HOME





# **World Competitiveness** Yearbook 2025

22<sup>nd</sup> – 23<sup>rd</sup> September 2025 Doubletree by Hilton Hotel, Putrajaya

See more





**IMD World Competitiveness** Yearbook 2025





**Factor:** 

**Sub-Factor:** 

Indicator:

4 Factor

20 Sub-factor

313 Indicators

By breaking down the data, it enables more informed discussions and targeted recommendations for improvement.

These improvements should be directed primarily at strengthening the measurement aspects of the indicators to ensure more accurate, meaningful, and actionable outcomes.



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  Disposable Income
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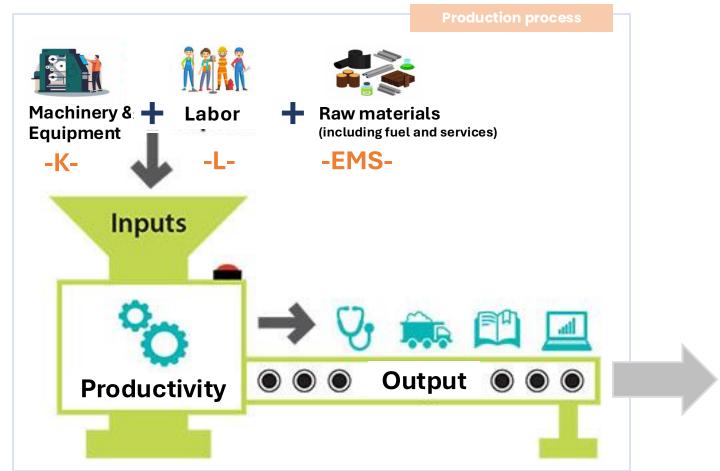




## The role of PRODUCTIVITY in generating GDP



## Productivity measures the efficiency of the use of INPUTS in producing OUTPUT



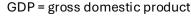
In the field of economics, inputs are also grouped as **KLEMS** 

Productivity improvements lead to greater output using the same inputs, which in turn translate into higher economic growth, better wages, more job opportunities, and overall improvements in societal well-being.

#### **Growth and well-being**

- GDP growth
- Compensation of employees-to-GDP
- Employment creation
- Price stabilization
- ••••••

The IMD World Competitiveness Ranking assesses how countries create and sustain environments that foster business competitiveness, with a **growing emphasis on the well-being of their populations** 









## **Designing short- and long-term interventions**



### Labor intervention is a short-term strategy and a Quick Win to increased productivity

#### Short-term--- Q = f(L)

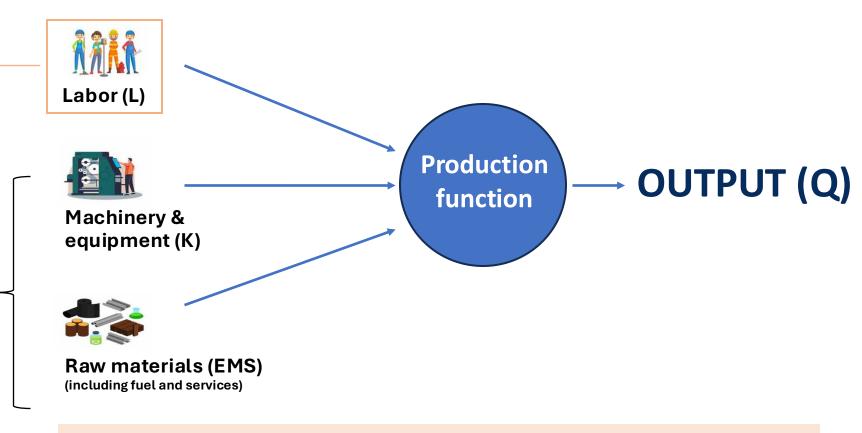
(Short-Run Production Function)

- Focus on output changes when only labor factors are changed.
- This is where the role of the MPC is important, for example through training and upskilling intervention programs to increase labor productivity.

#### Long-term--- Q = f(K,L,E,M,S)

(Long-Run Production Function)

- All inputs are changeable: capital, technology, labor skills, and process innovation.
- The MPC plays a role in supporting industrial upgrading, technology modernization, and innovation drive to ensure sustainable productivity growth.



In the short term, other inputs such as capital are considered fixed because they take time and higher costs to change compared to more adaptable labor.



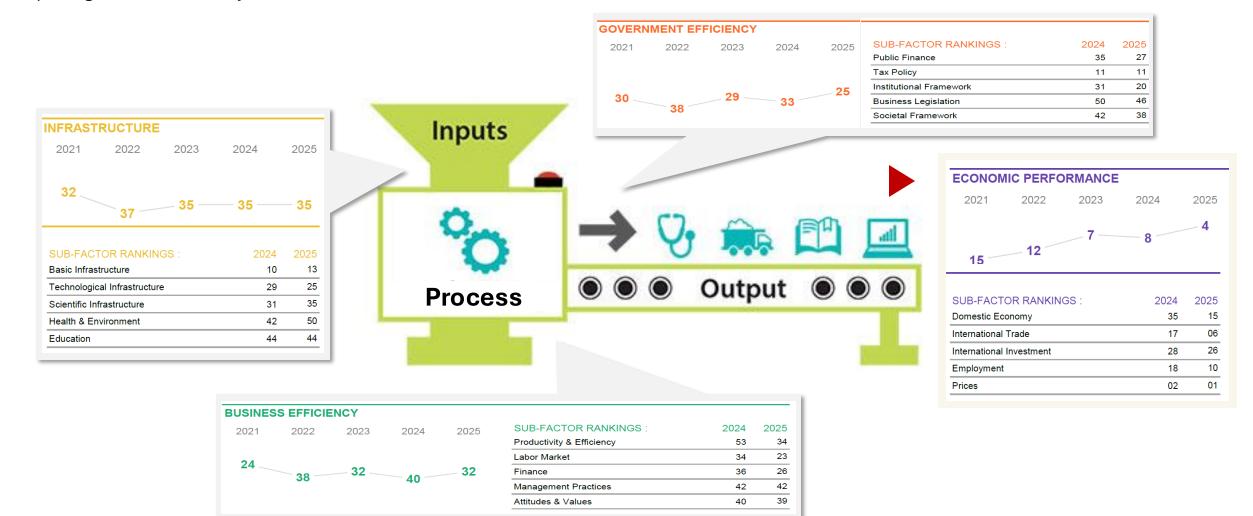




## Performance mismatch when strong outcomes but weak foundations



Malaysia's strong economic performance ranking (4th) signals resilience, but the lagging scores in infrastructure, government, and business efficiency likely reflect underlying measurement issues rather than actual structural weakness—highlighting the need to improve indicator reporting and data accuracy.





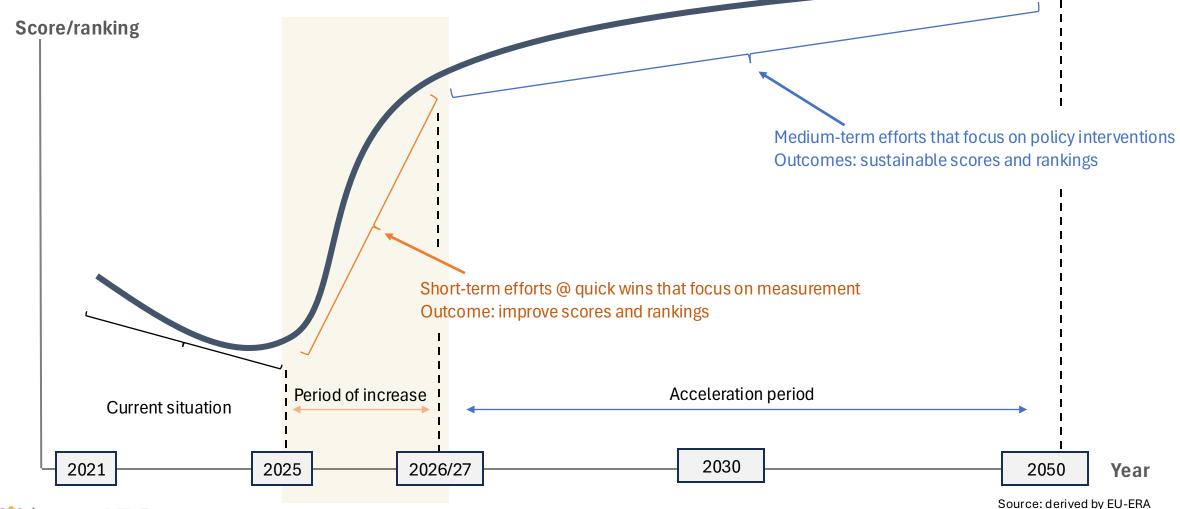




## Thus, focusing on measurement to drive competitiveness

## The "hockey stick curve" approach

Strategic focus on short-term measurement improvements can trigger a turning point, while sustained policy interventions are essential to maintain long-term progress in scores and rankings.















### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### Social framework

Measures social cohesion, inclusiveness, and the level of public trust supporting competitiveness.

<u>Indicators</u>	<u>Score</u>	Rankin
1. Media bias	0.409	55
2. Gini coefficient	41.20	53
3. Females in parliament	13.51	62
4. Gender inequality	0.172	39
5. Disposable income	65.1	47
6. Inequality in life expectancy	0.82	45
7. Freedom of the press	52.07	49
8. Income distribution - lowest 40%	16.1	47

Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based on 69 countries in IMD WCY 2025 report.







## Indicator overview sourced from IMD WCY 2025 Report

#### **INDICATOR DEFINED IN THE REPORT**

The IMD WCY 2025 report defines this indicator as measure of the deviation of the distribution of income among individuals or households within a country from a perfectly equal distribution. A value of 0 represents absolute equality, a value of 100 absolute inequality. Singapore: Calculation from the Department of Statistics based on Household Income from work per household member after accounting for Government Transfers and Taxes.

**Source:** IMD World Competitiveness Yearbook 2025 (page 586)

#### **INDICATOR MEASUREMENT**

The technical notes in WCY 2025 **DOES NOT** include the detailed calculations pertaining to the indicator.

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

- UNDP Human Development Report / http://hdr.undp.org/en/data
- National sources

Source: IMD World Competitiveness Yearbook 2025 (page 586)







## Ranking as reported in IMD WCY 2025

#### WHAT DOES THE SCORE INDICATE?

Societal Framework	2.5.00
GINI COEFFICIENT	
	2022
Equal distribution of income scale: 0 (absolute	e
equality) to 100 (absolute inequality)	
Ranking	coefficient
01 Slovak Republic	23.20
02 Slovenia	24.00
03 UAE	25.90
04 Belgium	26.00
04 Netherlands	26.00
06 Iceland	26.10
07 Czech Republic	26.20
08 Finland	27.10
09 Denmark	27.50
10 Norway	27.70
11 Kazakhstan	27.80
12 Taiwan (Chinese Taipei)	27.90
13 Poland	28.80
14 Sweden	28.90
15 Ireland	29.20
16 Croatia	29.50
17 Hungary	29.70
18 Austria	29.80
19 Oman	30.10
20 Estonia	30.70
20 France	30.70
22 Korea Rep.	31.40
23 Canada	31.70
23 Cyprus	31.70
23 Canada 23 Cyprus 23 Germany	31.70
26 United Kingdom	32.60
27 Mongolia	32.70
28 Japan	32.90
29 Switzerland	33.10
30 Luxembourg	33.40
31 Greece	33.60
32 Jordan	33.70

33 India	34.20
34 Australia	34.30
35 Romania	34.60
36 Portugal	34.70
37 Spain	34.90
38 Qatar	35.00 2018
39 Nigeria	35.10
39 Thailand	35.10
41 Italy	35.20
42 Latvia	35.70
43 Lithuania	36.00
44 China	37.10
45 Hong Kong SAR	37.60 2021
46 Singapore	37.80
47 Indonesia	37.90
48 Kenya	38.70
49 USA	39.80
50 Peru	40.20
51 Bulgaria	40.50
52 Philippines	40.70
53 Malaysia	41.20
54 Türkiye	41.90
55 Argentina	42.00
56 Bahrain	42.10 <sup>2019</sup>
57 Saudi Arabia	42.20 2018
58 Ghana	43.50
59 Chile	44.90
60 Mexico	45.40
61 Colombia	51.50
62 Brazil	51.80
63 Botswana	53.30
64 Puerto Rico	54.77
65 Namibia	59.10
66 South Africa	63.00
- Kuwait	-
<ul> <li>New Zealand</li> </ul>	-
- Venezuela	-

#### The lower the value, the higher the ranking.

#### **RATIONALITY?**

The Gini Coefficient measures income distribution within a country, where a lower coefficient reflects a more equal distribution of income. A lower value indicates reduced income disparity, greater inclusiveness, and stronger social cohesion.

From a policy and competitiveness perspective, countries with lower income inequality are more resilient and stable, as equitable income distribution supports higher levels of social mobility, economic participation, and balanced growth. Narrower income gaps also enhance consumer demand, strengthen domestic markets, and promote sustainable development.

Reducing income inequality further contributes to political and social stability, encourages human capital development, and supports innovation and productivity. In the IMD ranking system, countries with lower Gini Coefficients achieve higher rankings, reflecting stronger social balance, inclusiveness, and long-term competitiveness.

Source: IMD World Competitiveness Yearbook (WCY) 2025







## 2.4.19: Gini Coefficient

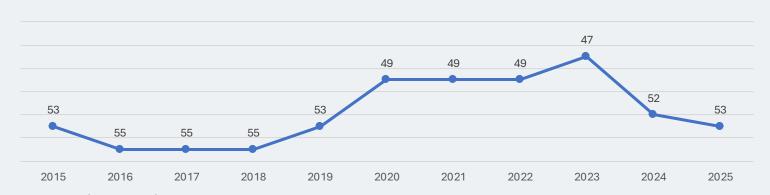


### Indicator performance over the years

#### Indicator Score (weeks)



#### Indicator Rank (of 69 countries)



**Source:** IMD WCY (various years)

## HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's Gini Coefficient shows a gradual improvement in income distribution over the past decade. After remaining at higher levels between 2015 and 2018 (index around 46.0–46.3), the score has declined to 41.2 in 2025, indicating reduced income inequality compared to earlier years. This suggests modest progress in creating a more balanced distribution of household income.

In terms of global ranking, Malaysia's position has fluctuated, moving from 53rd in 2015 to 47th in 2023, before settling at 53rd in 2025 out of 69 countries. While the ranking reflects some challenges in sustaining improvements relative to peers, the downward trend in the index indicates ongoing efforts to narrow income disparities, though the country still trails top performers such as the Slovak Republic (index 23.2).







## **Indicator performance over the years**



## WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

In 2025, Malaysia ranks 53rd globally for the Gini Coefficient, placing it fifth among the five ASEAN countries observed. This reflects a relatively weaker position compared to earlier years, as progress in reducing income inequality has been modest.

Thailand leads the region in 2025, ranking 39th globally, showing consistent improvement in narrowing income disparities. Singapore and Indonesia follow closely, ranking 46th and 47th respectively, both reflecting gradual gains over the past decade.

The Philippines ranks just ahead of Malaysia at 52nd place, while Malaysia remains at the lower end regionally, highlighting the continued challenge of addressing income inequality relative to its ASEAN peers.

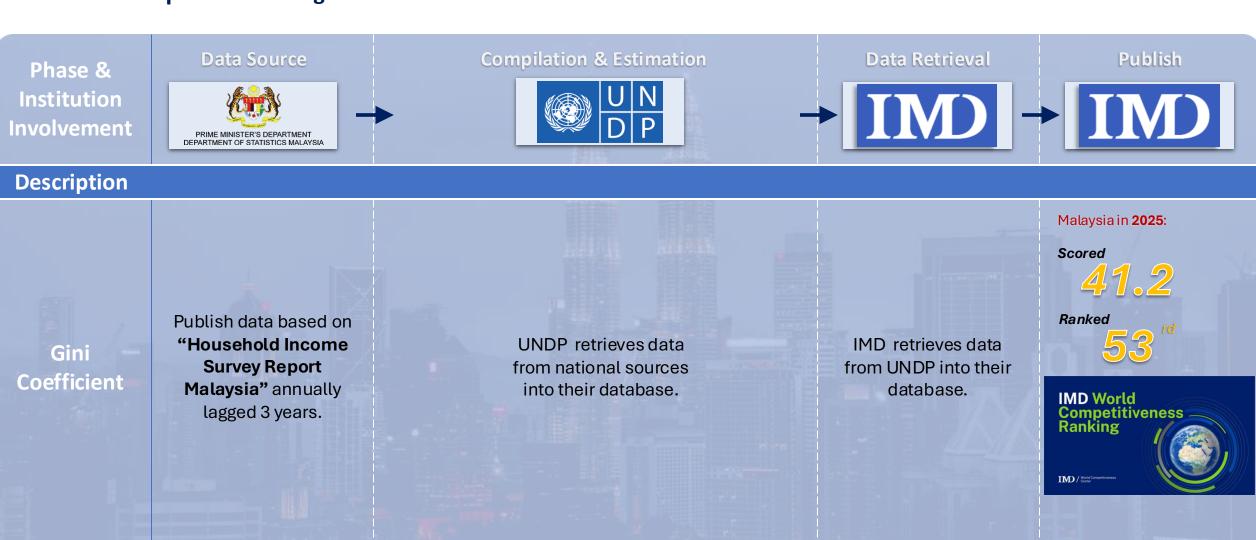
**Source:** IMD WCY (various years)







## **Indicator footprint** – Tracking the Data Sources



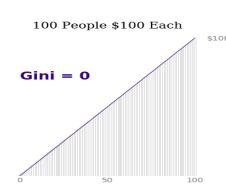




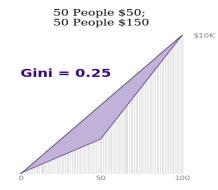


# Understanding Gini coefficient and other measures for wage inequality

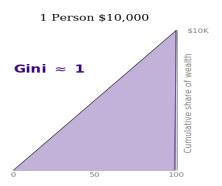
The **Gini coefficient** is a widely used measure of income or wage inequality, ranging from **0** (perfect equality) to **1** (perfect inequality), where higher values indicate greater disparities.



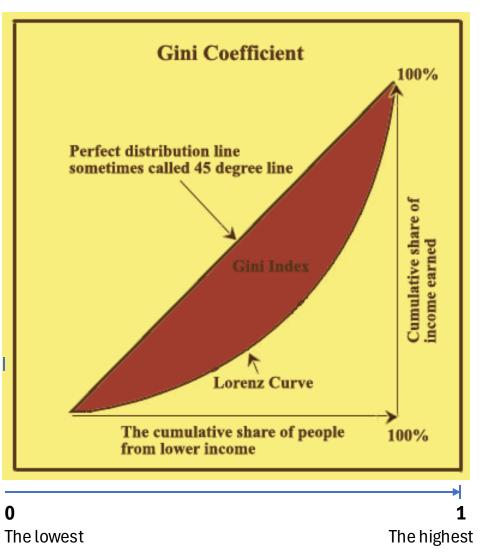
Everyone earns exactly the same amount, representing perfect income equality.



Income is somewhat unequally distributed, with half the people earning more than the other half, but disparities are moderate.



One person earns all the income while the rest earn nothing, representing extreme inequality.

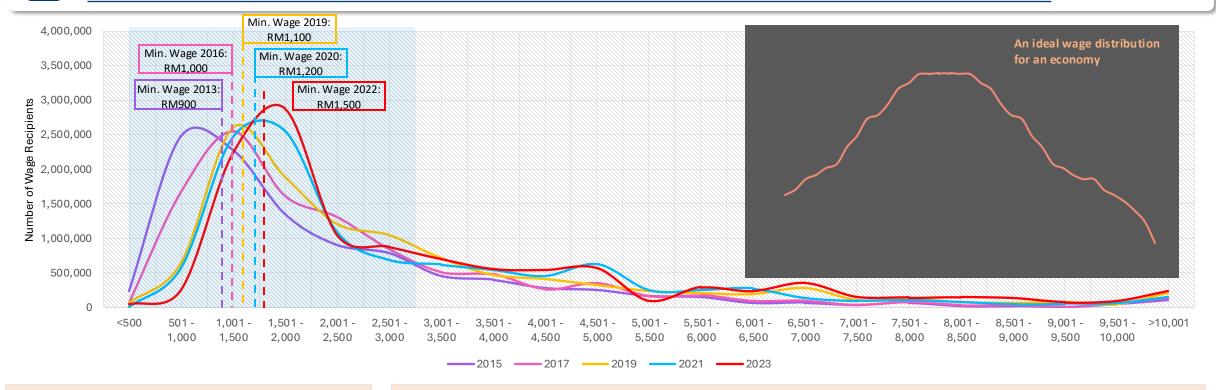


The **Gini coefficient is not the sole measure of wage inequality**; other measures such as the **Theil index** and the **simple wage gap** can also be used, especially when data limitations make it challenging to construct the **Gini coefficient**.



## Unequal wage patterns continue to shape Malaysia's income structure

#### Unequal wage distribution causes more than half of the workers to be trapped in the low-wage group



The percentage of workers receiving wages below RM3,000 decrease from **79.0%** in 2015 to **63.0%** in 2023

Minimum wages have shifted the level of wage but have limited capabilities in improving the distribution of wage.

- Proportion of wage recipients below RM1,500 reduced from 49.2% in 2015 to 21.7% in 2023
- Proportion of those receiving wage between RM3,001 RM4,000 decreased from 16.0% in 2015 to 10.7% in 2023

Source: Illustrated based on the Salaries and Wages Survey data from the Department of Statistics Malaysia (2016; 2018; 2020; 2022)



## Larger firms pay more, yet contribute less to compensation share

Larger firms offer higher salaries but allocate a smaller share of value added to labor, suggesting greater capital intensity and labor productivity compared to MSMEs, which bear the bulk of employment but receive a smaller wage share.

#### Average Monthly Wages (RM), 2015 & 2022

Although MSMEs contribute a larger share of their value added to labor compensation (CE) compared to large firms, their average monthly wages slightly lower—highlighting that high labor share does not equate to high pay, as absolute wage levels are still driven by firm size, productivity, and value creation capacity. 4,137





2015 2022

64.7% 65.2% 15.6% 13.8%

26.9% 28.1%

22.2% 23.3% 35.3% 34.8%

Sources: Analyzed based on Economic Census 2015 & 2022, Department of Statistics Malaysia (2017 & 2024)

Notes: Compensation of Employees (CE) refers to wages, salaries and benefits for employees. Gross Operating Surplus (GOS) refers to profits and returns to capital/owners.



# **Recommendation to be considered -** Data discrepancies between IMD and DOSM



## <u>Discrepancy between data</u> sources

DOSM data consistently shows higher Gini values than the IMD report, reflecting differences in methodology and reporting.

While DOSM figures are less frequent, they align more closely with national surveys, underscoring the need to reconcile both sources for consistent interpretation of inequality trends.









## **Areas of improvement** – Benchmarking Korea (22<sup>nd</sup> ranking)

Malaysia can adapt Korea's integrated approach to gender equality by modernising labour legislation, empowering women economically, and strengthening work–family reconciliation policies.

## **Key Rationality**



## Korea Wage Gap Interventions and "Win-Win" Models



#### Wage Support and Incentives

- Inclusive wage guidelines and subsidies for SMEs to raise wages
- Tax incentives for large firms to share profits and support suppliers

#### Productivity-Linked Wage Systems

- Encouraging companies to share productivity gains through bonuses/wage hikes
- Improved contract terms to benefit subcontractors and smaller firms

#### Win-Win Job Models

- Gwangju model: lower wages offset by housing, welfare, and job creation
- Local job partnerships with wage top-ups and rent support for workers

#### Labor Reform, the way forward

#### 3. Addressing the labor market dualism - to protect the vulnerable

- In order to address labor market dualism in shipbuilding industry, a joint mutual growth consultative group comprising principal contractors, subcontractors and experts was for med to sign a win-win agreement in shipbuilding industry on February 27, 2023
- A new win-win model was proposed, where contractors and subcontractors come up with solutions by themselves while the government supports their implementation, includ ing minimizing the compensation gap between contractors and subcontractors, reforming into a skill-based wage system, introducing an escrow system, and minimizing re-sub contracting
- To underpin the implementation of the agreement, the Government announced a win-win package support plan on March 8 to provide financial and institutional support ranging
  from skills training, employment service, increased benefits for both the contractors and subcontractors, and improved occupational safety measures on the condition of full imp
  lementation.
- To spread the win-win model in shipbuilding industry, the Government plans to meet with contractors, subcontractors and experts in other industries beginning in the second hal f of this year to explore possibilities for an agreement and build a win-win model for them.
- A win-win wage committee was formed on February 2, 2023 and has been discussing policy and institutional measures to reform the wage system and reduce wage gap.
- In June, the Government plans to draw up and announce measures to address the dual structure of the labor market, including labor, industrial, and welfare policies.
- By the end of 2023, the Government plans to complete building of an integrated wage information system that combines wage information and jobs that can be utilized in the workplace, such as in the case of the U.S. and Japan
  - Job and wage information is provided for about 930 occupations in the U.S. and about 500 occupations in Japan.













#### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

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Measures social cohesion, inclusiveness, and the level of public trust supporting competitiveness.

<u>In</u>	<u>dicators</u>	<u>Score</u>	<u>Rankin</u> g
1.	Media bias	0.409	55
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8.	Income distribution - lowest 40%	16.1	47

Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based on 69 countries in IMD WCY 2025 report.









## Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

The IMD WCY 2025 report, **not provided** the specific definitions in the IMD World Competitiveness Yearbook, we adopt the interpretation based on national sources or official definitions used by relevant government agencies and statistical bodies

**Source:** IMD World Competitiveness Yearbook 2025 (page 586)



#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

World Development Indicators (World Bank)

Source: IMD World Competitiveness Yearbook 2025 (page 586)





## Ranking as reported in IMD WCY 2025

#### WHAT DOES THE SCORE INDICATE?

Societal Framework	2.5.09
INCOME DISTRIBUTION	ON - LOWEST
40%	2022
Percentile going to the lowest 40% of h	ouseholds
Ranking	%
01 Slovak Republic	26.00
02 Iceland	25.80 <sup>2018</sup>
03 UAE	25.55
04 Slovenia	25.20
05 Czech Republic	24.28
06 Belgium	24.10
07 Netherlands	24.00 2021
08 Ireland	23.20
09 Denmark	23.10 2021
10 Norway	22.90 2019
11 Finland	22.80
12 Kazakhstan	22.75
13 Poland	22.40 2021
14 Hungary	22.20 2021
15 Cyprus	22.10
16 Croatia	21.80
17 Sweden	21.50 2021
18 Austria	21.00 2021
19 Germany	20.90 2019
19 Portugal	20.90
21 France	20.80 2021
22 Mongolia	20.80
23 Australia	20.70
24 Canada	20.40 2019
25 India 25 United Kingdom 27 Switzerland	20.10 2021
25 United Kingdom	20.10 2021
27 Switzerland	19.70 2020
28 Greece	19.60 2021
28 Korea Rep.	19.60
30 Estonia	19.50
30 Indonesia	19.50
30 Luxembourg	19.50 2021

33 Latvia	19.20 2021
34 Thailand	19.10 2021
35 China	18.80 2021
36 Taiwan (Chinese Taipei)	18.72
37 Spain	18.70 2021
38 Nigeria	18.70 <sup>2018</sup>
39 Italy	18.60 2021
40 Romania	18.50 2021
41 Lithuania	18.40
42 Ghana	17.60 2021
43 Bulgaria	17.10 2021
44 Philippines	16.90 2021
45 USA	16.60 2021
46 Peru	16.20
47 Malaysia	16.10
48 Chile	15.80
49 Argentina	15.50
50 Mexico	15.40
51 Türkiye 52 Saudi Arabia 53 Puerto Rico 54 Brazil	14.70 2021
52 Saudi Arabia	14.22 2018
53 Puerto Rico	11.36
54 Brazil	11.30
55 Colombia	10.30
56 Hong Kong SAR	9.90
- Bahrain	-
- Botswana	-
- Japan	-
- Jordan	-
- Kenya	-
- Kuwait	-
- Namibia	-
- New Zealand	-
- Oman	-
- Qatar	-
- Singapore	-
- South Africa	-
- Venezuela	

#### The highest the value, the higher the ranking.

#### **RATIONALITY?**

The Income Distribution – Lowest 40% indicator measures the share of national income received by the bottom 40% of households. A higher value reflects a more equitable distribution of income and stronger inclusiveness in economic growth.

From a policy and competitiveness perspective, economies where the lowest 40% of households receive a larger share of income are more socially cohesive and resilient. Fairer income distribution supports poverty reduction, strengthens domestic demand, and enhances workforce participation.

Improving the income share of the lowest 40% also contributes to reducing inequality, promoting social stability, and fostering sustainable long-term growth. In the IMD ranking system, a higher value indicates better social inclusion and stronger competitiveness through more balanced economic development.

Source: IMD World Competitiveness Yearbook (WCY) 2025

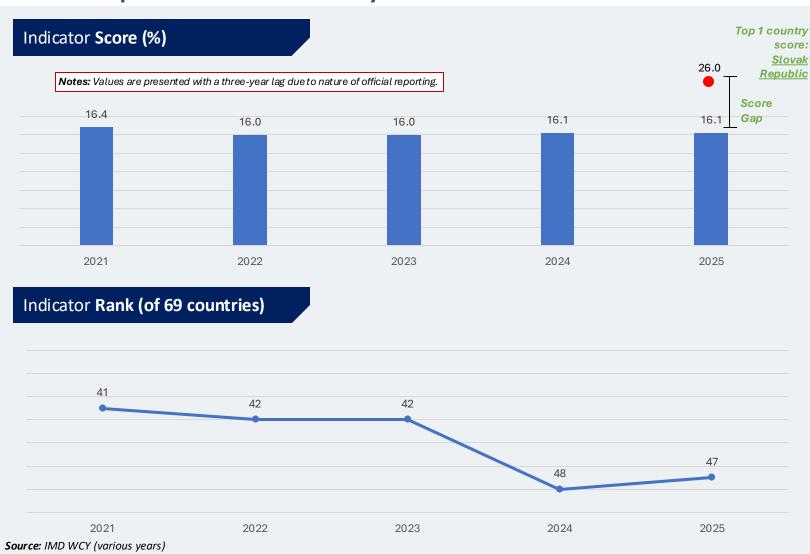








## **Indicator performance over the years**



## HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's income distribution indicator for the lowest 40% of households has remained relatively stable over the past five years, fluctuating only slightly between 16.0% and 16.4%. In 2025, the score stood at 16.1%, indicating limited progress in expanding the income share of the bottom 40% of households. This suggests that despite some policy efforts, inclusiveness in income distribution has not improved significantly.

In terms of global ranking, Malaysia's position declined from 41st in 2021 to 48th in 2024, before improving slightly to 47th in 2025 out of 69 countries. The overall trend highlights challenges in strengthening income equity for lower-income households, as the country continues to lag behind top performers such as the Slovak Republic (26.0%).





## **Indicator performance over the years**



## WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

In 2025, Malaysia ranks 47th globally for income distribution (lowest 40%), positioning it last among the five ASEAN countries observed. This represents a weaker position compared to 2021–2022 (41st–42nd), indicating limited gains in improving equity for lower-income households.

Thailand leads the region at 39th place globally, showing steady progress in enhancing inclusiveness. Singapore follows at 45th, while Indonesia ranks 46th, both ahead of Malaysia.

The Philippines stands at 52nd in 2025, also performing better than Malaysia, leaving Malaysia at the bottom of the ASEAN comparison, underscoring persistent challenges in strengthening the income share of the lowest 40%.

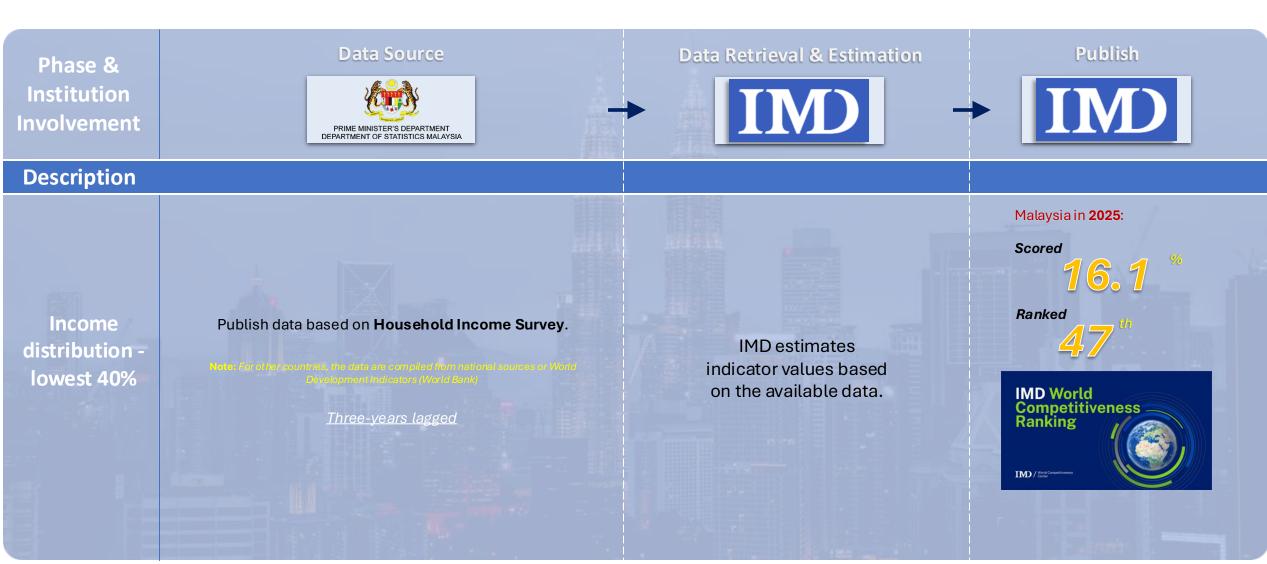
**Source:** IMD WCY (various years)







## **Indicator footprint – tracking the data sources**







## **Definition ambiguity**



### IMD WCY 2025 Report



There is no explicit statement defining this indicator in the source documentation.

### **Method of Computation**

Societal Framework

2.5.09

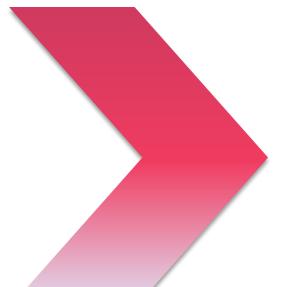
INCOME DISTRIBUTION - LOWEST

40%

2022

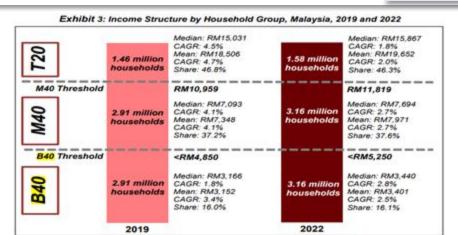
Percentile going to the lowest 40% of households

Source: IMD WCY (2025)



However, we can assume the definition is similar to:

According to the **Department of Statistics Malaysia (DOSM)**, the **Bottom 40% (B40)** refers to households in the lowest income bracket, representing the bottom 40% of household incomes in Malaysia, with the specific income threshold changing over time and varying by state.



The absence of a clear IMD definition creates ambiguity, especially when compared to Malaysia's B40 classification.

Alignment with Malaysia methodology is necessary to ensure Malaysia's performance is accurately benchmarked in global rankings.



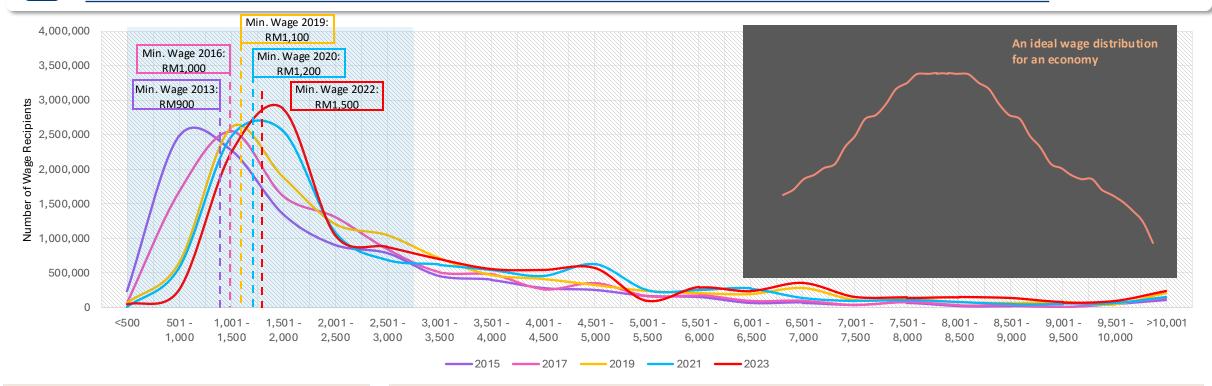






## Unequal wage patterns continue to shape Malaysia's income structure

Unequal wage distribution causes more than half of the workers to be trapped in the low-wage group



The percentage of workers receiving wages below RM3,000 decrease from **79.0%** in 2015 to **63.0%** in 2023

Minimum wages have shifted the level of wage but have limited capabilities in improving the distribution of wage.

- ✓ Proportion of wage recipients below RM1,500 reduced from 49.2% in 2015 to 21.7% in 2023
- Proportion of those receiving wage between RM3,001 RM4,000 decreased from 16.0% in 2015 to 10.7% in 2023

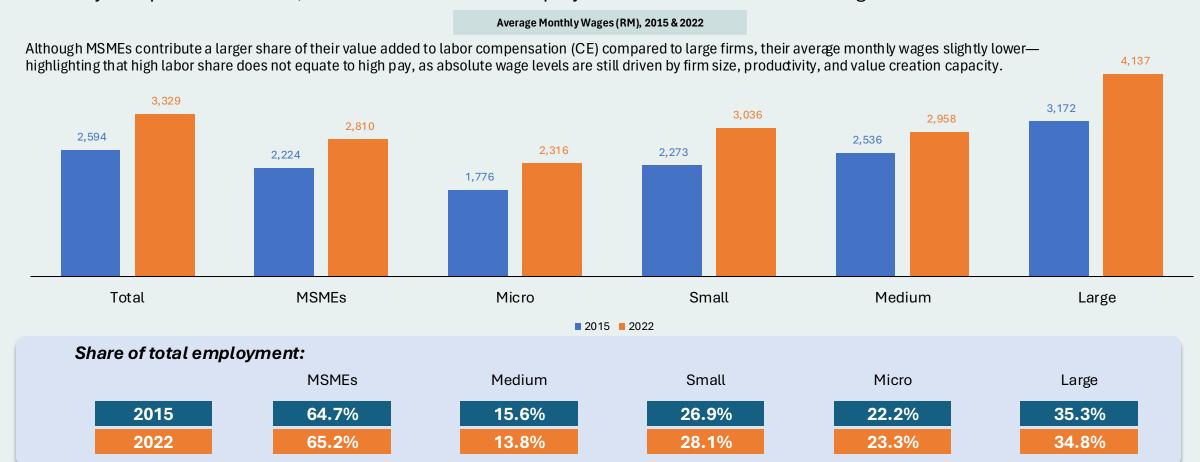
Source: Illustrated based on the Salaries and Wages Survey data from the Department of Statistics Malaysia (2016; 2018; 2020; 2022)

Notes: The number of wage recipient are based on total workforce including foreign workers. Wages below the minimum wage indicate that the recipient is a part-time worker



## Larger firms pay more, yet contribute less to compensation share

Larger firms offer higher salaries but allocate a smaller share of value added to labor, suggesting greater capital intensity and labor productivity compared to MSMEs, which bear the bulk of employment but receive a smaller wage share.



Sources: Analyzed based on Economic Census 2015 & 2022, Department of Statistics Malaysia (2017 & 2024)

Notes: Compensation of Employees (CE) refers to wages, salaries and benefits for employees. Gross Operating Surplus (GOS) refers to profits and returns to capital/owners.





## **Areas of improvement** – Benchmarking Korea (22<sup>nd</sup> ranking)

Malaysia can adapt Korea's integrated approach to gender equality by modernising labour legislation, empowering women economically, and strengthening work–family reconciliation policies.

## **Key Rationality**



## Korea Wage Gap Interventions and "Win-Win" Models



#### Wage Support and Incentives

- Inclusive wage guidelines and subsidies for SMEs to raise wages
- Tax incentives for large firms to share profits and support suppliers

#### Productivity-Linked Wage Systems

- Encouraging companies to share productivity gains through bonuses/wage hikes
- Improved contract terms to benefit subcontractors and smaller firms

#### Win-Win Job Models

- Gwangju model: lower wages offset by housing, welfare, and job creation
- Local job partnerships with wage top-ups and rent support for workers

#### Labor Reform, the way forward

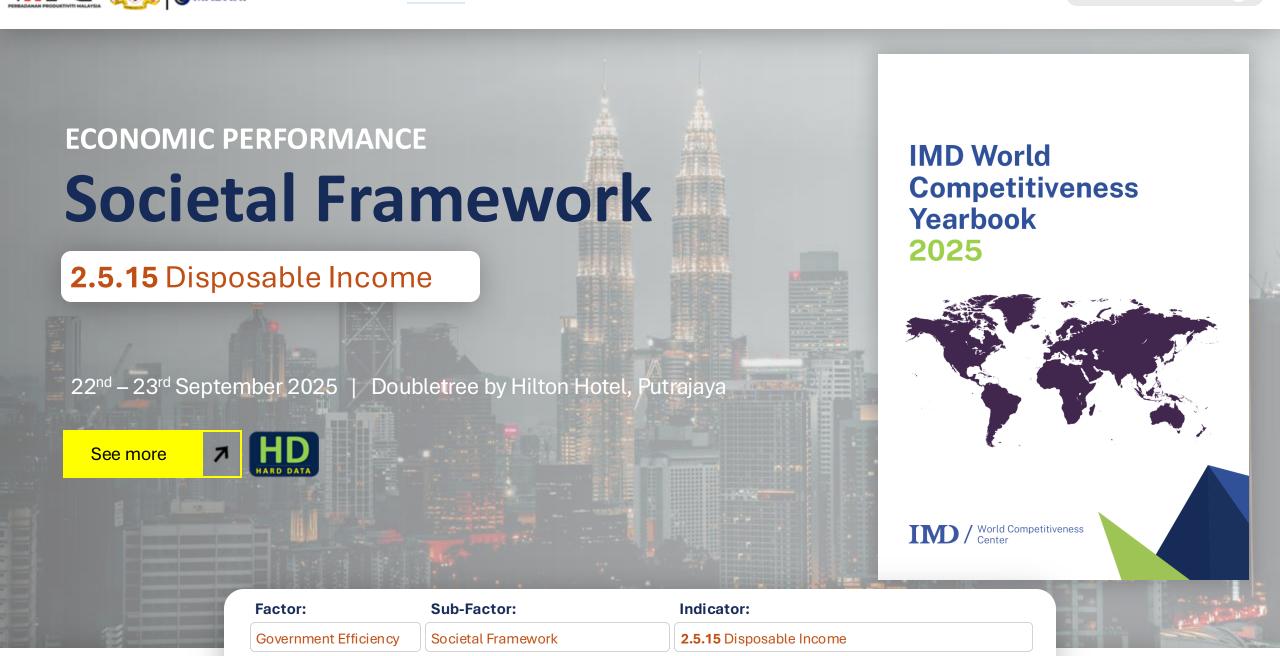
#### 3. Addressing the labor market dualism - to protect the vulnerable

- In order to address labor market dualism in shipbuilding industry, a joint mutual growth consultative group comprising principal contractors, subcontractors and experts was for med to sign a win-win agreement in shipbuilding industry on February 27, 2023
  - A new win-win model was proposed, where contractors and subcontractors come up with solutions by themselves while the government supports their implementation, including minimizing the compensation gap between contractors and subcontractors, reforming into a skill-based wage system, introducing an escrow system, and minimizing re-subcontracting
- To underpin the implementation of the agreement, the Government announced a win-win package support plan on March 8 to provide financial and institutional support ranging
  from skills training, employment service, increased benefits for both the contractors and subcontractors, and improved occupational safety measures on the condition of full imp
  lementation.
- To spread the win-win model in shipbuilding industry, the Government plans to meet with contractors, subcontractors and experts in other industries beginning in the second hal f of this year to explore possibilities for an agreement and build a win-win model for them.
- A win-win wage committee was formed on February 2, 2023 and has been discussing policy and institutional measures to reform the wage system and reduce wage gap.
- In June, the Government plans to draw up and announce measures to address the dual structure of the labor market, including labor, industrial, and welfare policies.
- By the end of 2023, the Government plans to complete building of an integrated wage information system that combines wage information and jobs that can be utilized in the workplace, such as in the case of the U.S. and Japan
  - Job and wage information is provided for about 930 occupations in the U.S. and about 500 occupations in Japan.















### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

Figure in bracket () refers to rank in IMD WCY 2025 report.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### Social framework

Measures social cohesion, inclusiveness, and the level of public trust supporting competitiveness.

<u>Indicators</u>		<u>Score</u>	<u>Ranking</u>	
1.	Media bias	0.409	55	
2.	Gini coefficient	41.20	53	
3.	Females in parliament	13.51	62	
4.	Gender inequality	0.172	39	
5.	Disposable income	65.1	47	
6.	Inequality in life expectancy	0.82	45	
7.	Freedom of the press	52.07	49	
8.	Income distribution - lowest 40%	16.1	47	

Rank are based on 69 countries in IMD WCY 2025 report.









## Indicator overview sourced from IMD WCY 2025 Report

### **INDICATOR DEFINED IN THE REPORT**

The IMD WCY 2025 report defines this indicator as based on gross income minus social security contribution and income taxes

Source: IMD World Competitiveness Yearbook 2025 (page 587)

Source: IMD World Competitiveness Yearbook 2025 (page 587)

#### **INDICATOR MEASUREMENT**

According to the technical notes in WCY 2025, the indicator can be simply calculated as follows:

#### Disposable Income =

Gross Income – Social security contribution – Income Taxes

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

- Passport, Source: © Euromonitor International
- National sources

Source: IMD World Competitiveness Yearbook 2025 (page 587)





### Ranking as reported in *IMD WCY 2025*

#### WHAT DOES THE SCORE INDICATE?

Societal Framework	2.5.15
DISPOSABLE INCOME	
	2024
Female / male ratio	
Ranking	ratio
01 Cyprus	99.3
02 Belgium	96.1
03 Luxembourg	94.8 2023
04 Lithuania	91.5
05 Colombia	89.0
06 Norway	88.1
07 Portugal	87.3
08 Switzerland	86.4
09 Latvia	86.0
10 France	85.0
11 Iceland	<b>85.0</b> 2023
12 Germany	84.8
13 Finland	84.6
14 Hungary	82.9
15 Spain	82.7
16 Czech Republic	82.5
17 Bulgaria	82.3
18 Estonia	81.6
19 Thailand	80.8
20 Mongolia	80.0 2023
21 Brazil	79.8
22 Denmark	79.7
23 USA	78.9
24 Hong Kong SAR	78.2
25 Kazakhstan	77.8
26 Chile	77.7
27 Sweden	77.6
28 Canada	77.5
29 Ireland	77.2
30 Singapore	75.9

31 Taiwan (Chinese Taip	ei)	75.5
32 Argentina		74.8
33 Slovenia		74.5
34 New Zealand		73.7
35 Australia		72.3
36 South Africa		72.0
37 Mexico		71.8
38 United Kingdom		71.2
39 Türkiye		71.1
40 Peru		70.4
41 Philippines		69.6
42 Slovak Republic		68.7
43 Netherlands		66.6
44 Korea Rep.		66.5
45 Croatia		66.
46 Greece		65.9
47 Malaysia		65.
48 Kenya		65.0
49 China		64.2
50 Poland		64.0
51 Austria		63.2
52 Romania		62.0
53 Venezuela		61.4
54 Ghana		57.8
55 Italy		53.9
56 Japan		52.3
57 Indonesia		51.
58 Nigeria		50.
59 Qatar		46.6
60 UAE		39.6
61 Kuwait		37.6
62 Bahrain		34.0
63 Saudi Arabia		28.2
64 Oman		24.0
65 India		22.2
66 Jordan		19.4
- Botswana		
- Namibia		
- Puerto Rico		

#### The higher the value, the higher the ranking.

#### **RATIONALITY?**

Food costs, expressed as a percentage of household final consumption expenditures, are a critical indicator of economic wellbeing and cost of living. A lower percentage suggests that households spend a smaller share of their income on food, which typically reflects higher disposable income, greater food affordability, and better overall economic conditions.

From a policy and competitiveness perspective, countries where food costs consume a smaller portion of household budgets are generally considered more economically resilient. This implies that households can allocate more spending toward education, healthcare, savings, and other discretionary consumption, contributing to improved quality of life and economic diversification.

Lower food cost burdens also reflect efficiencies in food production, distribution systems, and government interventions (such as subsidies or price controls) that stabilize prices and protect consumers. Therefore, in the IMD ranking system, a lower food cost share is rewarded with a higher position, as it signals stronger household purchasing power and broader economic development.

**Source:** IMD World Competitiveness Yearbook 2025









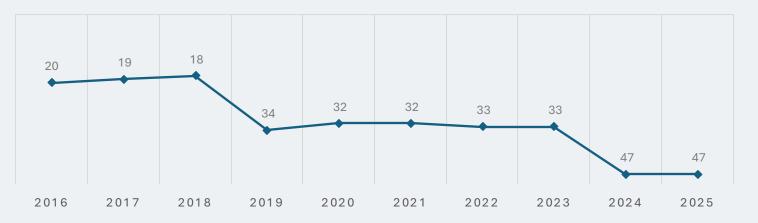
### **Indicator performance over the years**

#### Indicator Score (Ratio %)

Notes: Data are presented with a one-year lag due to the nature of official reporting. For example, figures reported for 2025 are based on 2024 data.



#### Indicator Rank (of 69 countries)



Source: IMD World Competitiveness Yearbook (various years)

## HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's disposable income indicator, measured as the female-to-male ratio, shows a fluctuating but overall declining trend over the years. After peaking at 80.2% in 2018, the ratio gradually decreased to 65.1% in 2025. This indicates a widening gender gap in disposable income, suggesting that women's earnings relative to men have weakened in recent years.

Correspondingly, Malaysia's global ranking has deteriorated significantly, falling from 18th position in 2018 to 47th position in both 2024 and 2025 out of 69 countries. This drop highlights growing challenges in achieving gender income parity, particularly when compared to topperforming countries like Cyprus, where women's disposable income is nearly on par with men's.

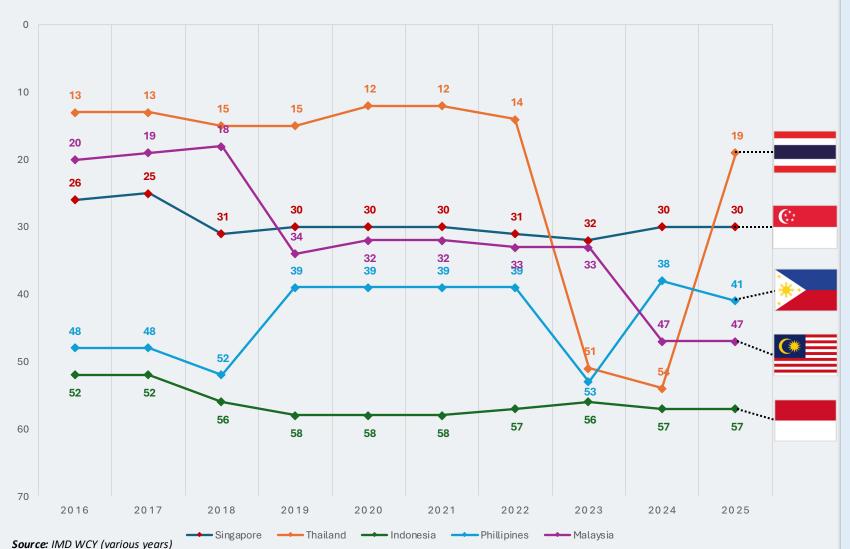






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### **Indicator performance over the years**



### WHERE ARE MALAYSIA NOW? **RANKS AMONG ASEAN COUNTRIES**

In 2025, Malaysia ranks 47th globally for disposable income equality (female-to-male ratio), placing it fourth among the five ASEAN countries observed. Over the past decade, Malaysia's performance has declined, with rankings falling from 18th in 2018 to 47th in both 2024 and 2025, reflecting widening gender income disparities.

Thailand consistently leads the region, maintaining top global positions within the top 20 across the entire period, highlighting its strong progress in narrowing gender income gaps. Singapore also shows relatively stable performance, remaining in the low-30s range and ranking above Malaysia.

Philippines has performed better than Malaysia, improving steadily to reach 41st in 2025. Meanwhile, the Indonesia continues to record the lowest ranking among ASEAN peers, remaining in the bottom 10 globally despite some marginal improvement in recent years.









### **Indicator footprint** – Tracking the Data Sources

Phase & Institution **Involvement** 



Compilation

International Institution



International Institution



Publish

Malaysia in 2025:

### **Description**

Disposable Income

Publish data based on "Household Income Survey Report Malaysia" annually lagged 1 years.

Data compiled and integrated internationally with other country profiles

by:



Euromonitor International estimates indicator values based on the available data of consumption.

IMD retrieves data from Euromonitor International sources into their database.

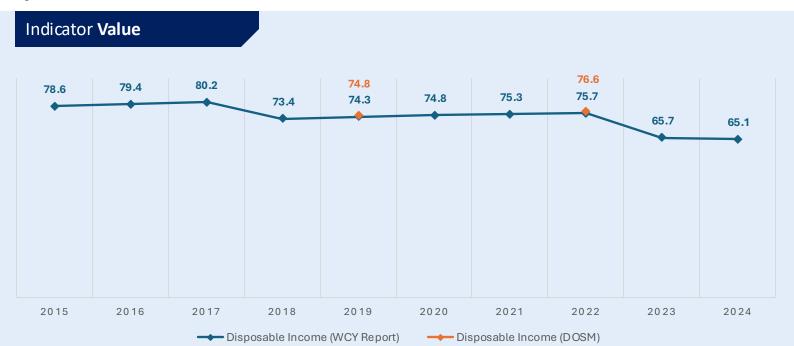
Scored Ranked **IMD World** Competitiveness Ranking IMD / World Co







### **Comparative Measurement Assessment of Indicator**



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Disposable Income (WCY Report)	78.6	79.4	80.2	73.4	74.3	74.8	75.3	75.7	65.7	65.1
Disposable Income (DOSM)	_	-	-	-	74.8	-	-	76.6	-	

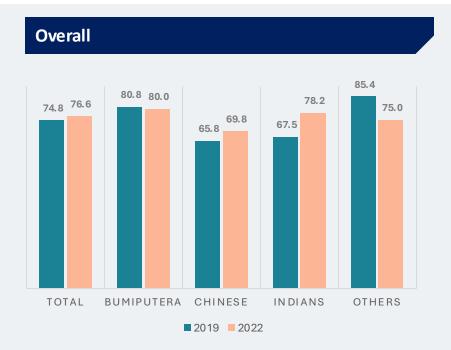
#### **Discrepancy between data** sources

There is a clear discrepancy between the WCY Report, WCY Database, and DOSM data, with the WCY Report consistently showing higher disposable income ratios than the WCY Database.

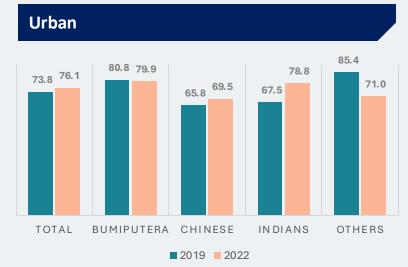
DOSM figures—though less frequent—tend to align more closely with or higher than WCY Report values.

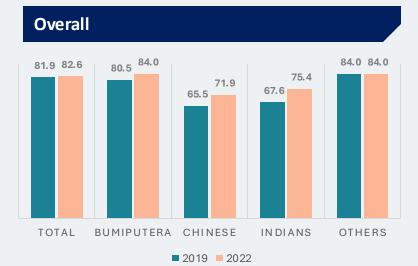


#### **Assessment of Indicator**



The overall female-male disposable income ratio improved from 74.8 in 2019 to 76.6 in 2022, with consistent gains across most ethnic groups. However, the Chinese and Indians group showed a modest increase, while the 'Others' category experienced a notable decline.





There are clear differences in gender income disposable gaps between urban and rural areas. In general, rural areas show higher female-male disposable income ratios than urban areas across all ethnic groups. In 2022, the overall rural ratio stood at 82.6 compared to 76.1 in urban areas, suggesting that female in rural settings have more comparable disposable incomes to male.

In contrast, urban areas show more variation by ethnicity and generally lower gender parity. While urban Bumiputera and Indian groups maintain relatively high ratios, the urban Chinese group continues to report lower parity

Source: Department of Statistic Malaysia 2023



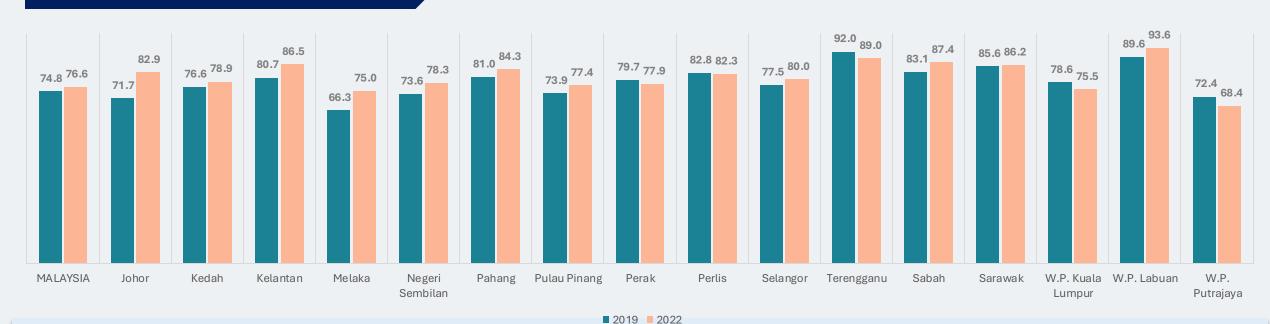






#### **Assessment of Indicator**

#### **States**



Most Malaysian states recorded improvements in the female–male disposable income ratio, indicating positive trends in gender income equality. W.P. Labuan (93.6), Terengganu (89.0), and Sarawak (86.2) lead the rankings in 2022, showing strong income parity between women and men. Notable gains were also seen in Johor, which rose sharply from 71.7 to 82.9, and Melaka, which increased from 66.3 to 75.0.

While the overall trend is encouraging, some states experienced a decline. W.P. Putrajaya dropped from 72.4 to 68.4, and W.P. Kuala Lumpur declined from 78.6 to 75.5, suggesting a relative widening of the income gap in these areas.

Source: Department of Statistic Malaysia 2023









### **Areas of improvement 1 – Capturing hidden workforce**

Enhance income statistics by capturing part-time or informal earnings from housewives and students to better reflect disposable income.

### **Key Rationality**

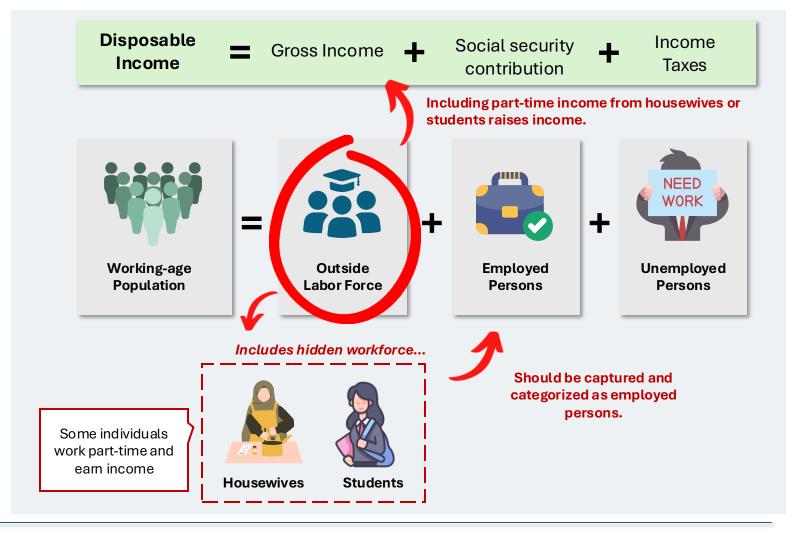


- Widden Income Underestimated: Many women outside the labor force (e.g., housewives, students) earn part-time income that is not captured, leading to undervaluation of household disposable income.
- Capturing Hidden Income Improves
  Disposable Income: Recognizing these
  earnings raises household disposable income,
  strengthens female income levels, and
  improves Malaysia's female-to-male
  disposable income ratio.

### **Prove of Concepts**



- Enhanced Household Income Surveys: Expand Household Income and Expenditure Survey (HIES) to capture part-time and informal earnings from housewives and students.
- Integration of Administrative & Digital Data: Use ewallet, gig economy platforms, and social security records to track part-time or informal income flows.











### **Areas of improvement 2 –** Benchmarking Cyprus (1st ranking)

Malaysia can adapt Cyprus's integrated approach to gender equality by modernising labour legislation, empowering women economically, and strengthening work–family reconciliation policies.

### **Key Rationality**



# **Cyprus Key Drivers of Equal Disposable Income**



#### Modernised Legislative Framework

- Amendments to gender equality laws in employment and vocational training, and removal of discriminatory provisions (e.g. pensions, army service, family law).
- Strengthening of monitoring and enforcement mechanisms (CEDAW recommendations).

#### Economic Empowerment of Women

- Measures to eliminate the pay gap, boost female entrepreneurship, and support vulnerable groups.
- Includes equal pay inspections, advisory services for employers, female entrepreneurship subsidy programmes, and training initiatives.

#### Reconciliation of Work and Family Life

- Subsidies for childcare, family policy plans, maternity/parental leave extension, and workplace nurseries .
- Policies ensure women's continuous participation in the labour market and reduce career interruptions that widen income disparities.

#### Strategic Action Plan on Gender Equality 2014-2017

- 4. Therefore, the provision of information and the sensitisation of women about their rights, including migrant women, disabled and other vulnerable groups of women, the facilitation of women victims' access to legal mechanisms for hearing complaints, the provision of advice and the elimination of all barriers to women's accessibility to the justice system and the establishment of training programs for prosecutors, judges and lawyers should receive special attention.
- 5. At the same time, information on the relevant provisions of the law and continuous dialogue with all actors, social partners, equality bodies and representatives of civil society is crucial for promoting, implementing and asserting women's rights.
- 6. In the Concluding Observations of the CEDAW Committee, it is highlighted that, apart from the Government, the House of Representatives has a key role to play in promoting this goal.
- 7. Based on the above, the interim objectives set for Updating and Improving the Legal Framework are:
- 1) The amendment and adoption of laws relating to gender equality,
- 2) Education and information about laws and Equality
- 3) Education / training of public officials (see1.3 above)



- 5. Based on the above, the interim objectives to effectively alleviate the problem of violence against women are the following:
- 1) Signing of the Convention of the Council of Europe (CoE) on Preventing and Combating Violence against Women and Domestic Violence.
- Preparing a new National Action Plan for the Prevention and Combating of Violence in the Family.
- 3) Prevention of Violence against Women.
- Protection-Support for victims and
- Prevention-Prosecution.









### **Areas of improvement 3 –** Benchmarking Belgium (2<sup>nd</sup>) ranking

Malaysia can adapt Belgium's structured legal and institutional approach to closing the gender pay gap by embedding pay equality in labour law, requiring systematic reporting, and ensuring gender-neutral job classifications.







# **Belgium Key Drivers of Equal Disposable Income**

#### Gender Pay Gap Law (2012)

- Law of 22 April 2012 obliges employers, sectors, and social partners to address the gender pay gap at interprofessional, sectoral, and company levels.
- Equal pay integrated into existing labour legislation rather than standalone measures

#### Gender-Neutral Job Classifications

- Legal requirement for all job evaluation systems to be assessed for gender bias.
- Official checklist and review process by the Directorate of Collective Labour Relations

#### Mandatory Company Pay Report

- Companies with ≥50 employees must produce a biennial gender pay gap analysis.
- Must be presented to works councils or employee committees and include: Wages, benefits, and employer contributions (broken down by gender).

## Eliminating the gender pay gap by law – Lessons learned in Belgium

1. The Belgian law to combat the gender pay gap explained

The law of 22 April 2012 to combat the gender pay gap introduces the obligation to deal with the gender pay gap on all levels of social dialogue.<sup>1</sup>

The interprofessional level

Every two years social partners from the private sector negotiate at a national level an interprofessional agreement (IPA) on the evolution in wages, reductions in employers' contributions, the level of social benefits... This IPA is a framework agreement that forms the basis for future sector agreements. The law obliges social partners to discuss gender equality in wages, its evolution and possible measures to be taken. Job classifications are generally not negotiated at this level, but strategies to make them gender-neutral are to be discussed during interprofessional bargaining.

CHAPTER 2. - Obligation to negotiate measures to combat the pay gap at the interprofessional level

Art. 2. In Article 4 §1 part1 of the Law of 26 July 1996 on the promotion of employment and the preventive safeguarding of competitiveness, the words "and the development of the pay gap between men and women" shall be inserted between the words "and the development of companies" and the words ". Where appropriate".

Art. 3. Article 6 §1 of the same Law shall be supplemented by the following sentence: "Measures to combat the gender pay gap shall also be laid down, in particular by making job classification systems gender-neutral".

The company level

The law also directly impacts on the level of the company. In order to guide the social dialogue at company level, the employer is obliged to compile a statistical report every two years on the gender pay gap within the company, taking into account the different job levels. This obligation applies to companies with 50 employees or more. The statistical report on the gender pay gap

in the company has to be discussed in the works council, and if there is none, in the committee for prevention and protection at work. The establishment of a works council is mandatory for companies with 100 employees or more. The establishment of a committee for prevention and protection at work is mandatory from 50 employees.

CHAPTER 5. - Organisation of compulsory consultation within the company in order to achieve a gender-neutral remuneration policy

Art. 7. In Title II, Chapter II, Section IV of the Law of 10 May 2007 on combating discrimination between women and men, an Article 13/1 shall be inserted, as follows:

"Art. 13/1 §1. The employer of each company which normally employs an average of at least fifty employees shall, every two years, carry out a detailed analysis of the

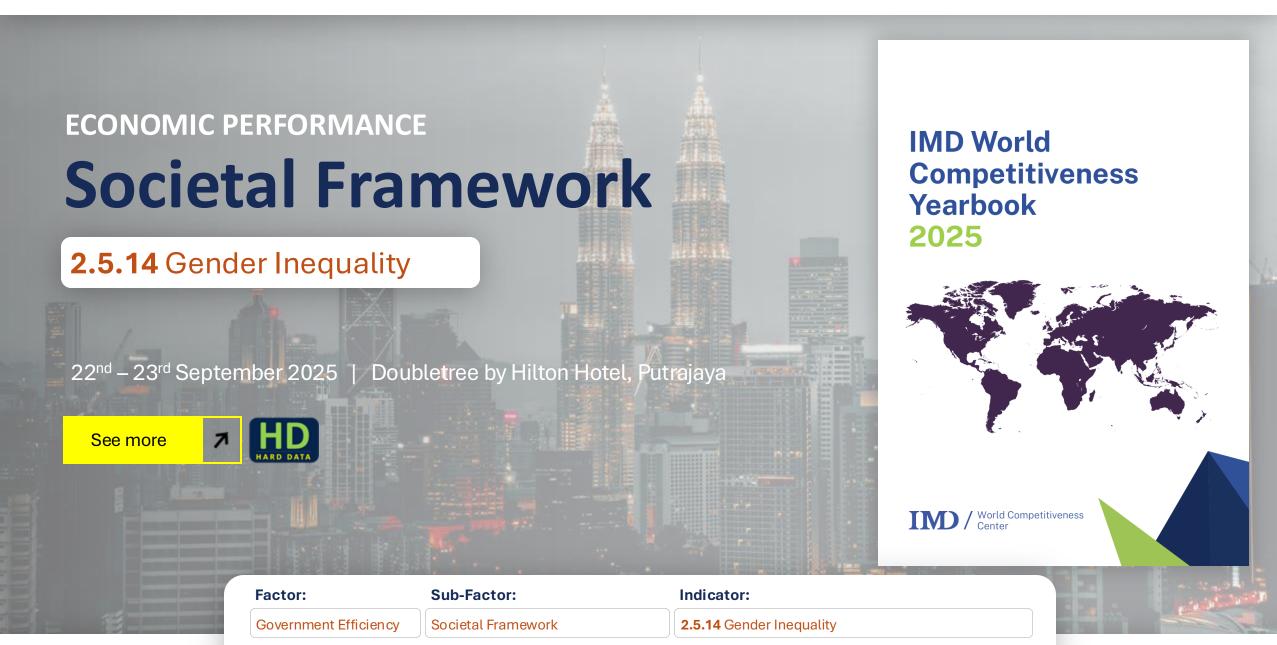
<sup>4</sup> This list can be viewed via: <a href="https://emploi.belgique.be/fr/themes/egalite-et-non-discrimination/egalite-femmes-hommes-lecart-salarial">https://emploi.belgique.be/fr/themes/egalite-et-non-discrimination/egalite-femmes-hommes-lecart-salarial</a>.

.















#### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

Figure in bracket () refers to rank in IMD WCY 2025 report.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### Social framework

Measures social cohesion, inclusiveness, and the level of public trust supporting competitiveness.

<u>In</u>	<u>dicators</u>	<u>Score</u>	Ranking
1.	Media bias	0.409	55
2.	Gini coefficient	41.20	53
3.	Females in parliament	13.51	62
4.	Gender in equality	0.172	39
5.	Disposable income	65.1	47
6.	Inequality in life expectancy	0.82	45
7.	Freedom of the press	52.07	49
8.	Income distribution - lowest 40%	16.1	47

Rank are based on 69 countries in IMD WCY 2025 report.









### Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

The IMD WCY 2025 report defines this indicator as a composite measure reflecting inequality in achievement between women and men in three dimensions: reproductive health, empowerment and the labor market.

Source: IMD World Competitiveness Yearbook 2025 (page 587)

# INDICATOR MEASUREMENT The technical notes in WCY 2025 **DOES NOT** include the detailed calculations pertaining to the indicator. Source: IMD World Competitiveness Yearbook 2025 (page 587)

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

- **UNDP Human Development Report**
- National sources







### Ranking as reported in *IMD WCY 2025*

#### WHAT DOES THE SCORE INDICATE?

Societal Framework	2.5.14
GENDER INEQUALITY	
GENDER INEQUALITY	2023
Gender Inequality Index (UNDP)	
,,,	
Ranking	index
01 Denmark	0.003
02 Norway	0.004
03 Sweden	0.007
04 Switzerland	0.010
05 Netherlands	0.013
06 Finland	0.021
07 Iceland	0.024
08 Belgium	0.031
08 Singapore	0.031
10 Austria	0.033
11 France	0.034
12 Korea Rep.	0.038
13 UAE	0.040
14 Hong Kong SAR	0.041 2022
14 Taiwan (Chinese Taipei)	0.041 2022
16 Slovenia	0.042
17 Italy	0.043
17 Spain	0.043
19 Luxembourg	0.044
20 Canada	0.052
21 Ireland	0.054
22 Australia	0.056
23 Germany	0.057
24 Japan	0.059
25 Estonia	0.061
26 Lithuania	0.070
27 Croatia	0.074
28 Portugal	0.076
29 Poland	0.081
30 New Zealand	0.082

31 United Kingdom	0.083
32 Czech Republic	0.088
33 Chile	0.102
34 Greece	0.103
35 Latvia	0.117
36 China	0.132
37 Bahrain	0.165
38 USA	0.169
39 Malaysia	0.172
40 Slovak Republic	0.176
41 Kazakhstan	0.182
42 Kuwait	0.188
43 Qatar	0.195
44 Bulgaria	0.208
45 Hungary	0.213
46 Oman	0.222
47 Romania	0.227
47 Türkiye	0.227
49 Saudi Arabia	0.228
50 Cyprus	0.252
51 Argentina	0.264
52 Mongolia	0.284
53 Thailand	0.288
54 Peru	0.340
55 Philippines	0.351
56 Mexico	0.358
57 South Africa	0.388
58 Brazil	0.390
59 Colombia	0.393
60 India	0.403
61 Indonesia	0.423
62 Jordan	0.433
63 Namibia	0.448
64 Botswana	0.490
65 Venezuela	0.512
66 Ghana	0.514
67 Kenya	0.526
68 Nigeria	0.677
- Puerto Rico	-

#### The lower the value, the higher the ranking.

#### **RATIONALITY?**

The Gender Inequality Index (GII) measures disparities between men and women across key dimensions such as health, education, economic participation, and political empowerment. A lower index value reflects smaller gender gaps, greater inclusiveness, and stronger progress towards gender equality.

From a policy and competitiveness perspective, economies with lower gender inequality are more resilient and dynamic, as they are able to fully utilise the potential of both men and women in the workforce. Greater gender balance not only strengthens human capital development but also supports innovation, productivity, and sustainable growth.

Reducing gender inequality further enhances social cohesion, improves access to education and healthcare, and promotes women's leadership in business and governance. In the IMD ranking system, countries with stronger gender equality achieve a higher ranking, signalling better social development, inclusiveness, and long-term competitiveness.

**Source:** IMD World Competitiveness Yearbook 2025





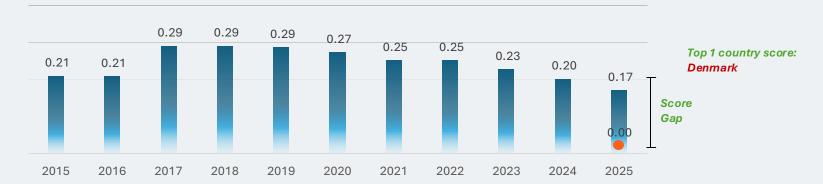




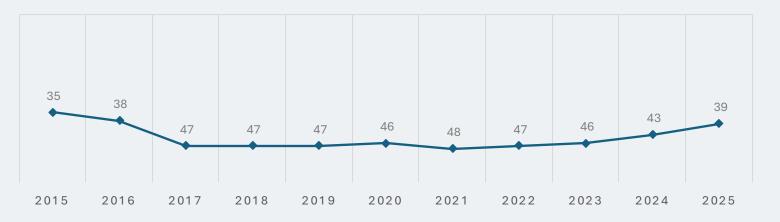
### Indicator performance over the years

#### Indicator Score (Index)

Notes: Data are presented with a one-year lag due to the nature of official reporting. For example, figures reported for 2025 are based on 2024 data.



#### Indicator Rank (of 69 countries)



Source: IMD World Competitiveness Yearbook (various years)

# HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's gender inequality indicator (GII) shows a fluctuating but generally improving trend over the past decade. After recording higher inequality levels between 2017 and 2019 (index 0.29), the score has gradually declined, reaching 0.17 in 2025, its lowest level in the series. This indicates progress in reducing gender disparities across areas such as health, education, and labour market participation.

Correspondingly, Malaysia's global ranking has improved slightly in recent years, moving from 47th in 2017 to 39th in 2025 out of 69 countries. This positive movement highlights Malaysia's efforts in narrowing gender gaps, though the country still lags behind top performers like Denmark, where gender inequality is almost negligible (index close to 0.00).









### **Indicator performance over the years**



**Source:** IMD WCY (various years)

### MALAYSIA MADANI



# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

In 2025, Malaysia ranks 39th globally for gender inequality, positioning it third among the five ASEAN countries observed. This marks an improvement from its weaker position in 2017–2019 (47th), reflecting gradual progress in narrowing gender gaps.

Singapore continues to lead the region and is among the global top performers, reaching 8th place in 2025, demonstrating sustained success in advancing gender equality. Thailand, however, has declined in performance, slipping to 53rd place in 2025, showing a widening gap relative to earlier years.

The Philippines ranks 55th in 2025, remaining in the lower tier regionally, while Indonesia continues to record the weakest performance among ASEAN peers, standing at 61st globally and consistently among the bottom 10 worldwide.





### **Indicator footprint** – Tracking the Data Sources

### Publish data based on Subnational Statistics Parliament

Phase & Institution **Involvement**  **Data Source** 

**National Sources** 



International Institution





**Estimation** 



Publish

**Description** 

Maternal mortality ratio Publish data based on national Vital Statistics Malaysia annually by:



**Adolescent** birth rate

Share of seats in

parliament

Publish data based on national Vital Statistics Malaysia annually by:



PRIME MINISTER'S DEPARTMENT

Publish data based on national **Subnational Statistics Parliament** annually by:



Data compiled, forecast and integrated internationally with other country profiles by:



Data compiled, and integrated internationally with other country profiles by:



Data compiled and integrated internationally with other country profiles by:



UNDP retrieves data from UN DESA, UIS and IMF sources into their database.

UNDP calculates the index values.

Malaysia in 2025:

Scored

Ranked













### **Indicator footprint** – Tracking the Data Sources

Phase & Institution Involvement **Data Source** 

**National Sources** 



International Institution





**Estimation** 





### **Description**

**Population with** at least some secondary education

Labour force

participation

rate

Publish data based on national Labour Force Survey annually by:



Data compiled, forecast and integrated internationally with other country profiles by:



Publish data based on national Labour Force Survey annually by:



Data compiled, and integrated internationally with other country profiles by:



UNDP retrieves data from World Bank, UN DESA, IPU, UNESCO and ILO sources into their database.

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Malaysia in 2025:

Scored

Ranked

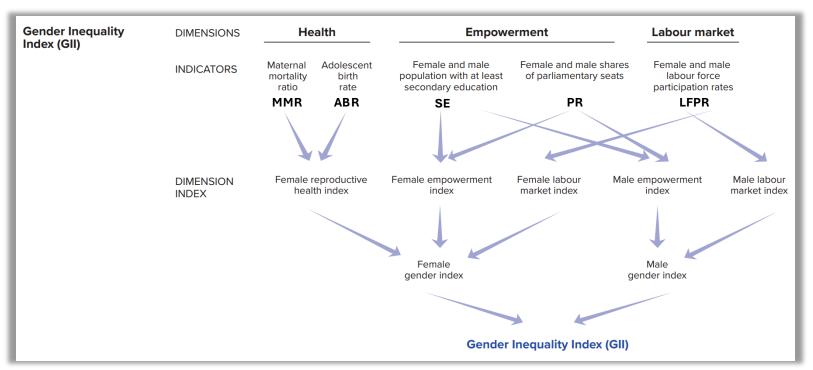








### **Understanding GII dimension and indicators**



GII values are computed using the association sensitive inequality measure suggested by Seth (2009), which implies that the index is based on the general mean of general means of different orders — the first aggregation is by a geometric mean across dimensions; these means, calculated separately for women and men, are then aggregated using a harmonic mean across genders.

#### Source: UNDP Human Development Report 2024

#### **HOW IS THE INDEX COMPUTED?**

Women aggregation formula = 
$$G_F = \sqrt[3]{\left(\frac{10}{MMR} \cdot \frac{1}{ABR}\right)^{\frac{1}{2}} \cdot (PR_F \cdot SE_F)^{\frac{1}{2}} \cdot LFPR_F}$$

Men aggregation formula = 
$$G_M = \sqrt[3]{1 \cdot (PR_M \cdot SE_M)^{\frac{1}{2}} \cdot LFPR_M}$$
.

Aggregating gender indices = 
$$HARM(G_F, G_M) = \left[\frac{(G_F)^{-1} + (G_M)^{-1}}{2}\right]^{-1}$$
.

Aggregating gender indices using equal weights =

where 
$$\overline{Health} = \left(\sqrt{\frac{10}{MMR} \cdot \frac{1}{ABR}} + 1\right)/2$$
,

 $G_{EM} = \sqrt[3]{Health \cdot Empowerment \cdot LFPR}$ 

$$\overline{Empowerment} = \left(\sqrt{PR_F \cdot SE_F} + \sqrt{PR_M \cdot SE_M}\right)/2 \text{ and}$$

$$\overline{LFPR} = \frac{LFPR_F + LFPR_M}{2}.$$

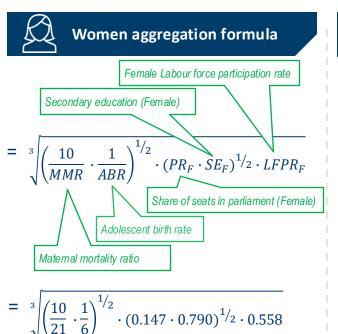
GII Gender Inequality Index

Note: MMR = Maternal mortality ratio, ABR = Adolescent birth rate, PR = Share of seat in parliament, SE = Secondary education, LFPR = Labour force participation rate.

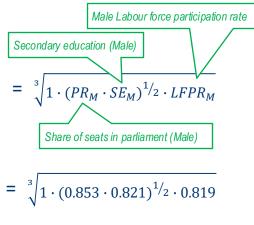


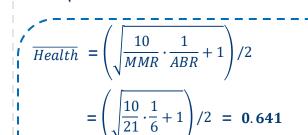


### **How GII is calculated – case of study of Malaysia**



#### Men aggregation formula





using equal weight

 $\frac{3}{2} \overline{Health} \cdot \overline{Empowerment} \cdot \overline{LFPR}$ 

Aggregating gender indices

$$\overline{Empowerment} = (\sqrt{PR_F + SE_F} + \sqrt{PR_M \cdot SE_M})/2$$

$$= (\sqrt{0.147 \cdot 0.790} + \sqrt{0.853 \cdot 0.821})/2 = 0.589$$

$$\overline{LFPR} = \frac{LFPR_F + LFPR_M}{2}$$

$$= \frac{0.558 + 0.819}{2} = 0.688$$

$$= \sqrt[3]{0.641 + 0.589 + 0.688}$$

$$= 0.638$$

Aggregating gender indices

Women aggregation

Men aggregation

$$= \left[\frac{(G_F)^{-1} + (G_M)^{-1}}{2}\right]^{-1}$$

$$= \left[ \frac{(0.377)^{-1} + (0.882)^{-1}}{2} \right]^{-1}$$

= 0.882

#### **Gender Inequality** GII Index

= 1- Aggregating gender indices Aggregating gender indices using equal weight

$$= 1 - \frac{0.528}{0.638}$$

= 0.172

Malaysia's Gender Inequality Index is mainly affected by gaps in women's empowerment, especially education and political participation.

Focused measures to strengthen female representation and improve access to higher education are essential to further reduce inequality and elevate Malaysia's overall standing.



= 0.377







### **Areas of improvement – Capturing hidden workforce**

Enhance labor statistics by incorporating measures to identify hidden workers in the 'Outside the Labor Force' category

### **Key Rationality**

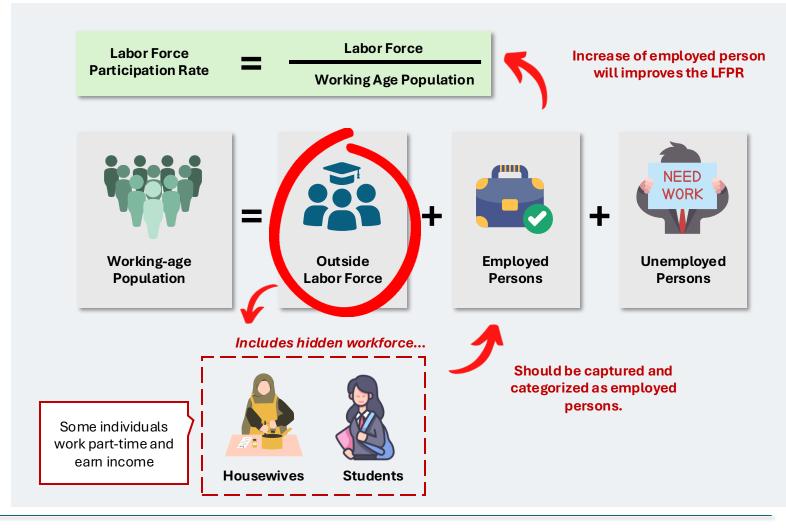


- Underreported Female LFPR: Excluding these hidden workers leads to underestimation of women's actual labor participation, lowering Malaysia's LFPR score and weakening competitiveness rankings.
- Capturing Hidden Workers Improves LFPR:
  Recognizing and including these groups as part of the laborr force will raise female LFPR, strengthen gender equality indicators, and improve Malaysia's overall GII performance.

### **Prove of Concepts**



- Conduct Time-use surveys: Systematically capture unpaid and informal economic activities, including household production and part-time work.
- ♠ Enhance Labour Force Survey Modules: Incorporate additional questions to identify secondary employment or income-generating activities among those classified as outside the labour force.

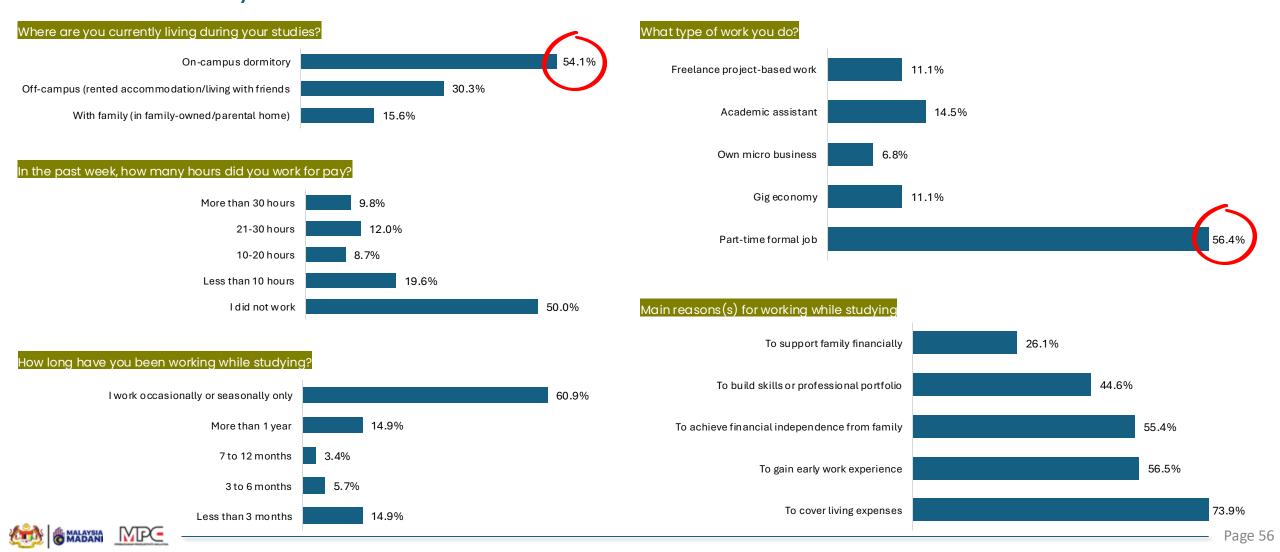








For example, previously we conducted the PoC for students working while studying. The results show that many respondents reported working consistently alongside their studies, highlighting a pattern of hidden labor participation that is often excluded from official labor force statistics. These insights underscore the importance of improving data coverage to better reflect youth economic activity and inform inclusive labor market policies. Importantly, competitiveness labor market indicators are likely under-estimated.













### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

Figure in bracket () refers to rank in IMD WCY 2025 report.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### Social framework

Measures social cohesion, inclusiveness, and the level of public trust supporting competitiveness.

<u>ln</u>	<u>dicators</u>	<u>Score</u>	Ranking
1.	Media bias	0.409	55
2.	Gini coefficient	41.20	53
3.	Females in parliament	13.51	62
4.	Gender in equality	0.172	39
5.	Disposable income	65.1	47
6.	Inequality in life expectancy	0.82	45
7.	Freedom of the press	52.07	49
8.	Income distribution - lowest 40%	16.1	47

Rank are based on 69 countries in IMD WCY 2025 report.







### Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Inequality in life expectancy is defined as inequality in the distribution of expected span of life-based on data from survival tables estimated using the Atkinson inequality index. Added in 2023.

Source: IMD World Competitiveness Yearbook 2025 (page 587)

#### **INDICATOR MEASUREMENT**

The Atkinson index measures inequality on a scale from 0 to 1. Higher values indicate higher inequality. Inequality is measured here in terms of the number of years a newborn would live if age-specific mortality rates in the current year were to stay the same throughout its life.

**Note:** Inequality in life expectancy is calculated by HDRO from period life tables from UNDESA. This indicator must be computed from microdata or life tables using the Atkinson formula.

Source: IMD World Competitiveness Yearbook 2025 (page 365)

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

UNDP Human Development Report

**Source:** IMD World Competitiveness Yearbook 2025 (page 587)





### Ranking as reported in *IMD WCY 2025*

#### WHAT DOES THE SCORE INDICATE?

Societal Framework	2.5.1
NEQUALITY IN LIFE E	XPECTANCY 2023
ndex	
anking	Index
01 Hong Kong SAR	0.98
02 Japan	0.97
03 Korea Rep.	0.97
04 Singapore	0.95
05 Italy	0.95
06 Australia	0.95
07 Switzerland	0.95
08 Spain	0.95
09 Norway	0.95
10 Sweden	0.95
11 Iceland	0.95
12 France	0.94
13 Ireland	0.93
14 UAE	0.93
15 Portugal	0.93
16 Finland	0.92
17 Netherlands	0.92
18 Qatar	0.92
19 Denmark	0.92
20 Slovenia	0.92
21 Austria	0.92
22 Canada	0.92
23 Belgium	0.92
24 Cyprus	0.92
25 Greece	0.92
26 Germany	0.91
27 New Zealand	0.91
28 Luxembourg	0.91
29 United Kingdom	0.91

_	
30 Bahrain	0.90
31 Chile	0.90
32 Czech Republic	0.89
33 Estonia	0.88
34 Kuwait	0.88
35 Croatia	0.87
36 Poland	0.87
37 Oman	0.86
38 USA	0.86
39 Saudi Arabia	0.86
40 Slovak Republic	0.86
41 China	0.85
42 Hungary	0.84
43 Latvia	0.83
44 Lithuania	0.83
45 Malaysia	0.82
46 Romania	0.82
47 Argentina	0.82
48 Colombia	0.81
49 Bulgaria	0.81
50 Jordan	0.81
51 Türkiye	0.81
52 Thailand	0.80
53 Peru	0.80
54 Brazil	0.78
55 Kazakhstan	0.78
56 Mexico	0.77
57 Mongolia	0.73
58 Venezuela	0.71
59 Indonesia	0.69
60 India	0.68
61 Philippines	0.65
62 Botswana	0.61
63 Namibia	0.59
64 South Africa	0.57
65 Ghana	0.55
66 Kenya	0.53
67 Nigeria	0.33
- Puerto Rico	-
<ul> <li>Taiwan (Chinese Taipei)</li> </ul>	-

#### The higher the value, the higher the ranking.

#### **RATIONALITY?**

A higher index value reflects lower inequality in life expectancy across a population, indicating a more equitable distribution of health outcomes regardless of income, geography, or demographics. Malaysia's score of 0.82 places it behind many high-performing countries, suggesting room for improvement in ensuring all population segments enjoy similar health longevity. Addressing disparities in access to healthcare, preventive services, and social determinants of health is essential to improve this indicator.

**Source:** IMD World Competitiveness Yearbook 2025





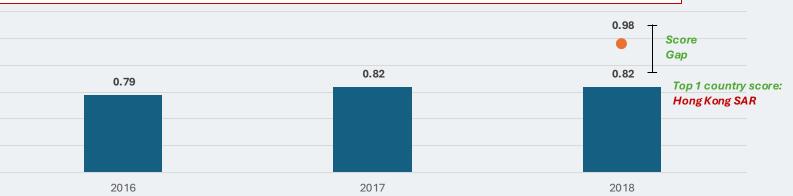




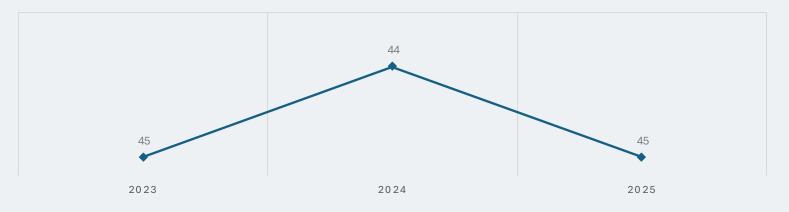
### Indicator performance over the years



Notes: Data are presented with a two-years lag due to the nature of official reporting. For example, figures reported for 2025 are based on 2023 data.



#### Indicator Rank (of 69 countries)



Source: IMD World Competitiveness Yearbook (various years)

# HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's inequality in life expectancy score has shown modest improvement over the years, increasing from 0.79 in 2016 to 0.82 in 2017 and 2018, and has remained stable since. Despite this stability in score, Malaysia's ranking fluctuated slightly, moving from 45th in 2023 to 44th in 2024, before returning to 45th in 2025. This indicates that while absolute performance has been steady, relative competitiveness has not improved, suggesting other countries are progressing at a similar or faster pace. To advance in ranking, Malaysia must narrow the score gap with leading countries like Hong Kong SAR (0.98).

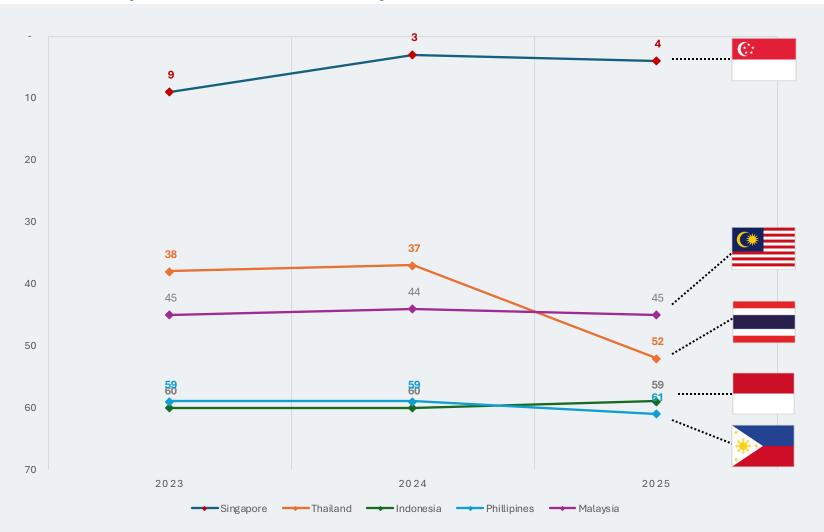








### **Indicator performance over the years**



# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

Malaysia ranks **45th** globally on the Inequality in Life Expectancy index, placing it **second highest in ASEAN** after **Singapore**, which ranks **4th** globally. Compared to regional peers:

- Thailand ranks 52nd,
- Indonesia ranks 59th, and
- Philippines ranks 61st.

Malaysia's position remains relatively stable over the past three years. Although still behind global leaders, its ranking suggests a better equity in health outcomes compared to other developing ASEAN countries.

**Source:** IMD WCY (various years)

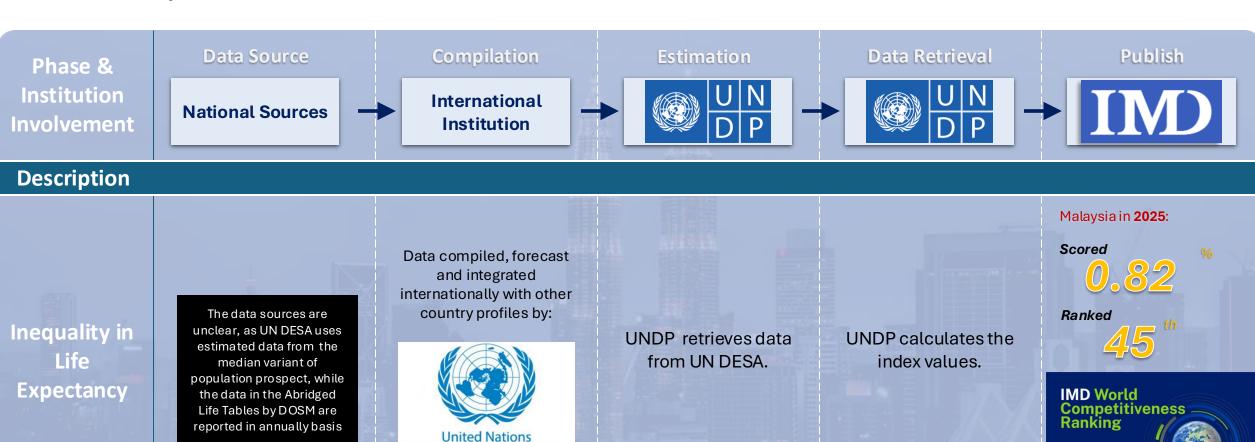








### **Indicator footprint** – Tracking the Data Sources



Department of Economic and Social Affairs



IMD / World Co





### Life expectancy at birth

Life expectancy depends on a country's population size and mortality rates.

To increase the value of life expectancy at birth, need to:



Increase **POPULATION** 



Decrease **DEATH** 

New Population =

Current Population + Birth - Death + Net Migration

Umur Age           	Kematian Death	Penduduk Population	Kebarangkalian mati di antara umur x dan umur x+n Probability of dying between age x and age x+n	Bilangan kematian di antara umur x dan umur x+n Number of deaths between age x and age x+n	Kadar tengah mortaliti di antara umur x dan umur x+n Central mortality rate between age x and age x+n	Penakat (orang yang masih hidup) pada umur tepat x Survivors at exact age x	Bilangan orang hidup-tahun di antara umur x dan umur x+n Number of person-years lived between age x and age x+n	Nisbah ketakatan Survival ratio	Jumlah bilangan orang hidup-tahun selepas umur tepat x Total number of person-years lived after exact age x	Jangkaan hayat Life expectancy
x			<sub>n</sub> q <sub>x</sub>	$_{n}d_{x}$	<sub>n</sub> m <sub>x</sub>	l <sub>x</sub>	$_{n}L_{x}$	<sub>n</sub> S <sub>x</sub>	T <sub>x</sub>	e <sub>x</sub>
elaki dan P Both sexes	erempuan		1							
0	XXX	XXX	0.00667	667	0.00671	100,000	99,380	0.99276 a	7,519,229	75.2
1	XXX	XXX	0.00135	134	0.00034	99,333	396,998	0.99877 <sup>b</sup>	7,419,849	74.7
5 ¦	XXX	XXX	0.00092	91	0.00018	99,199	495,767	0.99888	7,022,851	70.8
10	XXX	XXX	0.00132	131	0.00026	99,108	495,213	0.99790	6,527,085	65.9
15	XXX	XXX	0.00289	286	0.00058	98,977	494,171	0.99705	6,031,872	60.9
20	XXX	XXX	0.00301	297	0.00060	98,691	492,712	0.99666	5,537,701	56.1
25	XXX	XXX	0.00367	362	0.00074	98,394	491,066	0.99566	5,044,989	51.3
30	XXX	XXX	0.00501	491	0.00100	98,032	488,934	0.99367	4,553,923	46.5
35	XXX	XXX	0.00766	747	0.00154	97,541	485,839	0.99031	4,064,989	41.7
40	XXX	XXX	0.01174	1,136	0.00236	96,794	481,131	0.98427	3,579,150	37.0
45	XXX	XXX	0.01977	1,891	0.00399	95,658	473,563	0.97456	3,098,019	32.4
50	XXX	XXX	0.03123	2,928	0.00634	93,767	461,515	0.95956	2,624,456	28.0
55	XXX	XXX	0.04995	4,537	0.01025	90,839	442,851	0.94076	2,162,942	23.8
60	XXX	XXX	0.06902	5,956	0.01430	86,302	416,618	0.91499	1,720,091	19.9
65	XXX	XXX	0.10219	8,211	0.02154	80,345	381,201	0.87576	1,303,473	16.2
70	XXX	XXX	0.14881	10,734	0.03215	72,135	333,839	0.81443	922,272	12.8
75	XXX	XXX	0.22877	14,046	0.05166	61,401	271,887	0.53795 <sup>c</sup>	588,433	9.6
80+	XXX	XXX	1.00000	47,354	0.14960	47,354	316,546	-	316,546	6.7







### Life expectancy at birth

### **Issues Identified**

To calculate life expectancy at birth, DOSM applies actual population data from the Population Census 2020 together with annual death records from KKM. In comparison, UNDESA produces estimates based on modeled values.

### Actions to be taken

UNDESA fully estimates and adjusted the data since 2016, while DOSM supplies values on annual basis. Engagement session will be arranged with UNDESA for further discussion on the methodology and use of data in their estimations.

### **Policy recommendations**

- Reduce premature mortality by strengthening preventive healthcare, early disease detection, and lifestyle interventions, in line with WHO's target of cutting premature deaths to 25% (compared to the current ~80% in Malaysia).
- Enhance population and labor force sustainability by reviewing and revising migration policies to attract and retain skilled expatriates, while positioning Malaysia as an education hub to draw more international students. These efforts will support demographic balance and strengthen Malaysia's long-term economic competitiveness.

Umur	Kematian	Penduduk	Kebarangkalian	Bilangan kematian	Kadar tengah	Penakat	Bilangan orang	Nisbah	Jumlah bilangan	Jangkaan
Age I	Death	Population	mati di antara umur x dan umur x+n Probability of dying between age x and age x+n	di antara umur x dan umur x+n Number of deaths between age x and age x+n	mortaliti di antara umur x dan umur x+n Central mortality rate between age x and age x+n	(orang yang masih hidup) pada umur tepat x Survivors at exact age x	hidup-tahun di antara umur x dan umur x+n Number of person-years lived between age x and age x+n	ketakatan Survival ratio	orang hidup-tahun selepas umur tepat x Total number of person-years lived after exact age x	hayat Life expectancy
x ¦			<sub>n</sub> q <sub>x</sub>	$_{\rm n} {\bf d_x}$	<sub>n</sub> m <sub>x</sub>	l <sub>x</sub>	<sub>n</sub> L <sub>x</sub>	<sub>n</sub> S <sub>x</sub>	T <sub>x</sub>	e <sub>x</sub>
Lelaki dan F	Perempuan		1							
Both sexes			1							
0	XXX	XXX	0.00667	667	0.00671	100,000	99,380	0.99276 a	7,519,229	75.2
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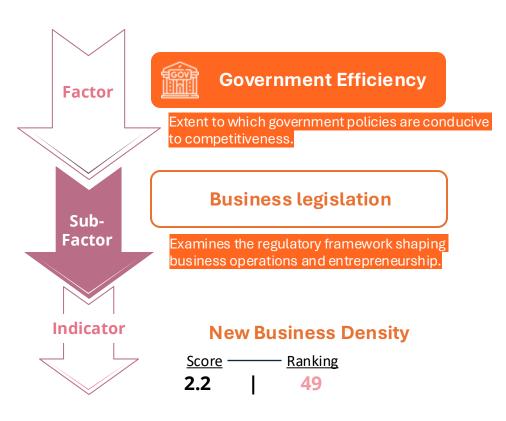


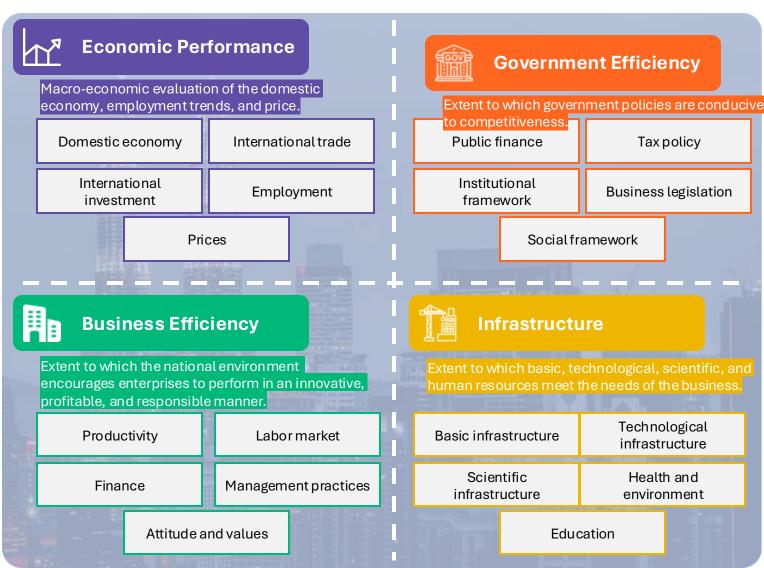






### What is the IMD World Competitiveness Ranking?









### Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

The IMD WCY 2025 report defines this indicator as the number of newly registered firms with limited liability per 1,000 working-age people (ages 15-64) per calendar year.

#### **INDICATOR MEASUREMENT**

According to the technical notes in WCY 2025, the indicator can be simply calculated as follows:

New business density =

 $\frac{\textit{Number of new limited liability corporations registered}}{\textit{Total people ages } 15-64} \times 1000$ 

**Notes:** Limited liability corporations are those in which the financial liability of the firm's members is limited to the value of their investment in the company. A limited liability corporations is a separate legal entity that has its own privileges and liabilities.

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

- World Development Indicators (World Bank) -Entrepreneurship Survey and Database
- National sources

https://databank.worldbank.org/source/world-development-indicators

Source: IMD World Competitiveness Yearbook 2025









### Ranking as reported in IMD WCY 2025

#### WHAT DOES THE SCORE INDICATE?

			202
-	stered new businesses per 1'000 peo I 15-64	ple	
anki	<u> </u>	number	
01		24.3	
	Hong Kong SAR	21.0	
	Luxembourg	18.9	
	United Kingdom	18.6	
	Australia	17.3	
06	New Zealand	16.3	
07	Cyprus	13.3	2020
80	Iceland	12.1	
09	Singapore	11.3	
10	South Africa	11.1	
11	Chile	10.8	
12	Canada	9.8	
13	Bulgaria	9.7	
14	Sweden	9.2	
15	Romania	9.2	
16	Norway	9.2	
17		8.7	
18	China	8.6	2020
19	******	7.3	
20		7.2	
21		7.0	
22	Latvia	6.7	
23	France	6.7	2021
24	Bahrain	6.6	
25	Ireland	6.4	
26	Belgium	6.3	
27	Oatar	6.3	2018
28	Croatia	6.3	
29	Finland	6.1	
30	Slovak Republic	5.5	

31 Puerto Rico		5.3 2020
32 Brazil		5.1
33 Peru		4.7
34 Switzerland		4.6 <sup>2019</sup>
35 Hungary		4.3
36 Czech Republic		4.1
37 Kazakhstan		3.5 <sup>2020</sup>
38 Netherlands		3.4
39 Kuwait		3.3 <sup>2020</sup>
40 Korea Rep.		3.1
41 Spain		3.1
42 Lithuania		3.0
43 Italy		2.9
44 Taiwan (Chinese Taipei)		2.8
45 Slovenia		2.8
46 Türkiye		2.5
47 UAE		2.3 2020
48 Colombia		2.3
49 Malaysia		2.2
50 Poland		2.2
51 Greece		2.1
52 Kenya		1.5 2020
53 Thailand		1.5
54 Oman		1.5 2020
55 Germany		1.4
56 Austria		1.0 2021
57 Saudi Arabia		0.9
58 Nigeria		0.9 2020
59 Mexico		0.9
60 Namibia		8.0
61 Japan		0.5
62 Jordan		0.4 2020
63 Philippines	-	0.3
64 Argentina		0.2 2018
65 India		0.2
- Ghana		-
- Indonesia		-
- USA		-
- Venezuela		-

# The higher the value, the higher the ranking.

#### **RATIONALITY?**

- Improving new business density is key to raising Malaysia's government efficiency score in the IMD World Competitiveness Ranking (indicator 2.4.12).
- It shows how well the government supports entrepreneurship, reduces barriers, and makes it easier to start businesses.
- Malaysia ranks 49th out of 69 countries, positioning it in the lower tier globally.

Source: IMD World Competitiveness Yearbook (WCY) 2025

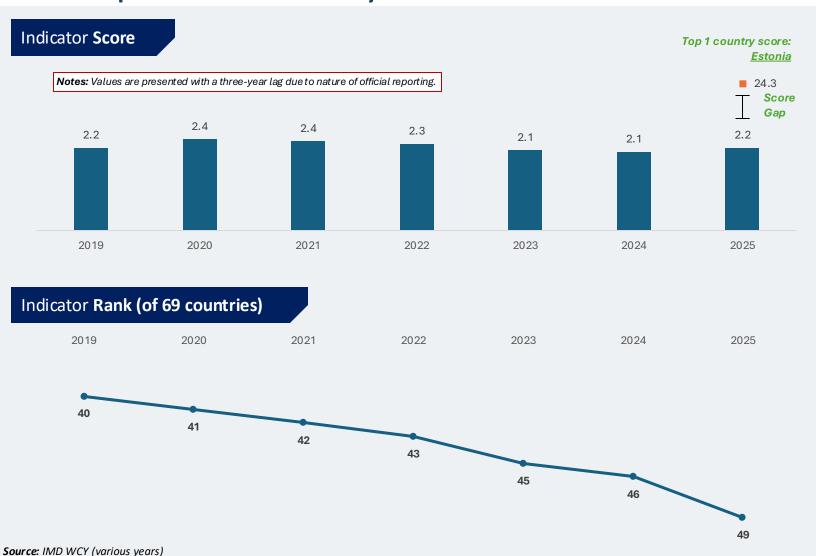








### Indicator performance over the years



# HOW DO THE INDICATORS PERFORM ACROSS YEARS?

- Malaysia's performance has remained low over the past six years, ranging between 2.1 and 2.4 new businesses per 1,000 adult population.
- There is a gap of 22.1 points compared to the top-ranked country, Estonia, which recorded a score of 24.3.
- Malaysia's ranking has gradually declined over the past six years, falling from 40th to 49th place.
- This indicates that while many countries are recording higher levels of new LLC registrations, Malaysia has remained low, leading to a continuous decline in its ranking.

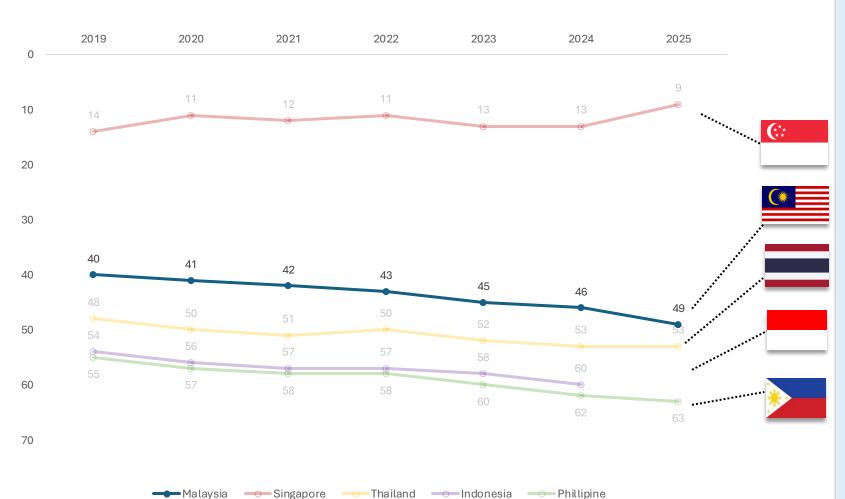








### Indicator performance over the years



# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

- Within ASEAN, Singapore ranks first, holding the 9th position globally in 2025.
- Malaysia ranks second in ASEAN, ahead of Thailand, Indonesia, and the Philippines.
- Although Malaysia holds the second position, a significant gap with Singapore remains, highlighting the room for further improvement to narrow this gap.

**Source:** IMD WCY (various years)









### **Indicator footprint – tracking the data sources**

Phase & Institution Involvement





**Data Retrieval & Estimation** 



Publish



Description

New Limited Liability Corporation

Publish data based on **Companies Comission of Malaysia (SSM)** annually.

The World Bank retrieves and estimates this data through the Entrepreneurship Survey and Database

Note: For other countries, the data are compiled from Entrepreneurship Survey and Database National sources or World Development Indicators (World Bank) of respective countries. A three-year data lag means the

3 years lagged



Published by the **World Population Prospects** (WPP), the data provides population estimates and projections up to the **year 2100** 

3 years lagged

Scored

Malaysia in 2025:

2.2

Ranked

49th



Working age population/ adult population



Publish censuses for the adult population in **1957, 1970, 1980, 1991, 2000, 2010, and 2020** 

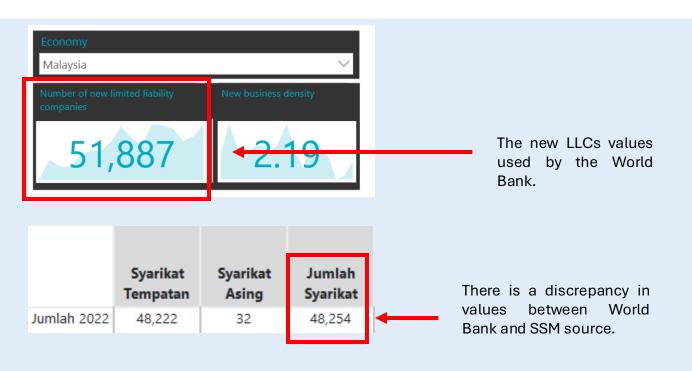






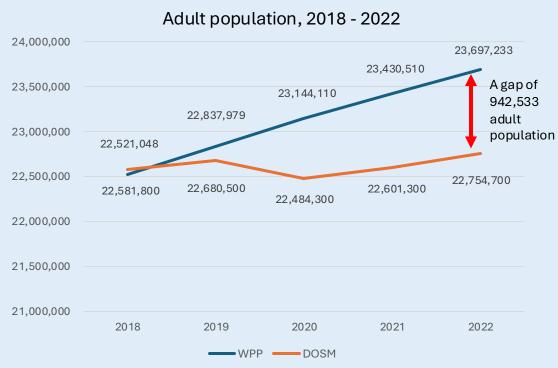
#### Data discrepancies between World Bank and SSM

- There is a slight difference between the values used by the World Bank and those published by SSM, with the World Bank's figures being slightly lower than SSM's data.
- The lower values result in Malaysia receiving a score below its actual potential.



#### **Data discrepancies between WPP and DOSM**

- WPP uses adult population estimates and projections extending up to the year 2100.
- The population figures released by DOSM are lower than the estimates provided by WPP.
- A lower denominator value has the potential to raise Malaysia's score and ranking.



Source: World Population Prospect, Companies Commission of Malaysia (SSM) and Department of Statistics Malaysia (various years).



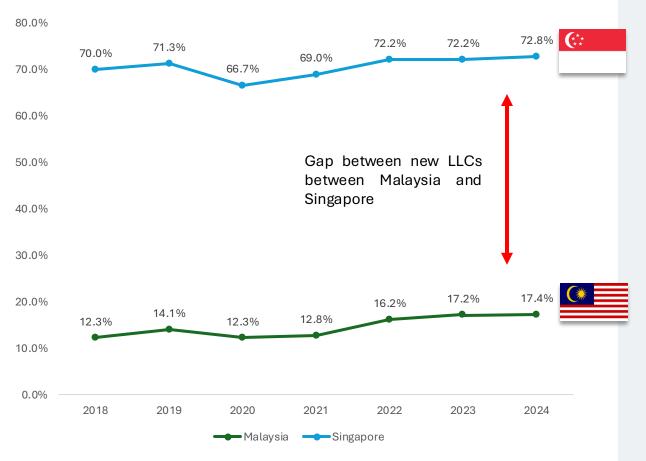








## Wide Gap in New LLCs: Malaysia vs. Singapore



- **Notes:** Line graph showing the number of newly registered firms with limited liability corporation as a proportion of total businesses per year.
- Source: Companies Commission of Malaysia (SSM) and Department of Statistics Singapore (various years).

- LLCs in Malaysia account for only **about 12.3% to 17.4% of total businesses** between 2019 and 2024, indicating that most legal businesses in the country are enterprises.
- A significant gap is observed in Singapore's market structure, where LLCs are far more dominant.
- According to the Malaysian SME Program Efficiency Review by the World Bank, several factors affect the shift from enterprises to more formal businesses (LLCs):
- MSMEs in Malaysia invest less in R&D compared to ASEAN peers.
- 2. Malaysian firms are slower in adopting digital technologies compared to other upper-middle-income countries.
- 3. MSMEs are less likely to use advanced innovations and technologies in their operations and management because of limited capabilities.
- **4. Most SMEs rely on informal funding sources**, rather than formal financial channels.

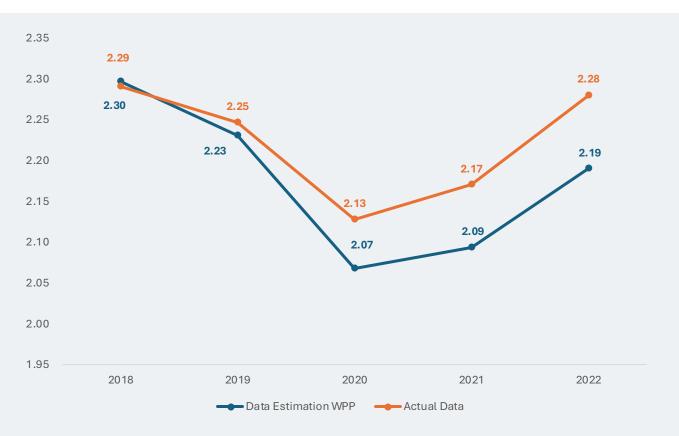






## Recommendation to be considered – Use adult population data from national sources

The **new business density published by IMD** uses adult population estimates from the **World Population Prospects, World Bank**. These adult population estimation are **higher than the adult population figures released by DOSM**.



- The score based on WPP adult population data is lower compared to the score using the actual data from DOSM.
- Malaysia could raise its score from 2.19 to 2.28 if actual data is used.
- Malaysia's position could rise from 49th to 47th globally, moving up two ranks.
- Although the score change appears small, the difference is widening over time, indicating that the gap between WPP and DOSM population data is increasing. This could cause Malaysia's new business density to appear even lower in the future.

**Source:** Estimated based on data sourced from Entrepreneurship Database, World Bank and DOSM (various years).









## Recommendation to be considered – Enable MSMEs to upgrade from enterprises to LLCs

Malaysia's market structure is dominated by MSMEs. Therefore, one key step to increase the number of LLCs in Malaysia is to support the transition from enterprises to LLCs.

## **Key Rationality**



Area of Improvement	Singapore Practices	Malaysia Practices	Gaps & What to Improve
I ROOSTING RXII INVESTMENT		· · ·	Incentives exist but not attractive enough for MSMEs (low awareness, complex claims).
I ACCEIETATING I NOITAL AGONTION			Efforts fragmented; many MSMEs lack skills and see cost as barrier.
I BUILDING INDOVATION CANADILITY			Support exists but less hands-on; weak in tech- matching and product innovation support.
		•	Financing available but procedures strict; SMEs still prefer informal funding.











#### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### Social framework

Measures social cohesion, inclusiveness, and the level of public trust supporting competitiveness.

<u>In</u>	<u>dicators</u>	<u>Score</u>	<u>Rankin</u> g
1.	Media bias	0.409	55
2.	Gini coefficient	41.20	53
3.	Females in parliament	13.51	62
4.	Gender inequality	0.172	39
5.	Disposable income	65.1	47
6.	Inequality in life expectancy	0.82	45
7.	Freedom of the press	52.07	49
8.	Equal Opportunity	5.93	41

Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based on 69 countries in IMD WCY 2025 report.







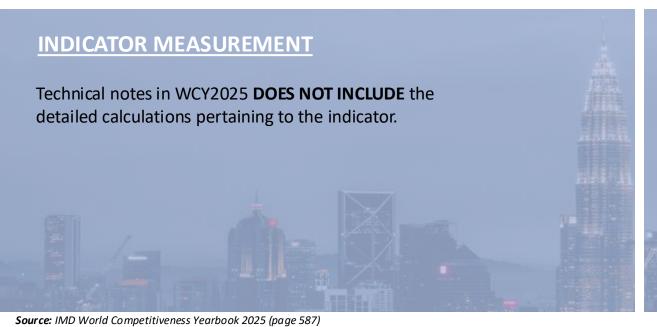


## **Indicator overview sourced from IMD WCY 2025 Report**

#### INDICATOR DEFINED IN THE REPORT

The degree of freedom available to journalists in 180 countries is determined by pooling the responses of experts to a questionnaire devised by RSF. This qualitative analysis is combined with quantitative data on abuses and acts of violence against journalists during the period evaluated. The criteria evaluated in the questionnaire are pluralism, media independence, media environment and self-censorship, legislative framework, transparency, and the quality of the infrastructure that supports the production of news and information.

Source: IMD World Competitiveness Yearbook 2025 (page 587)



#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator is derived from

Reporters Without Borders

Source: IMD World Competitiveness Yearbook 2025 (page 587)







## Indicator overview sourced from IMD WCY 2025 Report

FREEDOM OF THE PRE	SS
THE POWER THE THE	2
Reporters Without Borders: World Press	
reedom Score	
Ranking	Score
01 Norway	91.89
02 Denmark	89.60
03 Sweden	88.32
04 Netherlands	87.73
05 Finland	86.55
06 Estonia	86.44
07 Portugal	85.90
08 Ireland	85.59
09 Switzerland	84.01
10 Germany	83.84
11 Luxembourg	83.80
12 Latvia	82.90
13 Lithuania	81.73
14 Canada	81.70
15 Belgium	81.49
16 Czech Republic	80.14
17 Iceland	80.13
18 New Zealand	79.72
19 France	78.65
20 United Kingdom	77.51
21 Taiwan (Chinese Taipei)	76.13
22 Slovak Republic	76.03
23 Spain	76.01
24 Austria	74.69
25 Namibia	74.16
26 South Africa	73.73
27 Australia	73.42
28 Slovenia	72.60
29 Italy	69.80
30 Poland	69.17
31 Croatia	68.79
32 Romania	68.45

	•
22 Ober	07.74
33 Ghana 34 Chile	67.71
• · · · · · · · · · · · · · · · · · · ·	67.32
35 Puerto Rico	66.59
35 USA	66.59
37 Bulgaria	65.32
38 Korea Rep.	64.87
39 Cyprus	63.14
40 Argentina	63.13
41 Hungary	62.98
42 Japan	62.12
43 Botswana	59.78
44 Brazil	58.59
45 Qatar	58.48
46 Thailand	58.12
47 Greece	57.15
48 Kenya	53.22
49 Malaysia	52.07
50 Mongolia	51.34
51 Indonesia	51.15
52 Nigeria	51.03
53 Colombia	49.63
54 Mexico	49.01
55 Peru	47.76
56 Singapore	47.19
57 Kuwait	44.66
58 Jordan	44.30
59 Philippines	43.36
60 Hong Kong SAR	43.06
61 Oman	42.52
62 Kazakhstan	41.11
63 Venezuela	33.06
64 Türkiye	31.60
65 India	31.28
66 UAF	30.62
67 Saudi Arabia	27.14
68 China	23.36
69 Bahrain	23.30
Danialli	23.21

#### WHAT DOES THE SCORE INDICATE?

The higher the value, the higher the ranking.

#### **RATIONALITY?**

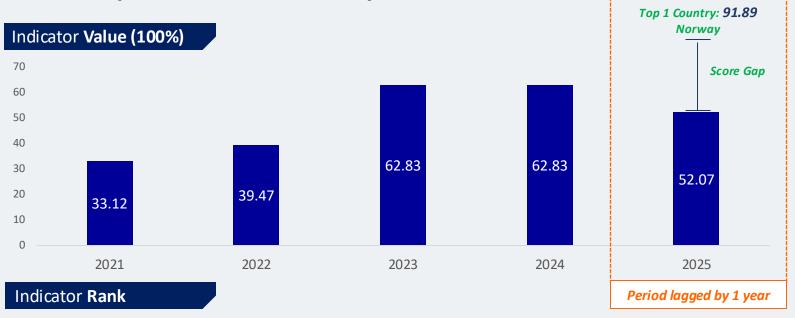
- Freedom of the Press refers to the ability of journalists to operate independently and without interference.
- It ensures they can select, produce, and share news in the public interest free from political, economic, legal, or social pressures, and without threats to their safety.
- This freedom is vital to prevent censorship, judicial restrictions, or violence, and to allow the media to hold governments accountable, promoting transparency and professional standards.
- In today's context, alongside traditional economic considerations, leaders must also factor in digital readiness, green transition management, and resilience strategies to safeguard press freedom.

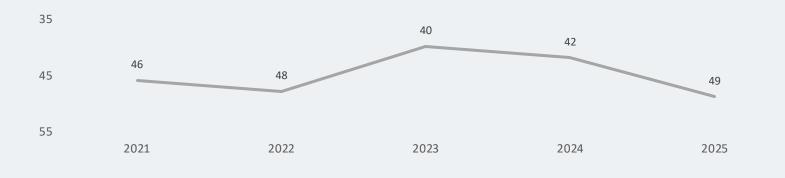






## Indicator performance over the years





#### **Source:** IMD WCY (various years)

## MALAYSIA MADANI



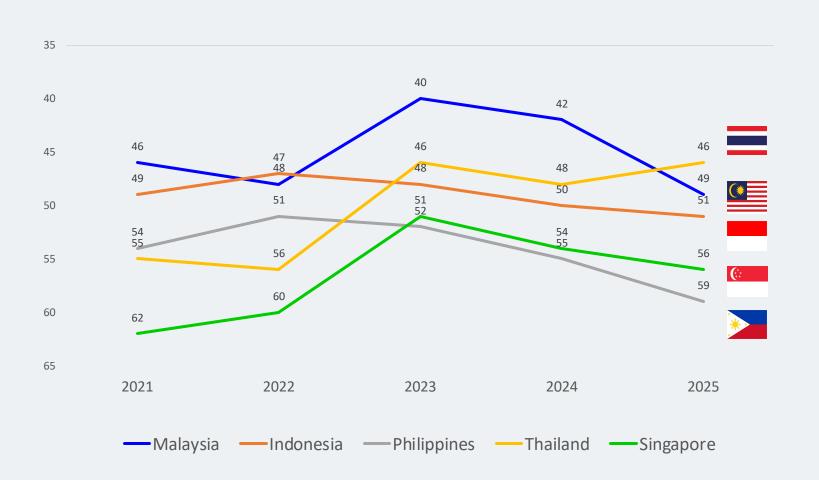
## HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Over the past five years, Malaysia's press freedom score improved markedly from 33.12 in 2021 to 62.83 in 2023, before stabilising in 2024 and falling to 52.07 in 2025. The country's ranking followed a similar trend, rising to 40th in 2023 but slipping back to 49th in 2025, reflecting a loss of earlier momentum.





## **Indicator performance over the years**



## WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

From 2021 to 2025, ASEAN trends in press freedom show mixed outcomes. Malaysia rose from a score of 33.12 (46th) in 2021 to 62.83 (40th) in 2023, but declined to 52.07 (49th) by 2025, losing earlier gains.

Indonesia and Thailand remained relatively stagnant, ending at 46th and 51st respectively.

The Philippines weakened from 55th in 2021 to 59th in 2025, while Singapore consistently ranked lowest, at 56th in 2025, reflecting structural limits to media independence.

**Source:** IMD WCY (various years)







## **Indicator footprint – tracking the data sources**

Phase & Institution Involvement

# Compilation Compilation Data Retrieval Publish International Institution Institution

#### Description

- The press freedom questionnaire and map are broken down into five distinct categories or indicators: political context, legal framework, economic context, sociocultural context and safety.
- The Index is based on a score ranging from 0 to 100 that is assigned to each country or territory, with 100 being the best possible score (the highest possible level of press freedom) and 0 the worst.

Other sources
(only for population
to calculate abuse, a
sub-component of
safety category)



Except for Taiwan,
Cyprus, Northern Cyprus,
and Montserrat, using
local source

## Dir

https://rsf.org/en

Reporters Without Borders (RWB) is an international non-profit organisation governed by principles of democratic governance.

Recognised as a public interest organisation in France since 1995, RSF has consultative status with the United Nations, UNESCO, the Council of Europe and the International Organization of Francophonie (OIF).

IMD retrieves data from Reporters Without Borders

#### 2024 World Press Freedom Index - journalism under political pressure

Press freedom around the world is being threatened by the very people who should be its guarantors – political authorities. This is clear from the latest annual World Press Freedom Index produced by Reporters Without Borders (RSF). This finding is based on the fact that, of the five indicators used to compile the ranking, it is the political indicator that has fallen most, registering a global average fall of 7.6 points.

Malaysia in 2025:

Scored

*52.07* 

Ranked

**49** th



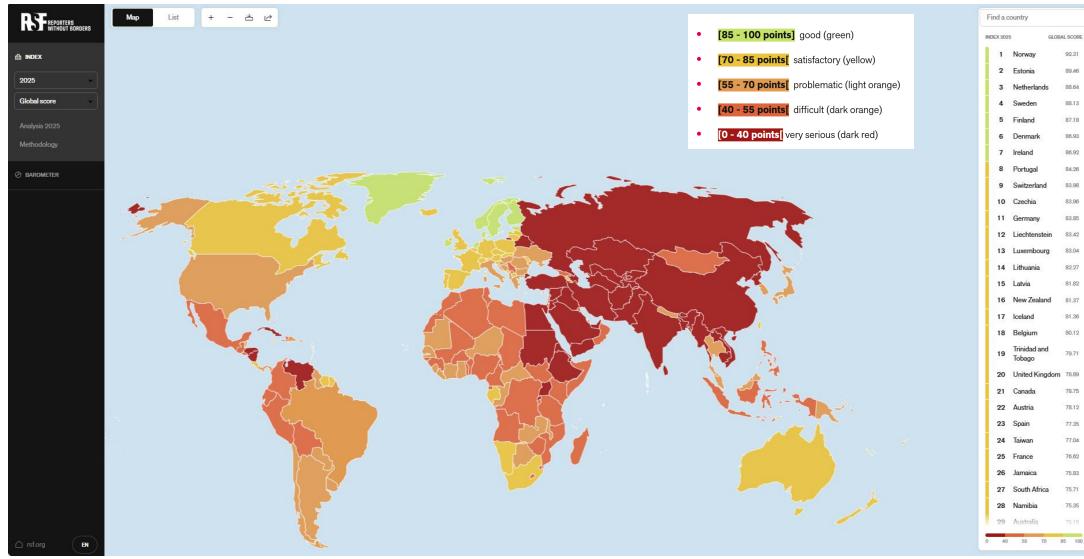






## **Indicator footprint – The Index**

## Index | RSF



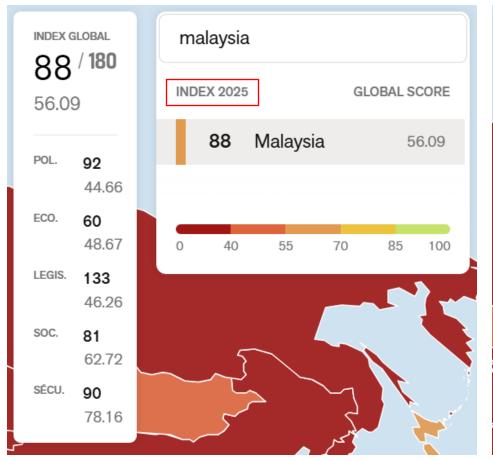


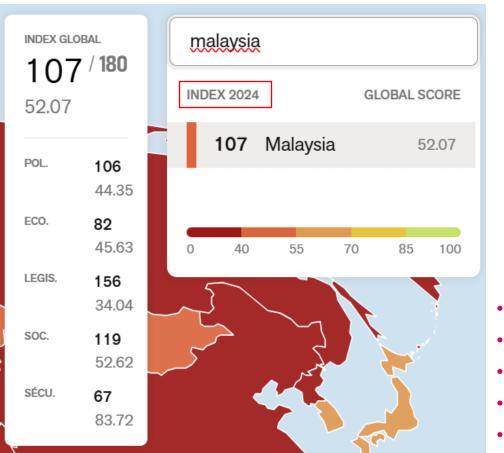




## **Indicator footprint – The Scores**

#### Index | RSF





- [85 100 points] good (green)
- [70 85 points[ satisfactory (yellow)
- [55 70 points[ problematic (light orange)
- [40 55 points] difficult (dark orange)
- [0 40 points] very serious (dark red)







## Indicator footprint - Methodology



#### RESPONDENTS

press freedom specialists, including journalists, researchers, academics and human rights defenders



#### LEGAL FRAMEWORK

25 QUESTIONS AND SUBQUESTIONS



POLITICAL



#### **ECONOMIC** CONTEXT

25 QUESTIONS AND SUBQUESTIONS

03

#### SOCIOCULTURAL CONTEXT

22 QUESTIONS AND SUBQUESTIONS

#### SAFETY

12 QUESTIONS AND SUBQUESTIONS (% OF THE SAFETY SCORE)

05







## Indicator footprint - Methodology

## **POLITICAL CONTEXT**

- They aim to evaluate:
- the degree of support and respect for media autonomy vis-à-vis political pressure from the state or from other political actors;
- the level of acceptance of a variety of journalistic approaches satisfying professional standards, including politically aligned approaches and independent approaches; and
- the degree of support for the media in their role of holding politicians and government to account in the public interest.

1.1	What influence does the government have in the editorial board of the following forms of media?	GRID
1.2	Is the broadcast licensing process transparent?	SINGLE_OPTION
1.3	What degree of autonomy from political authorities do the following leaders have?	GRID
1.4	Do government officials and other politicians act in a way that guarantees press freedom?	SINGLE_OPTION
1.5	Do the news media outlets with the largest audiences provide news coverage that is independent of the government?	GRID
1.6	Do public media outlets ever ignore sensitive information regarding the government or administration that is covered by private media?	SINGLE_OPTION
1.7	During elections, is there a fair distribution of speaking time in broadcast media?	SINGLE_OPTION
1.8	Outside of election periods, does the government force the media to give it speaking time	GRID
1.9	How easily can the government achieve the dismissal of	GRID







## Indicator footprint – Methodology

## LEGAL FRAMEWORK

They aim to evaluate:

- the degree to which journalists and media are free to work without censorship or judicial sanctions, or excessive restrictions on their freedom of expression;
- the ability to access information without discrimination between journalists, and the ability to protect sources;
- the presence or absence of impunity for those responsible for acts of violence against journalists.

2.1	Has the International Covenant on Civil and Political Rights been ratified?	SINGLE_OPTION
2.2	Is freedom of expression and press freedom guaranteed	GRID
2.3	Do the laws guaranteeing these rights impose restrictions that do not conform with international law on freedom of opinion and expression?	SINGLE_OPTION
2.4	Do the laws provide for custodial sentences for defamation?	SINGLE_OPTION
2.5	Does the law guarantee the secrecy of journalists' sources?	SINGLE_OPTION
2.6	Does the law guarantee the right of access to public information?	SINGLE_OPTION
2.7	Does the law guarantee journalists' right to unionize?	SINGLE_OPTION
2.8	Does the law provide mechanisms to guarantee pluralism and editorial independence?	SINGLE_OPTION

2.9	Does the law provide mechanisms protecting journalists or media against abusive lawsuits/prosecution?	SINGLE_OPTION
2.10	Do these laws make it possible to safeguard the rights they proclaim?	SINGLE_OPTION
2.11	Are permissible restrictions of freedom of expression (protection of the rights of others, national security, public order, public health or morals) being abused to restrict press freedom?	SINGLE_OPTION
2.12	Are laws against terrorism, separatism and/or extremism used against journalists?	SINGLE_OPTION







## Indicator footprint – Methodology

## **ECONOMIC CONTEXT**

They aim to evaluate:

- economic constraints linked to governmental policies (including the difficulty of creating a news media outlet, favouritism in the allocation of state subsidies, and corruption);
- economic constraints linked to nonstate actors (advertisers and commercial partners);
- economic constraints linked to media owners seeking to promote or defend their business interests.

3.1	Are there independent media outlets, meaning media outlets where the editorial board is fully able to take positions within the public space without any constraint exerted by the owners or political authorities?	SINGLE_OPTION
3.3	Do journalists wishing to disseminate information benefit from sufficient quality Internet access at an affordable price?	SINGLE_OPTION

3.3	from sufficient quality Internet access at an affordable price?	SINGLE_OPTION
3.4	Does the written press have adequate and affordable means of printing and distribution, equally available to everyone?	SINGLE_OPTION
3.5	Does the state distribute its advertising and media assistance fairly among different media outlets?	SINGLE_OPTION
3.6	Do private media outlets have to adapt their content in return for subsidies given by the state?	SINGLE_OPTION
3.7	Do any of the following constraints hinder the launch of independent private media outlets?	GRID
3.8	Do journalists receive luxury invitations, press trips or any other benefit in kind that could undermine the objectivity of their content?	SINGLE_OPTION
3.9	Do political authorities put pressure on advertisers to favor certain media outlets?	SINGLE_OPTION
3.10	Do journalists ever get paid by an entity other than their regular employer with the aim of influencing their content?	SINGLE_OPTION
3.11	Are media owners' conflicts of interest a frequent source of self-censorship for journalists?	SINGLE_OPTION
3.12	To what extent is media ownership concentrated?	SINGLE_OPTION







## Indicator footprint – Methodology

## **SOCIOCULTURAL CONTEXT**

They aim to evaluate:

- social constraints resulting from denigration and attacks on the press based on such issues as gender, class, ethnicity and religion;
- cultural constraints, including pressure on journalists to not question certain bastions of power or influence or not cover certain issues because it would run counter to the prevailing culture in the country or territory.

4.1	Do citizens generally have a high level of confidence in the credibility of news media outlets and their content?	SINGLE_OPTION
4.2	Are cartoonists targeted by hate campaigns or incited to self-censor?	SINGLE_OPTION
4.3	Is the practice of journalism prohibited or prevented based on the following criteria:	GRID
4.4	Is the pluralism of opinions of people in the country reflected in the media?	SINGLE_OPTION
4.5	Do journalists practice self-censorship for fear of the following reprisals?	GRID
4.6	Overall, is the media free to disclose information on	GRID
4.7	Can the media address culturally sensitive subjects without provoking a strong popular opposition movement?	SINGLE_OPTION
4.8	Do socio-cultural or religious groups issue calls for	SINGLE_OPTION

censorship?







## Indicator footprint - Methodology

#### SAFETY

The questions concern journalists' safety. For this purpose, press freedom is defined as the ability to identify, gather and disseminate news and information in accordance with journalistic methods and ethics, without unnecessary risk of:

- bodily harm (including murder, violence, arrest, detention, enforced disappearance and abduction);
- psychological or emotional distress that could result from intimidation, coercion, harassment, surveillance, doxing (publication of personal information with malicious intent), degrading or hateful speech, smears and other threats targeting journalists or their loved-ones;
- professional harm (for example, the loss of one's job, the confiscation of professional equipment, or the ransacking of installations).

5.1	Have any journalists been assaulted in the past 12 months?	SINGLE_OPTION
5.2	Have any journalists been tortured or suffered cruel and degrading treatment in the past 12 months?	SINGLE_OPTION
5.3	Have any journalists been murdered in the past 12 months?	SINGLE_OPTION
5.4	Have any journalists been arbitrarily detained in the past 12 months, or are they currently detained?	SINGLE_OPTION
5.5	Have any journalists been kidnapped or have any disappeared in the past 12 months?	SINGLE_OPTION
5.6	Is there a psycho-emotional risk for journalists linked to their job (public discrediting of their work, targeted verbal threats, harassment campaigns)?	SINGLE_OPTION
5.7	Are journalists morally harassed in their workplace?	SINGLE_OPTION
5.8	Are journalists or news media outlets at risk of having their equipment or facilities seized or damaged?	SINGLE_OPTION
5.9	Are journalists or media outlets having their social media accounts or their websites hacked or blocked?	SINGLE_OPTION
5.10	Do journalists suffer other forms of professional harm (loss of employment or income, for example) as a result of their work?	SINGLE_OPTION
5.11	Are journalists monitored and/or spied on by the authorities?	SINGLE_OPTION
5.12	Are journalists' sources subjected to physical or moral pressure?	SINGLE_OPTION
5.13	Can you elaborate on any specific cases or do you have any	INPUT

other comments?









## Indicator footprint – Methodology

Abuses score (1/3 of the safety score)

The abuses score is calculated from RSF's tally of abuses against media and against journalists in connection with their work, by means of the following function:

$$f(x) = \frac{100}{1+x}$$

where x is the weighted sum of the abuses in a country or territory in the calendar year prior to the Index relative to the decimal logarithm of the population size:

$$x = K \sum_{i=1}^{n} k_i \frac{x_i}{\log_{10}(pop)}$$

#### where:

- pop is the population size;
- each x<sub>i</sub> represents the number of abuses in a category (murders, physical attacks,
- each k<sub>i</sub> represents the coefficient associated with this category;
- n is the number of categories for which abuses were registered;
- K is the coefficient used as a mathematical device to create a score distribution ranging from 0 to 100. It is 0.15.

This function has been chosen for the following reasons:

- When no abuse against journalists is registered in a country in a given year, the abuse score is 100.
- When the number of abuses increases, the score declines and tends towards 0.

#### Our data gathering

X

- RSF's staff constantly gathers information throughout the world about abuses against journalists in connection with their work.
- . The information about journalists who are held hostage, imprisoned, killed or missing is updated every day on RSF's press freedom barometer.

#### Choice of coefficients

The k<sub>i</sub> coefficients establish a hierarchy of the different kinds of abuses. Three main levels of seriousness are established:

- Abuses not contravening a non-derogable right under <u>Common Article 3 of the four</u> Geneva Conventions (coefficient of 1):
  - o ransacking, destruction, closure or suspension of a media outlet
- . Abuses contravening a non-derogable right under Common Article 3 of the four Geneva Conventions:
  - abduction or enforced disappearance (coefficient of 50)
  - detention (coefficient varying from 25 o 50, according to length of detention)
  - murder (coefficient of 100)

#### Population data sources

The country or territory's population size is used to calculate the abuses score. The population figures used are those published by the World Bank, except in the following cases, where the source is specified:

- Taiwan: local Statistical Bureau:
- Cyprus: Eurostat;
- Northern Cyprus: World Bank figure for the total population of the Island of Cyprus less the Eurostat figure for the population of the part of Cyprus that is an EU
- Montserrat, a member of the OECS: local government;

The population figures used are the most recent available, namely 2021 for the 2023 Index, with certain exceptions.

#### Coefficients

Murder	100
Abduction	50
Disappearance	50
Detention for > 10 years*	50
Detention for 9-10 years*	47.5
Detention for 8-9 years*	45
Detention for 7-8 years*	42.5
Detention for 6-7 years*	40
Detention for 5-6 years*	37.5
Detention for 4-5 years*	35
Detention for 3-4 years*	32.5
Detention for 2-3 years*	30
Detention for 1-2 years*	27.5
Detention for < 1 year*	25
Media ransacked,	
destroyed, closed or	
suspended	1

\*House arrest is counted as detention in our data.





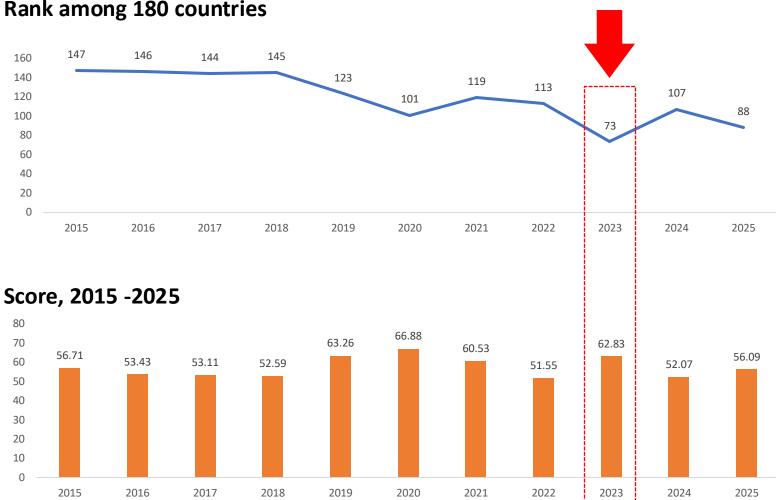






## **Dissecting Malaysia's Score**

### Rank among 180 countries



The best score in 10

years

- Malaysia's Press Freedom Score (2015–2025) Malaysia's ranking improved significantly in 2023, jumping from 113th to 73rd, with its score peaking at 62.83.
- However, this momentum was not sustained, as the score *dropped* to 52.07 in 2024 before recovering slightly to 56.09 in 2025, placing Malaysia at 88th.
- While press freedom improved compared to the pre-2019 period, the decline after 2023 highlights ongoing challenges in sustaining a free and independent media environment.



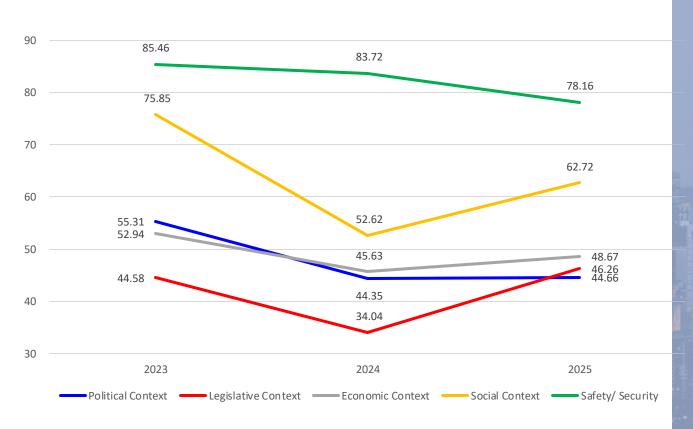






## **Dissecting Malaysia's Score**

#### **Score based on categories**



# "Malaysia saw a sharp decline in 2024, followed by partial recovery in 2025 — but all dimensions remain below 2023 levels"

- The **political context** deteriorated sharply in 2024, falling from 55.31 to 44.35, and remained weak in 2025 (44.66), reflecting persistent political interference.
- The **legislative context** saw its lowest point in 2024 at 34.04 but improved in 2025 to 46.26, signalling only a fragile recovery of legal safeguards.
- The economic context steadily declined from 52.94 to 48.67, underscoring ongoing financial constraints and ownership pressures on media outlets.
- Meanwhile, the social context suffered a steep fall in 2024 (75.85 to 52.62), with a moderate rebound in 2025 (62.72), suggesting public trust remains unsettled.
- Lastly, safety and security continued to be Malaysia's strongest dimension, but its gradual slide from 85.46 in 2023 to 78.16 in 2025 highlights growing risks to journalists.









#### **Pros and Cons**

Pros	Cons
Encourages transparency and accountability in governance, reducing corruption risks.	In developing countries, weak self-governance may lead to misuse of press freedom, fuelling instability (e.g., Egypt's prolonged unrest).
Enhances international reputation and investor confidence by signalling openness.	Sensationalism, misinformation, or politically motivated reporting can undermine trust in institutions.
Strengthens democracy by giving citizens access to diverse viewpoints and information.	Without strong civic maturity, societies may be easily swayed by propaganda or populist narratives.
Supports innovation and competitiveness by enabling free flow of ideas and critical debate.	Unchecked freedom can sometimes polarise societies, deepening divisions instead of fostering progress.
Acts as a safeguard for human rights, giving marginalised groups a voice.	Media capture by interest groups may distort narratives, eroding genuine competitiveness benefits.

# "Responsible Freedom, Resilient Media, Competitive Nation"

- To balance press freedom with stability, developing countries should strengthen media literacy and civic education to build societal resilience against manipulation.
- At the same time, independent regulatory safeguards and clear accountability mechanisms are needed to ensure responsible journalism without curbing legitimate freedom of expression.
- This approach allows press freedom to support competitiveness without jeopardising national stability.

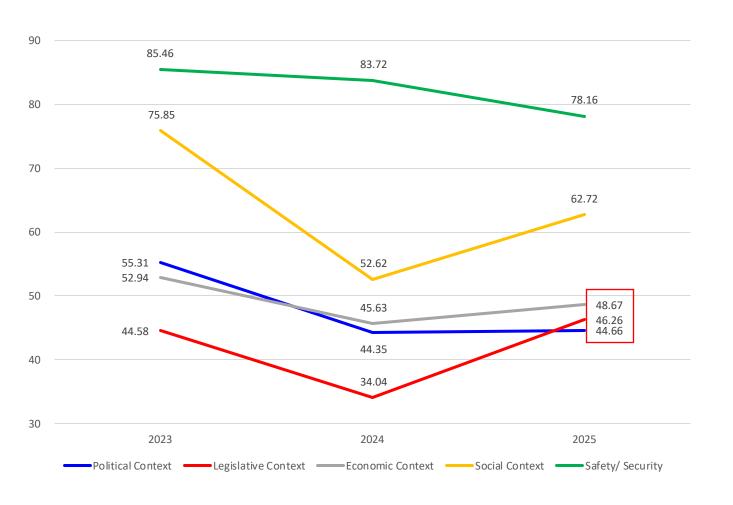








## **Way Forward**



# Improving the political, legislative and economic context

# Examining the questions and understand how the surveys can be influenced

- What influence does the government have in the editorial board of the following forms of media?
- What degree of autonomy from political authorities do the following leaders have? List is provided by RSF. Is there a way to identify the respondents?













#### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### Social framework

Measures social cohesion, inclusiveness, and the level of public trust supporting competitiveness.

<u>Indicators</u>	<u>Score</u>	<u>Rankin</u>
1. Media bias	0.409	55
2. Gini coefficient	41.20	53
3. Females in parliament	13.51	62
4. Gender inequality	0.172	39
5. Disposable income	65.1	47
6. Inequality in life expectancy	0.82	45
7. Freedom of the press	52.07	49
8. Equal Opportunity	5.93	41

Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based on 69 countries in IMD WCY 2025 report.



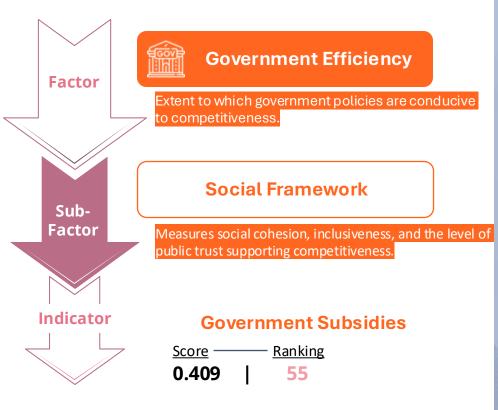


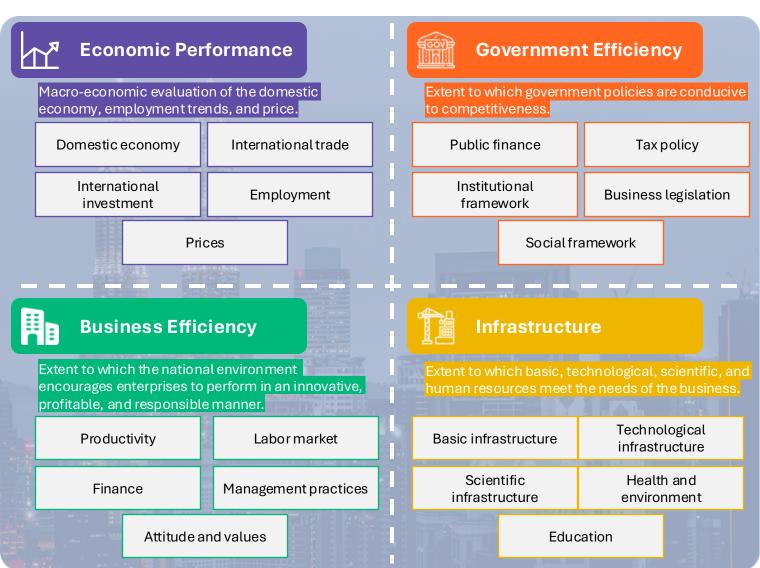


## 2.5.17: Media Bias



## What is the IMD World Competitiveness Ranking?







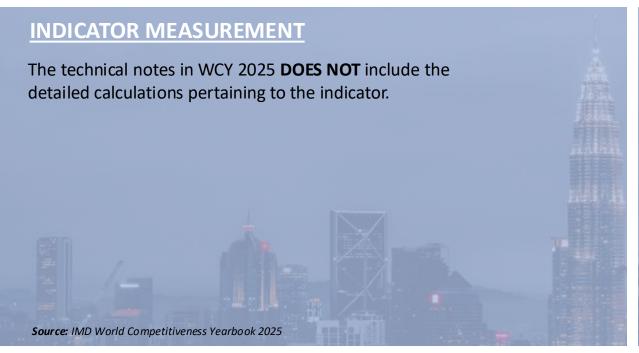


## Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Indicator "media bias" by the V-Dem measures whether the print and broadcast media cover all newsworthy parties and candidates more or less impartially and in proportion to their newsworthiness. Where this is the case the country receives the highest value (4), while lower values suggest an increasing imbalance. The score of this indicator, which is coded by multiple country experts, sheds some light on whether competing political parties face a more or less even playing field.

Source: IMD World Competitiveness Yearbook 2025



#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

V-Dem Institute

https://v-dem.net/data\_analysis/VariableGraph/

**Source:** IMD World Competitiveness Yearbook 2025







## **Indicator performance over the years**

#### WHAT DOES THE SCORE INDICATE?

Whether the print/broadcast media cover parties/candidates impartially and proporti	ionately
, , , , , , , , , , , , , , , , , , , ,	,
tanking	score
01 Denmark	3.036
02 Czech Republic	2.875
03 Switzerland	2.709
04 Estonia	2.616
05 Ireland	2.586
06 Luxembourg	2.570
07 Norway	2.472
08 Argentina	2.443
09 Kenya	2.360
10 Belgium	2.324
11 Australia	2.242
12 Netherlands	2.223
13 Sweden	2.217
14 Colombia	2.131
15 Lithuania	2.100
16 Brazil	2.035
17 New Zealand	2.034
18 Latvia	2.015
19 Canada	1.966
20 Namibia	1.965
21 France	1.942
22 United Kingdom	1.928
23 Philippines	1.824
24 Finland	1.820
25 Slovak Republic	1.786
26 Bulgaria	1.754
27 Italy	1.721
28 Germany	1.718
29 Ghana	1.692
30 Mexico	1,610

31 Chile	1.592
32 Portugal	1.546
33 Indonesia	1.523
34 Cyprus	1.508
35 Spain	1.482
36 Nigeria	1.467
37 Taiwan (Chinese Taipei)	1.292
38 Japan	1.262
39 Iceland	1.260
40 Austria	1.234
41 USA	1.218
42 Botswana	1.146
43 Jordan	1.111
44 Greece	1.058
45 Slovenia	1.025
46 Peru	0.997
47 Korea Rep.	0.952
48 Croatia	0.938
49 Thailand	0.838
50 Mongolia	0.813
51 Singapore	0.730
52 Romania	0.512
53 Kuwait	0.472
54 South Africa	0.424
55 Malaysia	0.409
56 Poland	0.149
57 Venezuela	0.143
58 India	0.067
59 Hungary	-0.275
60 Kazakhstan	-0.296
61 Türkiye	-0.542
62 Bahrain	-0.927
63 Hong Kong SAR	-1.123
64 Oman	-1.339
65 China	-1.837
66 Saudi Arabia	-1.916
67 Qatar	-2.509
68 UAE	-2.995
- Puerto Rico	-

# The higher the value, the higher the ranking.

#### **RATIONALITY?**

- Media bias is an important component in improving Malaysia's government efficiency score under the IMD World Competitiveness Ranking.
- A fair and balanced media environment reflects transparency, accountability, and institutional credibility, which are core elements of government efficiency.
- Media bias is measured on a continuous Likert scale from -4 to +4; higher values indicate fairer and more impartial coverage by print and broadcast media.
- Malaysia ranks 55th out of 69 countries, showing that media bias remains at a low level compared to global standards.

Source: IMD World Competitiveness Yearbook (WCY) 2025

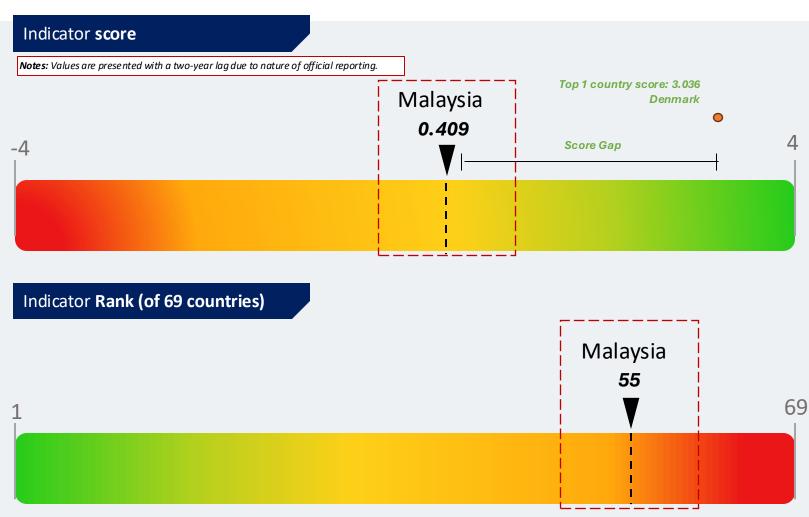




## 2.5.17: Media Bias



## **Indicator performance over the years**



## **HOW DO THE INDICATORS PERFORM ACROSS YEARS?**

- In 2025 (using 2023 data), Malaysia scored 0.409 on the media bias indicator.
- Malaysia recorded a score gap of 2.627 compared to the top-ranked country, Denmark, which scored 3.036.
- This indicates that Malaysia remains at a mid-level among countries in terms of fair and impartial media and broadcast coverage.
- However, Malaysia is positioned within the group of countries ranked 50 and below, indicating that it is being significantly outpaced globally by other nations.

Source: IMD WCY (2025)





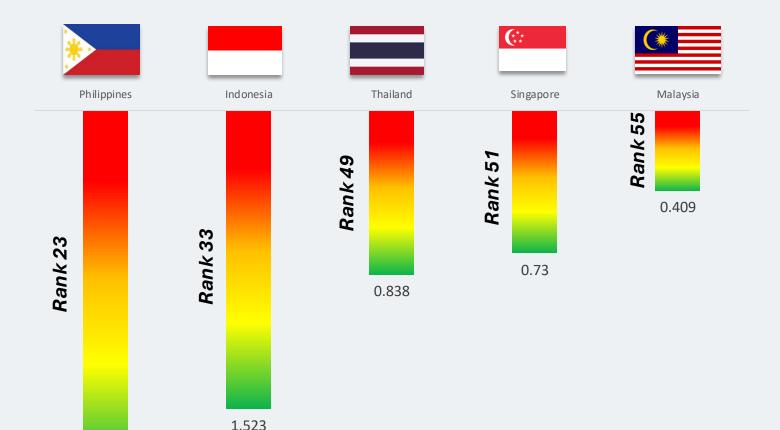


## 2.5.17: Media Bias



## **Indicator performance for 2025**

**Notes:** Values are presented with a two-year lag due to nature of official reporting.



# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

- Within ASEAN, Malaysia ranks last, lagging behind Indonesia, Thailand, Singapore, and far behind the Philippines, which holds the 23rd position globally.
- This shows that other ASEAN countries record higher media bias scores than Malaysia — in other words, they enjoy a higher level of fairness and impartiality in their media and broadcast coverage.

Source: IMD WCY (2025)

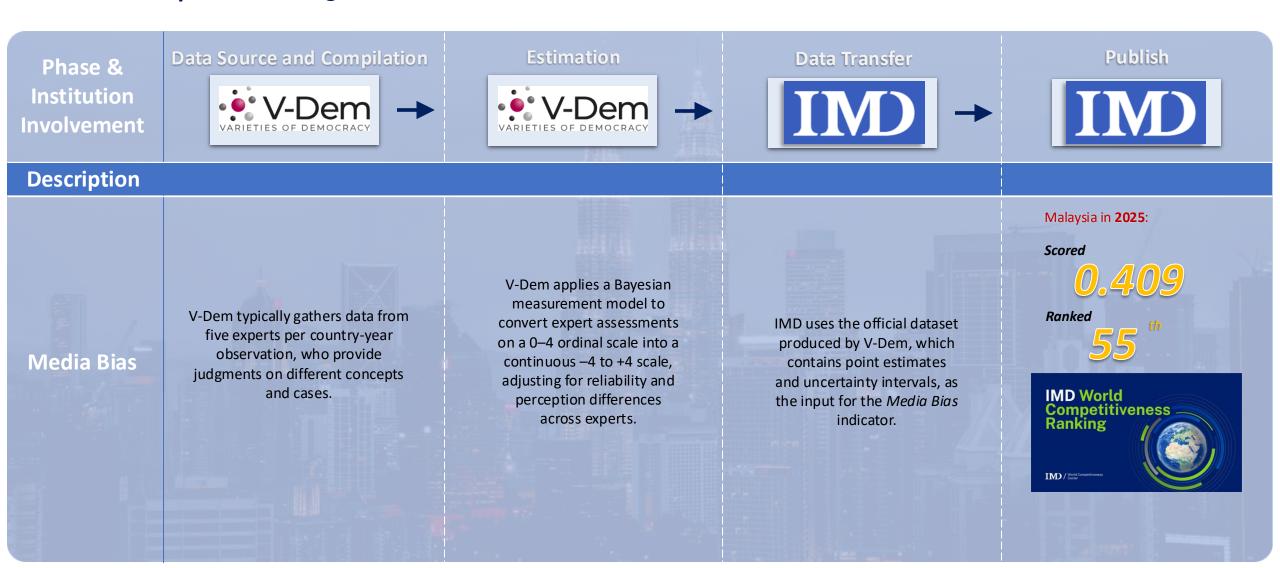


1.824

## 2.4.19: Redundancy Costs



### **Indicator footprint** – Tracking the Data Sources







## 2.5.17: Media Bias



## Methodology behind the media bias indicator

Based on the official reference from Varieties of Democracy, only one question is used to measure the media bias indicator. The question used by V-Dem is shown in the image below. The definition of media also had been stated under the question.

Question: Media bias (C) (v2mebias)

Is there media bias against opposition parties or candidates?

Clarification: We ask you to take particular care in rating the year-to-year variation on this question if media bias tends to increase or decrease in election years. Coverage can be considered ~more or less impartial~ when the media as a whole present a mix of positive and negative coverage of each party or candidate.

Responses: 0: The print and broadcast media cover only the official party or candidates, or have no political coverage, or there are no opposition parties or candidates to cover.

- 1: The print and broadcast media cover more than just the official party or candidates but all the opposition parties or candidates receive only negative coverage.
- 2: The print and broadcast media cover some opposition parties or candidates more or less impartially, but they give only negative or no coverage to at least one newsworthy party or candidate.
- 3: The print and broadcast media cover opposition parties or candidates more or less impartially, but they give an exaggerated amount of coverage to the governing party or candidates.
- 4: The print and broadcast media cover all newsworthy parties and candidates more or less impartially and in proportion to their newsworthiness.

Media: Two types of media are distinguished in this section: (1) print (newspapers and magazines) and broadcast (radio and television), and (2) online media. We ask that you evaluate these categories as a whole. Thus, "the print and broadcast media" can provide a wide range of perspectives in a country even when individual publications or programs take a consistently narrow perspective.

Source: Varieties of Democracy (V-Dem)

Key aspects to understand about how V-Dem measures the media bias indicator:

- Based on V-Dem's methodology, around five experts per country provide their judgments on each indicator every year.
- From the question, a country will obtain a high score if the print and broadcast media cover all newsworthy parties and candidates fairly, impartially, and in proportion to their newsworthiness.
- V-Dem does not disclose the identities of its Country Experts, in order to protect their confidentiality and ensure compliance with security policies and international regulations.
- The higher the value, the fairer and more impartial the media coverage.







## Recommendation to be considered: Enhance Editorial Independence and Journalism Capacity

Based on V-Dem's methodology and the question used, the level of media bias in a country depends on the judgments provided by country experts. These judgments reflect the prevailing conditions of the media and broadcast environment in each country. The greater the transparency and impartiality of media and broadcast coverage, the higher the media bias score achieved.

## **Key Rationality**



- United Kingdom excels in editorial independence and professional standards, supported by the Independent Press Standards Organization (IPSO), which ensures accountability and impartiality through self-regulation without government interference.
- Philippines strengthens democracy through capacity building for journalists, with institutions like the Philippine Center for Investigative Journalism (PCIJ) providing training in investigative reporting, ethics, and balanced political coverage.
- Meanwhile, Malaysia lags due to weaker institutionalised self-regulation and less structured, consistent journalist training programs leading to lower impartiality and media bias scores in global benchmarks such as V-Dem and IMD.

## **Proposed Actions**



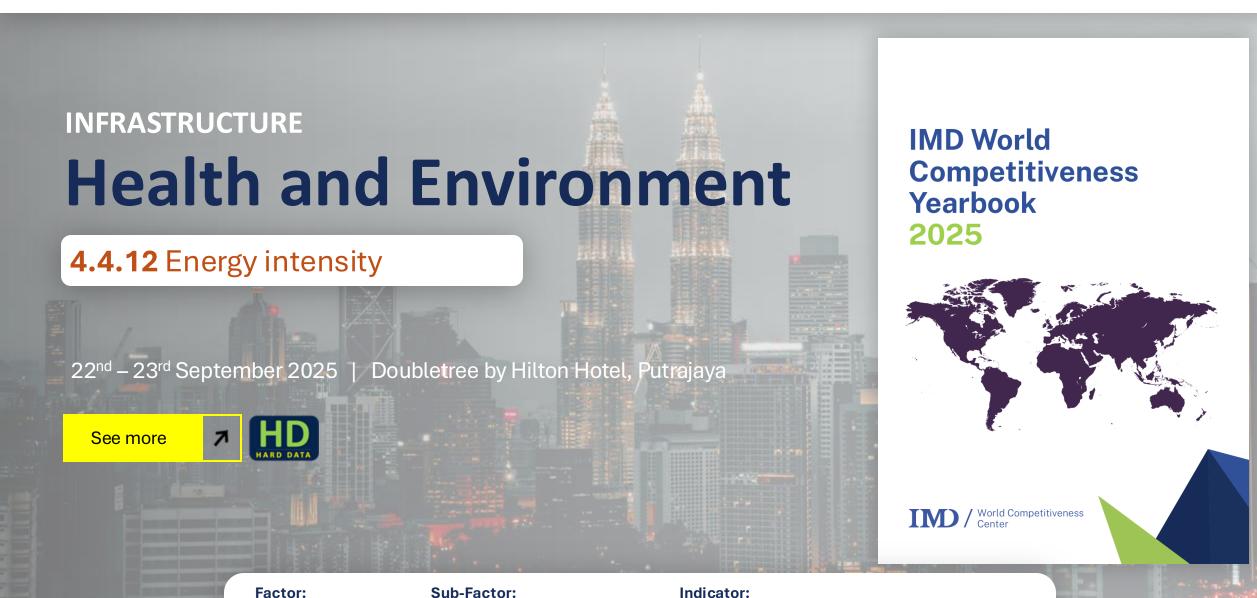
- Establish a Malaysian Press Council with independent authority to oversee media impartiality, similar to IPSO in the UK.
- Strengthen continuous journalist training programs, collaborating with regional and international organizations (e.g., UNESCO, PCIJ model).
- Promote investigative journalism through grants and incentives to foster balanced, evidence-based reporting.



Infrastructure

Health and Environment





4.4.12 Energy intensity



## 4.4.12: Energy Intensity





#### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
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- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and numan resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Health and Environment**

Reviews public health standards and environmental sustainability efforts.

<u>Indicators</u>	<u>Score</u>	<u>Rankin</u>
Energy intensity	146	60
2. CO2 emissions intensity	708.8	61
3. Exposure to particle pollution	16.29	43
4. Renewable energies (%)	4.1	56
5. Ecological balance (reserve/deficit)	-2.18	40
6. Food waste	210.0	67
7. Environment-related technologies	0.04	33
8. Environmental performance index	41.0	57

Rank are based on 69 countries in IMD WCY 2025 report.

Figure in bracket () refers to rank in IMD WCY 2025 report.







# Indicator overview sourced from IMD WCY 2025 Report

# INDICATOR DEFINED IN THE REPORT

The amount of energy consumed (production + imports - exports - bunkers - stock changes) for each dollar of gross domestic product. France: including Monaco. Italy: incl. San Marino. South Africa: African Customs Union includes South Africa, Botswana, Lesotho, Swaziland and Namibia. Switzerland: incl. Liechtenstein.

Source: IMD World Competitiveness Yearbook 2025 (page 600)

# **INDICATOR MEASUREMENT**

According to the technical notes in WCY 2025, the indicator can be simply calculated as follows:

# **Energy Intensity =**

 $\frac{Amount\ of\ Energy\ Consumed\ (MTOE)}{Gross\ Domestic\ Product\ (US\ Bn, current\ price)} \times 1,000$ 

# **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

IEA "Extended world energy balances", IEA World Energy Statistics and Balances (database)

Source: IMD World Competitiveness Yearbook 2025 (page 578)





# Ranking as reported in IMD WCY 2025

# WHAT DOES THE SCORE INDICATE?

ealth & Environment	4.4.12
NERGY INTENSITY	2022
tal energy consumed for each 1000 US\$ of	
OP in MTOE	
nking	MTOE
1 Hong Kong SAR	19
2 Ireland	20
3 Switzerland	20
4 Denmark	32
5 Norway	35
6 Singapore	36
7 United Kingdom	37
8 Luxembourg	38
9 Australia	46
0 Netherlands	49
1 Germany	50
2 France	50
3 Cyprus	52
4 Sweden	54
5 Italy	54
6 New Zealand	54
7 Austria	55
8 Spain	56
9 Japan	61
0 USA	61
1 Belgium	61
2 Portugal	63
3 Mexico	71
4 Greece	71
5 Estonia	75
6 Slovenia	80
7 Romania	82
8 Lithuania	83
9 Finland	85
0 Colombia	87

31	Czech Republic	88
32	Philippines	89
33	Canada	90
34	Peru	91
35	Argentina	91
36	Slovak Republic	95
37	Taiwan (Chinese Taipei)	95
38	Croatia	97
39	Botswana	99
40	Chile	100
41	Qatar	100
42	Korea Rep.	101
43	Latvia	103
44	Poland	110
45	Iceland	110
46	Hungary	112
47	Bulgaria	112
48	UAE	115
49	Ghana	118
50	Namibia	121
51	Indonesia	123
52	Türkiye	124
53	China	125
54	Nigeria	125
55	Brazil	127
56	Jordan	129
57	Kuwait	133
58	South Africa	145
59	Saudi Arabia	145
60	Malaysia	146
61	Kenya	147
62	Bahrain	157
63	Venezuela	183
64	Kazakhstan	185
65	India	196
66	Thailand	198
67	Oman	221
68	Mongolia	270
-	Puerto Rico	-

# The lower the value, the higher the ranking.

## **RATIONALITY?**

Energy intensity reflects an economy's efficiency in converting energy inputs into economic output.

A lower value indicates higher energy productivity, signifying advanced economic structure, technological efficiency, and reduced dependence on energy-intensive sectors.

This contributes positively to national competitiveness by promoting costeffective production, supporting environmental sustainability, and enhancing long-term economic resilience through better resource management and low-carbon transition.

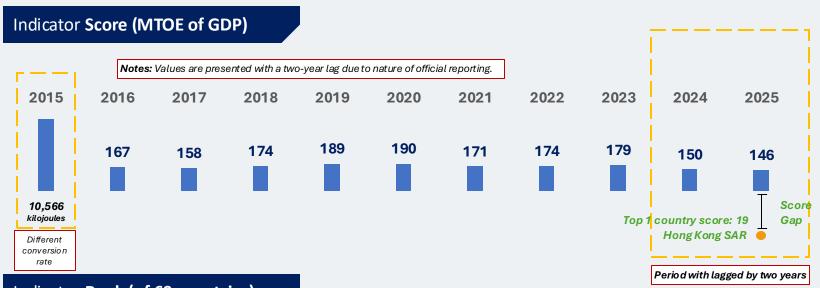
Source: IMD World Competitiveness Yearbook (WCY) 2025







# **Indicator performance over the years**



Indicator Rank (of 69 countries)



Source: IMD WCY (various years)

# MALAYSIA MPC

# HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's energy intensity, measured as MTOE per unit of GDP, has fluctuated over the years, reflecting changes in economic structure, efficiency improvements, and energy consumption patterns. From 167 in 2016, the indicator rose to 190 in 2020 before declining to 171 in 2021 and stabilizing around 174–179 during 2022–2023. In 2024 and 2025, energy intensity improved further to 150 and 146, signaling progress in energy efficiency and structural shifts towards less energy-intensive activities.

In terms of global ranking, Malaysia moved from 52nd in 2015 to 53rd–55th during 2018–2020, then improved to 57th in 2023 before reaching 60th in 2025. Despite these gains, a significant gap remains with top-performing economies such as Hong Kong SAR (score: 19). This underlines the importance of sustained energy efficiency measures, industrial upgrading, and green technology adoption to reduce energy intensity and enhance long-term competitiveness.





# **Indicator performance over the years**



# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

In 2025, Malaysia is ranked 4th among the five ASEAN countries assessed for energy intensity, placing 60th globally. Singapore leads the region (6th), followed by Thailand (42nd) and Indonesia (51st), with Malaysia slightly ahead of the Philippines (66th).

While Malaysia's ranking in energy intensity has remained relatively stable over the years, its regional position has weakened as both Thailand and Indonesia demonstrated steady improvements. This indicates that Malaysia's progress in reducing energy intensity has been modest, underscoring the need for stronger efficiency measures, structural transformation, and green technology adoption to close the regional gap.

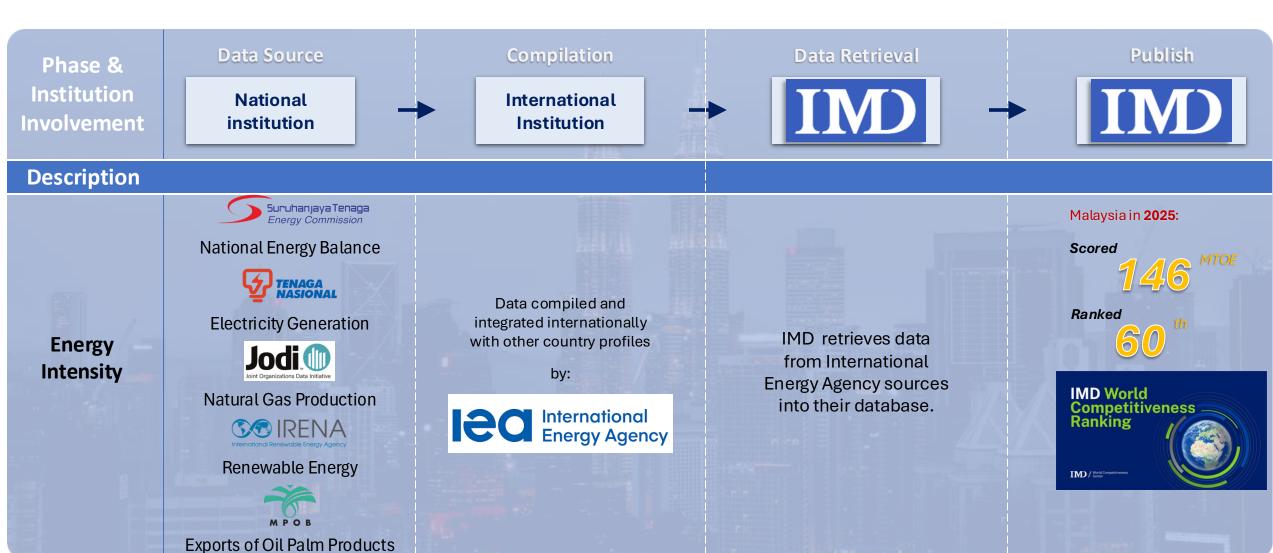
**Source:** IMD WCY (various years)







# **Indicator performance over the years**









# Detailed breakdown calculation of energy intensity

# Energy Consumed (in MTOE)

Energy Consumed (Terajoule) =

Energy consumed (Coal, peat and oil shale + Crude, NGL and feedstocks + Oil products + Natural gas + Nuclear + Renewables and waste + Electricity + Heat)

Conversion formula from terajoules (TJ) to million tonnes of oil equivalent (MTOE):

 $\frac{Energy\ Consumed\ (TJ)}{41,868}$ 

## Data source:

## **Energy Consumed (TJ)**

World Energy Statistics and Balances, IEA (database)

To access the data, follow these steps:

- 1. Go to <a href="https://www.iea.org/countries/malaysia/energy-mix">https://www.iea.org/countries/malaysia/energy-mix</a>
- 2. Click detailed on "How is energy used in Malaysia?"
- 3. Click "CSV" on the bottom left of the screen to download the data.

# Gross Domestic Product (in \$Bn, current price)

Gross Domestic Product (\$Bn, current price) =

Gross Domestic Product (RM Bn, current price)

Exchange rate (LCU per US\$, period average)

### Data source:

## **Gross Domestic Product (RM Bn, current price)**

Department of Statistics Malaysia

To access the data, follow these steps:

- Go to "eStatistik" DOSM
- Click on "Free Download"
- From Main Category, select "Economy"
- 4. From Sub-Category, select "National accounts"
- 5. Click "Search"
- 6. Find "Annual National Accounts Gross Domestic Product (GDP), Malaysia"
- 7. Download the excel file.
- 8. Go to "Table 1"

## **Exchange rate (LCU per US\$, period average)**

Department of Statistics Malaysia

To access the data, follow these steps:

- Go to "eStatistik" DOSM
- Click on "Free Download"
- 3. From Main Category, select "General"
- 4. From Sub-Category, select "Yearbook/Handbook"
- Click "Search"
- 6. Find "Statistics Yearbook Malaysia"
- 7. Download the excel file.

Note: LCU refers to local currency unit

# **Energy Intensity**

## *Energy Intensity* =

 $\left(\frac{\textit{Amount of Energy Consumed (MTOE)}}{\textit{Gross Domestic Product (US$ Bn, current price)}}\right)$ X1,000







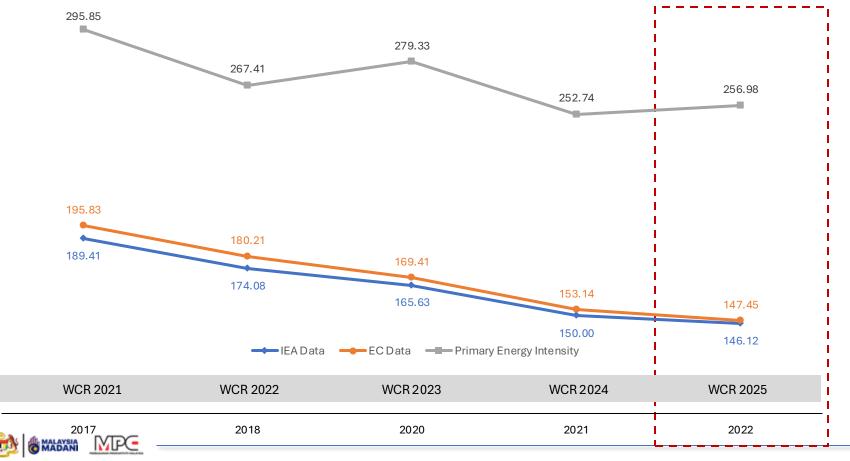


# Our understanding on the data sources

- Double-checking the definition, measurement approach, and data sources is crucial for accurately understanding the scores—and, consequently, the rankings

# **Definition included in IMD report**

The amount of energy consumed (production + imports - exports - bunkers - stock changes) for each dollar of gross domestic product. This definition = primary energy supply.



# Two technical issues observed from the figure

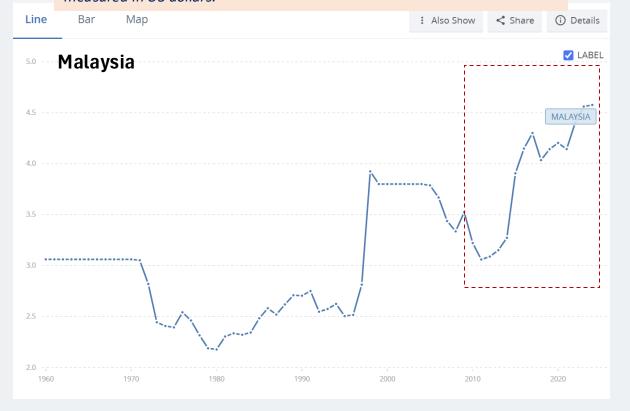
- Difference between the indicator's measurement definition and the actual calculation method. IMD defines the indicator in relation to primary energy supply, but the scoring calculation uses final energy data instead.
- 2. There is also a slight discrepancy between energy intensity magnitudes when using data from IEA versus the Energy Commission (EC)



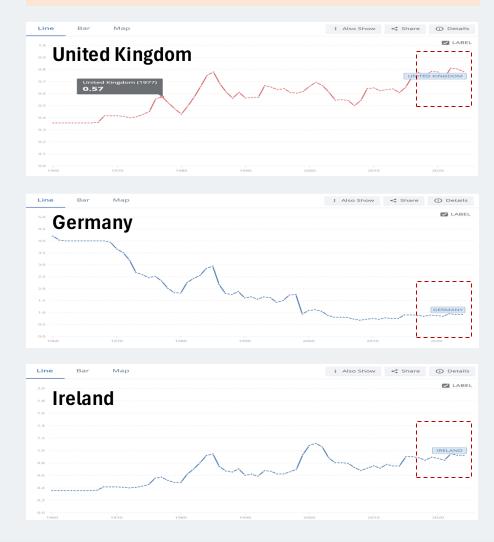


# GDP measured in US\$ Dollar, therefore currency conversion and exchange rate fluctuations can influence a country's score and global ranking

Malaysia's exchange rate has fluctuated significantly over the decades, especially during economic crises, which affects its GDP value when measured in US dollars.



Countries with high GDP like the UK, Germany, and Ireland tend to have more stable or lower exchange rate volatility, which supports stronger international purchasing power and ranking stability.







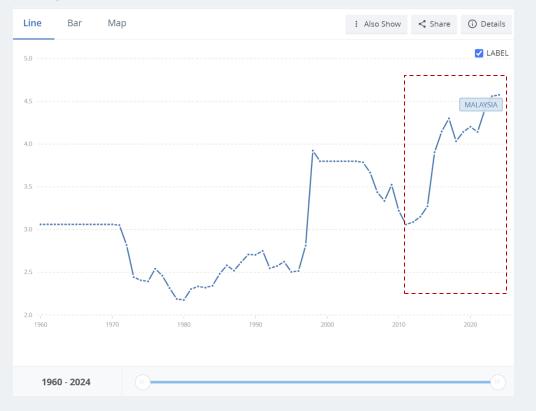




# Official exchange rate (LCU per US\$, period average) for Top-4 ranking in Energy Intensity

- Stable exchange rate improves denominator of energy intensity.

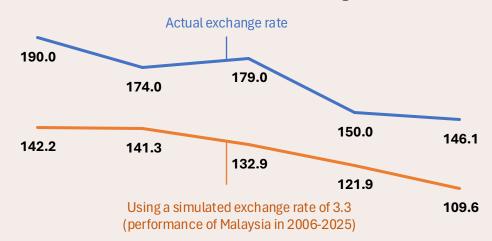
# Malaysia



## **Simulation**

If we take average exchange of 3.3 (MYR-to-USD), we obtain the following scores for energy intensity......a considerable reduction of energy intensity

# Actual versus simulated exchange rates



WCR 2021	WCR 2022	WCR 2023	WCR 2024	WCR 2025
2017	2018	2020	2021	2022

IEA "Extended world energy balances", IEA World Energy Statistics and Balances (database)

The amount of energy consumed (production + imports - exports - bunkers - stock changes) for each dollar of gross domestic product.









# **Exchange rate depreciation continues to impact Malaysia's GDP** ranking despite nominal growth



- Malaysia's nominal GDP has shown steady growth over the past two decades, rising from USD 143.4 billion in 2005 to USD 421.9 billion in 2024, driven by ongoing expansion in domestic production and investment.
- However, the **depreciation of the Ringgit** from RM3.79 to RM4.58 per US dollar over **the same period** significantly reduced the value of Malaysia's GDP when measured in USD terms.
- In the IMD rankings, this contributed to a relatively stagnant position, as Malaysia's global GDP ranking remained within the 32nd to 39th range despite improvements in real output.
- This trend highlights the impact of exchange rate movements on international competitiveness, especially in dollardenominated benchmarks like GDP rankings.

Source: IMD World Competitiveness Yearbook (various years)











# **Recommendation for addressing the issue**

- Understanding both the measurement (short-term) and policy (medium-term) dimensions ensures a delivering a big push to







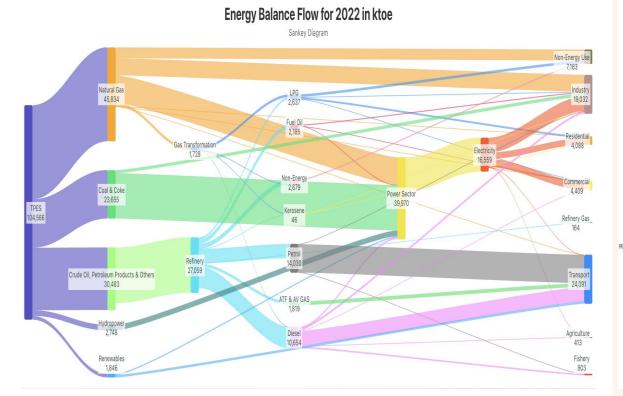


# Are we measure it right?

- Comparative structure between Malaysia and Australia.

Malaysia's current energy flow reporting still has room for improvement particularly in clearly distinguishing between domestic consumption and exports ...

# Malaysia

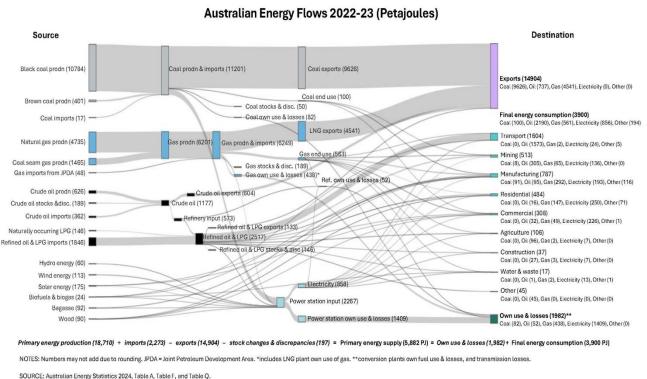


**Source:** Energy Commission, Malaysia

MALAYSIA MPC

... in contrast, Australia's approach already deducts exports upfront, offering a cleaner picture of actual national energy use. Improving this aspect of data structure will enhance accuracy in calculating indicators like energy intensity and allow for better international comparability.

## **Australia**



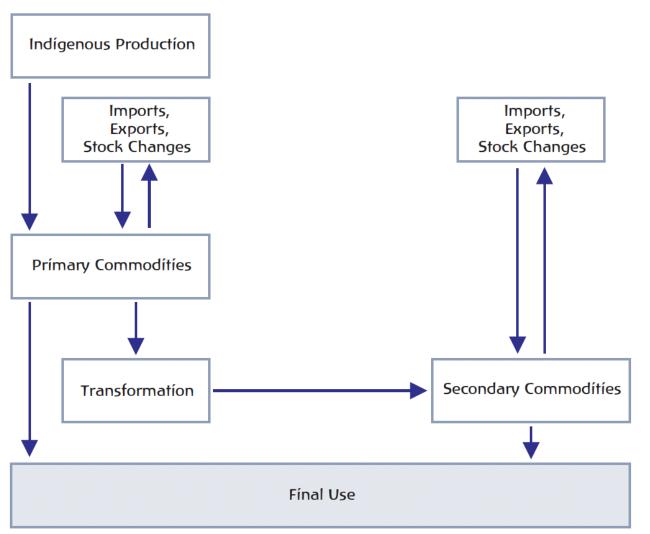
Source: Department of Climate Change, Energy, the Environment and Water, Australia





# Are we measure it right?

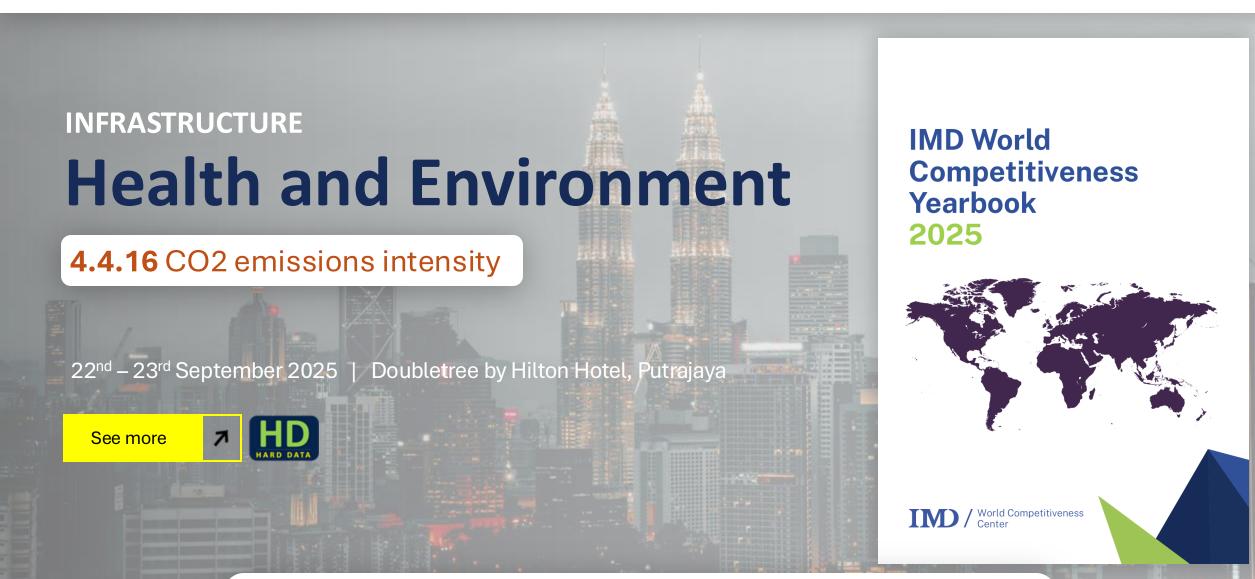
- The IEA framework tracks energy flows comprehensively—from production to final use.



Does Malaysia's current measurement system align with this structure, or are key components being overlooked?







Infrastructure

**Factor:** 

Health and Environment

**Sub-Factor:** 

**4.4.16** CO2 emissions intensity

Indicator:







# **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
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# **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

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# **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
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- Social framework (38)



## Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

# **Health and Environment**

Reviews public health standards and environmental sustainability efforts.

<u>Indicators</u>	<u>Score</u>	Rankin
1. Energy intensity	146	60
2. CO2 emissions intensity	708.8	61
3. Exposure to particle pollution	16.29	43
4. Renewable energies (%)	4.1	56
5. Ecological balance (reserve/deficit)	-2.18	40
6. Food waste	210.0	67
7. Environment-related technologies	0.04	33
8. Environmental performance index	41.0	57

Rank are based on 69 countries in IMD WCY 2025 report.

Figure in bracket () refers to rank in IMD WCY 2025 report.









# Indicator overview sourced from IMD WCY 2025 Report

# INDICATOR DEFINED IN THE REPORT

Total Carbon Dioxide (CO2) Emissions refer to the mass of CO2 released in a particular country or region, excluding land-use change and forestry. Source adapted in 2025.

**Source:** IMD World Competitiveness Yearbook 2025 (page 600)

# According to the technical notes in WCY 2025, the indicator can be simply calculated as follows: CO2 Emission Intensity = CO2 industrial emissions (metric tons) Gross Domestic Product (US\$ Bn, current price) × 1,000,000

# **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

World Development Indicators

Source: IMD World Competitiveness Yearbook 2025 (page 578)





# Ranking as reported in IMD WCY 2025

# WHAT DOES THE SCORE INDICATE?

Health & Environment		4.4.1
CO2 EMISSIO	NS INTENSITY	202
CO2 emissions in metric t	tons per one million US\$	
of GDP		
lanking		tons
01 Switzerland		38.3
02 Ireland		58.8
03 Sweden		60.4
04 Denmark		65.8
05 Luxembourg		80.0
06 United Kingdom		89.6
7 Hong Kong SAR		91.0
08 Norway		91.2
9 France		92.5
0 Iceland		98.1
11 Finland		109.4
2 Netherlands		109.9
3 Singapore		112.9
4 Austria		114.9
5 Puerto Rico		116.7
6 Portugal		124.9
17 Germany		128.8
18 Italy		132.6
9 Spain		134.1
20 Belgium		137.0
21 New Zealand		141.3
22 Latvia		153.9
23 Lithuania		164.4
24 USA	_	168.9
25 Slovenia		174.6
26 Kenya		201.2
27 Romania		201.8
28 Hungary		204.8
29 Croatia		206.8
30 Cyprus		212.0
от сургао		212.0

31	Greece		212.2
32	Australia		214.6
33	Peru		218.4
34	Brazil		220.6
35	Japan		224.2
36	Chile		250.3
37	Mexico		259.7
38	Slovak Republic		262.3
39	Czech Republic		263.7
40	Canada		264.6
41	Colombia		275.4
42	Estonia		277.0
43	Argentina		286.9
44	Korea Rep.		311.9
45	Ghana		316.4
46	Namibia		351.7
47	Nigeria		352.1
48	Poland		354.6
49	Taiwan (Chinese Taipei)		358.8 <sup>202</sup>
50	Philippines		369.0
51	Botswana		382.5
52	Bulgaria		388.6
53	Türkiye		392.0
54	UAE		394.1
55	Jordan		461.5
56	Indonesia		491.9
57	Qatar		522.7
58	Thailand		531.4
59	Saudi Arabia		583.5
60	Kuwait		675.0
	Malaysia		708.8
62	China		725.7
63	Bahrain		810.2
64	India		810.3
65	Venezuela		852.8
66	Oman		887.4
67	Kazakhstan		916.1
68	South Africa	1	,043.8

# The lower the value, the higher the ranking.

## **RATIONALITY?**

CO<sub>2</sub> emission intensity reflects an economy's efficiency in generating output with lower carbon emissions.

A lower value indicates reduced carbon intensity, reflecting cleaner energy use, technological efficiency, advanced economic structures, and a shift away from fossil fuel dependency.

This contributes positively to national competitiveness by supporting sustainable production, strengthening climate commitments, and enhancing long-term economic resilience through effective carbon management and a low-emission growth pathway.

Source: IMD World Competitiveness Yearbook (WCY) 2025

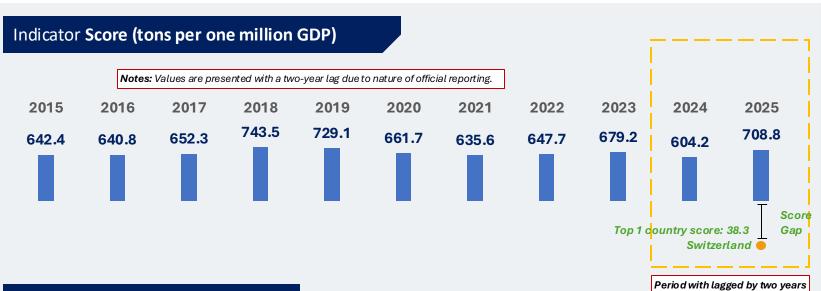








# **Indicator performance over the years**



# HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's CO<sub>2</sub> emission intensity, measured in tons per one million USD of GDP, has shown fluctuations over the years, reflecting changes in energy consumption, economic activity, and efficiency measures. From 642.4 in 2015, the indicator rose to a peak of 743.5 in 2018 before declining to 635.6 in 2021. However, in 2024 and 2025 the values rebounded to 604.2 and 708.8 respectively, suggesting variability linked to post-pandemic recovery and shifts in industrial and energy use patterns.

In terms of global ranking, Malaysia placed 50th in 2015, improved slightly to 53rd–56th between 2018 and 2022, but dropped to 61st by 2025. With topperforming countries such as Switzerland (38.3) maintaining very low CO2 intensities, the widening gap highlights Malaysia's need to accelerate decarbonization, enhance energy efficiency, and transition towards a low-carbon growth model.

#### 

**Source:** IMD WCY (various years)





Indicator Rank (of 69 countries)









# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

In 2025, Malaysia is positioned 4th among five ASEAN countries assessed for CO₂ emission intensity, ranking 61st globally. The leading ASEAN performer is Singapore (13th), followed by Thailand (42nd) and Indonesia (55th), with Malaysia narrowly ahead of the Philippines (56th).

While Malaysia's CO<sub>2</sub> intensity ranking has remained relatively steady over the years, its regional position has weakened as both Thailand and Indonesia have recorded improvements. This indicates that Malaysia's progress in reducing carbon intensity has been modest, reinforcing the need for stronger decarbonization strategies, energy efficiency improvements, and cleaner technology adoption to close the regional gap.

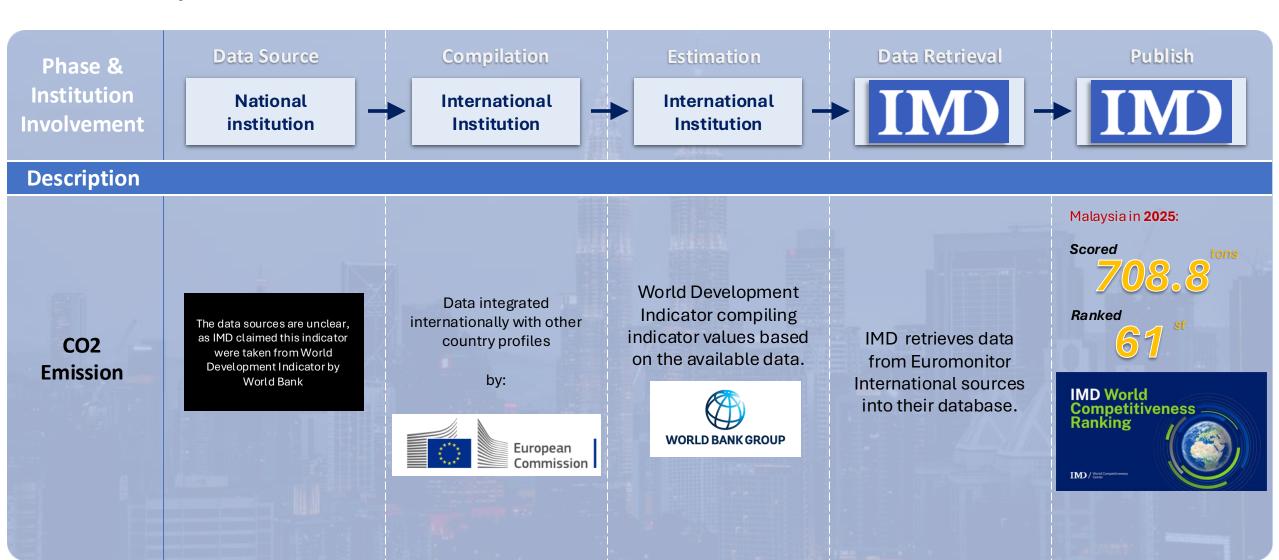
**Source:** IMD WCY (various years)







# **Indicator footprint** – Tracking the Data Sources









# **Understanding CO2 emission calculation by European Comission**

# CO2 emission =

# CO2 emission from fossil fuel combustion

- Calculated "bottom-up": Activity data (consumption of coal, oil, gas by country and sector) × IPCC 2006 emission factors + adjustments for technology / abatement.
- Base data: International Energy Agency (IEA) and Energy Institute energy statistics producing the IEA-EDGAR CO<sub>2</sub> dataset.



# CO2 emission from industrial processes (non-combustion)

- Calculated separately from industrial chemical reactions that release CO<sub>2</sub>:
  - Cement/clinker and lime: based on clinker production (clinker-tocement ratios, USGS/UNFCCC/World Cement data).
  - Steel and metals: CO<sub>2</sub> from reducing agents (coke/coal) and limestone in blast furnaces; using worldsteel output data.

# Exclusions in the energy sector

 CO<sub>2</sub> from biomass/biofuel combustion (short-cycle carbon) in power, industry, buildings, and transport is excluded from energy GHG totals, as it is assumed to be carbon-neutral over the short cycle.

# CO2 emission from LULUCF (Land Use, Land-Use Change, Forestry)

- Treated separately using IPCC Tier 1
   Gain/Loss method, applied globally:
  - Forest living biomass: sources and sinks based on satellite landcover data (C3S/ESA-CCI), growing stock, forest age classes, etc.
  - Deforestation: area of forest loss (TMF/GFC) × IPCC carbon stock factors; all carbon assumed released in the year of conversion.
  - Cropland/grassland organic soils: calculated with IPCC Wetlands Supplement factors.
  - Biomass burning: based on GWIS burned area/fire data; in tropical forests, CO<sub>2</sub> from fire linked to deforestation is excluded to avoid double-counting.

Source: Joint Research Centre (JRC), the European Commission.



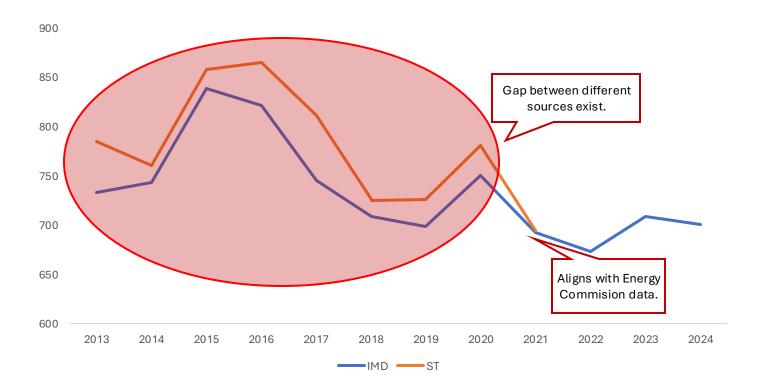






# **Data discrepancies between IMD and Energy Commission**





The observed discrepancies between IMD and Energy Commission data illustrate inconsistencies in CO<sub>2</sub> emission intensity reporting for Malaysia.

These variations highlight the importance of harmonizing methodologies and aligning national data sources with EC statistics to ensure accuracy, reliability, and comparability for policymaking and international benchmarking.

Source: Estimated based on data from IMD and EC





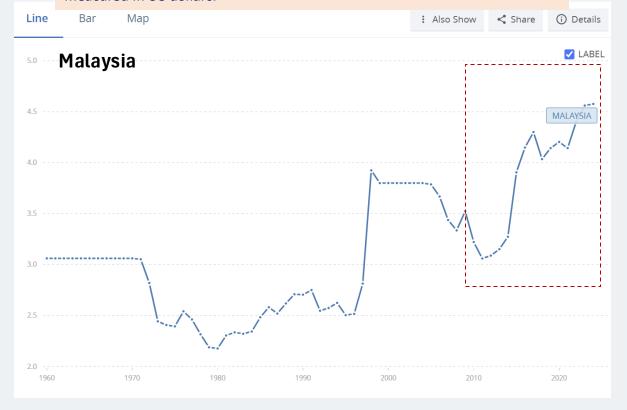




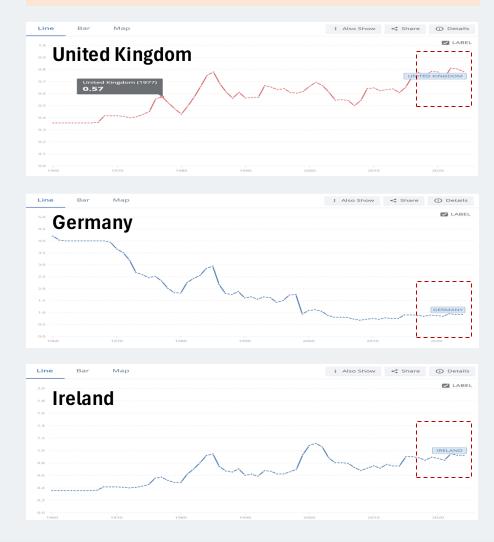


# GDP measured in US\$ Dollar, therefore currency conversion and exchange rate fluctuations can influence a country's score and global ranking

Malaysia's exchange rate has fluctuated significantly over the decades, especially during economic crises, which affects its GDP value when measured in US dollars.



Countries with high GDP like the UK, Germany, and Ireland tend to have more stable or lower exchange rate volatility, which supports stronger international purchasing power and ranking stability.







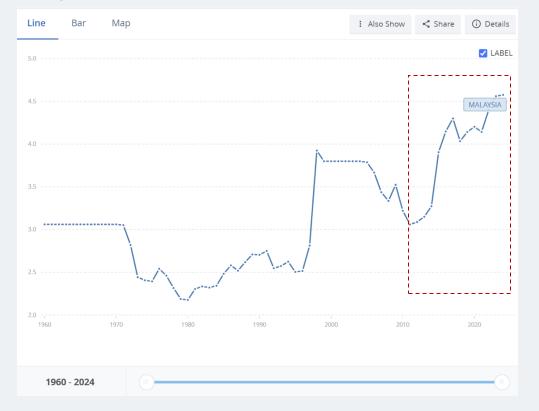




# Official exchange rate (LCU per US\$, period average) for Top-4 ranking in Energy Intensity

- Stable exchange rate improves denominator of CO2 emission intensity.

# Malaysia



## **Simulation**

If we take average exchange of 3.3 (MYR-to-USD), we obtain the following scores for energy intensity......a considerable reduction of CO2 emission intensity

# Actual versus simulated exchange rates



Using a simulated exchange rate of 3.3 (performance of Malaysia in 2006-2025)

WCR 2019	WCR 2020	WCR 2021	WCR 2022	WCR 2023	WCR 2024	WCR 2025
2017	2018	2019	2020	2021	2022	2023

IEA "Extended world energy balances", IEA World Energy Statistics and Balances (database)

The amount of energy consumed (production + imports - exports - bunkers - stock changes) for each dollar of gross domestic product.









# Exchange rate depreciation continues to impact Malaysia's GDP ranking despite nominal growth



- Malaysia's nominal GDP has shown steady growth over the past two decades, rising from USD 143.4 billion in 2005 to USD 421.9 billion in 2024, driven by ongoing expansion in domestic production and investment.
- However, the depreciation of the Ringgit from RM3.79 to RM4.58 per US dollar over the same period significantly reduced the value of Malaysia's GDP when measured in USD terms.
- In the IMD rankings, this contributed to a relatively stagnant position, as Malaysia's global GDP ranking remained within the 32nd to 39th range despite improvements in real output.
- This trend highlights the impact of exchange rate movements on international competitiveness, especially in dollardenominated benchmarks like GDP rankings.

**Source:** IMD World Competitiveness Yearbook (various years)









# Areas of improvement – enhance calculation transparency

Enhancing transparency in IMD's indicator calculation is critical for improving credibility and comparability across countries. To achieve this, Malaysia should engage with European Commission technical team to clarify computation methods ensuring a clearer understanding of data sources and reporting flows.

# **Key Rationality**



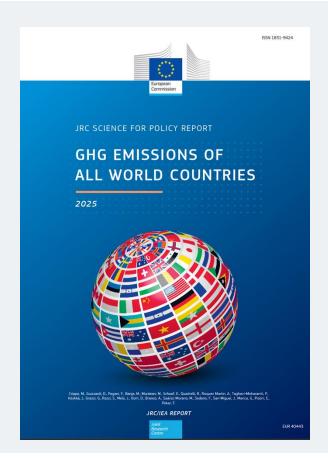
- **Transparency Builds Trust:** Clear disclosure of calculation methods strengthens confidence in global competitiveness rankings and reduces misinterpretation.
- Supports Informed Policy Decisions: Policymakers rely on accurate indicators for CO2 emission strategies. Ambiguous methodology risks misleading interventions.

# **Proposed Actions**



Request Methodology Disclosure
Engagement with European Commission (JRC/EDGAR team) to obtain clarification on methodology and data sources used in CO<sub>2</sub> emission intensity calculations..









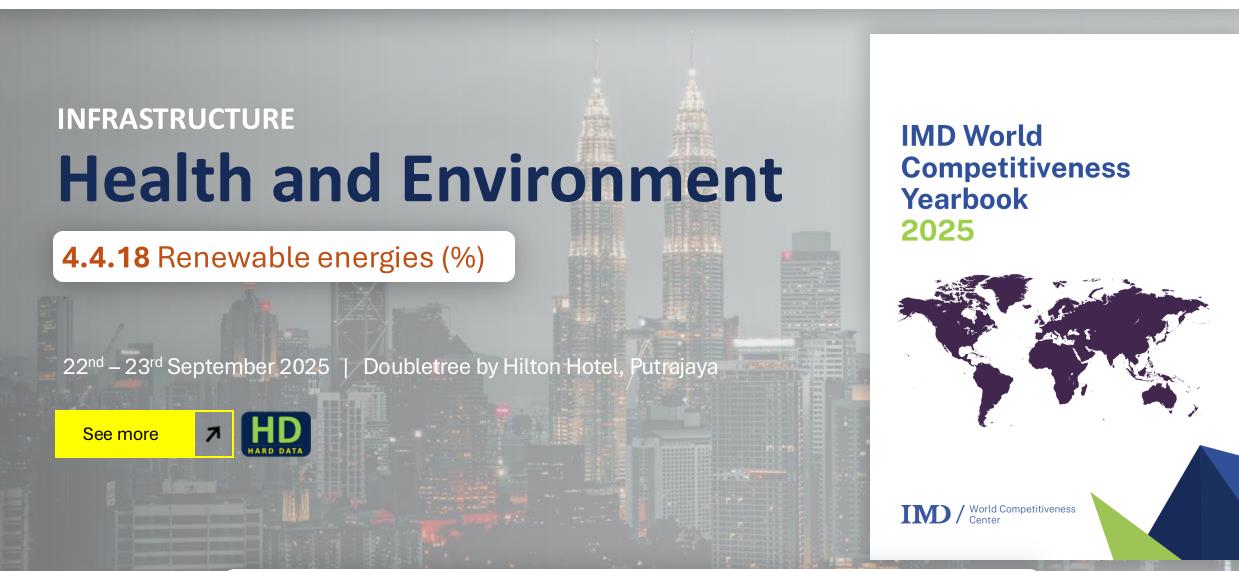
**Sub-Factor:** 

Health and Environment



**Factor:** 

Infrastructure



Indicator:

4.4.18 Renewable energies (%)







# **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



# **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



# **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



## Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
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- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

# **Health and Environment**

Reviews public health standards and environmental sustain ability efforts.

<u>Indicators</u>		<u>Score</u>	<u>Ranking</u>
1. Energy intensity		146	60
2. CO2 emissions inte	nsity	708.8	61
3. Exposure to particle	pollution	16.29	43
4. Renewable energies	s (%)	4.1	56
5. Ecological balance	reserve/deficit)	-2.18	40
6. Food waste		210.0	67
7. Environment-related	d technologies	0.04	33
8. Environmental perfo	ormance index	41.0	57

Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based on 69 countries in IMD WCY 2025 report.







# Indicator overview sourced from IMD WCY 2025 Report

# INDICATOR DEFINED IN THE REPORT

Renewable Energy is derived from natural processes that are replenished constantly. In its various forms, it derives directly or indirectly from the sun, or from heat generated deep within the earth. Included in the definition is energy generated from solar, wind, biomass, geothermal, hydropower and ocean resources, and biofuels and hydrogen derived from renewable resources. Therefore, the renewable products are: hydro (large, medium and small), geothermal, solar photovoltaic, solar thermal, tide, wave, ocean, wind, solid biomass, gases from biomass, liquid biomass and renewable municipal waste. It follows that total renewables does not include industrial waste, non-renewable municipal waste, waste heat, net heat generated by heat pumps, and electricity generated with hydro pumped storage. Is equal to the direct sum of HYDRO, GEOTHERM, SOLARPV, SOLARTH, TIDE, WIND, MUNWASTER, PRIMSBIO, BIOGASES, BIOGASOL, BIODIESEL, OBIOLIQ, RENEWNS and CHARCOAL.

Source: IMD World Competitiveness Yearbook 2025 (page 600)

# **INDICATOR MEASUREMENT**

According to the technical notes in WCY 2025, the indicator can be simply calculated as follows:

Renewable energies =

Renewables energy
Total Energy

# DATA SOURCE USED IN WCY 2025

The WCY 2025 report states that this indicator may be derived from the following sources:

• IEA "Extended world energy balances", IEA World Energy Statistics and Balances (database)

Source: IMD World Competitiveness Yearbook 2025 (page 578)







# Ranking as reported in IMD WCY 2025

# WHAT DOES THE SCORE INDICATE?

		202
Share of renewables in to %	otal energy requirements,	
70		
Ranking		%
01 Iceland		88.3
02 Kenya		79.7
03 Norway		56.1
04 Sweden		48.5
05 Brazil		47.1
06 Latvia		45.0
07 New Zealand		44.9
08 Nigeria		44.6
09 Denmark		41.9
10 Ghana		39.6
11 Finland		38.4
12 Namibia		34.7
13 Philippines		33.8
14 Austria		31.3
15 Chile		29.9
16 Botswana		27.9
17 Portugal		27.9
18 Estonia		27.5
19 Croatia		26.6
20 Colombia		26.3
21 Lithuania		24.8
22 India		23.8
23 Peru		23.1
24 Indonesia		22.8
25 Switzerland		21.9
26 Romania		19.0
27 Thailand		18.2
28 Italy		17.8
29 Germany		17.6
30 Türkiye		17.0

31	Canada		16.8
32	Greece		16.8
33	Spain		16.0
34	Slovenia		15.3
35	Venezuela		14.2
36	United Kingdom		14.0
37	Bulgaria		13.5
38	Netherlands		13.2
39	Ireland		12.9
40	Poland		12.7
41	Hungary		12.7
42	Luxembourg		12.5
43	France		12.4
44	Slovak Republic		12.3
45	Czech Republic		12.2
46	Cyprus		11.4
47	China		10.3
48	Belgium		9.9
49	Mexico		9.8
50	Australia		9.5
51	Argentina		9.2
52	Jordan		8.9
53	USA		8.6
54	Japan		7.4
55	South Africa		4.7
56	Malaysia		4.1
57	Mongolia	I	2.5
58	Korea Rep.	l	2.5
59	Taiwan (Chinese Taipei)	l	2.4
60	Kazakhstan	l .	1.7
61	Hong Kong SAR	1	1.3
62	Singapore		1.3
63	UAE		0.9
64	Oman		0.3
65	Qatar		0.1
66	Saudi Arabia		0.1
67	Kuwait		0.1
68	Bahrain		0.0
	Puerto Rico		

# The higher the value, the higher the ranking.

## **RATIONALITY?**

The share of renewable energies (%) reflects the extent to which an economy is able to meet its energy requirements from sustainable and clean sources.

A higher value indicates stronger adoption of renewables, signifying progress in energy diversification, technological advancement, reduced reliance on fossil fuels, and alignment with climate goals.

This contributes positively to national competitiveness by enhancing energy security, supporting environmental sustainability, promoting cost-effective clean production, and strengthening long-term resilience through a low-carbon energy transition.

Source: IMD World Competitiveness Yearbook (WCY) 2025







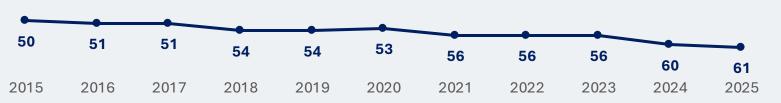


# **Indicator performance over the years**

# Indicator Score (share of total energy, %)



Indicator Rank (of 69 countries)



**Source:** IMD WCY (various years)

# **HOW DO THE INDICATORS PERFORM ACROSS YEARS?**

Malaysia's share of renewable energies in total energy consumption has remained relatively low and fluctuating over the years. From 5.2% in 2015 and 2016, the share declined to 3.4% in 2017, then showed only slight increases, reaching 4.3% in 2024 before dipping again to 4.1% in 2025. This modest progress highlights challenges in scaling up renewable adoption and diversifying the energy mix beyond fossil fuels.

In terms of global ranking, Malaysia stood at 50th in 2015 but slipped steadily to 61st by 2025. With leading countries such as Iceland achieving 88.3% renewable energy, the widening gap underscores Malaysia's need to accelerate investments in clean energy, strengthen policy frameworks, and leverage technology and innovation to advance its renewable energy transition.

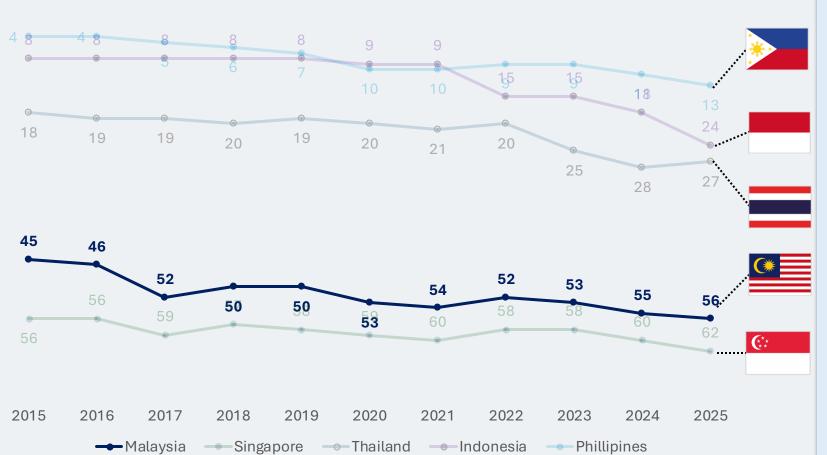








# **Indicator performance over the years**



# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

In 2025, Malaysia is positioned 4th among five ASEAN countries assessed for renewable energy share, ranking 56th globally. The leading ASEAN performer is the Philippines (13th), followed by Indonesia (24th) and Thailand (27th), with Malaysia slightly ahead of Singapore (62nd).

While Malaysia's ranking in renewable energy (%) has remained relatively stable, its regional position has weakened as both Thailand and Indonesia have advanced more quickly. This suggests that Malaysia's progress in expanding renewable energy adoption has been modest, reinforcing the need for stronger investment, policy support, and technology deployment to accelerate the transition and close the regional gap.

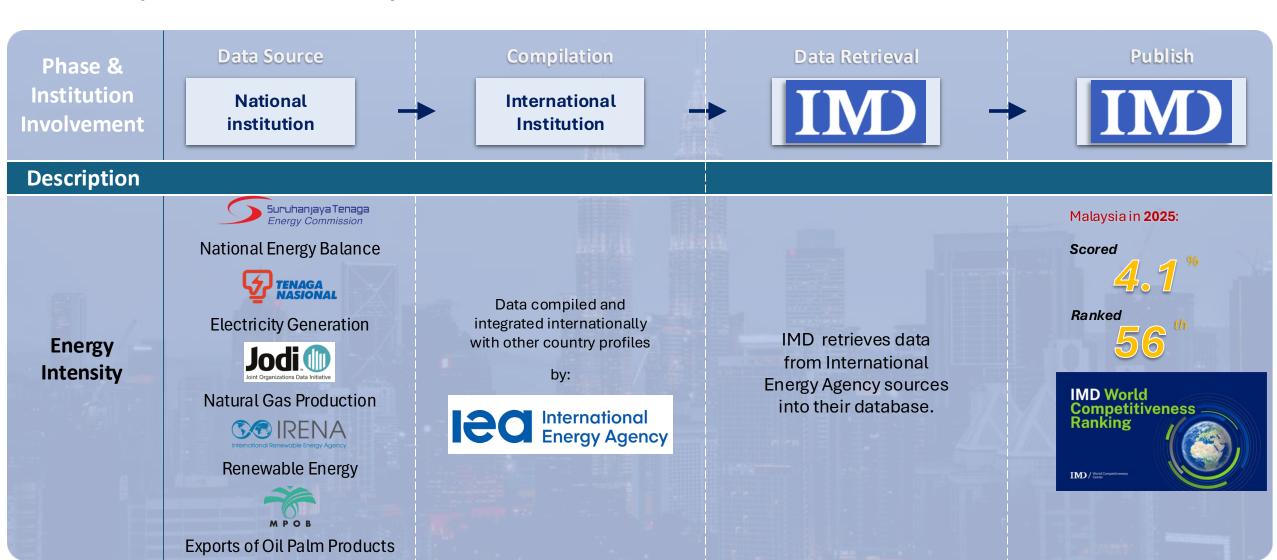
**Source:** IMD WCY (various years)







# **Indicator performance over the years**





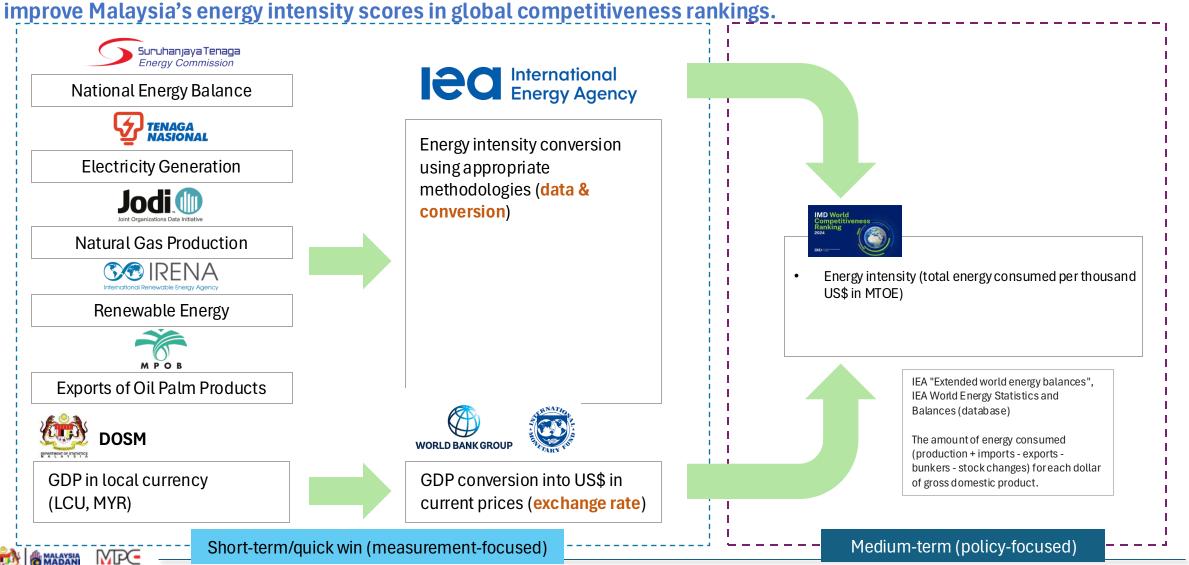






# **Recommendation for addressing the issue**

- Understanding both the measurement (short-term) and policy (medium-term) dimensions ensures a delivering a big push to







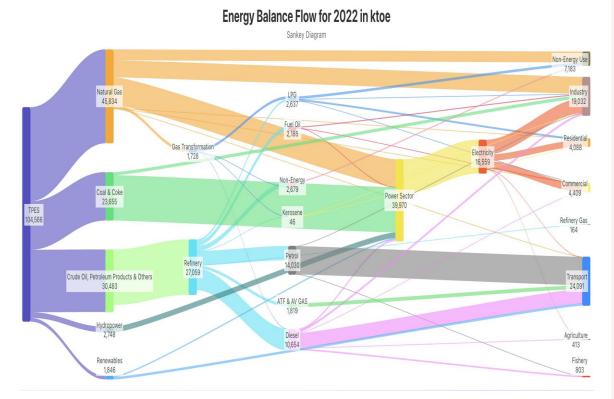


# Are we measure it right?

- Comparative structure between Malaysia and Australia.

Malaysia's current energy flow reporting still has room for improvement particularly in clearly distinguishing between domestic consumption and exports ...

# Malaysia

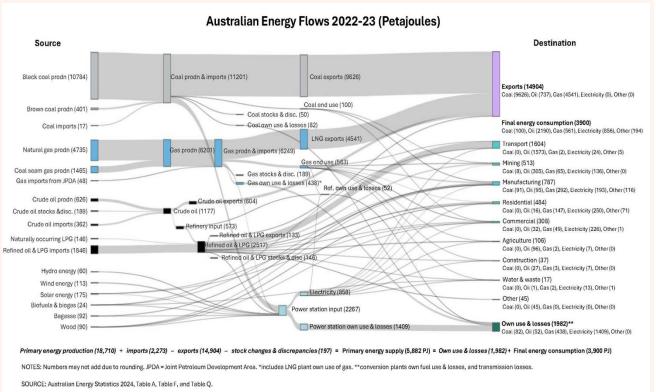


**Source:** Energy Commission, Malaysia

MALAYSIA MPC

... in contrast, Australia's approach already deducts exports upfront, offering a cleaner picture of actual national energy use. Improving this aspect of data structure will enhance accuracy in calculating indicators like energy intensity and allow for better international comparability.

## **Australia**



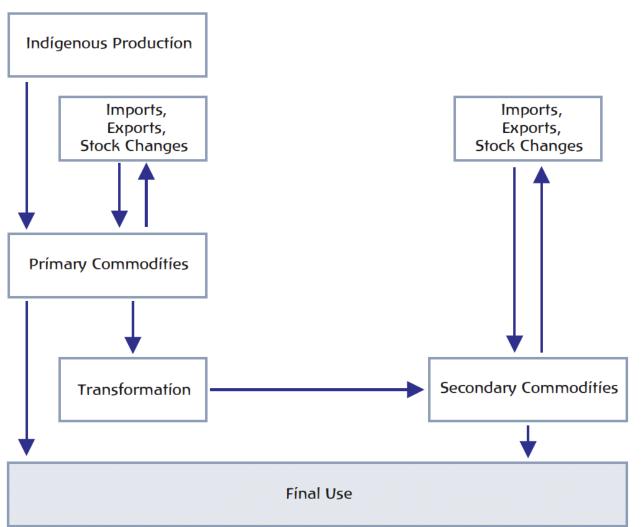
Source: Department of Climate Change, Energy, the Environment and Water, Australia





# Are we measure it right?

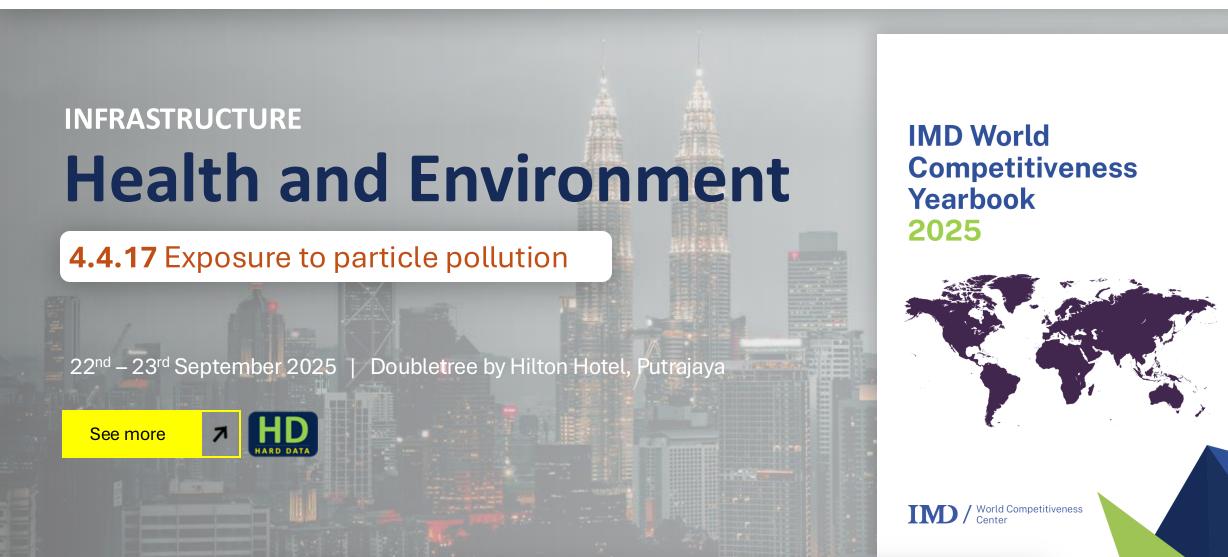
- The IEA framework tracks energy flows comprehensively—from production to final use.



Does Malaysia's current measurement system align with this structure, or are key components being overlooked?







Infrastructure

**Factor:** 

**Sub-Factor:** 

Indicator:

Health and Environment

4.4.16 CO2 emissions intensity







## **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
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- Prices (01)



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Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

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Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based on 69 countries in IMD WCY 2025 report.









## Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Particle pollution, also called particulate matter or PM, is a mixture of solids and liquid droplets floating in the air. Some particles are released directly from a specific source, while others form in complicated chemical reactions in the atmosphere. Particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into lungs and even the bloodstream. Cyprus: includes PM2.5 and PM10.

Source: IMD World Competitiveness Yearbook 2025 (page 601)

## INDICATOR MEASUREMENT

Technical notes in WCY2025 **DOES NOT INCLUDE** the detailed calculations pertaining to the indicator.

#### DATA SOURCE USED IN WCY 2025

The WCY 2025 report states that this indicator is derived from

- OECD "Green growth indicators"
- OECD Environment Statistics 2022 (database)
- National sources

Source: IMD World Competitiveness Yearbook 2025 (page 601)

Source: IMD World Competitiveness Yearbook 2025 (page 601)











## Indicator Overview sourced from IMD WCY 2025

8.30

8.67

9.05

9.16

9.34

9.61

9.77

9.84

10.40

10.88

11.03 11.25

12.14

12.38 12.95

13.69

14.01

14.10

14.21

14.22 14.23

Health & Environment EXPOSURE TO P POLLUTION	4.4.1 ARTICLE	
		-
Mean population exposure to PN per cubic meter	nz.5, Micrograms	
por cubic motor		
Ranking	micrograms	
01 Finland	4.96	
02 Iceland	5.64	
03 Sweden	5.70	
04 Norway	6.02	
05 Estonia	6.30	
06 New Zealand	6.49	
07 Canada	6.56	
08 Puerto Rico	7.25	
09 USA	7.84	
10 Ireland	8.13	
11 Australia	8.25	

	_
34 Slovenia	14.36
35 Italy	14.42
36 Greece	14.52
37 Hong Kong SAR	15.00
38 Mexico	15.05
39 Argentina	15.23
40 Slovak Republic	15.46
41 Venezuela	15.53
42 Croatia	16.04
43 Malaysia	16.29
44 Bulgaria	17.49
45 Poland	18.02
46 Indonesia	18.07
47 Botswana	19.36
48 Namibia	20.03
49 Philippines	20.15
50 Kazakhstan	20.51
51 Türkiye	22.55
52 South Africa	23.34
53 Chile	24.19
54 Kenya	24.48
55 Korea Rep.	25.85
56 Peru	27.18
57 Jordan	28.54
58 Thailand	30.83
59 Mongolia	32.62
60 China	34.84
61 UAE	36.13
62 Oman	39.52
63 India	48.30
64 Ghana	54.66
65 Bahrain	55.17
65 Kuwait	55.17
67 Nigeria	56.60
68 Saudi Arabia	56.78
69 Qatar	76.70

#### WHAT DOES THE SCORE INDICATE?

The lower the value, the higher the ranking.

#### **RATIONALITY?**

- Exposure to fine particulate matter (PM2.5) poses significant health risks, directly impacting a nation's competitiveness, as both are recognised as primary concerns by the World Health Organisation (WHO).
- PM2.5 is identified as the most robust indicator of adverse health impacts, particularly mortality, leading to serious respiratory and cardiovascular diseases, with children and elderly people being most severely affected.
- A 2013 WHO assessment further concluded that outdoor particulate matter is carcinogenic to humans. Similarly, ozone exposure significantly impacts respiratory health, causing issues like breathing problems, asthma, and reduced lung function.
- Ultimately, managing these environmental and health challenges is crucial for a nation's ability to achieve sustainable "green growth" and maintain its competitive edge in 2025, where environmental sustainability is a critical dimension.



12 Portugal

13 Luxembourd

Switzerland 16 Lithuania

19 United Kingdom

Germany

21 Netherlands

Belgium

Austria

Brazil

Japan

30 Romania Hungary

Singapore 29 Taiwan (Chinese Taipei)

Colombia

25 Latvia

27 Cyprus

4 Denmark

17 France

18 Spain

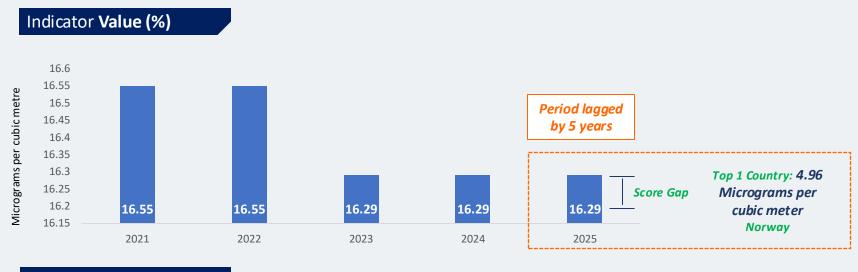




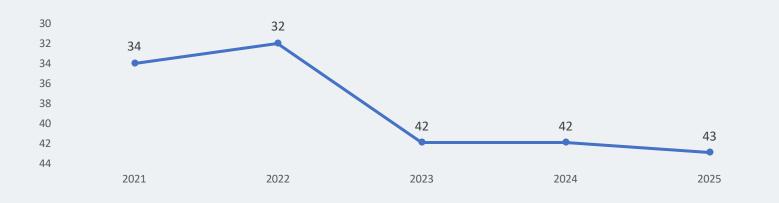




## Indicator performance over the years



#### Indicator Rank



## **HOW DO THE INDICATORS PERFORM ACROSS YEARS?**

- The World Health Organization (WHO) recommends an annual mean PM2.5 concentration not exceeding 5 µg/m<sup>3</sup>. Malaysia's score in 2025 was 16.29 μg/m³, ranking 43rd, showing a slight deterioration from 2021.
- Malaysia's 2025 score of 16.29 μg/m<sup>3</sup> is considerably higher than the WHO's recommended guideline of 5 μg/m³, indicating a substantial gap in meeting international air quality standards.
- Data from year 2023 onwards are using 2020 report.

**Source:** IMD WCY (various years)



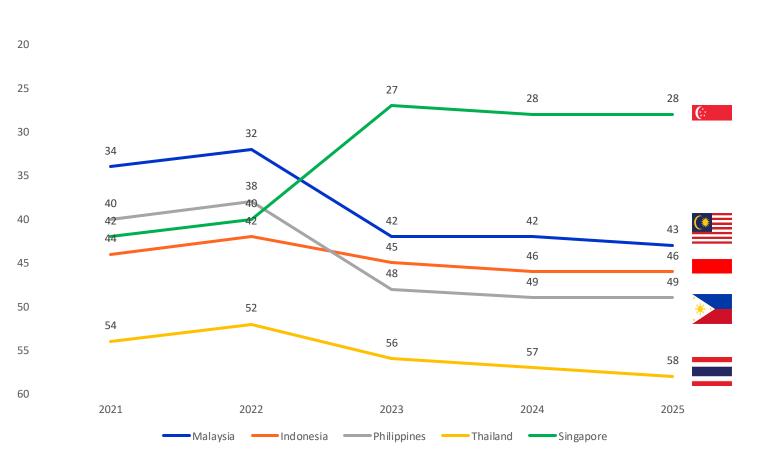








## **Indicator performance over the years**



## WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

- In 2025, Malaysia ranks 2nd among ASEAN countries for exposure to particle pollution, behind Singapore but ahead of Indonesia, the Philippines, and Thailand.
- Malaysia's value (16.29 μg/m³) remains above the WHO guideline of 5 μg/m³, reflecting ongoing air quality challenges.
- The stagnant trend from 2023–2025 reflects OECD's methodology, which relies on 2020 base year data for these periods, not actual new measurements

Source: IMD WCY (various years)



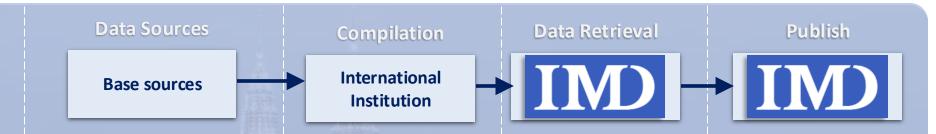






## Indicator footprint – tracking the data sources

Phase & Institution Involvement



#### **Description**

- Fine particulate matter (PM2.5) is a significant air pollutant with potentially the most severe adverse effects on human health compared to other pollutants. These particles, less than 2.5 micrometres in diameter, can be inhaled deeply into the lungs and even the bloodstream, leading to serious health problems.
- A 2013 WHO assessment concluded that exposure to outdoor particulate matter is carcinogenic to humans. The most severe effects are observed in children and elderly people, who are susceptible to both respiratory and cardiovascular diseases from PM2.5 exposure. The total societal costs from exposure to PM2.5 are substantial, with mortality costs typically accounting for the majority
- Satellite-based estimates of Aerosol Optical Depth (AOD) retrievals from instruments like MODIS, MISR, SeaWIFS, and **CALIPSO**
- **Chemical Transport Model** (CTM) simulations, such as GEOS-Chem and TM5-FASST. which use emissions data from sources like EDGAR, ECLIPSE, and Global Fire Emissions Database
- Ground-level measurement data from over 3000 monitoring sites globally used to calibrate the estimates from the satellite and





model data



ds environmental goals and sustainable dev

OECD "Green growth indicators"

https://www.oecd.org/en/topics/environmental-statistics-accounts-and-indicators.html

- **OECD Environment** Statistics 2022 (database)
- National sources

Malaysia in 2025:

Scored

hectares

Ranked











### **Indicator footprint – Environment at a Glance Indicators**

#### DEFINITION

- Fine particulate matter (PM2.5), is a particularly **harmful pollutant**, increasing the **risk of cardiovascular and respiratory diseases** even at moderate exposure levels. Black carbon, a major component of PM2.5, accelerates climate change and snowmelt. Major emissions sources include transport, industry, electricity generation, agriculture and residential heating.
- The guideline set by the World Health Organization (WHO) for PM2.5 is that annual mean concentrations should not exceed 5 micrograms per cubic meter, representing the lower range over which adverse health effects have been observed. The WHO has also recommended guideline values for emissions of PM2.5 from burning fuels in households.

#### DATA SOURCES

- OECD, "Air and climate: Air pollutants Inventories", OECD Environment Statistics (database), https://doi.org/10.1787/data-00598-en.
- OECD, "Air and climate: Exposure to PM2.5 fine particles countries and regions", OECD Environment Statistics (database), https://doi.org/10.1787/96171c76-en.
- OECD, "Air and climate: Mortality and welfare cost from exposure to environment-related risks", OECD Environment Statistics (database), https://doi.org/10.1787/c14fb169-en.
- OECD, "Environmental policy: Environmentally related tax revenue",
   OECD Environment Statistics (database),
   https://doi.org/10.1787/df563d69-en
- OECD, "Policy Instruments for the Environment (PINE)" (database), http://oe.cd/pinedatabase.









## **Indicator footprint – Data**

#### OECD Data Explorer • Exposure to air pollution

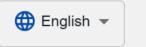


More about the OECD Data Explorer 
Platform and data status









## **OECD Data Explorer**

**Data source(s)**: Global Burden of Disease air pollutant data and Global Human Settlement Layer population data.

**AVAILABLE DATA UNTIL 2020** 

Back to the search results

#### Refine your data selection:

Time period	31
Reference area	59
Measure	1
Exposure levels (WHO Air Quality Guidelines)	
Unit of measure	

1334 data points selected in this dataset with:



#### Exposure to air pollution

The exposure to air pollution dataset is a global assessment of air pollution data to monitor population exposure to three key air pollutants, i.e. fine particulate matter (PM2.5), ozone (O3) and nitrogen dioxide (NO2). By using geospatial data with high spatio-temporal resolution, it develops a set of internationally comparable and yearly indicators with a long time series from 1990 to 2020. Please see the 2016 <a href="working paper">working paper</a> for a more complete description of the methods. A forthcoming working paper reviewing current data sources and updating methods is scheduled for to be released in 2024.







## Indicator footprint - Methodology

<u>Population Exposure to Fine Particles (EN)</u>

MEASUREMENT & REPORTING

OECD Green Growth Papers 2016-02



# Population Exposure to Fine Particles

METHODOLOGY AND RESULTS FOR OECD AND G20 COUNTRIES



- The preferred methodology for producing internationally harmonised indicators of PM2.5 exposure is a hybrid approach.
- This approach combines satellite-based estimates (Aerosol Optical Depth retrievals from instruments like MODIS, MISR, SeaWIFS, and CALIPSO), chemical transport models (like GEOS-Chem and TM5-FASST), and ground-level monitoring data.
- This hybrid method overcomes the limitations of purely ground-based data (limited geographic coverage, comparability issues) and improves the accuracy of remote sensing estimates, particularly in areas without extensive ground monitoring like rural regions.
- The resulting PM2.5 concentration data reflects pollution from both combustion sources and airborne mineral dust, which are both relevant from a human health perspective







## Indicator footprint - Methodology

- Data on PM2.5 concentrations from the Global Burden of Disease (GBD) 2013 project were used for years spanning 1990-2013.
- These estimates are combined with population data from NASA's SEDAC Gridded Population of the World (GPWv4).
- The indicators can be generated at national, sub-national (macro-region), and metropolitan area levels, using OECD Territorial Classifications or alternative boundary datasets

#### Limitations to these estimates:

- Potential for overestimation or underestimation in certain locations due to the global calibration function. For example, in 2012 and 2013, estimates for some high-altitude areas in countries like Austria, Switzerland, and Japan were overestimated.
- Conversely, exposure might be underestimated in some small cities with low surrounding concentrations or in urban areas with high winter-time emissions due to limited satellite retrievals.
- The 0.1° resolution of the concentration data can lead to underestimation in PM2.5 exposure for very small cities
- Concentration data may be missing for areas like snow-covered regions, small islands, and coastlines where AOD measurements are unreliable. While country-level coverage is generally good (95-100%), some regions may have limited data coverage, such as Valle D'Aosta in Italy (around 6% population coverage)

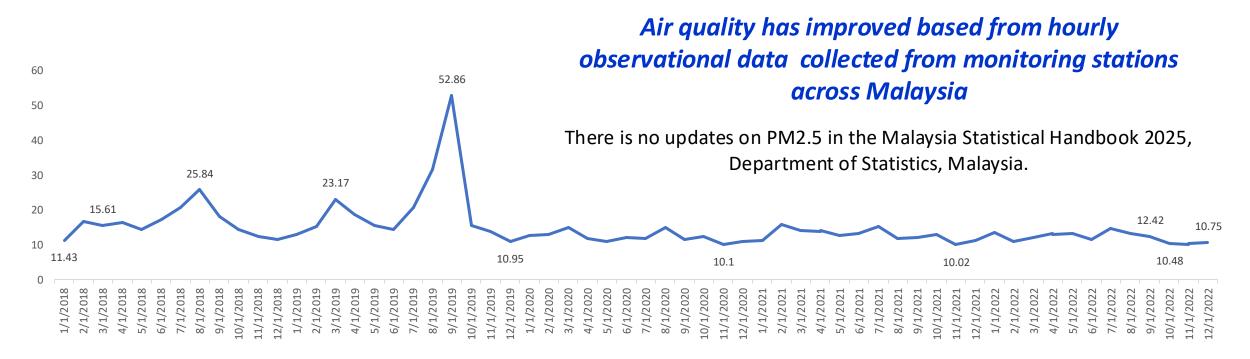




# PM.25

#### **National Data**

#### Average monthly concentration of key air pollutants



Source: https://open.dosm.gov.my/data-catalogue/air\_pollution?pollutant=pm-2-5&visual=table









## **Way Forward**

# To determine ways the report produced by OECD can be updated using the recent data or to use national source to update WCY- based on agreed methodology

Indicator	2021	2022	2023	2024	2025
Exposure to particle pollution					
Base Year	2019	2019	2020	2020	2020
Top 1 Country- Finland	5.64	5.64	4.96	4.96	4.96
Malaysia	16.55	16.55	16.29	16.29	16.29

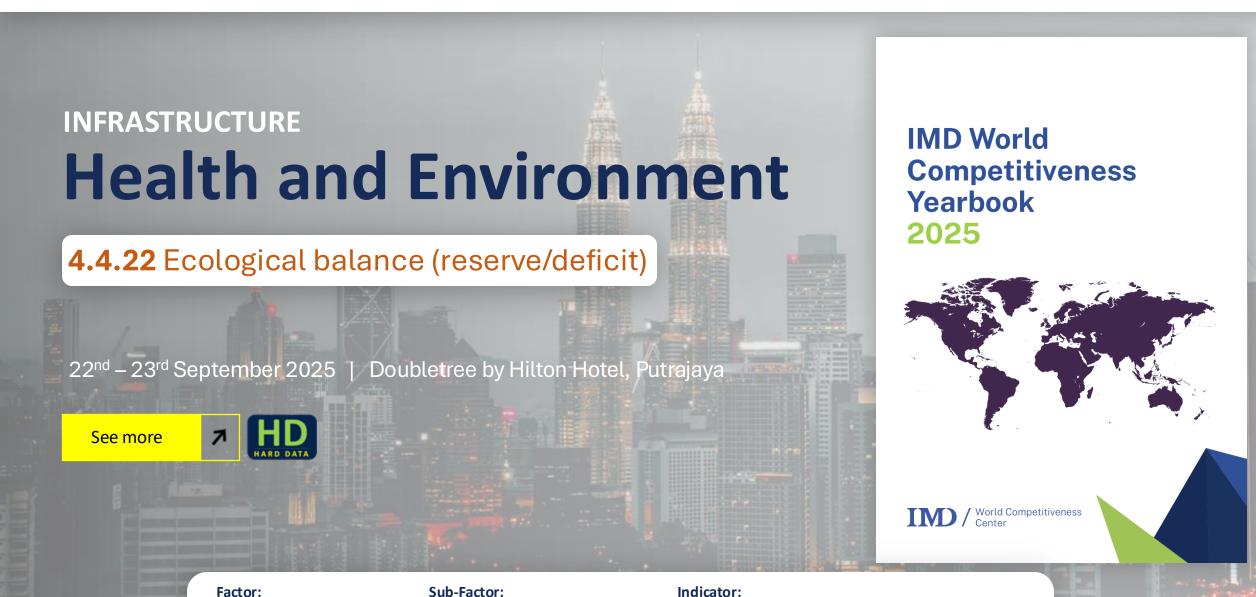


**Health and Environment** 

4.4.22 Ecological balance (reserve/deficit)



Infrastructure









## **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Health and Environment**

Reviews public health standards and environmental sustain ability efforts.

<u>ln</u>	<u>dicators</u>	<u>Score</u>	<u>Ranking</u>
1.	Energy intensity	146	60
2.	CO2 emissions intensity	708.8	61
3.	Exposure to particle pollution	16.29	43
4.	Renewable energies (%)	4.1	56
5.	Ecological balance (reserve/deficit)	-2.18	40
6.	Food waste	210.0	67
7.	Environment-related technologies	0.04	33
8.	Environmental performance index	41.0	57

Rank are based on 69 countries in IMD WCY 2025 report.

Figure in bracket () refers to rank in IMD WCY 2025 report.









## Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Ecological deficit / reserve is the **difference between the biocapacity and Ecological Footprint** of a region or country. An ecological deficit occurs when the **Footprint of a population exceeds the biocapacity of the area available to that population**. Conversely, an ecological reserve exists when the biocapacity of a region exceeds its population's Footprint. If there is a regional or national ecological deficit, it means that the region is importing biocapacity through trade or liquidating regional ecological assets. In contrast, the global ecological deficit cannot be compensated inrough trade, and is therefore equal to overshoot by definition.

Source: IMD World Competitiveness Yearbook 2025 (page 601)

#### **INDICATOR MEASUREMENT**

- Technical notes in WCY2025 DOES NOT INCLUDE the detailed calculations pertaining to the indicator.
- However, the calculation can be simplified as follows:

#### **Ecological Balance**

= (Biocapacity - Ecological Footprint)/ population

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator is derived from

© Global Footprint Network 2023

Source: IMD World Competitiveness Yearbook 2025 (page 601)

**Source:** IMD World Competitiveness Yearbook 2025 (page 601)









## Indicator Overview sourced from IMD WCY 2025

Health & Environment	4.4.22
ECOLOGICAL BALANCE	
(RESERVE/DEFICIT)	2022
Total biocapacity minus total footprint in global	

Total biocapacity minus total footprint in global hectares per capita

hectares per capita		
Ranking	hectare	es
01 Canada	6.8	32
02 Finland	6.3	39
03 Mongolia	5.8	31
04 Brazil	5.6	3
05 Australia	5.2	24
06 Namibia	3.7	74
07 Sweden	3.5	8
08 New Zealand	3.0	)2
09 Latvia	2.2	21
10 Argentina	2.0	)1
11 Estonia	1.6	39
12 Colombia	1.6	31
13 Norway	1.3	35
14 Peru	1.3	31
15 Venezuela	3.0	34
16 Botswana	0.6	8
17 Puerto Rico	0.0	)9
18 Romania	-0.2	29
19 Nigeria	-0.3	35
20 Kenya	-0.4	2
21 Indonesia	-0.4	15
22 Lithuania	-0.4	16
23 Kazakhstan	-0.4	17
24 Bulgaria	-0.5	<del>0</del>
25 Chile	-0.6	31
26 India	-0.7	70
27 Philippines	-0.7	<b>78</b>
28 Ghana	3.0-	33
29 Mexico	-1.0	)8
30 Jordan	-1.0	)9

31 Croatia	-1.14
32 Thailand	-1.20
33 Hungary	-1.22
34 Ireland	-1.40
35 Slovak Republic	-1.49
36 France	-1.85
37 Türkiye	-1.92
38 South Africa	-1.94
39 Greece	-2.18
40 Malaysia	-2.18
41 Spain	-2.19
42 Portugal	-2.24
43 Slovenia	-2.30
44 United Kingdom	-2.54
45 Czech Republic	-2.56
46 Switzerland	-2.61
47 Poland	-2.63
48 Austria	-2.73
49 Cyprus	-2.81
50 China	-2.82
51 Germany	-2.88
52 Italy	-2.98
53 Denmark	-3.07
54 Japan	-3.41
55 USA	-3.74
56 Netherlands	-4.91
57 Saudi Arabia	-5.05
58 Korea Rep.	-5.17
59 Oman	-5.48
60 Belgium	-5.53
61 Singapore	-5.63
62 Bahrain	-7.62
63 Kuwait	-7.74
64 UAE	-8.17
65 Luxembourg	-9.73
66 Iceland	-10.12
67 Qatar	-12.09
- Hong Kong SAR	-
Taiwan (Chinaca Tainai)	

#### WHAT DOES THE SCORE INDICATE?

The higher the value, the higher the ranking.

#### **RATIONALITY?**

- The higher the ecological balance value, the better the ranking, as it reflects greater biocapacity relative to ecological footprint.
- Malaysia scored –2.18 in 2025, signalling an ecological deficit — the country consumes more natural resources than its ecosystems can regenerate.
- This persistent deficit highlights dependence on imports of biocapacity and overuse of domestic ecological assets

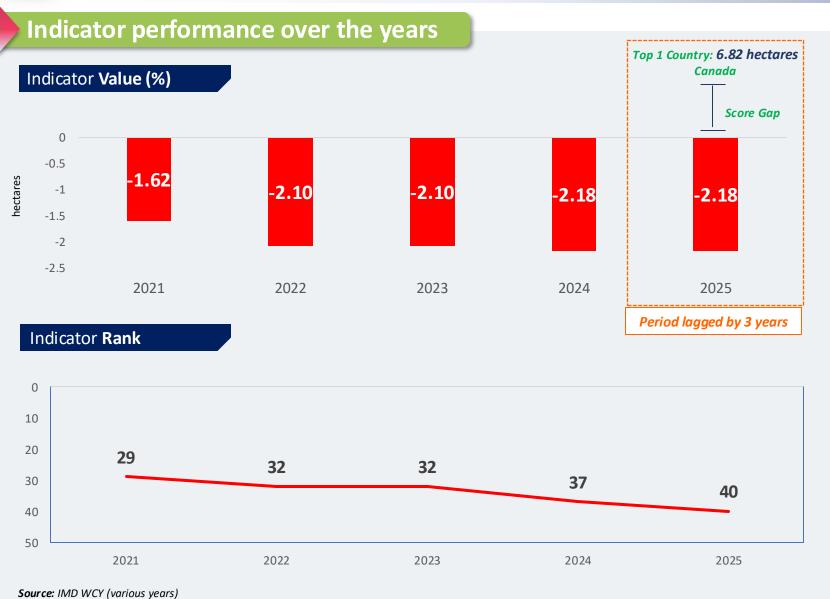




Taiwan (Chinese Taipei)







#### **HOW DO THE INDICATORS PERFORM ACROSS YEARS?**

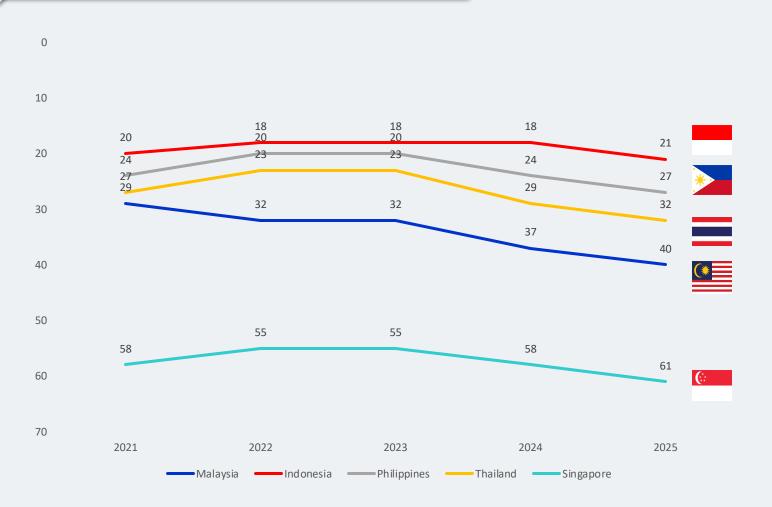
- Malaysia's ecological balance declined from -1.62 in 2021 to -2.18 in 2025, while its global ranking slipped from 29th to 40th.
- Canada remains the leading performer at 6.82 hectares, highlighting the gap between Malaysia and ecological reserve countries.
- The downward trend shows increasing ecological pressure, as national demand for natural resources continues to outpace regeneration capacity











## WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

- Within ASEAN, Malaysia holds a mid-level position, performing better than Indonesia and the Philippines but trailing behind Singapore and Thailand.
- By 2025, Malaysia ranked 40th globally, reflecting a loss of ground while several neighbours maintained or improved their positions.
- The results suggest Malaysia is lagging in sustainability transition, with its ecological deficit widening compared to regional peers.

**Source:** IMD WCY (various years)









## **Indicator footprint – tracking the data sources**

Phase & Institution Involvement





#### Description

■ The difference between the biocapacity and Ecological Footprint of a region or country. An ecological deficit occurs when the Footprint of a population exceeds the biocapacity of the area available to that population. Conversely, an ecological reserve exists when the biocapacity of a region exceeds its population's Footprint.

https://overshoot.footprintnetwork.org/annual-report-2023/



IMD retrieves data from Global Footprint Network 2023









## **Indicator footprint – The Global Footprint Network 2023**

**Ecological Balance = (Biocapacity - Ecological Footprint)/ population** 

**DEFINITION OF INDICATOR:** The difference between the **biocapacity** and **Ecological Footprint** of a region or country.

#### **BIOCAPACITY**

- The capacity of ecosystems to regenerate what people demand from those surfaces. Life, including human life, competes for space.
- The biocapacity of a particular surface represents its ability to regenerate what people demand, powered by solar-driven photosynthesis.
- In the National Footprint and Biocapacity Accounts, the biocapacity of an area is calculated by multiplying the actual physical area by the yield factor and the appropriate equivalence factor. Biocapacity is usually expressed in global hectares.

#### **ECOLOGICAL FOOTPRINT**

- A measure of how much area of biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates, using prevailing technology and resource management practices.
- The Ecological Footprint is usually measured in global hectares. It can also be measured in "number of Earths". Because trade is global, an individual or country's Footprint includes land or sea from all over the world.
- Without further specification, Ecological Footprint generally refers to the Ecological Footprint of consumption.
- Ecological Footprint is often referred to in short form as Footprint. "Ecological Footprint" and "Footprint" are proper nouns. Therefore, we capitalize them.







## Indicator footprint – The Global Footprint Network 2023

Simplifying the terms

**Biocapacity** 

Think of nature like a farm.

- Biocapacity is how much food, water, wood, and clean air this "farm" can naturally produce and regenerate every year.
- If your farm is big and healthy, it can produce a lot.
- If your farm is small or overused, it produces less.
- So, biocapacity = nature's yearly supply.

**Ecological Balance = (Biocapacity - Ecological Footprint)/ population** 

## **Ecological Footprint**

Now, think of people as customers coming to the farm.

- The ecological footprint is how much of that food, water, wood, and clean air people use up (including what is needed to absorb their waste).
- If people take only what the farm can grow back, things stay balanced.
- If people take more than the farm can produce, then we start "eating into savings" — forests shrink, fish stocks drop, pollution builds up.
- So, ecological footprint = people's yearly demand.

## **Balance**

- If biocapacity > footprint  $\rightarrow$  you have reserve (sustainable).
- If footprint > biocapacity → you have a deficit (unsustainable).

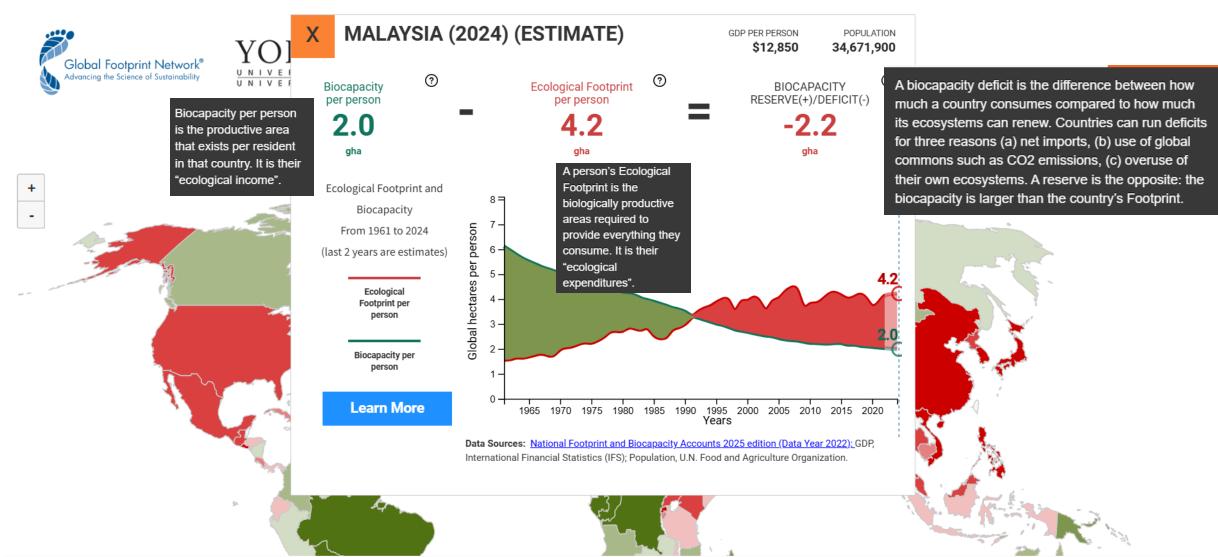








## **Indicator footprint – Data**









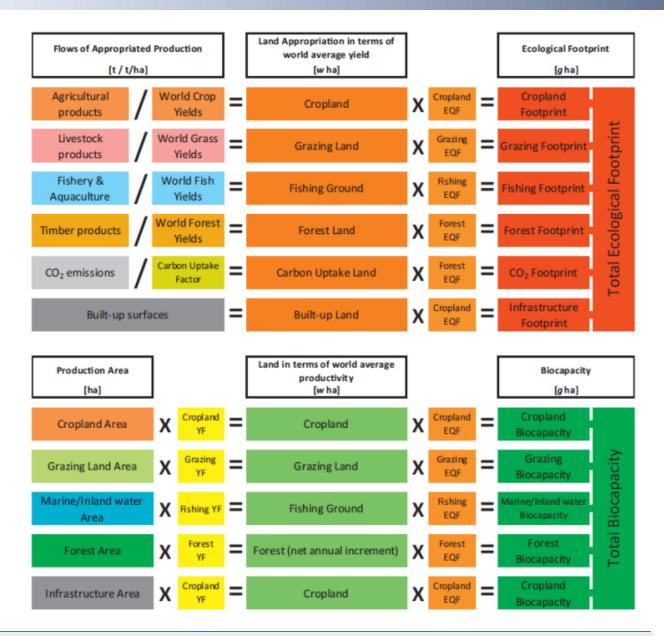


## Indicator footprint – Framework

## **Working Guidebook to the** National Footprint and Biocapacity Accounts



Research Department | April 2016 Updated: May 26, 2019







## **Indicator footprint – Data Sources**

#### Table 1: Data Sources for Carbon Footprint

Data	Worksheet	Data Source(s)
Emissions from fossil fuels	fossil_efp	Marland, G., T.A. Boden, and R. J. Andres. 2007. Global, Regional, and National Fossil Fuel CO2 Emissions. In Trends: A Compendium of Data on Global Change. Oak Ridge, TN: Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory and U.S. Department of Energy. http://wds.iea.org/wds/ (accessed 2015).
International trade quantities by commodity	carbon_efi_efe	UN Commodity Trade Statistics Database. http://comtrade.un.org/ (accessed 2015).
Carbon sequestration factor; Ocean Uptake Fraction; Carbon intensity of total primary energy supply; National and regional electricity carbon intensity values	cnst_carbon	Mancini, M. S., et al. (2015). Ecological Footprint: refining the carbon Footprint calculation. Ecological Indicators, 61: 390-403. S. Khatiwala Univ. of Columbia (email correspondence) Khatiwala, S., Primeau, F., Hall, T. 2009. Reconstruction of the history of anthropogenic CO <sub>2</sub> concentrations in the ocean. Nature 462: 346-350; Estimates based on data from IEA CO <sub>2</sub> Emissions from Fuel Combustion Database. 2015. http://wds.iea.org/wds/ (accessed 2015); International Energy Agency. 2015. Key World Energy Statistics. Paris: International Energy Agency (accessed 2015).
Embodied energy of traded commodities	carbon_efi_efe	Global Footprint Network internal database, available upon request. Database compiled using data from Ecoinvent Database, Hammond and Jones (2008), Thormark (2002), Interfacultaire Vakgroep Energie en Milieukunde Energy Analysis Program (IVEM 1999), and a collection of LCA data from the Stockholm Environment Institute at York University.
Emissions from gas flaring and sources other than fossil fuels	other_co2_efp	International Energy Agency. 2015. CO2 Emissions from Fuel Combustion. (accessed 2015).
Emissions from International Transport Bunker Fuels	Int_transport	IEA International Aviation Bunkers and International Marine Bunkers
International trade in electricity	electricity_trade	International Energy Agency. 2015. Key World Energy Statistics. Paris: International Energy Agency (accessed 2015).



Data	Worksheet	Data Source
Production (tonnes yr <sup>-1</sup> ) and area (ha)	crop_efp	FAO Production Database. http://faostat3.fao.org/download/Q/*/E (accessed 2015).
Imports and exports (1000 t yr <sup>-1</sup> )	crop_efi_efe cnst_ag_extr	FAO Trade Database. http://faostat3.fao.org/download/T/*/E (accessed 2015).
Technical conversion factors for derived agricultural products	extraction rate in cnst_ag_extr	FAO Technical Conversion Factors for Agricultural Commodities (2000). http://www.fao.org/fileadmin/templates/ess/documents/methodology/tcf.pdf
Water content of crops (%)	cnst_crop_factor	Fridolin Krausmann, IFF, Wien, Austria (personal communication)

#### Table 3: Data Sources for Grazing Footprint

Data	Worksheet	Data Source
Production quantities of livestock products, and livestock populations (tonnes year <sup>-1</sup> or heads or 1000 heads)	prodstat_livestock_n , resourcestat_n	FAO Production Database. http://faostat3.fao.org/download/Q/*/E (accessed 2015).
Imports and exports of livestock (1000 tonnes year-1)	livestock_efi_efe	FAO Trade Database. http://faostat3.fao.org/download/T/*/E (accessed 2015).
Feed Intake (kg dry matter head-1 day-1) and Feed Demand (tonnes dry matter year-1)	feed_demand_n	Haberl, H., K.H. Erb, F. Krausmann, V. Gaube, A. Bondeau, C. Plutzar, S. Gingrich, W. Lucht and M. Fischer-Kowalski. 2007. Quantifying and mapping the human appropriation of net primary production in earth's terrestrial ecosystems. <i>PNAS</i> 104: 12942-12947.
Dry matter percent (tonnes dry matter crop (tonne crop) <sup>-1</sup> )	residue_supply_n	Haberl, H., K.H. Erb, F. Krausmann, V. Gaube, A. Bondeau, C. Plutzar, S. Gingrich, W. Lucht and M. Fischer-Kowalski. 2007. Quantifying and mapping the human appropriation of net primary production in earth's terrestrial ecosystems. <i>PNAS</i> 104: 12942-12947.
Animal weights (tonnes head-1)	cnst_grazing	Vaclav Smil. 2000. Feeding the World: A Challenge for the Twenty-First Century. Cambridge: MIT Press.
Above-ground NPP %, edible % of above- ground NPP	cnst_grazing	Chad Monfreda (personal communication). 2008. SAGE, University of Wisconsin, Madison.
Number of Animals in stock (heads or 1000 heads)	resourcesat_livestoc k	FAO Production Database. <a href="http://faostat3.fao.org/download/Q/*/E">http://faostat3.fao.org/download/Q/*/E</a> (accessed 2015).









## Indicator footprint – Data Sources

Table 4: Data Sources for <u>Livestock Trade Calculations</u>

Data	Worksheet	Data Source
Extraction rates,	livestock_intensity_w,	FAO Technical Conversion Factors for Agricultural
Technical	feed_intensity_w,	Commodities (2000).
Conversion Factor	cnst_ag_extr	http://www.fao.org/fileadmin/templates/ess/documents/
		methodology/tcf.pdf
Feed requirements	feed_mix_n	Vaclav Smil. 2000. Feeding the World: A Challenge for the
for livestock		Twenty-First Century. Cambridge: MIT Press.
Pasture NPP,	cnst_grazing_npp	Zaks, D. et al 2007. From Miami to Madison: Investigating the
Pasture Area		relationship between climate and terrestrial net primary
		production. Global Biogeochem Cycles, 21.
Crop Residue Feed	cnst_livestock_residue,	Haberl et al 2007. Quantifying and mapping the human
Converstion Ratio,	cnst_livestock_demand	appropriation of net primary production in earth's terrestrial
Species-specific		ecosystems. PNAS, 104:31, 12942-12947.
daily feed intake		

Table 5: Data Sources for Fishing Grounds Footprint

Data	Worksheet	Data Source
Production, imports, exports (tons)	fish_efp, aquaculture_production	FAO FishStatJ Fisheries Statistical Database. <a href="http://www.fao.org/fishery/statistics/software/fishstatj">http://www.fao.org/fishery/statistics/software/fishstatj</a> (accessed 2015).
Trophic levels	fish_yield_w	Froese, R. and D. Pauly. (Eds.) 2016. FishBase World Wide Web electronic publication. <a href="http://www.fishbase.org">http://www.fishbase.org</a> (accessed 2016).
Primary Production (mgC/m2/day)	const_npp_EEZ_shelf_area	Sea Around Us Project. Fisheries Centre, Pew Charitable Trusts and the University of British Columbia. 2008. <a href="https://www.seaaroundus.org/data/#/eez">www.seaaroundus.org/data/#/eez</a> (accessed 2014).
Discard factor, transfer efficiency, carbon content of fish per tonne wet weight	cnst_fish	Pauly D. and V. Christensen. 1995. Primary production required to sustain global fisheries. <i>Nature</i> . 374: 255-257.
Sustainable catch	used in calculation of available NPP	Gulland, J.A. 1971. The Fish Resources of the Ocean. West Byfleet, Surrey, England: Fishing News.
Extraction rate	constant_fish_extr	Extraction Rates. FAO Fisheries Circular 847 revision 1. Commodity and Parent: FISHSTAT Plus 2.3. <a href="http://www.fao.org/fi/website/FIRetrieveAction.do?do">http://www.fao.org/fi/website/FIRetrieveAction.do?do</a> m=topic&fid=16073







## **Indicator footprint – Data Sources**

#### Table 6: Data Sources for Forest Products Footprint

Data	Worksheet	Data Source
Production, imports, exports (tonnes, m³ or m³ roundwood equivalent)	forest_efp	FAO ForeSTAT Statistical Database. http://faostat.fao.org/site/626/default.aspx#ancor (accessed 2015).
Derived product extraction rates (unit primary product / unit derived product)	constant_forest_extr	UNECE and FAO. 2005. European Forest Sector Outlook Study. <a href="http://www.unece.org/timber/docs/sp/sp-20.pdf">http://www.unece.org/timber/docs/sp/sp-20.pdf</a>
Net annual increment (m <sup>3</sup> ha <sup>-1</sup> yr <sup>-1</sup> )	constant_forest_incr ement	Global Forest Resources Assessment. 2010. Food and Agriculture Organization of the United Nations. Rome.  IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4: Agriculture Forestry and Other Land Use. (accessed 2008).  http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html

#### Table 7: Data Sources for Built-up Land Footprint

Data	Worksheet	Data Source
Infrastructure area (ha)	infrastructure_efp	Global Agro-Ecological Zones (GAEZ). FAO and International Institute for Applied Systems Analysis 2000. <a href="http://www.fao.org/ag/agl/agll/gaez/index.htm">http://www.fao.org/ag/agl/agll/gaez/index.htm</a> . (accessed 2015); Global Land Cover 2000. Institute for Environment and Sustainability, Joint Research Center and European Commission. Italy: IES. <a href="http://www-tem.jrc.it/glc2000/">http://www-tem.jrc.it/glc2000/</a> (accessed 2014); FAO ResourceSTAT Statistical Database. <a href="http://faostat3.fao.org/home/E">http://faostat3.fao.org/home/E</a> (accessed 2015); Global Land Use Database. Center for Sustainability and the Global Environment, University of Wisconsin-Madison. 1992. <a href="http://www.sage.wisc.edu:16080/iamdata/">http://www.sage.wisc.edu:16080/iamdata/</a> (accessed 2007).

#### **Table 8: Data Sources for Biocapacity Calculations**

Data Worksheet		Data Source	
First source for land areas of cropland, grazing land, forest, other wooded land, inland waters, and built-up land. Limited to EU member countries.	bioproductive_area (CORINE2000)	Corine Land Cover 2000. European Topic Centre on Land Use and Spatial Information, 2000. Barcelona: EIONET. <a href="http://www.eea.europa.eu/data-and-maps/data/corine-land-cover-2000-clc2000-seamless-vector-database">http://www.eea.europa.eu/data-and-maps/data/corine-land-cover-2000-clc2000-seamless-vector-database</a> (accessed 2015).	
Second source for data on cropland, grazing land, other wooded land, inland waters.	bioproductive_area (FAOSTAT)	FAO ResourceSTAT Statistical Database. <a href="http://faostat3.fao.org/home/E">http://faostat3.fao.org/home/E</a> (accessed 2015).	
Second source for built-up land areas.	bioproductive_area (GAEZ)	Global Agro-Ecological Zones. FAO and International Institute for Applied Systems Analysis 2000. <a href="http://www.fao.org/ag/agl/agll/gaez/index.htm">http://www.fao.org/ag/agl/agll/gaez/index.htm</a> . (accessed 2015).	
Third source for built-up land areas.	bioproductive_area (GLC)	Global Land Cover 2000. Institute for Environment and Sustainability, Joint Research Center and European Commission. Italy: IES. <a href="http://www-tem.jrc.it/glc2000/">http://www-tem.jrc.it/glc2000/</a> (accessed 2014).	
Fourth source for built-up land areas.	bioproductive_area (SAGE)	Global Land Use Database. Center for Sustainability and the Global Environment, University of Wisconsin-Madison. 1992. <a href="http://www.sage.wisc.edu:16080/iamdata/">http://www.sage.wisc.edu:16080/iamdata/</a> (accessed 2014).	
Area of marine continental shelf; Area of marine EEZ	const_npp_EEZ_shelf_area	Sea Around Us Project. Fisheries Centre, Pew Charitable Trusts and the University of British Columbia. 2008. <a href="https://www.seaaroundus.org/data/#/eez">www.seaaroundus.org/data/#/eez</a> (accessed 2014).	









## Way Forward

# Advocate for Country-Specific Extraction Rates for Derived Products

- The methodology currently uses world average extraction rates for derived products in calculating the Footprint of exports and consumption.
- If *Malaysia produces certain*derived products (e.g., palm oil,
  rubber, timber products) more
  efficiently than the world average,
  the current methodology could be
  overestimating its Footprint of
  exports and underestimating its
  Footprint of consumption.

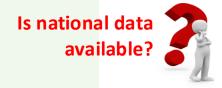
# Updating database to include current data

 Latest data is 2022. There is a need to update the database or the value will not change.

Malaysia should engage with Global Footprint Network researchers to explore ways to incorporate species and geographic variability and update this calculation.

OR

Ensure WCY reflects the latest data from national sources.



Global Footprint Network®

Advancing the Science of Sustainability









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**IMD World** Competitiveness Yearbook 2025





**Factor:** 

**Sub-Factor:** 

Indicator:

Infrastructure

Health and Environment

4.4.24 Environment-related Technologies







#### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
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- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Health and Environment**

Reviews public health standards and environmental sustain ability efforts.

<u>Indicators</u>		Score	<u>Rankin</u> g
1.	Energy intensity	146	60
2.	CO2 emissions intensity	708.8	61
3.	Exposure to particle pollution	16.29	43
4.	Renewable energies (%)	4.1	56
5.	Ecological balance (reserve/deficit)	-2.18	40
6.	Food waste	210.0	67
7.	Environment-related technologies	0.04	33
8.	Environmental performance index	41.0	57

Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based







Rank are based on 69 countries in IMD WCY 2025 report.





## **Indicator overview sourced from IMD WCY 2025 Report**

#### INDICATOR DEFINED IN THE REPORT

The IMD WCY 2025 report defines this indicator as the number of environment-related inventions is expressed as a percentage of environment-related inventions worldwide. This indicator allows the importance of inventive activity in a given country to be assessed in terms of its contribution to the global pool of inventions.

Source: IMD World Competitiveness Yearbook 2025

#### **INDICATOR MEASUREMENT**

Indicators of technology development are constructed by measuring inventive activity using patent data across a wide range of environment-related technological domains (ENV-TECH), including environmental management, water-related adaptation, and climate change mitigation technologies. The counts used here include only higher-value inventions (with patent family size  $\geq$  2).

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator may be derived from the following sources:

- OECD "Patents in environment-related technologies:
   Technology indicators"
- OECD Environment Statistics 2022 (database)

Source: IMD World Competitiveness Yearbook 2025 (page 578)







## Ranking as reported in IMD WCY 2025

#### WHAT DOES THE SCORE INDICATE?

ENVIRONMENT-RE	LATED
TECHNOLOGIES	
Development of environment-relate echnologies, % inventions worldwi	
Ranking	%
01 China	39.43
02 Japan	14.50
03 Korea Rep.	13.84
04 USA	12.66
05 Germany	4.14
06 Taiwan (Chinese Taipei)	2.04
07 United Kingdom	1.68
08 France	1.33
09 Canada	1.16
10 India	1.00
11 Italy	0.86
11 Sweden	0.86
13 Denmark	0.72
14 Netherlands	0.63
15 Spain	0.50
16 Austria	0.48
17 Belgium	0.39
18 Switzerland	0.37
19 Australia	0.36
20 Finland	0.30
21 Norway	0.28
22 Türkiye	0.25
23 Singapore	0.19
24 Poland	0.15
25 Brazil	0.14
26 Czech Republic	0.13
27 Saudi Arabia	0.12
28 Hong Kong SAR	0.08

30 New Zealand	0.06
32 Portugal	0.05
33 Colombia	0.04
33 Greece	0.04
33 Luxembourg	0.04
33 Malaysia	0.04
33 South Africa	0.04
38 Chile	0.03
38 Cyprus	0.03
38 Hungary	0.03
38 Slovenia	0.03
38 UAE	0.03
43 Bulgaria	0.02
43 Latvia	0.02
43 Romania	0.02
43 Slovak Republic	0.02
43 Thalland	0.02
48 Argentina	0.01
48 Croatia	0.01
48 Indonesia	0.01
48 Philippines	0.01
52 Bahrain	0.00
52 Botswana	0.00 2019
52 Estonia	0.00
52 Ghana	0.00
52 loeland	0.00
52 Jordan	0.00
52 Kazakhstan	0.00
52 Kenya	0.00 2021
52 Kuwait	0.00
52 Lithuania	0.00
52 Mongolia	0.00 2020
52 Namibia	0.00 2018
52 Nigeria	0.00 2019
52 Oman	0.00
52 Peru	0.00
52 Puerto Rico	0.00
52 Qatar	0.00
52 Venezuela	0.00

#### The higher the value, the higher the ranking.

#### **RATIONALITY?**

A higher share of environment-related technologies signals stronger innovation capacity in renewable energy, pollution control, water management, and climate change solutions. A lower share points to weak alignment with environmental priorities and underinvestment in green R&D.

In 2025, Malaysia ranks in the lower global tier with only a small share of environment-related patents. Despite policy commitments, progress is slowed by low R&D spending, reliance on resource-based industries, and weak industry–research linkages.

To improve its position, Malaysia needs to expand incentives for green R&D, strengthen collaboration between universities and industry, and leverage international partnerships. These steps are critical to accelerate innovation and secure competitiveness in the emerging green economy.

Source: IMD World Competitiveness Yearbook (WCY) 2025



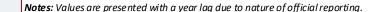


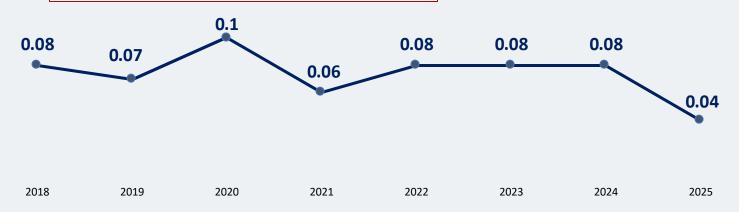




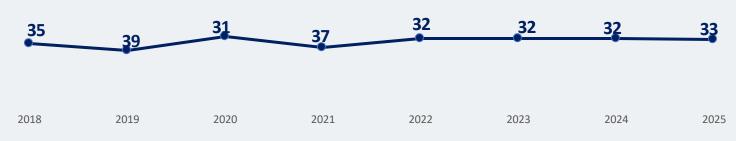
## **Indicator performance over the years**

#### Indicator Score (% of forest area)





#### Indicator Rank (of 69 countries)



**Source:** IMD WCY (various years)

## MALAYSIA ME

# HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's performance in environment-related technologies has remained weak, with only limited competitiveness over recent years. Patent activity in green technologies peaked at 0.10 in 2020 but dropped to 0.06 in 2021, stabilized at 0.08 from 2022 to 2024, and fell further to 0.04 in 2025.

In global rankings, Malaysia has moved between 31st and 39th place from 2018 to 2025, consistently placing in the lower third of 69 economies.

Overall, the downward trajectory underscores Malaysia's vulnerability in the fast-growing green economy. Stronger incentives, closer industry—research collaboration, and international technology transfer are needed if Malaysia is to avoid losing ground to regional peers that are advancing more rapidly in green innovation.





## **Indicator performance over the years**



# WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

As of 2025, Malaysia ranks 33rd out of 69 global economies in environment-related technologies, placing it 2nd among ASEAN countries, behind Singapore (23rd) but ahead of Thailand (43rd), Indonesia (48th), and the Philippines (48th).

Malaysia's ranking has been relatively stable over the past five years, shifting only slightly from 31st in 2020 to 33rd in 2025. This reflects limited progress in scaling up green innovation, with patenting activity in environment-related technologies remaining below the pace of global leaders.

Strengthening incentives for green technology development, enhancing cross-border collaboration, and aligning innovation policy with climate commitments will be critical to consolidate Malaysia's position as a regional frontrunner after Singapore.

**Source:** IMD WCY (various years)







## **Indicator footprint – tracking the data sources**

Phase & Institution Involvement

**Data Source** 

National Institution

Compilation

International Institution Classification & Estimation



Data Retrieval



Publish



### **Description**

Environmentrelated technologies Patent applications are filed by inventors and companies in Malaysia through



MyIPO (Intellectual Property Corporation of Malaysia).

Data from MyIPO and other national patent offices are integrated into EPO's PATSTAT (Worldwide Patent Statistical Database) or other patent authorities

by:







The OECD applies the ENV-TECH classification (over 200,000 IPC/CPC codes) to identify patents related to environmental technologies.

Measurement: % of patents in environmental technologies out of all "high-value inventions" (patent families with size ≥ 2) by national inventors

IMD extracts the dataset from OECD transforms them into scores & global rankings

Malaysia in 2025:

Scored

0.04%

Ranked

33"









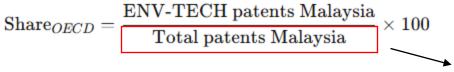
#### Interpreting Environment-related Technologies Patent Indicator: Domestic Share (OECD) and Global Share (IMD)

#### **OECD** = *Domestic relative strength*

Share of ENV-TECH patents out of Malaysia's total patents =  $^{\sim}8-10\%$  (2015–2021). The data does not reflect international standing → risk of overestimating national performance.

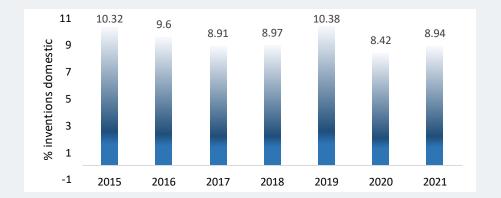
#### IMD = Global competitiveness position

Share of Malaysia's ENV-TECH patents out of global ENV-TECH patents = ~0.04% (2025). The data does not reflect internal dynamics  $\rightarrow$  risk of underestimating local efforts.



# Difference in denominator

#### **OECD:** Malaysia appears relatively active in its domestic context



Source: Estimated based on data sourced from OECD (various years).

#### IMD: Malaysia appears very small in the global innovation landscape



**Source:** Estimated based on data sourced from IMD WCY, MOM, IMF (various years).







## 4.4.24: Environment-related Technologies



### Recommendation to be considered -based on IMD ranking

Malaysia's green patent share is **moderate domestically but negligible globally**. While OECD data shows that around 1 in 10 Malaysian patents are environment-related, IMD highlights Malaysia's minimal contribution to the global green innovation landscape.



- Broaden the Patent Base
  - Increase Malaysia's total patent filings by incentivizing R&D and technology transfer.
- Strengthen Global Presence
  Encourage international filings (USPTO, EPO, WIPO) to raise Malaysia's visibility in the global patent system.
- Targeted Green Innovation Missions Launch focused R&D programs in renewable energy, waste-to-energy, and sustainable agriculture.



#### Establish a "Green Patents Acceleration Scheme"

Provide fast-track examination, reduced fees, and co-funding for Malaysian inventors filing environment-related patents both domestically and internationally. This can be targeted by doubling Malaysia's ENV-TECH filings by 2030 and raise global share from 0.04% → at least 0.1%.

















### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
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#### Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Health and Environment**

Reviews public health standards and environmental sustainability efforts.

<u>In</u>	<u>dicators</u>	<u>Score</u>	<u>Rankin</u> g
1.	Energy intensity	146	60
2.	CO2 emissions intensity	708.8	61
3.	Exposure to particle pollution	16.29	43
4.	Renewable energies (%)	4.1	56
5.	Ecological balance (reserve/deficit)	-2.18	40
6.	Food waste	210.0	67
7.	Environment-related technologies	0.04	33
8.	Environmental performance index	41.0	57

Figure in bracket () refers to rank in IMD WCY 2025 report.

Rank are based on 69 countries in IMD WCY 2025 report.







### Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Quantifies the environmental performance of a state's policies, by ranking countries on climate change performance, environmental health, and ecosystem vitality feeding into a national scale of how close countries are to established environmental policy targets.

Source: IMD World Competitiveness Yearbook 2025 (page 602)

### **Three main factors of EPI**

#### **Ecosystem Vitality**

#### **Ecosystem Vitality (45%)**

- Measures how well a country protects its natural environment.
- Includes forests, fisheries, agriculture, and biodiversity.
- Simple meaning: how good a country is at taking care of nature and resources.
- Malaysia ranking 147<sup>th</sup> among 180 countries in EPI report.
- Malaysia ranking 152th for Biodiversity & Habitat

#### **Climate Change**

#### Climate Change (30%)

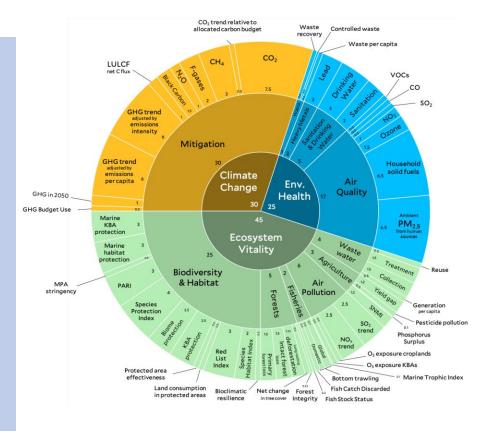
- Tracks progress in cutting greenhouse gas emissions and using cleaner energy.
- Simple meaning: how serious a country is about fighting global warming.
- Malaysia ranking 106<sup>th</sup> among 180 countries in EPI report

## Environmental Health

#### **Environmental Health (25%)**

- Focuses on protecting people from pollution and unsafe environments.
- Includes air quality, clean water, and waste management.
- Simple meaning: how safe and healthy the environment is for people to live in.
- Malaysia ranking 84<sup>th</sup> among 180 countries in EPI report

SE SERVICE SERVICE



Note: The EPI score combines these three areas into one measure









### Ranking as reported in *IMD WCY 2025*

#### WHAT DOES THE SCORE INDICATE?

	Ith & Environment	4.4.2
	IVIRONMENTAL PERI	FORMANCE
INI	DEX	202
EPI S	Score, quantifying the environmental	
	rmance of a state's policies	
Rank		score
_	Estonia	75.7
02	Luxembourg	75.1
03	Germany	74.5
	Finland	73.8
05	United Kingdom	72.6
	Sweden	70.3
07	Norway	69.9
08	Austria	68.9
09	Switzerland	67.8
10	Denmark	67.7
11	Greece	67.3
12	France	67.0
13	Netherlands	66.9
14	Belgium	66.8
15	Ireland	65.8
16	Czech Republic	65.5
17	Slovak Republic	65.1
18	Iceland	64.3
19	Poland	64.2
20	Lithuania	64.1
21	Spain	64.0
22	Australia	63.1
23	Slovenia	62.4
24	Croatia	62.3
25	Portugal	61.9
26	Japan	61.4
27	Canada	61.1
	Italy	60.3
	Latvia	60.2
	Hungary	59.8
_	New Zealand	57.3
	Romania	57.3
_	USA	57.2
34	Bulgaria	56.2

35 Cyprus	53.9
36 Venezuela	53.3
37 Brazil	53.0
37 Singapore	53.0
39 UAE	51.6
40 Oman	51.3
41 Korea Rep.	50.€
42 Taiwan (Chinese Taipei)	50.1
43 Colombia	49.7
44 Chile	49.6
45 Botswana	49.2
46 Kazakhstan	47.8
47 Jordan	47.3
48 Argentina	47.0
49 Qatar	46.8
50 Peru	46.5
51 Thailand	45.7
52 Kuwait	44.4
53 Mexico	44.2
54 Namibia	44.0
55 South Africa	42.7
56 Saudi Arabia	42.5
57 Malaysia	41.0
58 Nigeria	37.9
59 Mongolia	37.2
59 Türkiye	37.2
61 Ghana	36.9
61 Kenya	36.9
63 China	35.4
64 Bahrain	35.3
65 Indonesia	33.6
66 Philippines	32.1
67 India	27.6
- Hong Kong SAR	
- Puerto Rico	

### The higher the value, the higher the ranking.

#### **RATIONALITY?**

Ranking to show how well a country protects its environment and manages natural resources. It looks at things like clean air and water, healthy ecosystems, and efforts to reduce climate change. A higher EPI score or ranking means a country is doing a good job turning its environmental policies into real results that benefit people and nature. This matters because a clean and healthy environment supports the well-being of citizens and makes the country more attractive for business, tourism, and investment.

A lower EPI ranking suggests that a country is facing challenges like pollution, habitat loss, or weak enforcement of environmental rules. Countries that rank higher are seen as more sustainable and responsible, which can build trust with investors, trade partners, and the global community. That's why in this indicator, **the higher the ranking, the better**, it reflects stronger environmental performance, long-term resilience, and a better quality of life for people living there.

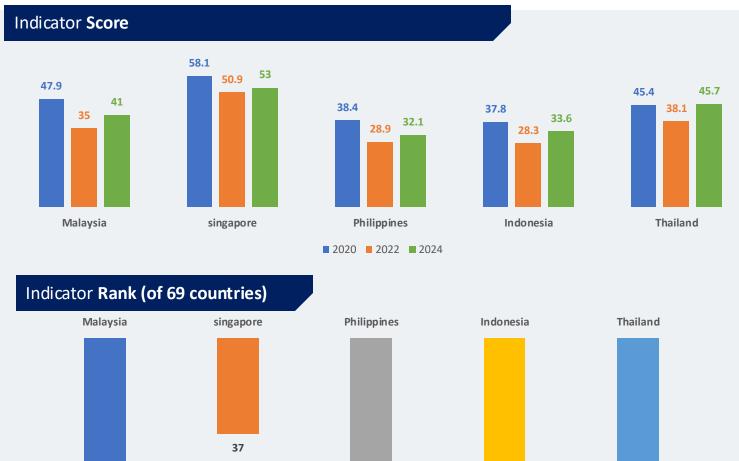








### Indicator performance over the years



The Environmental Performance Index (EPI) ranking in the IMD report is only available for **2025** because this is the first year that IMD has included EPI as a new indicator in its competitiveness framework.

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## HOW DO THE INDICATORS PERFORM ACROSS YEARS?

Malaysia's Environmental Performance Index (EPI) score has changed over the years. In 2020, the score was 47.9, showing a stronger performance compared to later years. However, in 2022 the score dropped sharply to 35, which means the country faced more challenges in meeting environmental targets during that period. By 2024, the score improved slightly to 41, showing that Malaysia made some progress and recovery, although it still has not reached the 2020 level. Overall, the trend tells us that Malaysia's environmental performance has been inconsistent, with a decline followed by a small improvement, and highlights the need for stronger and more consistent efforts in protecting the environment.

Malaysia is ranked 57th in the Environmental Performance Index (EPI) among countries worldwide. When compared to its ASEAN neighbors, Malaysia's position is in the middle range. Singapore leads the region with a much stronger performance at 37th place, showing its strong environmental policies and management. Thailand performs better than Malaysia, ranking 51st, while Malaysia comes next at 57th. On the other hand, the Philippines (66th) and Indonesia (65th) are ranked lower than Malaysia, showing that Malaysia is ahead of these two countries in terms of environmental performance.



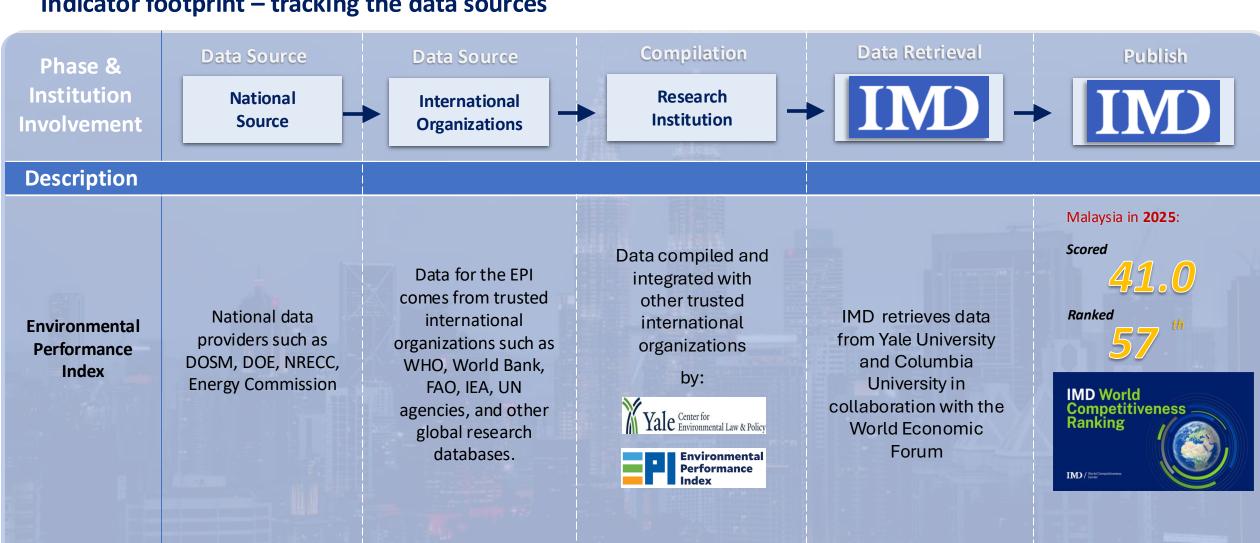


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### **Indicator footprint – tracking the data sources**



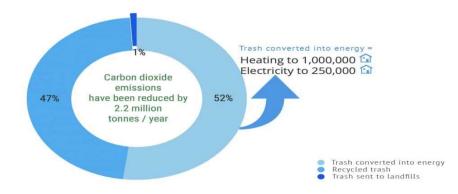




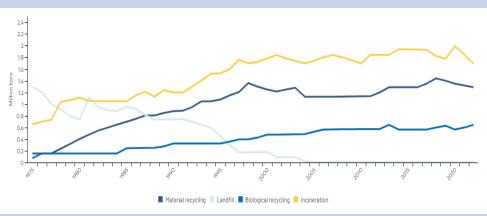


### **Benchmarking – Sweden (6th)**

#### From Waste to Resource: Lessons from Sweden



Source: European Environment Agency (EEA) Waste Management Country Profile 2025



2005, they were almost eliminated.

Instead, Sweden now relies on recycling, composting, and converting waste into energy. This shift has reduced pollution, cut greenhouse gas emissions, and turned waste into a valuable resource.

This graph shows how Sweden

45 years. In the 1970s, landfills

were the main method, but by

transformed its waste system over

#### **How Sweden Done**

#### 1. Active waste-to-energy (WTE)

Less than 1% of Sweden's household and industrial waste ends up in landfills most is either recycled or incinerated with energy recovery. This program integrates waste management into the energy sector, reducing fossil fuel use while cutting landfill reliance.

#### 2. Producer Responsibility Ordinance

Sweden made it mandatory for producers to take responsibility for the collection and recycling of packaging, electronics, and batteries.

#### 3. National Waste Prevention Program (2023–2030)

Current framework guiding Sweden toward a circular economy. Focuses on reducing hazardous waste, reusing materials, improving textile recycling, and promoting ecodesign.

**Source:** Nordic Council of Ministers











### **Areas of Improvement**

Malaysia has made progress in protecting the environment, but more needs to be done to improve its EPI ranking. The main challenges are weak enforcement, heavy reliance on outdated systems, and slow adoption of greener solutions. By strengthening policies, scaling up existing initiatives, and improving coordination, Malaysia can raise its performance and move closer to global best practices.

### What Malaysia can improve?



- Strengthen enforcement ensure existing environmental policies are followed consistently.
- Reduce landfill dependency increase recycling, waste separation, and waste-to-energy projects.
- Accelerate green transition expand renewable energy, cleaner transport, and sustainable practices.

### **Proposed Actions**



#### **Boost clean energy and transport**

Malaysia has set goals to increase renewable energy, but progress is still slow and the country relies a lot on coal and fossil fuels. To improve, Malaysia should speed up renewable energy projects like solar farms, small hydro, and biomass.

In transport, Malaysia's cities face heavy traffic and air pollution, especially in Klang Valley. Expanding public transport networks like MRT, LRT, and buses can reduce the number of private cars on the road. At the same time, Malaysia can promote electric vehicles (EVs) by giving tax breaks, building more charging stations, and encouraging government agencies and companies to switch to EV fleets.







## **Health and Environment**

**4.4.23** Food Waste

22<sup>nd</sup> – 23<sup>rd</sup> September 2025

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See more





**IMD World Competitiveness** Yearbook 2025





Factor:

Sub-Factor:

Indicator:

Infrastructure **Health and Environment**  4.4.22 Ecological balance (reserve/deficit)





### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and numan resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Health and Environment**

Reviews public health standards and environmental sustainability efforts.

<u>Indicators</u>		<u>Score</u>	<u>Ranking</u>
1.	Energy intensity	146	60
2.	CO2 emissions intensity	708.8	61
3.	Exposure to particle pollution	16.29	43
4.	Renewable energies (%)	4.1	56
5.	Ecological balance (reserve/deficit)	-2.18	40
6.	Food waste	210.0	67
7.	Environment-related technologies	0.04	33
8.	Environmental performance index	41.0	57

Rank are based on 69 countries in IMD WCY 2025 report.

Figure in bracket () refers to rank in IMD WCY 2025 report.







### Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Kg lost per capita, including household, service, and retail. Measuring food waste allows countries to comprehend the magnitude of the issue, thereby revealing the size of the opportunity, while establishing a baseline for tracking progress.

Source: IMD World Competitiveness Yearbook 2025 (page 601)

#### **INDICATOR MEASUREMENT**

- Technical notes in WCY2025 DOES NOT INCLUDE the detailed calculations pertaining to the indicator.
- However, the calculation can be simplified as follows:

#### **Food Waste**

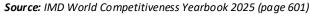
= (Household + Service + Retail) / population

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator is derived from

Food Waste Index Report (UN)

Source: IMD World Competitiveness Yearbook 2025 (page 601)









### Ranking as reported in *IMD WCY 2025*

Health & Environment	4.4.23
FOOD WASTE	2022
KG per capita, Including household, service and	
retail	
	Kg
01 Bulgaria 30	.0
02 Croatia 58	.0
03 Mongolia 60	.0
04 Slovenia 63	.0
05 Slovak Republic 69	.0
06 Hungary 72	0
06 Spain 72	.0
08 Poland 73	.0
09 Netherlands 76	.0
10 Finland 77	.0
11 Czech Republic 79	.0
11 Sweden 79	.0
13 Japan 81	.0
14 Estonia 84	.0
15 Belgium 85	.0
16 France 89	.0
16 Romania 89	.0
18 South Africa 93	.0
19 Botswana 96	.0
19 Ireland 96	.0
19 United Kingdom 96	.0
22 India 97	.0
23 Lithuania 98	.0
24 New Zealand 103	.0
25 Iceland 105	.0
26 Denmark 107	.0
26 Norway 107	.0
28 Germany 109	.0
28 Latvia 109	.0
30 Philippines 110	.0

31 Austria	115.0
32 Luxembourg	119.0
33 Greece	122.0
34 Kenya	123.0
35 Ghana	125.0
36 Venezuela	130.0
37 Italy	132.0
38 Korea Rep.	134.0
39 Namibia	136.0
40 Colombia	137.0
41 Hong Kong SAR	140.0
41 Kazakhstan	140.0
43 Argentina	142.0
43 China	142.0
45 Indonesia	143.0
46 Brazil	145.0
46 Chile	145.0
46 Puerto Rico	145.0
46 Qatar	145.0
50 Saudi Arabia	149.0
50 Singapore	149.0
52 Kuwait	151.0
52 Oman	151.0
52 UAE	151.0
55 Nigeria	154.0
56 Peru	155.0
57 Cyprus	157.0
57 Jordan	157.0
59 USA	159.0
60 Türkiye	162.0
61 Portugal	168.0
61 Switzerland	168.0
63 Thailand	176.0
64 Australia	177.0
65 Bahrain	184.0
66 Canada	189.0
67 Malaysia	210.0
68 Mexico	214.0
T : (0): T : 3	

#### WHAT DOES THE SCORE INDICATE?

The lower the value, the higher the ranking.

#### **RATIONALITY?**

- The lower the food waste value, the better the ranking, as it signifies as it shows more efficient food use, stronger sustainability awareness, and less strain on waste systems.
- In 2025, Malaysia recorded **210 kg of food waste per person**, placing it among the higher wastegenerating countries, reflecting inefficiencies in supply chains, household consumption, and disposal practices.
- High food waste contributes economic loss, environmental harm, and emissions. Cutting waste boosts efficiency, strengthens food security, and supports sustainability goals.





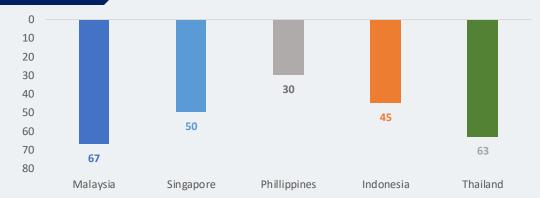
Taiwan (Chinese Taipei)



### Indicator performance over the years



### Indicator Rank (of 69 countries)



Source: IMD WCY

The Environmental Performance Index (EPI) ranking in the IMD report is only available for **2025** because this is the first year that IMD has included EPI as a new indicator in its competitiveness framework.

#### **HOW DO THE INDICATORS PERFORM THROUGHOUT 2025?**

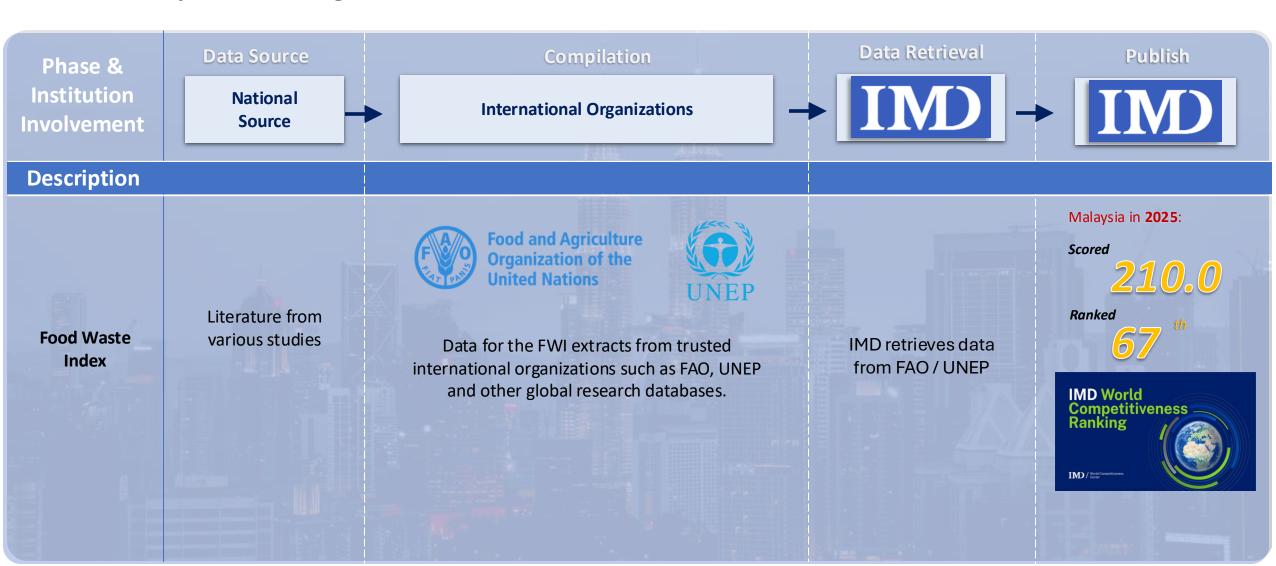
- In 2025, Malaysia generated 210 kg of food waste per person, ranking 67th out of 69 countries and placing among the highest waste producers.
- Compared with regional peers,
   Malaysia's level is higher than
   Singapore (149 kg), Indonesia (143 kg), Thailand (176 kg), and the
   Philippines (110 kg), reflecting
   inefficiencies in consumption and
   waste management.
- High food waste contributes to economic losses, environmental strain, and higher emissions, highlighting the need for greater sustainability awareness and stronger resource management.







### **Indicator footprint – tracking the data sources**







### Understanding Food waste based on United Nation

#### **Food Waste Definition**



**"Food waste"** is defined as food and the associated inedible parts removed from the human food supply chain.

"Removed from the human food supply chain" means one of the following end destinations: co/anaerobic digestion; compost / aerobic digestion; land application; controlled combustion; sewer; litter/discards/refuse; or landfill.

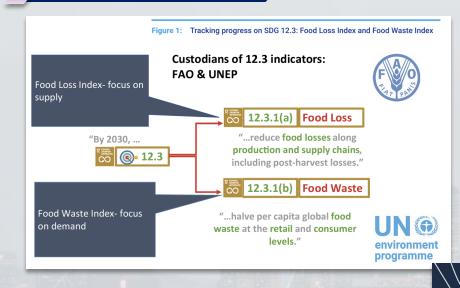
**"Food"** is defined as any substance – whether processed, semi processed or raw – that is intended for human consumption.

**"Food"** includes drink, and any substance that has been used in the manufacture, preparation or treatment of food. Therefore, food waste includes both:

"edible parts": i.e. the parts of food that were intended for human consumption, and

"inedible parts": components associated with a food that are not intended to be consumed by humans. Examples of inedible parts associated with food could include bones, rinds and pits/stones

#### Rationale of Food Waste





This report is a continuation of the previous report, namely the Food Waste Index Report 2021.

Source: United Nation (2024)



Source: United Nation (2024)





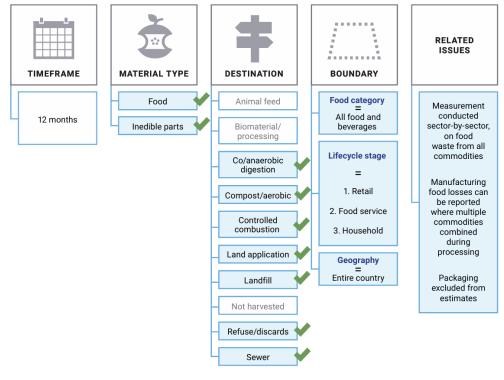


### **Understanding Food waste based on United Nation**

#### Scoping



Figure 3: Scope of the Food Waste Index (Levels 2 and 3) adapted from the Food Loss and Waste Accounting and Reporting Standard



Source: Hanson et al. 2016.

### Sectoral scope in food waste data coverage

Table 5: Appropriate methods of measurement for different sectors

s	ECTOR	METHODS OF ME	ASUREMENT				
	Manufacturing if included)	Direct measurement (for food- only waste streams)	Waste composition analysis	Volumetric assessment	Mass balance		
R	Retail					Counting/	
F	ood service					scanning	Diaries (for material
Н	lousehold						going down sewer, home composted or non-waste destinations)







### **Understanding Food waste based on United Nation**

### Sectoral scope in food waste data coverage

#### Table 26: Subsectors within retail sector

ISIC, REV. 4., 47-11	Retail sale in non-specialized stores with food, beverages or tobacco predominating
ISIC, REV. 4., 47-2	Retail sale of food, beverages and tobacco in specialized stores
ISIC, REV. 4., 47-81	Retail sale via stalls and markets of food, beverages and tobacco products

(Retail excludes ISIC, REV. 4., 46-30, Wholesale of food, beverages and tobacco – this is covered under the Food Loss Index.)

#### Table 36: ISIC, REV. 4., divisions relevant for "Manufacturing"

ISIC, REV. 4., 10	Manufacture of food products	This division includes the processing of the products of agriculture, forestry and fishing into food for humans or animals, and includes the production of various intermediate products that are not directly food products. The activity often generates associated products of greater or lesser value (for example, hides from slaughtering, or oilcake from oil production).
ISIC, REV. 4., 11	Manufacture of beverages	This division includes the manufacture of beverages, such as non-alcoholic beverages and mineral water, manufacture of alcoholic beverages mainly through fermentation, beer and wine, and the manufacture of distilled alcoholic beverages.

#### Table 29: Categorization of subsectors within food service

EXAMPLE SUBSECTORS	RELEVANT ISIC, REV. 4.,	EXAMPLES AND CHARACTERISTICS
Restaurants, cafés, bars	ISIC, REV. 4., 56: Restaurants, cafeterias, events catering, pubs and bars ISIC, REV. 4., 49-11; 49-21; 50-11; 50-21; 51-10; 52-23 for establishments in transport services	Restaurants typically serving meals from a menu. Can be for dining-in or eating-out purposes.  Bars and cafés may be predominantly beverage-serving establishments with more limited food options.  These may include establishments embedded in other services, such as restaurants and cafés in airports and train stations.
Staff catering and other canteens/ cafeterias	ISIC, REV. 4., 56: Restaurants, cafeterias, events catering, pubs and bars	Staff catering and other canteens typically have limited table service and involve selection from a limited menu of pre-prepared food.  They may be situated in other establishments such as education, healthcare, corporate or retail settings.
Accommodation	ISIC, REV. 4., 55-10; 55-90: Accommodation both short term (hotels) and long term (school dormitories, worker hostels)	Hotels and other short-term accommodation involve provision of meals, including breakfast, for residents and often options for non-residents.  Long-term accommodation may include canteen-style catering.  Worker hostels and other long-term accommodation may capture food waste that would otherwise be "household" waste in other countries or regions.
Education	ISIC, REV. 4., 85: Education	Food served in educational institutions such as schools and universities.  These often take the form of canteen-style catering serving most/all students with limited choices, but in some cases may operate more like cafés with variable customer numbers.
Healthcare	ISIC, REV. 4., 86: Human health activities* ISIC, REV. 4., 87: Residential care activities*	Hospitals and other healthcare settings may include meal services for patients and staff. In addition, canteens or cafés may be available on-site for visitors (where not covered by ISIC REV. 4., 56 above).  Residential care, such as for elderly people or those with mental health conditions, may serve most or all meals with limited choices.
Sports and events	ISIC, REV. 4., 56: Restaurants, cafeterias, events catering, pubs and bars	Events including sports games, music festivals and conferences. Typically, the service moves between different locations or is not active on all days of the year.
Security (military and prisons)	ISIC, REV. 4., 84-22; 84-23: Armed forces and prisons	Military bases and barracks and prisons. Typically these serve most or all of the meals consumed by those on site.
Markets / street food	ISIC, REV. 4., 56: Restaurants, cafeterias, events catering, pubs and bars	Street food, markets and "food trucks." These often involve outdoor serving and consumption with disposable packaging.

\* ISIC, REV. 4., codes 86 and 87 were not listed in the Food Waste Index Report 2021 but are of relevance for food service where not captured by ISIC, REV. 4., 56 (e.g. inpatient care in hospitals).







### Understanding Food waste based on United Nation

### Methodology used in the report

Figure 5: Summary of Level 1 modelling methodology



SEARCH AND COLLATE EXISTING DATA



FILTER DATA ON SCOPE AND APPLICABILITY TO CURRENT STUDY'S NEEDS



ADJUST SOME DATA FOR CONSISTENCY



EXTRAPOLATE FOR COUNTRIES WITHOUT DATA



ASSIGN CONFIDENCE RATING TO ESTIMATE

### Description

Step	Summary
Search and collate existing data	Reviewed published studies on food waste from various sources (household, food service, retail) globally since the 2021 report.
Filter data	Kept only studies using direct food waste measurements; excluded diary-based or proxy data studies due to reliability issues.
Adjust some data	Adjusted certain datapoints (e.g., only edible parts) to ensure comparability across different studies.
Extrapolate for countries without data	Used regional or income-based estimates to fill data gaps for countries without studies, scaling with UN population data.
Assign confidence rating	Rated each estimation's reliability (high, medium, low) based on factors like methodology, data quality, and adjustments.







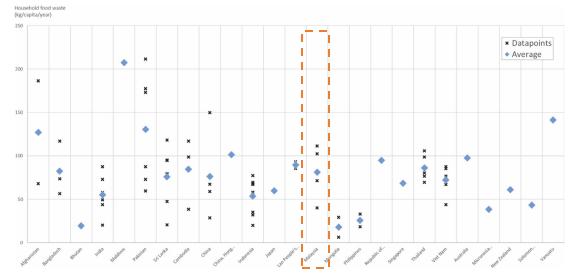
### **Understanding Food waste based on United Nation**

### The case of Malaysia

#### Table 16: Household food waste datapoints in the Asia Pacific region

COUNTRY	SOURCE	STUDY AREA	FOOD WASTE ESTIMATE (kg/capita/year)
	(Jereme et al. 2013)	Nationwide 112	
	(Watanabe 2012)	Bandar Baru Bangi	71
Malaysia	(Kulleh and Manaf 2023)	Sungai Asap, Belaga, Sarawak	81
	(Alias et al. 2014)	Sabah	40
ľ	(IIN-Hahitat 2021i)	Seremban	102

#### Figure 12: Distribution of household datapoints in the Asia Pacific region



Note: Where multiple datapoints exist, the mean (average) is taken and where only one datapoint exists, this is treated as the "average



### **Example of Household samples**

### **Annex 3: Table of household estimates**

This table is repeated in the Appendix, where tables of estimates for food service and retail can also be found.

REGION	M49 CODE	COUNTRY	HOUSEHOLD ESTIMATE (KG/ CAPITA/YEAR)	HOUSEHOLD ESTIMATE (TONNES/ YEAR)	CONFIDENCE IN ESTIMATE	
South-eastern Asia	96	Brunei Darussalam	76	34 109	Low confidence	
South-eastern Asia	116	Cambodia	85	1 419 831	Medium confidence	
South-eastern Asia	360	Indonesia	53	14 728 364	Medium confidence	
South-eastern Asia	418	Lao People's Dem. Rep.	89	673 831	Medium confidence	
South-eastern Asia	458	Malaysia	81	2 754 808	Medium confidence	
South-eastern Asia	104	Myanmar	78	4 221 946	Low confidence	
South-eastern Asia	608	Philippines	26	2 954 580	Medium confidence	
South-eastern Asia	702	Singapore	68	409 182	Medium confidence	
South-eastern Asia	764	Thailand	86	6 180 468	Medium confidence	
South-eastern Asia	626	Timor-Leste	78	104 419	Low confidence	
South-eastern Asia	704	Viet Nam	72	7 079 811	Medium confidence	







### **Understanding Food waste based on United Nation**

### **Datapoints taken from studies**

### **Annex 2: Table of datapoints**

### **Household datapoints**

SOURCE	COUNTRY	STUDY AREA	DESCRIPTION
(Jereme et al. 2013)	Malaysia		Table 1 cites the Ministry of Housing and Local Government (2011), estimating food waste generation by source. This was not findable by the bibliography nor through a direct internet search. As a result, we cannot have high confidence in the estimate.
(Watanabe 2012)	Malaysia	Bandar Baru Bangi	282 households were sampled across four neighbourhoods, which represent a mixture of different housing types (terraced housing, bungalows, flats). These were all in Selangor, described as a typical suburban area in the Kuala Lumpur area. Waste from a single day was sampled in each area, sourced from the normal disposal routine rather than asking households to dispose of their waste differently. Panel 3 shows a breakdown of food into "Unused food" (7.71% of total household waste), "General kitchen waste" (24.83% of total household waste), "big fruit peels" (10.32% of total waste). Although this has a large sample, it is geographically restricted to one area so can only have medium confidence when used for the whole of Malaysia.
(Kulleh and Manaf 2023)	Malaysia	Sungai Asap, Belaga, Sarawak	In this study among Orang Ulu community, a total of 150 households across three different longhouses were sampled (50 households from each). Each longhouse represented a different ethnicity group. Households were given plastic bags to separate wet and dry wastes, from which the waste was categorized into six categories and weighed. Waste was measured daily for 14 days. Results presented are overall. The authors state that "the food waste was mostly composed of vegetable stalks, fruit and vegetable peelings, and a little rice residue, which they would eventually use as their rearing and pets' food," and "some of the food wastes were also used as fertilizers by the villagers."

## **Annex 2: Table of datapoints**

### **Household datapoints**

SOURCE	COUNTRY	STUDY AREA	DESCRIPTION
(Alias et al. 2014)	Malaysia	Sabah	Plastic bags were distributed to 150 households in three water villages in Sabah. Households put their waste in the plastic bag and this was then collected and weighed daily. Once the waste was collected, the samples were sorted into six categories (food waste, paper, plastic, glass, metal and others), and the weights for each category was recorded.
(UN-Habitat 2021j)	Malaysia	Seremban	The method is not detailed in the "factsheet," but the Waste Wise Cities Tool has a separate methodology guidance document. This suggests a sample size of 90 households (10 households from 3 survey areas, with 3 income groups each), increasing to 150 households (5 survey areas) in megacities. Bags were given to households to store all waste generated in the home for eight days, with the first day discarded as it may involve wastes generated before the start of the survey. The waste was sorted into 12 categories, including "kitchen/canteen" as distinct from "garden/park" and "wood." Separate results are presented for each income grouping, with the average kilograms per capita of food waste taken from the data presented in the factsheet.







### **Understanding Food waste based on United Nation**

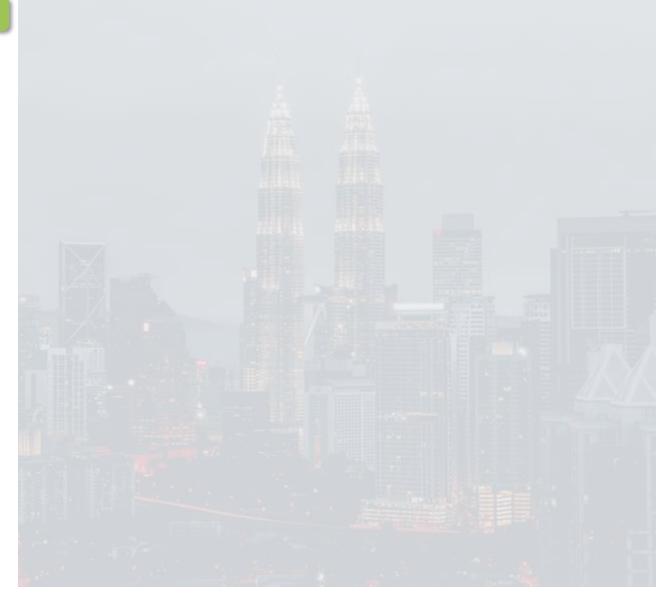
### Datapoints taken from studies

### **Food service datapoints**

SOURCE	COUNTRY	STUDY AREA	DESCRIPTION
(Jereme et al. 2013)	Malaysia		Table 1 cites the Ministry of Housing and Local Government (2011), estimating food waste generation by source. This was not findable by the bibliography nor through a direct internet search. As a result, we cannot have high confidence in the estimate.
(Zakarya et al. 2022)	Malaysia	Desa Pandan Kuala Lumpur	In the study, 10 restaurants in Kuala Lumpur were given 120-litre garbage bags every day for a six-day period, into which they were asked to put all food waste. The food waste was then sorted into food categories and into cooked and uncooked food. Note that the weighing was over the period in which Chinese new year celebrations occurred so may not be representative of a "normal" week.

### **Retail datapoints**

SOURCE	COUNTRY	STUDY AREA	DESCRIPTION
(Jereme et al. 2013)	Malaysia		Table 1 cites the Ministry of Housing and Local Government (2011), estimating food waste generation by source. This was not findable by the bibliography nor through a direct internet search. As a result, we cannot have high confidence in the estimate.









### Way Forward

#### **Datapoints taken from studies**



This study invites Member States of the United Nations to develop robust nationally representative baselines, and provides the methodology to do so. As more national baseline studies are carried out, and as countries collect consistent data over time, future Food Waste Index reports will reflect progress made by countries and will spotlight solutions that are contributing to the highest reductions.



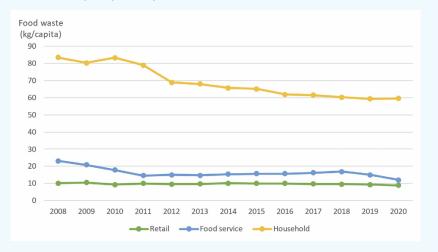
Recommendation from UNEP. Food Waste Index Report 2024

#### Box 5: Country profile: Japan

In Japan, consistent reporting of food waste has allowed for the development of time-series data from 2008 onwards. For households, the Ministry for Environment conducts annual surveys to collect waste generation and recycling data via municipalities that have conducted waste compositional analyses. Some municipalities conduct additional research on the amount of edible parts of food waste, which since 2012 have been used to form the national estimate of edible food waste. Food-related businesses that generate more than 100 tonnes of food waste per year, including retailers and food service, are mandated to report this waste to the government in accordance with the Food Recycling Law, data from which is used to inform estimates for smaller businesses.

As a result of this consistent approach, Japan has a rich insight into how food waste has changed over time. This data was reported to UNEP as part of the SDG 12.3.1(b) pilot data collection. It gives evidence of the impact of Japan's food waste reduction activities: from 2008 to 2019 (discounting 2020 data due to possible impacts of the COVID-19 pandemic), Japanese food waste was reduced by 28 per cent on a per capita basis, going down as much as 35 per cent in food service and 29 per cent in households (Figure 13). Including 2020 data, total food waste reduced by 31 per cent from 2008 (UNEP 2023).

Figure 13: Food waste per capita in Japan over time



Source: UNEP 2023.









### Way Forward

# Targeted Food Waste Reduction Campaigns (Including Ramadan & Festive Seasons)

- Initiative: Launch a nationwide awareness and behavioral change campaign focusing on reducing food shopping and over-preparation during Ramadan and other festive seasons. This can include public service announcements, collaboration with mosques, supermarkets, and eateries to promote responsible consumption, and introducing "smart shopping guides" to households.
- Rule/Regulation: Impose mandatory food waste reporting for major supermarkets, hotels, and event caterers during festive seasons, with incentives for those that successfully reduce food waste volumes.

## Strengthening Food Supply Chain Efficiency

- Initiative: Develop a "Farm-to-Fork Digital Tracking System" that links farmers, distributors, retailers, and consumers, to optimize logistics and reduce food losses before reaching markets. This improves resource efficiency and reduces food waste at production and retail levels.
- Rule/Regulation: Introduce food donation and redistribution laws, requiring supermarkets and large food retailers to donate unsold but safe food to charities or food banks, rather than discarding it.













### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Basic Infrastructure**

that meet business needs.

<u>In</u>	<u>dicators</u>	Score	<u>Ranking</u>
1.	Arable land	2,534	24
2.	Water resources	16,918	12
3.	Population – growth	2.10	10
4.	Dependency ratio	39.5	08
5.	Roads	1.57	20
6.	Railroads	0.005	49
7.	Total indigenous energy production (%)	97.1	22
8.	Electricity costs for industrial clients	Confidential	18

Rank are based on 69 countries in IMD WCY 2025 report.

Figure in bracket () refers to rank in IMD WCY 2025 report.







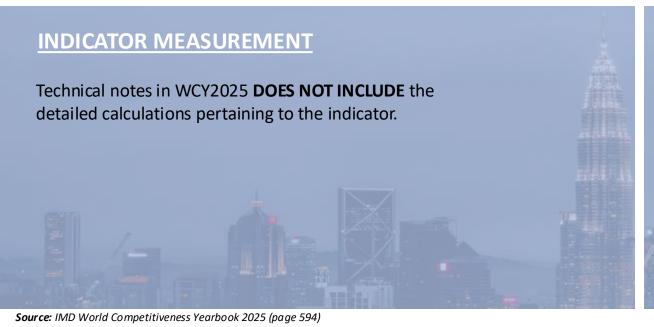
### Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Total length of public lines worked at end of year. Data may not be always comparable between countries.

- Hong Kong SAR: Includes heavy rail, light rail, tram, peak tram and airport automated people mover.
- Qatar: The Qatar metro starts operating in mid of 2019.
- Singapore: Rapid Transit Systems.
- Taiwan (Chinese Taipei): incl. THSRC and TRA since 2008, TRA only for previous years.

**Source:** IMD World Competitiveness Yearbook 2025 (page 594)



#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator is derived from

- World Development Indicators (World Bank)
- National sources

Source: IMD World Competitiveness Yearbook 2025 (page 594)







### Ranking as reported in *IMD WCY 2025*

#### WHAT DOES THE SCORE INDICATE?

RAILROADS 202	23

Density of the network, km per square km

01 Hong Kong SAR	0.744
02 Singapore	0.355
03 Czech Republic	0.119
04 Belgium	0.118
05 Luxembourg	0.105
06 Switzerland	0.103
07 Germany	0.094
08 Hungary	0.075
09 Slovak Republic	0.074
10 Netherlands	0.073
11 Poland	0.060
12 Slovenia	0.059
13 Austria	0.059
14 Italy	0.057
15 Taiwan (Chinese Taipei)	0.052
16 Japan	0.052
17 Korea Rep.	0.051
18 France	0.050
19 Denmark	0.046
20 Romania	0.045
21 United Kingdom	0.042
22 Bulgaria	0.036
23 Spain	0.032
24 Croatia	0.030
25 Lithuania	0.029
26 Latvia	0.028
27 Portugal	0.027
28 Ireland	0.023
29 Estonia	0.023
30 India	0.021
31 Sweden	0.018
32 Jordan	0.018

33 Finland	0.017
34 South Africa	0.017
35 New Zealand	0.015 2021
36 Qatar	0.015
37 USA	0.015
38 Türkiye	0.015
39 Greece	0.014
40 Mexico	0.014
41 China	0.012
42 Thailand	0.011
43 UAE	0.010
44 Argentina	0.006 2022
45 Norway	0.006
46 Kenya	0.006
47 Kazakhstan	0.006
48 Ghana	0.005 2022
49 Malaysia	0.005
50 Brazil	0.004 2021
51 Namibia	0.003
52 Chile	0.003
53 Colombia	0.003
54 Canada	0.003
55 Indonesia	0.003
56 Nigeria	0.002
57 Puerto Rico	0.002 2021
58 Australia	0.002
59 Botswana	0.002
60 Saudi Arabia	0.001 2022
61 Mongolia	0.001
62 Philippines	0.000
63 Kuwait	0.000 2021
64 Bahrain	0.000
64 Cyprus	0.000
64 Iceland	0.000
- Oman	
- Peru	-
<ul> <li>Venezuela</li> </ul>	-

#### The higher the value, the higher the ranking.

#### **RATIONALITY?**

- The availability and efficiency of transportation networks, including railroads, are considered a traditional and necessary determinant of competitiveness for an economy.
- A well-developed railroad network facilitates the movement of goods, raw materials, and people, thereby directly supporting business operations and economic activity.
- Efficient movement of people, whether for daily commuting or inter-city travel, ensures a readily available workforce, supports business travel, and enhances overall labor market efficiency. This contributes indirectly to productivity and the attractiveness of an economy for investment. For example, "Reliable infrastructure" is perceived as a key attractiveness indicator by business executives in countries like Argentina (47.9% of respondents) and Australia (47.9% of respondents).

Source: IMD World Competitiveness Yearbook 2025



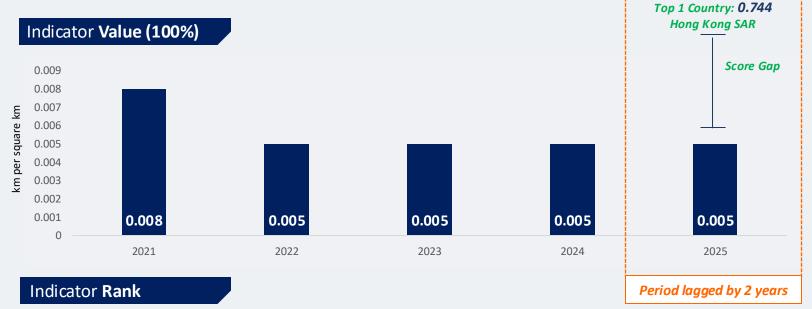


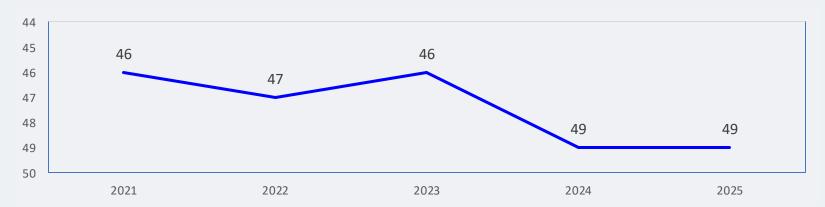


### 4.1.11: Railroads









**Source:** IMD WCY (various years)

### MALAYSIA MPC

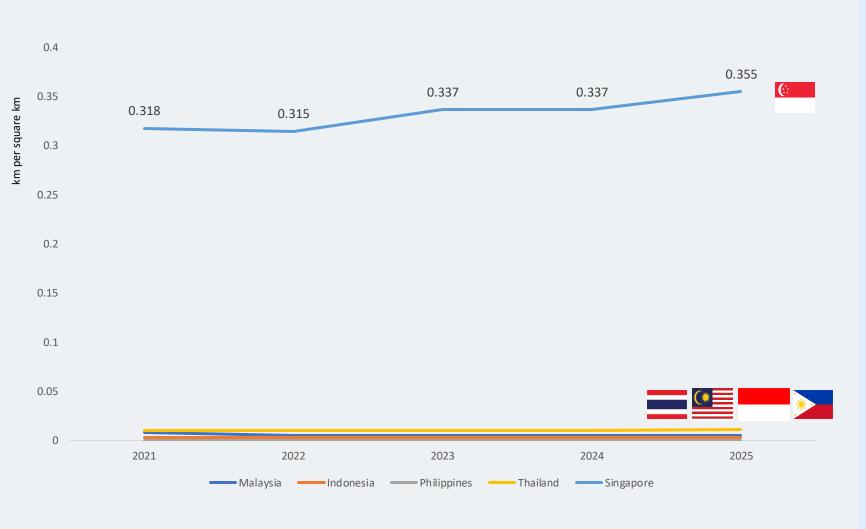
#### **HOW DO THE INDICATORS PERFORM ACROSS YEARS?**

### "Malaysia's rail density has stagnated, causing its global ranking to slip as peers move ahead."

- Malaysia's railroad indicator shows a clear downward shift after 2021 followed by four years of stagnation at 0.005.
- The lack of improvement in value coupled with the decline in ranking from 46th to 49th suggests that Malaysia is losing ground relative to other economies, not because of deterioration, but due to no growth while peers continue to improve.



### Indicator performance over the years



### WHERE ARE MALAYSIA NOW? RANKS AMONG ASEAN COUNTRIES

### "Malaysia sits mid-tier in ASEAN rail density, but progress has stalled while neighbours move ahead."

- Malaysia's railroad indicator peaked at 0.008 in 2021 but fell to 0.005 from 2022 onwards, placing it ahead of Indonesia and the Philippines but behind Thailand, which showed slight improvement.
- Singapore leads by a wide margin, rising from 0.318 in 2021 to 0.355 in 2025, leaving Malaysia in a stagnant mid-tier position with a growing gap from the regional frontrunner.

**Source:** IMD WCY (various years)









### **Indicator footprint – tracking the data sources**







International Institution

WORLD BANK GROUP

Data Retrieval Publish

TIMD

- IIMD

### Description

### Voluntary basis

Railroad density measures how extensive a country's railway network is in relation to its land area. It is calculated by dividing the total length of operational railway lines (in kilometers) by the country's total land area (in square kilometers).

A higher density means railways are more spread out across the land, offering broader coverage and accessibility.

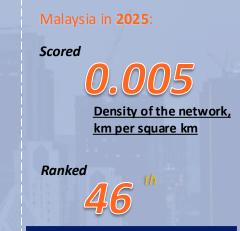
#### https://uic.org/

### World Development Indicators | DataBank





IMD retrieves data from World Development Indicators, World Bank











### **Indicator footprint – The Calculation**

 Methodology: Rail lines are the length of railway route available for train service, irrespective of the number of parallel tracks.
 It includes railway routes that are open for public passenger and freight services and excludes dedicated private resource railways.

Data for transport sectors are not always
internationally comparable. Unlike for
demographic statistics, national income
accounts, and international trade data, the
collection of infrastructure data has not been
internationalized". The data from UIC is
based on voluntary reporting by railway
companies.

Formula

Railroad Density  $(km/sq km) = \frac{Total length of rail network (km)}{Total land area of the country (sq km)}$ 

- Numerator: Length of the operational railway network in kilometres (excluding non-operational tracks).
- Denominator: Country's total surface area in square kilometres (land only).



### **>>>**

### Indicator footprint - Methodology

https://uic-stats.uic.org/

# **Examples of data** collected by UIC



















LOGIN

#### 1004 : Length of HS lines - Maximal line speed: 250 km/h and over - end of year

1006: Length of HS lines - end of year

1012: Length of HS lines - Maximal line speed: [ 200 km/h to 250 km/h [

1105: Length of not electrified lines - end of year

1106 : Length of not electrified single track lines - end of year

1110 : Length of electrified lines - end of year

1111: Length of electrified double track lines - end of year

1112: Length of lines worked - end of year

1113: Length of tracks - end of year

1114: Length of electrified tracks - end of year

1115: Length of double-tracked lines not electrified

1116: Length of single-tracked electrified lines

1204 : Train-km on the network of the infrastructure manager - All types of traction

1205 : Train-km on the network of the infrastructure manager - All types of traction - Passenger trains

1206 : Train-km on the network of the infrastructure manager - All types of traction - Freight trains

1207 : Train-km on the network of the infrastructure manager - Diesel traction

1208 : Train-km on the network of the infrastructure manager - Diesel traction - Passenger trains

1209 : Train-km on the network of the infrastructure manager - Diesel traction - Freight trains

1210: Train-km on the network of the infrastructure manager - Electric traction

1211: Train-km on the network of the infrastructure manager - Electric traction - Passenger trains

1213 : Train-km on the network of the infrastructure manager - Electric traction - Freight trains

 $1304: Gross\ hauled\ Tonnekm\ on\ the\ network\ of\ the\ infrastructure\ manager\ -\ All\ types\ of\ traction$ 

1305 : Gross hauled Tonnekm on the network of the infrastructure manager- All types of traction - Passenger trains

1306 : Gross hauled Tonnekm on the network of the infrastructure manager - All types of traction - Freight trains

1307 : Gross hauled Tonnekm on the network of the infrastructure manager - Diesel traction

1308 : Gross hauled Tonnekm on the network of the infrastructure manager - Diesel traction - Passenger trains

1309 : Gross hauled Tonnekm on the network of the infrastructure manager - Diesel traction - Freight trains

1310 : Gross hauled Tonnekm on the network of the infrastructure manager - Electric traction

 $1311: Gross\ hauled\ Tonnekm\ on\ the\ network\ of\ the\ infrastructure\ manager\ -\ Electric\ traction\ -\ Passenger\ trains$ 

1313 : Gross hauled Tonnekm on the network of the infrastructure manager - Electric traction - Freight trains

1410 : Number of stations and stops - Passenger - Total

1430 : Approximate average distance between stations

1507: Total automatic Level Crossings





### **Indicator footprint – Methodology**

https://uic-stats.uic.org/





LOGIN

















Visualize Download

VARIABLE	REGION	CTRY	CTRY NAME	COMPANY	YEAR	VALUE	VISIBILITY	UNIT
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2017	2773	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2018	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2019	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2020	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2021	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2022	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2023	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2024	1655	Public 1	km



### 4.1.11: Railroads

#### COUNTRY asi - Korea People's Democratic Republic - Kp ASI - KYRGYZSTAN - KG ASI - LEBANON - LB ASI - PAKISTAN - PK

ASI - PHILIPPINES - PH

MY - KTM (1995 to 2024)

### Indicator footprint – Methodology

Select Visualize Download

COMPANY

### Only Keretapi Tanah Melayu Berhad is the data provider for Malaysia

### https://uic-stats.uic.org/

VARIABLE	REGION	CTRY	CTRY NAME	COMPANY	YEAR	VALUE	VISIBILITY	UNIT
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2020	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2021	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2022	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2023	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2024	1655	Public 1	km

#### Step 1: Extract the data

- Total rail length (numerator): From UIC data, Malaysia's length of lines worked = 1655 km (for 2020–2024, constant).
- Total land area (denominator): Malaysia's land area = 328,550 sq km (World Bank/UN data, land only, excluding water).

#### Step 2: Plug into formula

0.00504

0.005 km per sq km

### **Step 3: Interpretation**

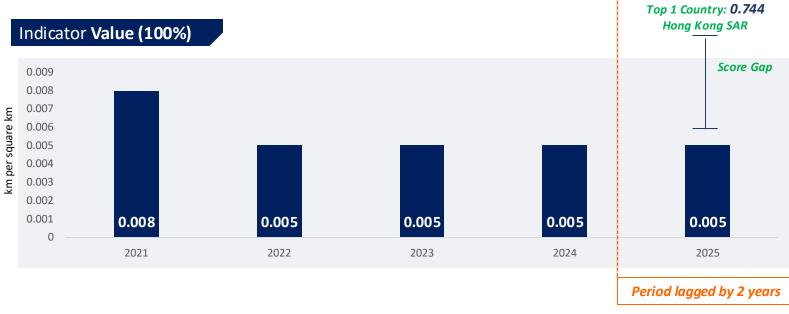
- Malaysia has 0.005 km of railway per sq km of land.
- That means, on average, 5 meters of railway per square kilometer.
- The value is constant across 2020–2024 since both rail length and land area did not change.







### Indicator performance over the years



- Indicator not published between 2012–2016 due to data unavailability or inconsistency in reporting by national authorities.
- However, a noticeable increase in total rail route-km was observed during this period.
- What could be the possible justification for this sudden rise in rail infrastructure coverage?

### Rail lines (total route-km)



1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021





## **>>>**

## **Indicator footprint – Methodology: Data Sources**

## Meanwhile in Japan......



**COUNTRY** 

ASI - IRAN - IR

ASI - IRAQ - IQ

ASI - ISRAEL - IL

asi - Japan - Jp

ASI - JORDAN - JO

ASI - KAZAKHSTAN - KZ

ASI - KOREA - KR

ASI - KOREA PEOPLE'S DEMOCRATIC REPUBLIC - KP

ASI - KYRGYZSTAN - KG

ASI - LEBANON - LB

ACL MANIANCIA MAN

select all | unselect all

**COMPANY** 

JP - CJRC (2009 to 2023)

JP - EJR (1999 to 2023)

JP - HRC (2009 to 2023)

JP - JFRC (1996 to 2018)

JP - JR (1995 to 2016)

JP - KRC (1999 to 2023)

JP - SHRC (2009 to 2023)

JP - WJRC (1995 to 2023)

# ...... There are six (6) data providers for the period 2020 - 2023

VARIABLE	REGION	CTRY	CTRY NAME	COMPANY	YEAR	VALUE	VISIBILITY	UNIT
1112 : Length of lines worked - end of year	Asia	JP	Japan	CJRC	2021	1970.8	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	CJRC	2022	1970.8	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	CJRC	2023	1970.8	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2020	7302.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2021	7302.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2022	7302.2	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2023	7302.2	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2020	2488.3	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2021	2372.3	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2022	2372.3	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2023	2336.6	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2020	853.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2021	853.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2022	853.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2023	853.7	Public 1	km

select all | unselect all



https://uic-stats.uic.org/

### **Indicator footprint – Methodology: Data Sources**

#### France

**COUNTRY** 

EUR - ESTONIA - EE

EUR - FINLAND - FI

EUR - FORMER CZECHOSLOVAKIA - CX

EUR - FRANCE - FR

EUR - FYR OF MACEDONIA - MK

EUR - GERMANY - DE

EUR - GREECE - GR

EUR - HUNGARY - HU

EUR - IRELAND - IE

EUR - ITALY - IT

select all | unselect all

**COMPANY** 

FR - EIFFAGE (2019 to 2024)

FR - EUROPORTE (2018 to 2019)

FR - EUROTUNNEL (1995 to 2024)

FR - LISEA (2017 to 2024)

FR - OCVIA (2019 to 2024)

FR - RATP (2003 to 2005)

FR - RFF (1997 to 2014)

FR - SNCF (1995 to 2014)

FR - SNCF EF (2019 to 2024)

FR - SNCF MOBILITES (2015 to 2018)

#### **Norway**

EUR - MONTENEGRO - ME

EUR - NETHERLANDS - NL

EUR - NORWAY - NO

EUR - POLAND - PL

EUR - PORTUGAL - PT

EUR - ROMANIA - RO

EUR - SERBIA - RS

EUR - SERBIA AND MONTENEGRO - CS

EUR - SLOVAK REPUBLIC - SK

EUR - SLOVENIA - SI

select all | unselect all

NO - BANE NOR (2015 to 2023)

NO - CARGONET (2002 to 2005)

NO - JBV (1996 to 2023)

NO - MTAS (1997 to 2003)

NO - NSB (1995 to 2017)

#### **Hong Kong**

ASI - ARMENIA - AM

ASI - AZERBAIJAN - AZ

ASI - BANGLADESH - BD

ASI - CAMBODIA - KH

ASI - CHINA - CN

ASI - CHINESE TAIPEI - CN

ASI - GEORGIA - GE

ASI - HONG KONG - HK

ASI - INDIA - IN

ASI - INDONESIA - ID

select all | unselect all

HK - KCR (2004 to 2005)

HK - KCRC (1995 to 1995)

HK - KCRC (HR) (1995 to 1995)

HK - KCRC (LR) (1995 to 1995).

HK - MTR (2021 to 2021)

....... Countries that have different operators, report directly to UIC.











- There is no strong evidence of change in the "line length worked" metric — it appears flat in recent years according to UIC source.
- There are additions of urban transit lines (MRT, LRT, etc.), metro systems etc. But these aren't always included in UIC's "lines worked" figure (which usually focuses on the national mainline network, KTM etc.).

## Does KTMB report all rail network in Malaysia? Is KTMB represent Malaysia's total network?

- Malaysia (through KTM or the relevant agencies) would need to voluntarily report changes in rail network metrics such as new lines, track closures, electrification, etc., for UIC to record them.
- If Malaysia hadn't added (or officially declared) new operational lines worked (or if changes are not submitted to UIC), the number would remain static in their published data.
- To improve sharing of data by including the city lines operated by different operator

### Malaysia rail operator

- Keretapi Tanah Melayu Berhad
- Express Rail Link (ERL) Sdn Bhd
- Rapid Rail Sdn Bhd
- Sabah State Railway















# **Health and Environment**

**4.4.23** Food Waste

22<sup>nd</sup> – 23<sup>rd</sup> September 2025

Doubletree by Hilton Hotel, Putrajaya

See more





**IMD World Competitiveness** Yearbook 2025





Factor:

Sub-Factor:

Indicator:

Infrastructure **Health and Environment**  4.4.22 Ecological balance (reserve/deficit)





#### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
- Labor market (23)
- Finance (26)
- Management practices (42)
- Attitude & values (39)



#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
- Tax policy (11)
- Institutional framework (20)
- Business legislation (46)
- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Health and Environment**

Reviews public health standards and environmental sustainability efforts.

<u>Indicators</u>	<u>Score</u>	<u>Ranking</u>
Energy intensity	146	60
2. CO2 emissions intensity	708.8	61
3. Exposure to particle pollution	16.29	43
4. Renewable energies (%)	4.1	56
5. Ecological balance (reserve/deficit)	-2.18	40
6. Food waste	210.0	67
7. Environment-related technologies	0.04	33
8. Environmental performance index	41.0	57

Rank are based on 69 countries in IMD WCY 2025 report.

Figure in bracket () refers to rank in IMD WCY 2025 report.







## Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

Kg lost per capita, including household, service, and retail. Measuring food waste allows countries to comprehend the magnitude of the issue, thereby revealing the size of the opportunity, while establishing a baseline for tracking progress.

Source: IMD World Competitiveness Yearbook 2025 (page 601)

#### **INDICATOR MEASUREMENT**

- Technical notes in WCY2025 DOES NOT INCLUDE the detailed calculations pertaining to the indicator.
- However, the calculation can be simplified as follows:

#### **Food Waste**

= (Household + Service + Retail) / population

#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator is derived from Food Waste Index Report (UN)

Source: IMD World Competitiveness Yearbook 2025 (page 601)

Source: IMD World Competitiveness Yearbook 2025 (page 601)





## 4.4.23: Food Waste



## Ranking as reported in *IMD WCY 2025*

Health & Environment	4.4.23
FOOD WASTE	
TOOD WASTE	2022
KG per capita, Including household, service and	
retail	
Ranking	Kg
01 Bulgaria	30.0
02 Croatia	58.0
03 Mongolia	60.0
04 Slovenia	63.0
05 Slovak Republic	69.0
06 Hungary	72.0
06 Spain	72.0
08 Poland	73.0
09 Netherlands	76.0
10 Finland	77.0
11 Czech Republic	79.0
11 Sweden	79.0
13 Japan	81.0
14 Estonia	84.0
15 Belgium	85.0
16 France	89.0
16 Romania	89.0
18 South Africa	93.0
19 Botswana	96.0
19 Ireland	96.0
19 United Kingdom	96.0
22 India	97.0
23 Lithuania	98.0
24 New Zealand	103.0
25 Iceland	105.0
26 Denmark	107.0
26 Norway	107.0
28 Germany	109.0
28 Latvia	109.0
30 Philippines	110.0

31 Austria	115.0
32 Luxembourg	119.0
33 Greece	122.0
34 Kenya	123.0
35 Ghana	125.0
36 Venezuela	130.0
37 Italy	132.0
38 Korea Rep.	134.0
39 Namibia	136.0
40 Colombia	137.0
41 Hong Kong SAR	140.0
41 Kazakhstan	140.0
43 Argentina	142.0
43 China	142.0
45 Indonesia	143.0
46 Brazil	145.0
46 Chile	145.0
46 Puerto Rico	145.0
46 Qatar	145.0
50 Saudi Arabia	149.0
50 Singapore	149.0
52 Kuwait	151.0
52 Oman	151.0
52 UAE	151.0
55 Nigeria	154.0
56 Peru	155.0
57 Cyprus	157.0
57 Jordan	157.0
59 USA	159.0
60 Türkiye	162.0
61 Portugal	168.0
61 Switzerland	168.0
63 Thailand	176.0
64 Australia	177.0
65 Bahrain	184.0
66 Canada	189.0
67 Malaysia	210.0
68 Mexico	214.0

#### WHAT DOES THE SCORE INDICATE?

The lower the value, the higher the ranking.

#### **RATIONALITY?**

- The lower the food waste value, the better the ranking, as it signifies as it shows more efficient food use, stronger sustainability awareness, and less strain on waste systems.
- In 2025, Malaysia recorded 210 kg of food waste per person, placing it among the higher wastegenerating countries, reflecting inefficiencies in supply chains, household consumption, and disposal practices.
- High food waste contributes economic loss, environmental harm, and emissions. Cutting waste boosts efficiency, strengthens food security, and supports sustainability goals.





Taiwan (Chinese Taipei)

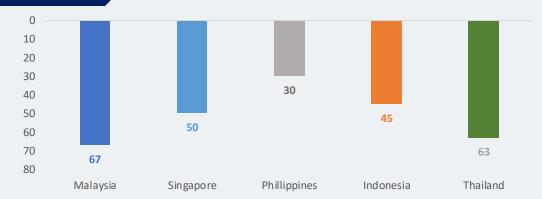
## 4.4.23: Food Waste



## **Indicator performance over the years**



#### Indicator Rank (of 69 countries)



Source: IMD WCY

The Environmental Performance Index (EPI) ranking in the IMD report is only available for 2025 because this is the first year that IMD has included EPI as a new indicator in its competitiveness framework.

#### **HOW DO THE INDICATORS PERFORM THROUGHOUT 2025?**

- In 2025, Malaysia generated 210 kg of food waste per person, ranking 67th out of 69 countries and placing among the highest waste producers.
- Compared with regional peers, Malaysia's level is higher than Singapore (149 kg), Indonesia (143 kg), Thailand (176 kg), and the Philippines (110 kg), reflecting inefficiencies in consumption and waste management.
- High food waste contributes to economic losses, environmental strain, and higher emissions, highlighting the need for greater sustainability awareness and stronger resource management.

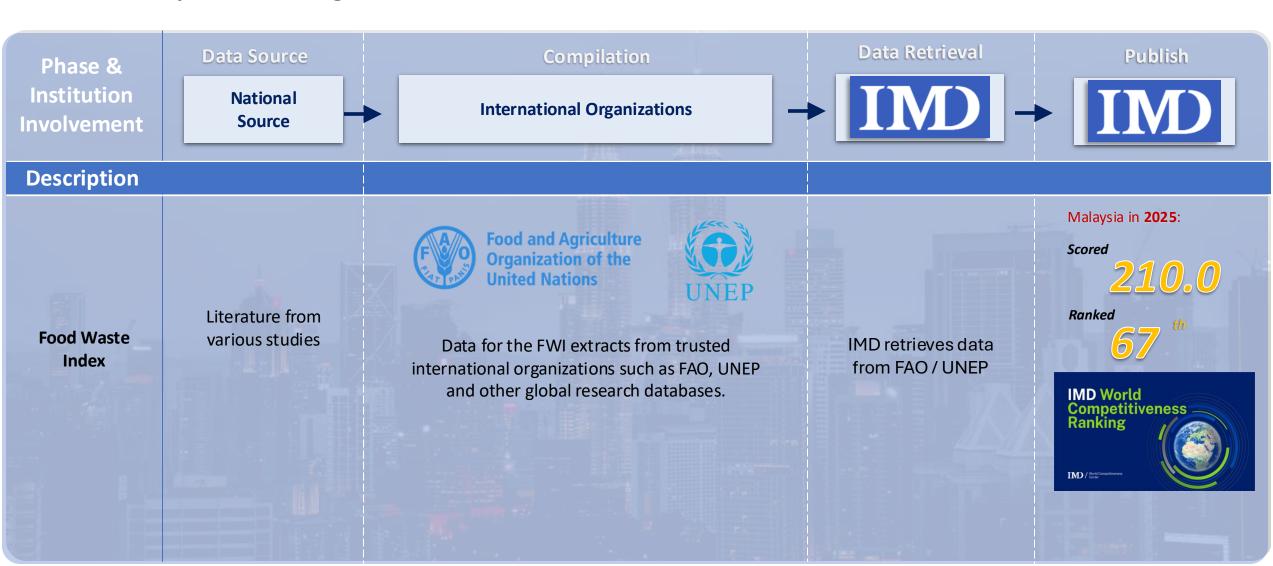




## 4.4.23: Food Waste



## **Indicator footprint – tracking the data sources**









## Way forward

# Targeted Food Waste Reduction Campaigns (Including Ramadan & Festive Seasons)

- Initiative: Launch a nationwide awareness and behavioral change campaign focusing on reducing food shopping and over-preparation during Ramadan and other festive seasons. This can include public service announcements, collaboration with mosques, supermarkets, and eateries to promote responsible consumption, and introducing "smart shopping guides" to households.
- Rule/Regulation: Impose mandatory food waste reporting for major supermarkets, hotels, and event caterers during festive seasons, with incentives for those that successfully reduce food waste volumes.

## Strengthening Food Supply Chain Efficiency

- Initiative: Develop a "Farm-to-Fork Digital Tracking System" that links farmers, distributors, retailers, and consumers, to optimize logistics and reduce food losses before reaching markets. This improves resource efficiency and reduces food waste at production and retail levels.
- Rule/Regulation: Introduce food donation and redistribution laws, requiring supermarkets and large food retailers to donate unsold but safe food to charities or food banks, rather than discarding it.













### **Economic Performance**

Macro-economic evaluation of the domestic economy, employment trends, and price.

- Domestic economy (15)
- International investment (06)
- International trade (26)
- Employment (10)
- Prices (01)



#### **Business Efficiency**

Extent to which the national environment encourages enterprises to perform in an innovative, profitable, and responsible manner.

- Productivity (34)
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#### **Government Efficiency**

Extent to which government policies are conducive to competitiveness.

- Public finance (27)
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- Social framework (38)



#### Infrastructure

Extent to which basic, technological, scientific, and human resources meet the needs of the business.

- Basic infrastructure (13)
- Technological infrastructure (25)
- Scientific infrastructure (50)
- Health and environment (50)
- Education (44)

#### **Basic Infrastructure**

Fundamental resources (natural, population, transport, energy, urban) that meet business needs.

<u>In</u>	<u>dicators</u>	<u>Score</u>	Ranking	
1.	Arable land	2,534	24	
2.	Water resources	16,918	12	
3.	Population – growth	2.10	10	
4.	Dependency ratio	39.5	08	
5.	Roads	1.57	20	
6.	Railroads	0.005	49	
7.	Total indigenous energy production (%)	97.1	22	
8.	Electricity costs for industrial clients	Confidential	18	

Rank are based on 69 countries in IMD WCY 2025 report.

Figure in bracket () refers to rank in IMD WCY 2025 report.







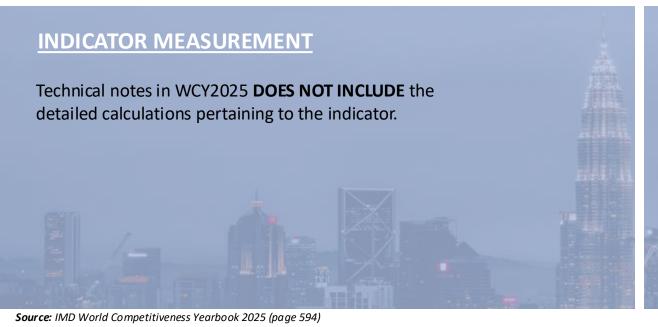
## Indicator overview sourced from IMD WCY 2025 Report

#### INDICATOR DEFINED IN THE REPORT

**Total length of public lines worked at end of year.** Data may not be always comparable between countries.

- Hong Kong SAR: Includes heavy rail, light rail, tram, peak tram and airport automated people mover.
- Qatar: The Qatar metro starts operating in mid of 2019.
- Singapore: Rapid Transit Systems.
- Taiwan (Chinese Taipei): incl. THSRC and TRA since 2008, TRA only for previous years.

Source: IMD World Competitiveness Yearbook 2025 (page 594)



#### **DATA SOURCE USED IN WCY 2025**

The WCY 2025 report states that this indicator is derived from

- World Development Indicators (World Bank)
- **National sources**

Source: IMD World Competitiveness Yearbook 2025 (page 594)





### Ranking as reported in *IMD WCY 2025*

km ner square km

0.023

0.021

0.018

0.018

#### WHAT DOES THE SCORE INDICATE?

Basic Intrastructure	4.1.11
RAILROADS	2023

Density of the network, km per square km

Ranking	km per square km
01 Hong Kong SAR	0.744
02 Singapore	0.355
03 Czech Republic	0.119
04 Belgium	0.118
05 Luxembourg	0.105
06 Switzerland	0.103
07 Germany	0.094
08 Hungary	0.075
09 Slovak Republic	0.074
10 Netherlands	0.073
11 Poland	0.060
12 Slovenia	0.059
13 Austria	0.059
14 Italy	0.057
15 Taiwan (Chinese Taipei)	0.052
16 Japan	0.052
17 Korea Rep.	0.051
18 France	0.050
19 Denmark	0.046 202
20 Romania	0.045
21 United Kingdom	0.042
22 Bulgaria	0.036
23 Spain	0.032
24 Croatia	0.030
25 Lithuania	0.029
26 Latvia	0.028
27 Portugal	0.027
28 Ireland	0.023

33 Finland	0.017
34 South Africa	0.017
35 New Zealand	0.015 2021
36 Qatar	0.015
37 USA	0.015
38 Türkiye	0.015
39 Greece	0.014
40 Mexico	0.014
41 China	0.012
42 Thailand	0.011
43 UAE	0.010
44 Argentina	0.006 2022
45 Norway	0.006
46 Kenya	0.006
47 Kazakhstan	0.006
48 Ghana	0.005 2022
49 Malaysia	0.005
50 Brazil	0.004 2021
51 Namibia	0.003
52 Chile	0.003
53 Colombia	0.003
54 Canada	0.003
55 Indonesia	0.003
56 Nigeria	0.002
57 Puerto Rico	0.002 2021
58 Australia	0.002
59 Botswana	0.002
60 Saudi Arabia	0.001 2022
61 Mongolia	0.001
62 Philippines	0.000
63 Kuwait	0.000 2021
64 Bahrain	0.000
64 Cyprus	0.000
64 Iceland	0.000
- Oman	-
- Peru	-
<ul> <li>Venezuela</li> </ul>	-

#### The higher the value, the higher the ranking.

#### **RATIONALITY?**

- The availability and efficiency of transportation networks, including railroads, are considered a traditional and necessary determinant of competitiveness for an economy.
- A well-developed railroad network facilitates the movement of goods, raw materials, and people, thereby directly supporting business operations and economic activity.
- Efficient movement of people, whether for daily commuting or inter-city travel, ensures a readily available workforce, supports business travel, and enhances overall labor market efficiency. This contributes indirectly to productivity and the attractiveness of an economy for investment. For example, "Reliable infrastructure" is perceived as a key attractiveness indicator by business executives in countries like Argentina (47.9% of respondents) and Australia (47.9% of respondents).

**Source:** IMD World Competitiveness Yearbook 2025





Estonia India

Sweden

Jordan

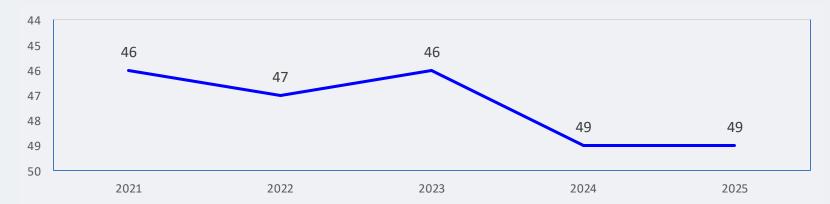


## 4.1.11: Railroads









**Source:** IMD WCY (various years)

#### **HOW DO THE INDICATORS PERFORM ACROSS YEARS?**

## "Malaysia's rail density has stagnated, causing its global ranking to slip as peers move ahead."

- Malaysia's railroad indicator shows a clear downward shift after 2021 followed by four years of stagnation at 0.005.
- The lack of improvement in value coupled with the decline in ranking from 46th to 49th suggests that Malaysia is losing ground relative to other economies, not because of deterioration, but due to no growth while peers continue to improve.

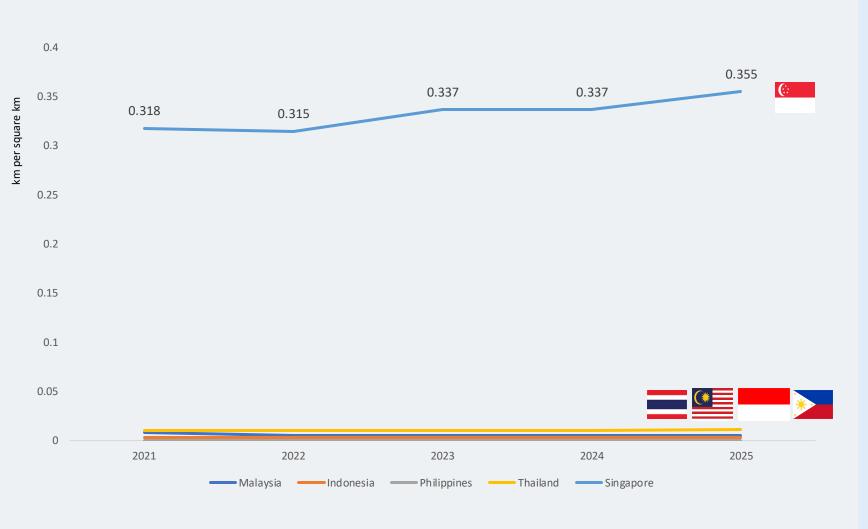








## **Indicator performance over the years**



#### WHERE ARE MALAYSIA NOW? **RANKS AMONG ASEAN COUNTRIES**

## "Malaysia sits mid-tier in ASEAN rail density, but progress has stalled while neighbours move ahead."

- Malaysia's railroad indicator peaked at 0.008 in 2021 but fell to 0.005 from 2022 onwards, placing it ahead of Indonesia and the Philippines but behind Thailand, which showed slight improvement.
- Singapore leads by a wide margin, rising from 0.318 in 2021 to 0.355 in 2025, leaving Malaysia in a stagnant mid-tier position with a growing gap from the regional frontrunner.

**Source:** IMD WCY (various years)









## **Indicator footprint – The Calculation**

 Methodology: Rail lines are the length of railway route available for train service, irrespective of the number of parallel tracks.
 It includes railway routes that are open for public passenger and freight services and excludes dedicated private resource railways.

internationally comparable. Unlike for demographic statistics, national income accounts, and international trade data, the collection of infrastructure data has not been internationalized". The data from UIC is based on voluntary reporting by railway companies.

Formula

Railroad Density  $(km/sq km) = \frac{\text{Total length of rail network } (km)}{\text{Total land area of the country } (sq km)}$ 

- Numerator: Length of the operational railway network in kilometres (excluding non-operational tracks).
- Denominator: Country's total surface area in square kilometres (land only).





## Indicator footprint - Methodology

https://uic-stats.uic.org/

# **Examples of data** collected by UIC



















LOGIN

1004: Length of HS lines - Maximal line speed: 250 km/h and over - end of year

1006: Length of HS lines - end of year

1012: Length of HS lines - Maximal line speed: [ 200 km/h to 250 km/h [

1105: Length of not electrified lines - end of year

1106: Length of not electrified single track lines - end of year

1110 : Length of electrified lines - end of year

1111: Length of electrified double track lines - end of year

1112: Length of lines worked - end of year

1113 : Length of tracks - end of year

1114: Length of electrified tracks - end of year

1115: Length of double-tracked lines not electrified

1116: Length of single-tracked electrified lines

1204: Train-km on the network of the infrastructure manager - All types of traction

1205 : Train-km on the network of the infrastructure manager - All types of traction - Passenger trains

1206 : Train-km on the network of the infrastructure manager - All types of traction - Freight trains

1207 : Train-km on the network of the infrastructure manager - Diesel traction

1208 : Train-km on the network of the infrastructure manager - Diesel traction - Passenger trains

1209 : Train-km on the network of the infrastructure manager - Diesel traction - Freight trains

1210: Train-km on the network of the infrastructure manager - Electric traction

1211: Train-km on the network of the infrastructure manager - Electric traction - Passenger trains

1213 : Train-km on the network of the infrastructure manager - Electric traction - Freight trains

1304 : Gross hauled Tonnekm on the network of the infrastructure manager - All types of traction

1305 : Gross hauled Tonnekm on the network of the infrastructure manager- All types of traction - Passenger trains

1306 : Gross hauled Tonnekm on the network of the infrastructure manager - All types of traction - Freight trains

1307 : Gross hauled Tonnekm on the network of the infrastructure manager - Diesel traction

1308 : Gross hauled Tonnekm on the network of the infrastructure manager - Diesel traction - Passenger trains

1309 : Gross hauled Tonnekm on the network of the infrastructure manager - Diesel traction - Freight trains

1310 : Gross hauled Tonnekm on the network of the infrastructure manager - Electric traction

1311: Gross hauled Tonnekm on the network of the infrastructure manager - Electric traction - Passenger trains

1313 : Gross hauled Tonnekm on the network of the infrastructure manager - Electric traction - Freight trains

1410 : Number of stations and stops - Passenger - Total

1430 : Approximate average distance between stations

1507: Total automatic Level Crossings



## 4.1.11: Railroads

#### COUNTRY asi - Korea People's Democratic Republic - Kp ASI - KYRGYZSTAN - KG ASI - LEBANON - LB ASI - PAKISTAN - PK ASI - PHILIPPINES - PH

MY - KTM (1995 to 2024)



## Indicator footprint – Methodology

Select Visualize Download

COMPANY

### Only Keretapi Tanah Melayu Berhad is the data provider for Malaysia

## https://uic-stats.uic.org/

VARIABLE	REGION	CTRY	CTRY NAME	COMPANY	YEAR	VALUE	VISIBILITY	UNIT
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2020	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2021	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2022	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2023	1655	Public 1	km
1112 : Length of lines worked - end of year	Asia	MY	Malaysia	KTM	2024	1655	Public 1	km

#### Step 1: Extract the data

- Total rail length (numerator): From UIC data, Malaysia's length of lines worked = 1655 km (for 2020–2024, constant).
- Total land area (denominator): Malaysia's land area = 328,550 sq km (World Bank/UN data, land only, excluding water).

#### Step 2: Plug into formula

- 0.00504
- 0.005 km per sq km

#### **Step 3: Interpretation**

- Malaysia has 0.005 km of railway per sq km of land.
- That means, on average, 5 meters of railway per square kilometer.
- The value is constant across 2020–2024 since both rail length and land area did not change.





## **Indicator footprint – Methodology: Data Sources**

## Meanwhile in Japan.....



**COUNTRY** 

ASI - IRAN - IR

ASI - IRAQ - IQ

ASI - ISRAEL - IL

asi - Japan - Jp

ASI - JORDAN - JO

ASI - KAZAKHSTAN - KZ

ASI - KOREA - KR

ASI - KOREA PEOPLE'S DEMOCRATIC REPUBLIC - KP

ASI - KYRGYZSTAN - KG

ASI - LEBANON - LB

ACL MANIANCIA MAN

select all | unselect all

**COMPANY** 

JP - CJRC (2009 to 2023)

JP - EJR (1999 to 2023)

JP - HRC (2009 to 2023)

JP - JFRC (1996 to 2018)

JP - JR (1995 to 2016)

JP - KRC (1999 to 2023)

JP - SHRC (2009 to 2023)

JP - WJRC (1995 to 2023)

## ...... There are six (6) data providers for the period 2020 - 2023

VARIABLE	REGION	CTRY	CTRY NAME	COMPANY	YEAR	VALUE	VISIBILITY	UNIT
1112 : Length of lines worked - end of year	Asia	JP	Japan	CJRC	2021	1970.8	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	CJRC	2022	1970.8	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	CJRC	2023	1970.8	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2020	7302.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2021	7302.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2022	7302.2	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	EJR	2023	7302.2	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2020	2488.3	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2021	2372.3	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2022	2372.3	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	HRC	2023	2336.6	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2020	853.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2021	853.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2022	853.7	Public 1	km
1112 : Length of lines worked - end of year	Asia	JP	Japan	SHRC	2023	853.7	Public 1	km

select all | unselect all



https://uic-stats.uic.org/

## **Indicator footprint – Methodology: Data Sources**

#### France

**COUNTRY** 

EUR - ESTONIA - EE

EUR - FINLAND - FI

EUR - FORMER CZECHOSLOVAKIA - CX

EUR - FRANCE - FR

EUR - FYR OF MACEDONIA - MK

EUR - GERMANY - DE

EUR - GREECE - GR

EUR - HUNGARY - HU

EUR - IRELAND - IE

EUR - ITALY - IT

select all | unselect all

**COMPANY** 

FR - EIFFAGE (2019 to 2024)

FR - EUROPORTE (2018 to 2019)

FR - EUROTUNNEL (1995 to 2024)

FR - LISEA (2017 to 2024)

FR - OCVIA (2019 to 2024)

FR - RATP (2003 to 2005)

FR - RFF (1997 to 2014)

FR - SNCF (1995 to 2014)

FR - SNCF EF (2019 to 2024)

FR - SNCF MOBILITES (2015 to 2018)

#### **Norway**

EUR - MONTENEGRO - ME

EUR - NETHERLANDS - NL

EUR - NORWAY - NO

EUR - POLAND - PL

EUR - PORTUGAL - PT

EUR - ROMANIA - RO

EUR - SERBIA - RS

EUR - SERBIA AND MONTENEGRO - CS

EUR - SLOVAK REPUBLIC - SK

EUR - SLOVENIA - SI

select all | unselect all

NO - BANE NOR (2015 to 2023)

NO - CARGONET (2002 to 2005)

NO - JBV (1996 to 2023)

NO - MTAS (1997 to 2003)

NO - NSB (1995 to 2017)

#### **Hong Kong**

ASI - ARMENIA - AM

ASI - AZERBAIJAN - AZ

ASI - BANGLADESH - BD

ASI - CAMBODIA - KH

ASI - CHINA - CN

ASI - CHINESE TAIPEI - CN

ASI - GEORGIA - GE

ASI - HONG KONG - HK

ASI - INDIA - IN

ASI - INDONESIA - ID

select all | unselect all

HK - KCR (2004 to 2005)

HK - KCRC (1995 to 1995)

HK - KCRC (HR) (1995 to 1995)

HK - KCRC (LR) (1995 to 1995).

HK - MTR (2021 to 2021)

....... Countries that have different operators, report directly to UIC.





https://uic-stats.uic.org/



## **Way Forward**

- There is no strong evidence of change in the "line length worked" metric — it appears flat in recent years according to UIC source.
- There are additions of urban transit lines (MRT, LRT, etc.), metro systems etc. But these aren't always included in UIC's "lines worked" figure (which usually focuses on the national mainline network, KTM etc.).

## Does KTMB report all rail network in Malaysia? Is KTMB represent Malaysia's total network?

- Malaysia (through KTM or the relevant agencies) would need to voluntarily report changes in rail network metrics such as new lines, track closures, electrification, etc., for UIC to record them.
- If Malaysia hadn't added (or officially declared) new operational lines worked (or if changes are not submitted to UIC), the number would remain static in their published data.
- To improve sharing of data by including the city lines operated by different operator

### Malaysia rail operator

- Keretapi Tanah Melayu Berhad
- Express Rail Link (ERL) Sdn Bhd
- Rapid Rail Sdn Bhd
- Sabah State Railway









