



MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

Developing A Data Strategy: Connecting User Needs With Effective Data Governance And Stewardship – Malaysia's Experience

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1. INTRODUCTION



StatsMalaysia
www.DOSM.gov.my





1. INTRODUCTION

A data strategy is a comprehensive plan developed by National Statistical Offices (NSOs) or Statistical Authority to guide their data-related actions and processes, as well as to ensure stakeholders and users are being provided with the best data and information, based on solid analysis and standards within a comprehensive statistical framework which supported by a strong data protection policy.

Key aspects of the NSO's data strategy typically includes:

- Data collection, use and reuse
- Data dissemination and communication
- Data protection and security
- Translating the NSO's vision and mission into practice by setting strategic objectives related to data integration, standard setting, enhancing metadata, and spreading solid ethical principles within the data ecosystem

Data strategies are vital for NSOs taking on the data governance and data stewardship role, as the objectives often concern the key functions of data stewards.

Reference:

United Nations Economic Commission For Europe. "Data Stewardship and the Role of National Statistical Offices in the New Data Ecosystem," 2023. Accessed May 22, 2024. Available online: https://unece.org/sites/default/files/2024-01/Data_stewardship_Publ_PrePrint_2.pdf.



1. INTRODUCTION (Cont'd)



Data Governance

The exercise of authority and control over the management and transformation of data with the objective to enhance the value of data assets and mitigating data - related risks.

Reference:

1. ESCAP Stats Brief: Data Governance, Practices in Asia and the Pacific, March 2024, Issue No. 34.
2. "Data governance: A conceptual framework, structured review, and research agenda," International Journal of Information Management, Volume 49, December 2019, Pages 424-438. Accessed May 22, 2024. Available online: <https://www.sciencedirect.com/science/article/pii/S0268401219300787#bib0190>.

GENERAL DEFINITION



Data Stewardship

- Data Stewardship refers to general operating in service, rather than in control of the data ecosystem.
- Data Stewardship is the implementation of the procedures, roles, policies and rules set by the data governance framework.
- "National statistical offices have traditionally taken the role of data custodian for a country's official statistics but many are now moving into the role of data steward for government data"³.

Reference:

3. ESCAP Stats Brief: Data Governance, Practices in Asia and the Pacific, March 2024, Issue No. 34





1. INTRODUCTION (Cont'd)

DOSM's Roles in Data Governance and Data Stewardship

The Department Statistics Malaysia (DOSM) plays a pivotal role in supporting the National Statistical System through:

1. Encourage other government bodies to review their data quality, especially for administrative sources.
2. Initiate discussions within national governments on how they could be involved in the elaboration of national data strategies, either in an advisory or leadership role.
3. Start discussions within the national governments in order to establish a legal system enabling use of data.
4. Develop analytical capabilities, more specifically in the areas of data literacy, data science and data engineering, to support effective data management.
5. Work closely with the international community about experience in data governance.

2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP





2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP

1. Strengthening of The National Statistical System (SNSS)

2. Strengthening Data Governance

3. Data Stewardship – present objectives

- To produce granular statistics (SDGs)
- To strengthen national data management – use case Central Database Hub (PADU)
- To collaborate with Other Government Agency – use case Central Database Hub (PADU)
- To enrich National Data Integration – use case Central Database Hub (PADU)
- To create a Central Repository of Statistics for national data (StatsDW – Statistic Data Warehouse)
- To enhance analytic expertise among civil service, DOSM has established preliminary Chief Data Officers (CDOs)
- Data Dissemination and Statistical Literacy

2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

1. Strengthening of The National Statistical System (SNSS)

1.1 National Statistics and Data Council

1.2 Chief Data Officer (CDO)

1.3 Amendments of Statistics Act 1965 (Revised 1989)

1.4 National Big Data Analytic Centre (NBDAC)

1.5 Capacity Building

- Organisational Restructuring
- Subject Matter Expert
- Statistics Intelligence Centre of Excellence



2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

2. Strengthening Data Governance by the following initiatives:

2.1 People and Culture

- Chief Data Officers (CDOs)
- Statistical Competencies Development Programme (SCDP)
- Data Scientists SAS
- Big Data Analytics Core Team
- Subject Matter Experts (SMEs)

2.2 Policies, Standards and Guidelines

- Statistics Act 1965 (revised 1989)
- Census Act 1960
- DOSM Strategic Plan
- General Statistical Business Process Model (GSBPM)
- Generic Activity Model for Statistical Organisations (GAMSO)
- Statistical Business Architecture (SBA)
- Micro Data Dissemination Policy

2.3 Data Quality

- Generic National Quality Assurance Framework (g-NQAF)
- Sound Methodology

2.4 Partnership

- MOU's for Data Sharing
- Collaboration with Agencies

2.5 Technology

- National Enterprise-Wide Statistical System (NEWSS)
- Integrated Population Census System (MyIPCS)
- StatsBDA
- StatsDW
- Stats Geoportal
- OpenDOSM
- Dashboards

2.6 Data Protection & Privacy; Ethics; Security

- Public Sector Data Sharing Policy (DPDSA)
- National Data Sharing Policy (NDSP)
- Personal Data Protection Act 2010 (PDPA)



2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives To produce granular statistics (SDGs)

Malaysia's involvement in SDG

Malaysia's involvement in the development of the SDG at international level began in 2014.

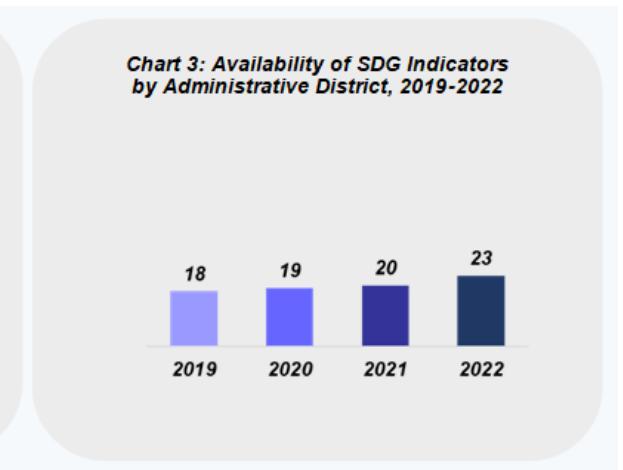
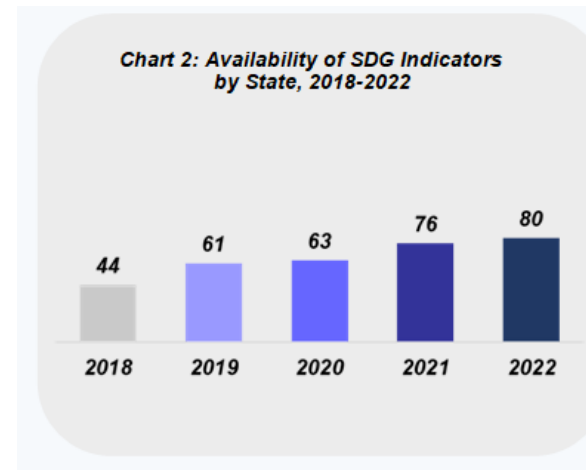
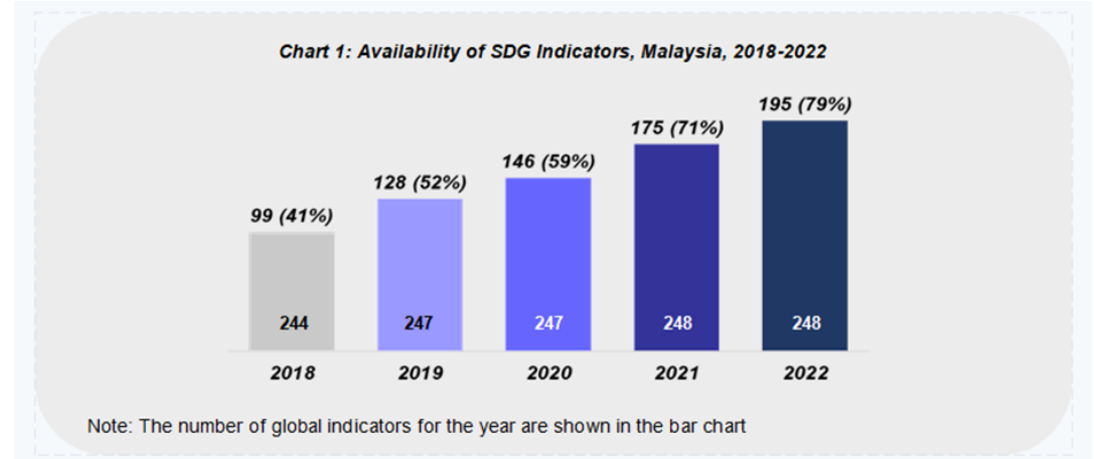
DOSM's Roles and Contribution in SDGs

In July 2015, DOSM was officially appointed as the focal point to coordinate the SDG data collection during Main Users Committee Meeting No.1/2015. The main role of focal point is to coordinate the compilation of SDG indicators from various line ministries/agencies.

For the first time in 2023, DOSM has taken steps to produce SDG Indicator Reports for

- each state (13) and
- Federal Territories (3)

The indicators at the state and district levels that are published can be utilized by state governments and local authorities in monitoring and formulating the framework for the implementation of SDG at their respective state and district level.



Reference:

"Sustainable Development Goals," Department of Statistics Malaysia. Accessed May 22, 2024. Available online: <https://www.dosm.gov.my/portal-main/article/sustainable-development-goals>.

2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives To strengthen national data management – use case Central Database Hub (PADU)



Objective

- The provision of a secure, comprehensive, and near real-time national primary database for digitalization and periodic analytical output.
- Policy formulation and decision-making processes based on data.
- Enabling targeted policy implementation to balance fiscal positions.



Goal

- Enhancing the efficiency of government service delivery systems.
- Optimizing the utilization of limited resources.
- Empowering the social system through the improvement of economic well-being for the people.
- Narrowing the socioeconomic gap by balancing the needs of the people.

The Benefits of Central Database Hub (PADU): People's Welfare

1. Improving the management of assistance and subsidies.
2. Strengthening disaster and crisis management.
3. Nation's preparation for an aging population.
4. Addressing social protection gaps.
5. More strategic national budget management.
6. PADU as a catalyst for Digital Government.



The Central Database Hub (PADU) was launched on 2nd January 2024 by the Prime Minister of Malaysia.



2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives

To collaborate with Other Government Agency – use case Central Database Hub (PADU)

Integration and consolidation of data from various agencies to create a single reference profile for the Malaysian population.

Targeting the integration of administrative data sources from:

70 Ministry/
Department/ Agency

13 State Government

83 Federal statutory
bodies

134 State statutory
bodies

155 Local Authorities

455 Agency of the
Public Sector
and various other agencies..

The PADU system maintains and ensure the security of profile data shared through

 **strategic collaboration with...**

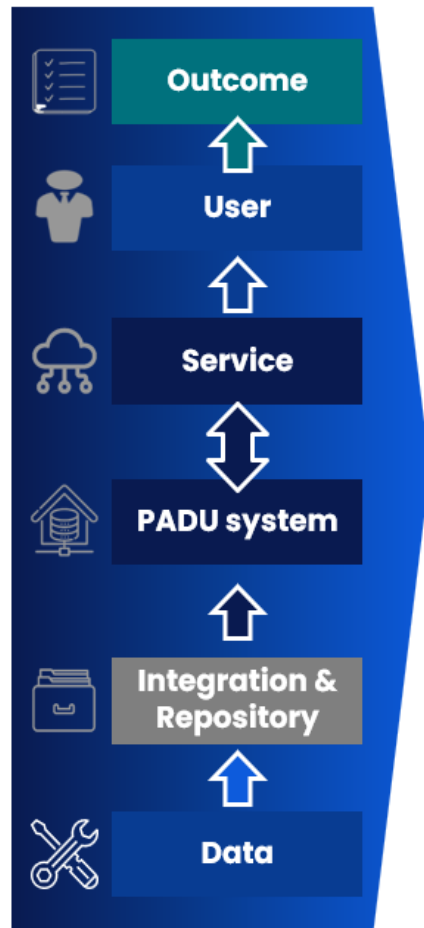


All information or individual data within **PADU** is
"CONFIDENTIAL"

2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives

To enrich National Data Integration – use case Central Database Hub (PADU)



PADU System framework towards data as a strategic national asset

Generating comprehensive and real/near real-time integration of individual profile data to enable efficient service delivery to the citizens.



Integration of data from various agencies for profile formation through administrative directives & MoU



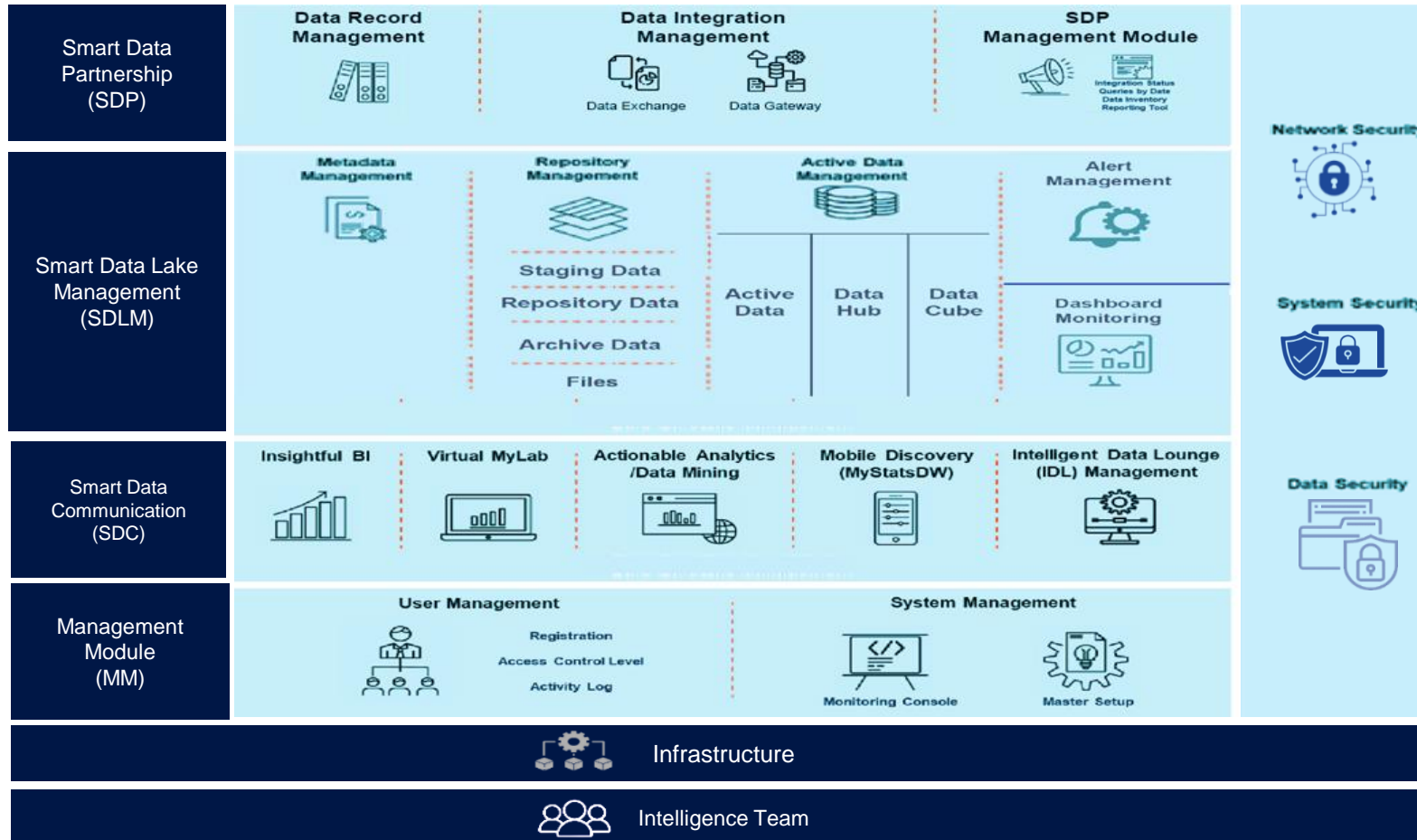


2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives

To create a Central Repository of Statistics for national data

- StatsDW – Statistic Data Warehouse



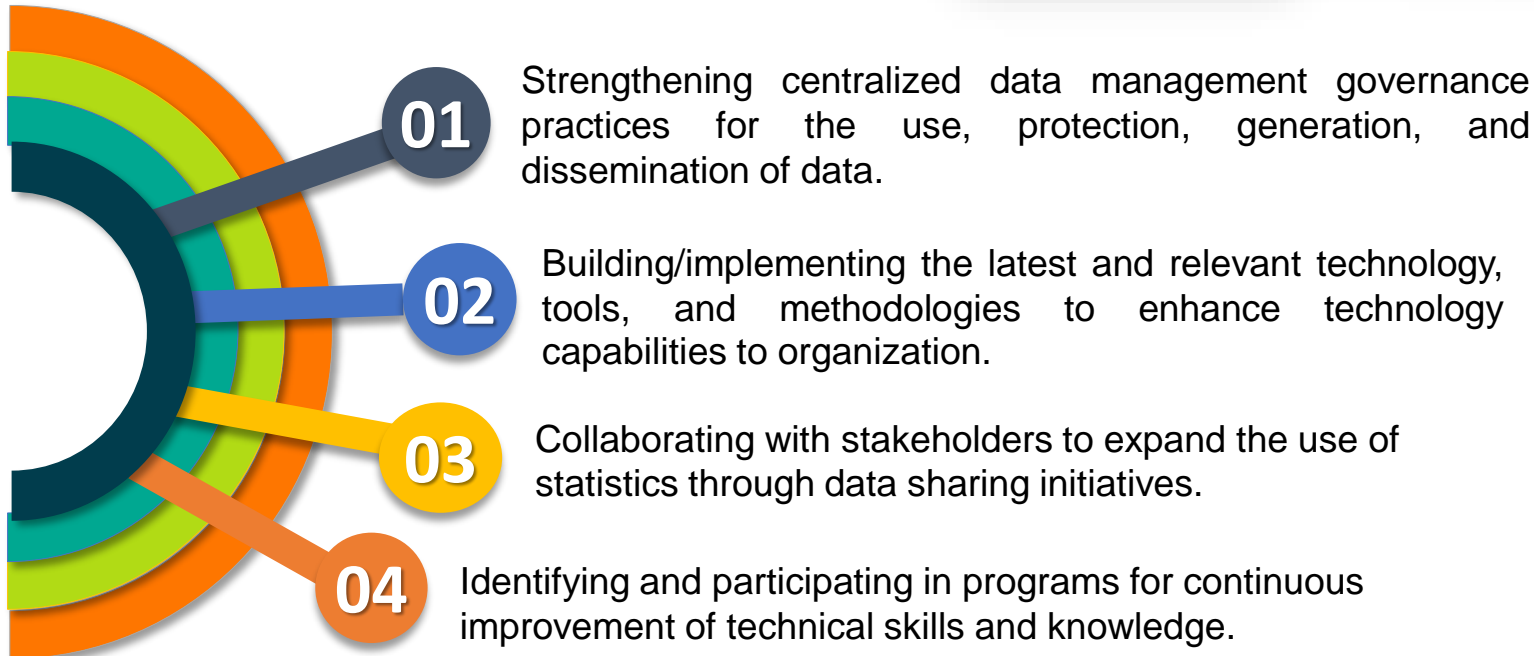
StatsDW will facilitate the storing, retrieving, processing activities of data for more efficient organising, administration, governing and securing of datasets. Now, StatsDW has enable DOSM to become the central data repository platform to other government agencies and has integrate with several government agencies system through API for data sharing.

2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives

To enhance analytic expertise among civil service, DOSM has established preliminary Chief Data Officers (CDOs).

The main objectives of appointing a Chief Data Officer



WHO IS CDO?

"The CDO is the focal point for data alignment and designing data governance strategies at the ministry/agency level."

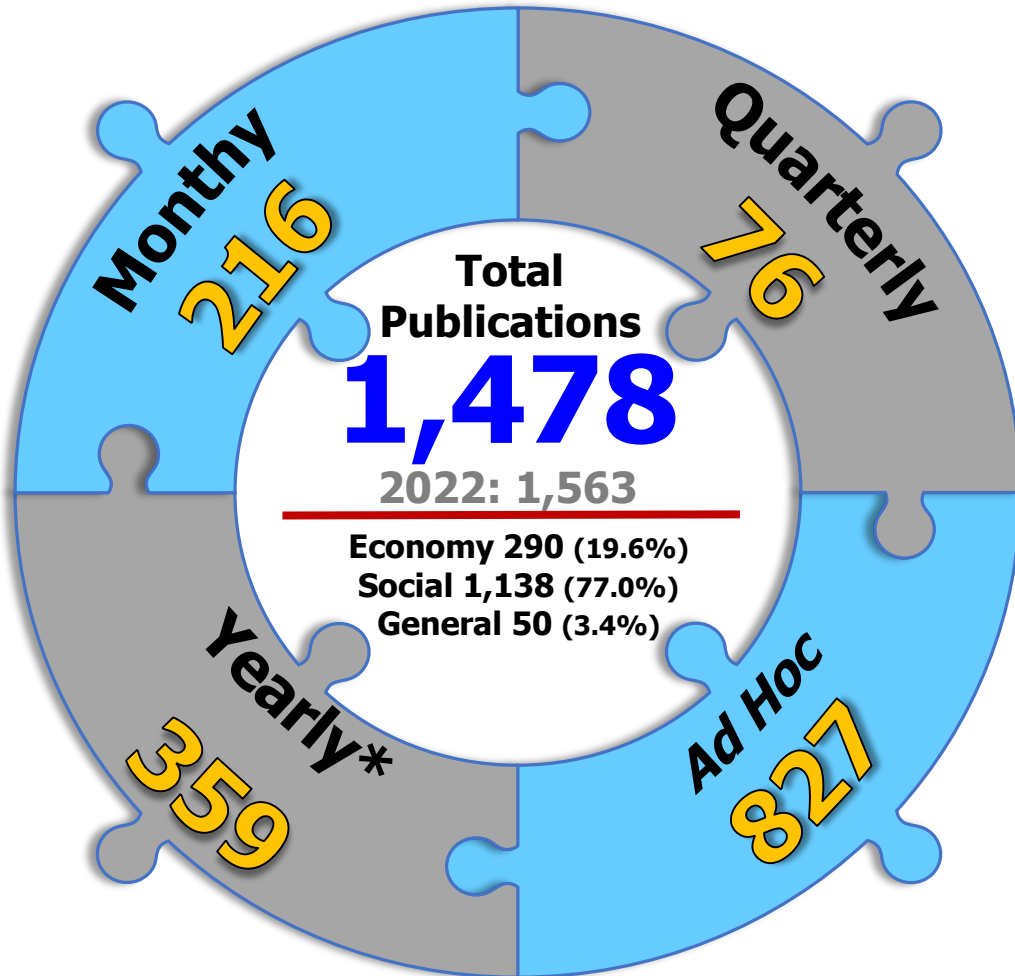
"Currently, in practice, DOSM has assigned a Chief Data Officer (CDO) to the Ministry of Agriculture and Food Security Malaysia to focus on the Agricultural Census 2024."



2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

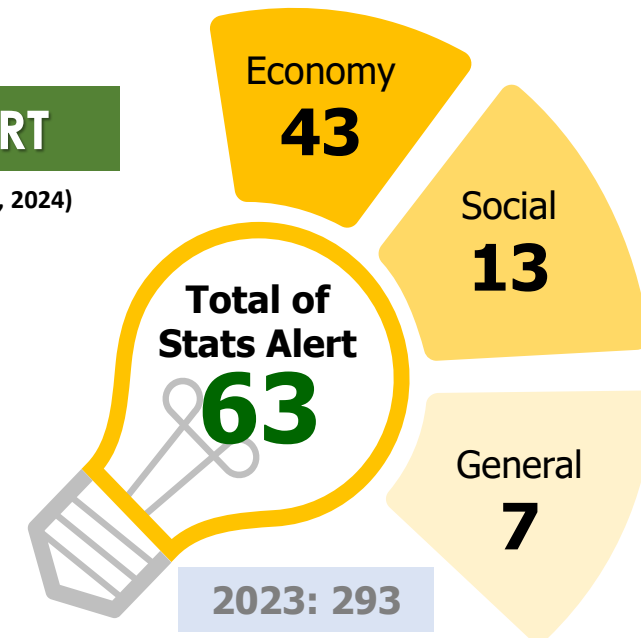
3. Data Stewardship – present objectives Data Dissemination and Statistical Literacy

Data stewardship plays a crucial role in ensuring the quality and integrity of data that are disseminated to users.



STATS ALERT

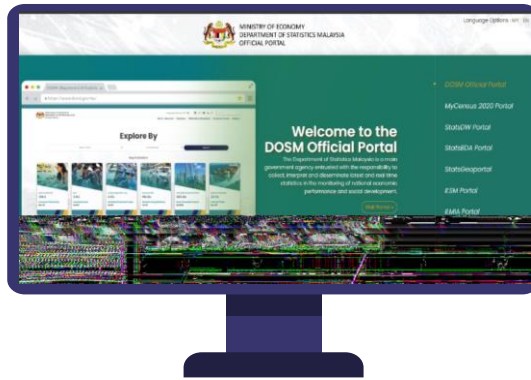
(Updated as of March 31, 2024)



Note: * Annual, Bi-Annual, 5-year and 10-year Routine Surveys.

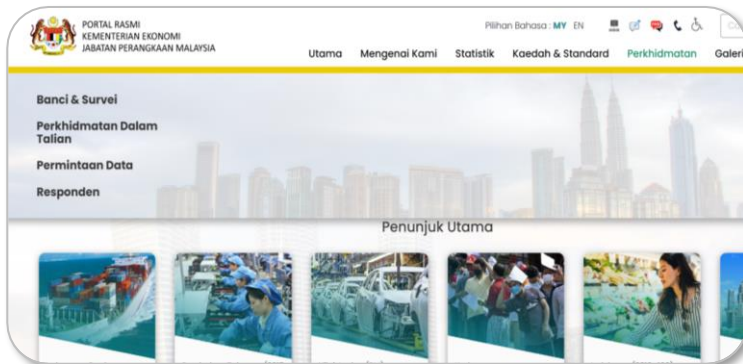
2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives Data Dissemination and Statistical Literacy



DOSM Portal

www.dosm.gov.my



1 Interactive Visualization

1. Malaysia External Trade Statistics Online (METS Online)
2. Business Cycle Clock
3. Malaysia CPI Inflation Calculator
4. My Local Stats
5. Population Quick Info

2 Portal Data

1. e-Statistik
2. StatsDW
3. StatsBDA
4. Stats Geoportal
5. Stats Digital
6. MysIDC
7. Portal MyCensus
8. Economic Census Portal
9. Agricultural Census Portal

3 Dashboard

<ol style="list-style-type: none">1. Agricultural Analytical System2. Tourism Dashboard3. Malaysia Economic Recovery Dashboard4. MyPrice Dashboard5. National Occupational Accident & Disease Statistics6. Job Market Insights7. My Job Profile	<ol style="list-style-type: none">8. Malaysia Labour Market Interactive Data (MyLMID)9. Population and Housing Census of Malaysia Dashboard (MyCenDash)10. OpenDOSM11. Kawasanku12. MyDemography13. Malaysia Input-Output Table (MyIOT)14. SDG Dashboard
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2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives Data Dissemination and Statistical Literacy (OpenDOSM)

DOSM Open Data initiative started way back in 2012 through *Malaysia Informative Data Centre (MysIDC)*.



The Motivation

DOSM embraces a dual approach, guided by the principles of **FAIR** and **CARE** to provide open data through **OpenDOSM**, a **modern platform for easy access to open data**.

FAIR ensures data is:

- ★ Findable
- ★ Accessible
- ★ Interoperable
- ★ Reusable

CARE principles emphasize:

- ✓ Collective Benefit
- ✓ Authority to Control
- ✓ Responsibility
- ✓ Ethics

The Output



The screenshot shows the OpenDOSM website with the following content:

- Header: OpenDOSM Home Dashboards Data Catalogue Publications API Docs
- Section: MALAYSIA'S NATIONAL STATISTICS ORGANISATION
- Section: Data: The backbone of effective governance
- Section: Malaysia at a Glance

Indicator	Value	Period
Current Population	33.4 mil	(2Q 2023)
Economic Growth	2.9%	(2Q 2023)
Unemployment	3.4%	(Jul 2023)
Inflation	2.0%	(Aug 2023)
Production Costs	-1.8%	(Aug 2023)
Manufacturing Output	-3.0%	(Jul 2023)
Industrial Production	+0.7%	(Jul 2023)
Wholesale & Retail Trade	+5.4%	(Jul 2023)

The Outcome

OpenDOSM led to a successful collaborative effort and value

The collage includes:

- A Facebook post from data.gov.my: "MALAYSIA'S OFFICIAL OPEN DATA PORTAL. High frequency. High granularity. High impact." with a link to the portal.
- A social media post in Malay: "Bersatu padu untuk saling membantu. Mulakan dengan sedikit, bantu satu bendera sehari dan bersama kita jadikan Malaysia lebih harmoni. Stay strong & safel Kita jaga Malaysia"
- A map showing locations in Malaysia like Kajang, Seremban, and Bangsar.



2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives Data Dissemination and Statistical Literacy (OpenDOSM)

Data Catalogue
Your one-stop interface to browse our wealth of open data. This page will consistently grow in depth and breadth, providing richer and more varied data from the various divisions of DOSM.

Dataset is catalogued

Metadata
Metadata: helps to understand the structure, nature and context of the data

Code
Connect directly to the data with Python.

Connect directly: to the data using Python

```
Python
# If not already installed, get pip installed
import pandas as pd

URL_DATA = 'https://storage.dosm.gov.my/labour/labourforce_annual.parquet'

df = pd.read_parquet(URL_DATA)
```

Data Visualization:
Enlighten users to get insights from charts or graphs

OpenDOSM Publications
can be browsed by:
Type, Frequency, Geography
Demography and Technical Notes

How is this data produced?
Key Information: help users to get fundamental understanding of the data

Publications
Looking for something specific?
Select a publication type

OpenDOSM
<https://open.dosm.gov.my/>

21 Dashboard

- i. Balance of Payments
- ii. Consumer Prices
- iii. Construction Statistics
- iv. Composite Indices
- v. Exchange Rates
- vi. External Trade Statistics
- vii. Formal Sector Wages
- viii. Gross Domestic Product
- ix. Household Income & Expenditure
- x. Industrial Production
- xi. International Investment Position
- xii. Kawasanku (MyArea) @OpenDOSM
- xiii. Labour Markets
- xiv. Labour Productivity
- xv. Life Expectancy
- xvi. Manufacturing Statistics
- xvii. Producer Prices
- xviii. Population of Malaysia
- xix. Services Statistics
- xx. Services Produces Prices
- xxi. Wholesale & Retail Trade

2. ADVOCATING DATA STRATEGY, DATA GOVERNANCE AND DATA STEWARDSHIP (Cont'd)

3. Data Stewardship – present objectives Data Dissemination and Statistical Literacy (Social Media)

DOSM's Social Media Followers

Facebook Stats Malaysia

www.facebook.com/StatsMalaysia



Followers 50,646

Reach 42,228

Engagement 15,455

Youtube Stats Malaysia

www.youtube.com/statsmalaysia



Suscribers 2,384

Views 231,062

Video 586

Twitter Stats Malaysia

www.twitter.com/statsmalaysia



Followers 19,366

Tweets 13,105

Instagram Stats Malaysia

www.instagram.com/statsmalaysia



Followers 9,662

Posts 6,482

Infographics and Facebook Live

Jan - Mar : 27
April : 4
TOTAL : 31

Infographic

FB Live

Jan - Mar : 63
April : 4
TOTAL : 67

3. KEY CHALLENGES ON PRACTICING DATA STRATEGY



    
StatsMalaysia
www.DOSM.gov.my





3. KEY CHALLENGES ON PRACTICING DATA STRATEGY

1. Legal and Regulatory Frameworks

- Government Agencies have difficulties in agreeing to share data. They may see data sharing as too risky due to privacy concerns and security challenges

2. Policies, Standard and Guidelines

- Revising Statistics Act 1965 (revised 1989)
- DOSM Strategic Plan (DSP) 2021-2025
- Generic Statistical Business Process Model (GSBPM)
- GAMSO
- Statistical Business Architecture (SBA)
- Micro Data Dissemination Policy
- Micro Data Sharing Policy

3. Data Protection & Privacy; Ethics; Security

- Public Sector Data Sharing Policy (DPDSA)
- National Data Sharing Policy (NDSP)
- Personal Data Protection Act 2010 (PDPA)
- Examples of data use agreements in Central Database Hub (PADU):
 - a. Memorandum of Understanding (MoU)
 - b. Non - Disclosure Agreement
 - c. Confidentiality Declaration
 - d. Data Sharing Agreement
 - e. Confidentiality Agreement

4. Resource constraint

- Limited Budget
- Outdated Infrastructure
- Workforce Capacity



3. KEY CHALLENGES ON PRACTICING DATA STRATEGY (Cont'd)

5. Capacity building

- Understanding Data Governance and Data Management

6. Data Interoperability and integration

- Standardization
- Data Quality Issues
- Data Sharing Agreements
- Legacy Infrastructure

7. Data culture – statistical literacy

- Public Perception of Statistics
- Limited Data Education
- Communication Gap

8. Common data architecture

- Legacy Systems
- Standardization Hurdles
- Data Governance
- Data Security and Privacy Concerns
- Workforce Readiness

9. Technology

- National Enterprise-Wide Statistical System (NEWSS) 2.0
- Stats Geoportal
- OpenDOSM Next Gen.

"Gemilang"

Di arus zaman berubah
moden dan penuh rintangan
tetap melangkah dan berevolusi
dan menuju matlamat jaya

Seiring dan seirama
bersama tekad di hati
misi dan visi berinovasi
Gah di mata dunia



VIDEO "GEMILANG"

<https://bit.ly/DOSMGemilang>

Chorus

Gemilang, perangkaan jitu
data terpelihara
pelbagai anugerah
membuktikan kita juga berdaya
Gemilang, harumkan negara
di antarabangsa
berpadu tenaga, berganding bahu
dan kejayaan di rasa

Langkah strategi di yakini
kejayaan di kecap
sejarah yang terukir
menjadi inspirasi

THANK YOU



20 OKTOBER



2016-2030



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