



MINISTRY OF ECONOMY  
DEPARTMENT OF STATISTICS MALAYSIA



# 28TH MEETING OF THE WIESBADEN GROUP ON BUSINESS REGISTERS

## WORKSHOP SBR MATURITY MODEL: DASHBOARD ON SOCIAL & ECONOMICS STATISTICS: A CASE STUDY IN MUKIM AYER HITAM MUAR, JOHOR, MALAYSIA

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THE HAGUE, NEATHERLANDS





**01**

**BACK GROUND OF DOSM**

**02**

**OVERVIEW OF MSBR**

**03**

**DASHBOARD OF CASE STUDY**

**04**

**BENEFITS**

**05**

**CHALLENGES**

**06**

**WAY FORWARD**

# DOSM INSIGHTS

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StatsMalaysia  
[www.DOSM.gov.my](http://www.DOSM.gov.my)





In 1965, the Bureau of Statistics changed its name to the Department of Statistics Malaysia (under Prime Minister's Department)

On 10 March 2020, the Department of Statistics Malaysia is under the purview of Prime Minister's Department (Economy)

1949

1965

2018

2020

Established in 1949 under the Statistics Act 1949 known as the Bureau of Statistics

Department Of Statistics Malaysia under the Ministry of Economic Affairs

## LEGISLATION



LAWS OF MALAYSIA

Act 415

STATISTICS ACT 1965

(REVISED-1989)

Under the Statistics Act 1965 (Revised - 1989), the functions of DOSM [Section 2] are:

To collect and interpret statistics for the purpose of formulation or implementation of government policies....

Statistics Act 1965  
(Revised-1989)



LAWS OF MALAYSIA

REPRINT

Act 16

CENSUS ACT 1960

Incorporating all amendments up to 1 January 2006

Under Census Act 1960:

The Yang di-Pertuan Agong may, by notification in the Gazette, from time to time direct that a census to be taken throughout Malaysia of the Population, Agriculture, Trade, Labor, Industry, Commerce....

Census Act 1960  
(Revised-1969)



## STRATEGIC THRUST 2

**Empowerment of Innovation in the Management of Resources and Infrastructure**

## STRATEGY 1

**Adapting the Revolution of Statistical System and Work Process**

## Programme 3

Expanding the use of Geographic Information System (GIS) in compilation of statistics.

## Activity

- 1 Strengthen data management and geospatial governance.
- 2 Expand the use of geospatial data in compilation of statistics
- 3 Widen the use of imagery data in statistical activities.
- 4 Adapt The Global Statistical Geospatial Framework (GSGF).

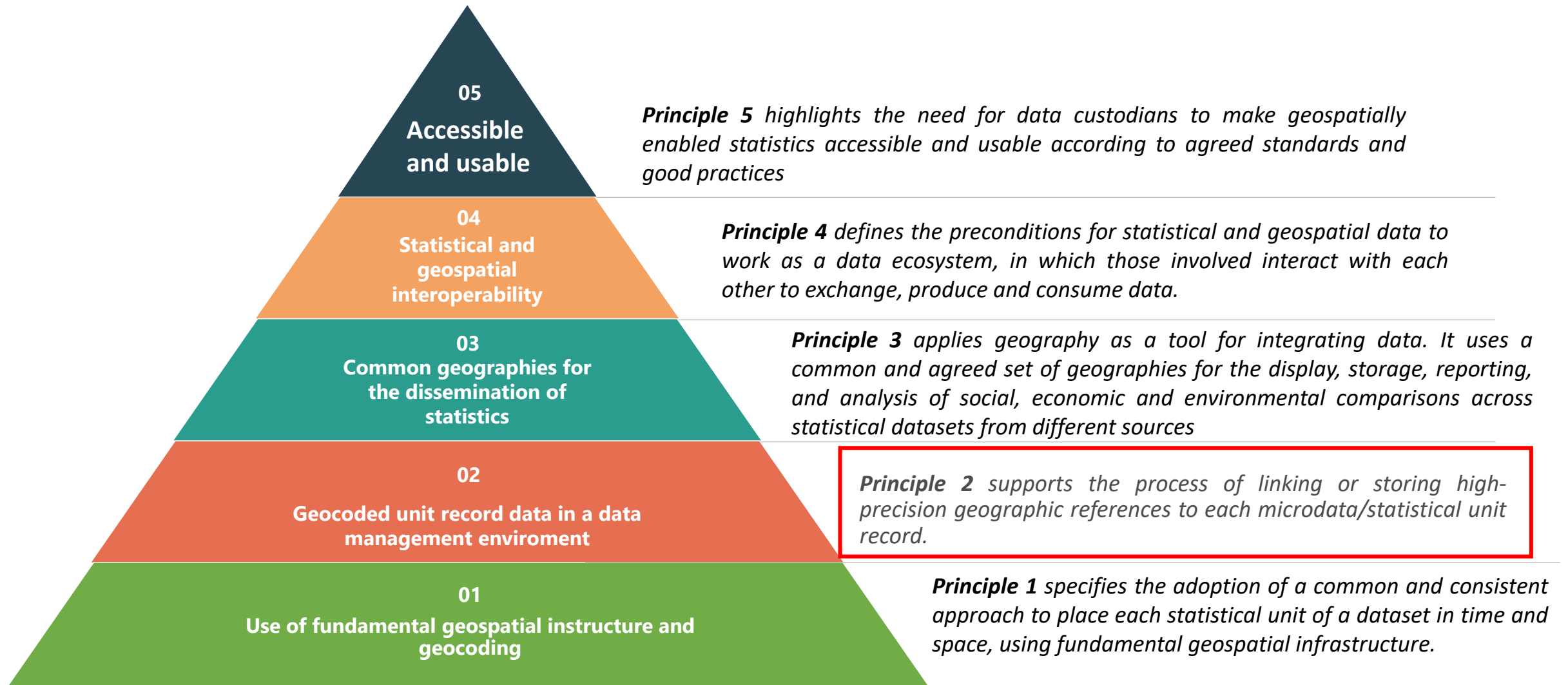
# **GLOBAL STATISTICAL GEOSPATIAL FRAMEWORK (GSGF)**

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# FIVE PRINCIPLES OF THE GLOBAL STATISTICAL GEOSPATIAL FRAMEWORK (GSGF)





## Use of fundamental geospatial infrastructure and geocoding

Address geocoding based on Census 2020 data

## Geocoded unit record data in a data management environment

Integration of geospatial data based on statistical identifier.  
(NGDBBPUBTK)

## Common geographies for dissemination of statistics

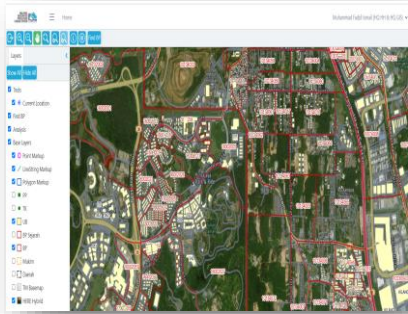
Standard and command base map from respective agencies e.g Department of Survey and Mapping Malaysia, Department of Town and Country Planning, Election Commission of Malaysia

## Statistical and geospatial interoperability

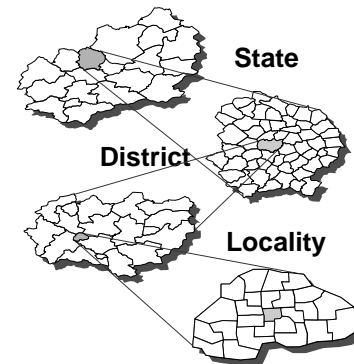
MS1759 sources of references for the geospatial data developed in compliance with Malaysian standards.

## Accessible and usable

Dissemination of statistics using GIS application (STATSGeoportal & Dashboard)



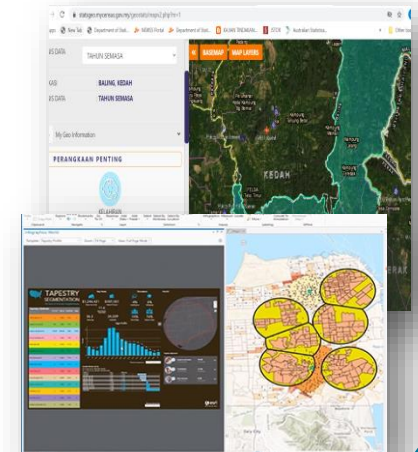
state_code	ad_code	cd_code	eb_code	lq_no	
20327	2	101	22	1	40
20328	2	402	23	1	51
20329	2	901	64	1	38
20330	2	801	48	3	122
20331	2	402	23	1	52
20332	2	402	23	1	52
20333	2	402	23	1	52



Statistical boundary

## MS1759 MALAYSIAN STANDARD GEOGRAPHIC INFORMATION / GEOMATICS - FEATURE AND ATTRIBUTE CODES

- Manual GIS 2015
- MANUAL GIS 2016
- Manual GIS Versi 3





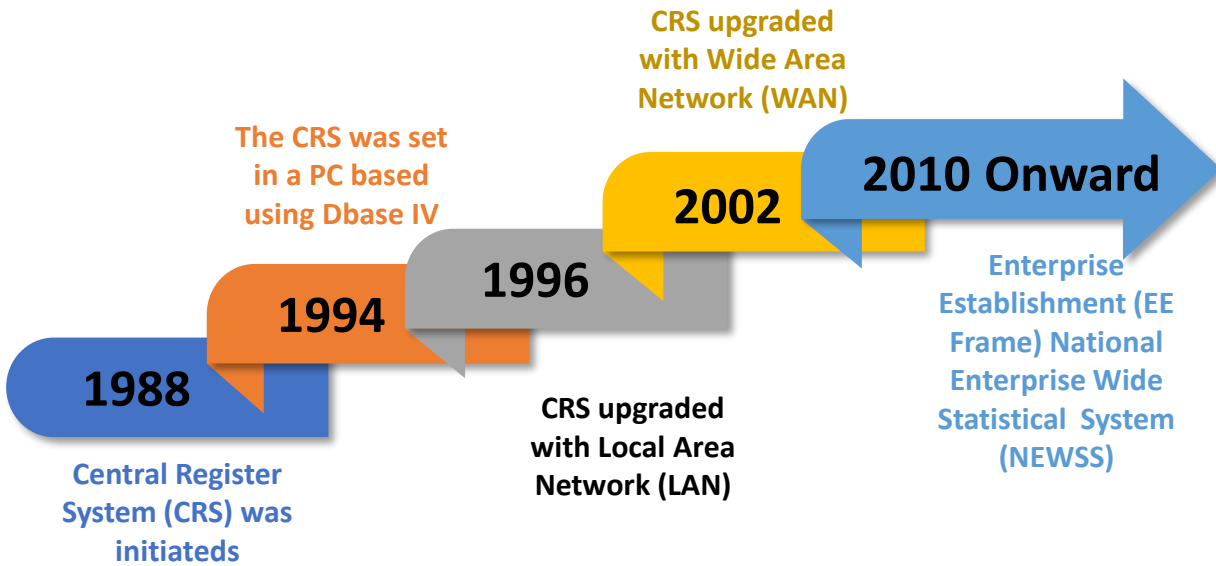
# MALAYSIA STATISTICAL BUSINESS REGISTER (MSBR)

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DOSM has developed an integrated and online system to streamline the business process model in Business Register as well as to replace the numerous nonintegrated systems namely New Enterprise Wide Statistical System (NEWSS).



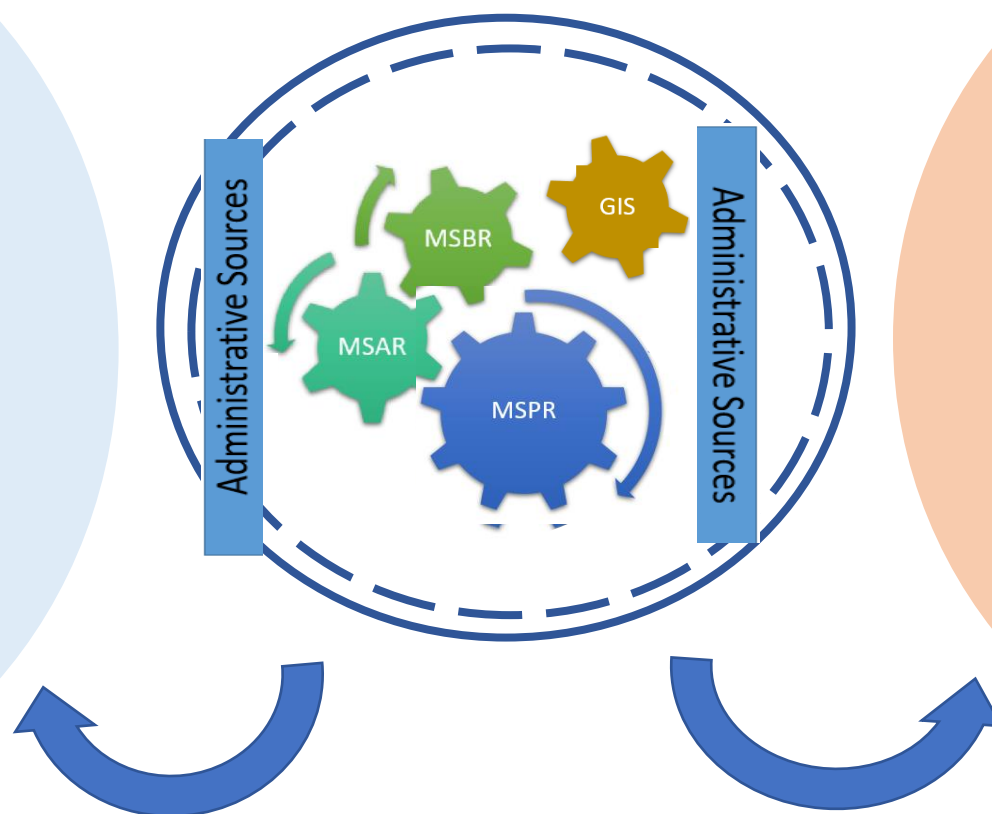
## NO. OF ESTABLISHMENTS BY SECTOR AND CATEGORY, MALAYSIA

	LARGE	MEDIUM	SMALL	MICRO	TOTAL
<b>SERVICES</b>	28,441	10,539	215,164	794,612	<b>1,048,756</b>
<b>MANUFACTURING</b>	2,490	2,426	25,530	41,121	<b>71,567</b>
<b>CONSTRUCTION</b>	1,460	4,747	26,688	72,239	<b>105,134</b>
<b>AGRICULTURE</b>	1,536	920	4,977	11,409	<b>18,842</b>
<b>MINING &amp; QUARRYING</b>	146	219	804	3,021	<b>4,190</b>
<b>TOTAL</b>	<b>34,073</b>	<b>18,851</b>	<b>273,163</b>	<b>922,402</b>	<b>1,248,489</b>



## DOSM, MALAYSIA: MSAR, MSBR, MSPR & GIS Integration

Data integration refers to the process of bringing together data from multiple sources across an organisation to provide a complete, accurate, and up-to-date dataset, data analysis as well as other applications and business processes



In the case study of Mukim Ayer Hitam, Muar, Johor, Malaysia.

- Began with utilization of datasets of MSBR, MSAR and MSPP from DOSM as the initial step. These datasets were subsequently integrated with the latest information from self updating by Mukim Ayer Hitam, Muar Community.

Note:

MSAR- Malaysia Statistical Address Register

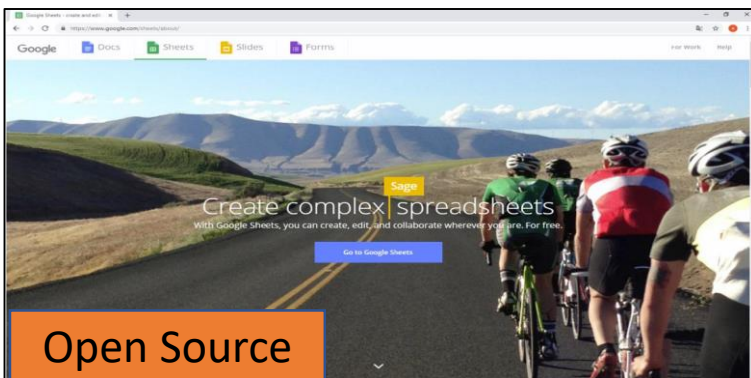
MSPP - Malaysia Statistical Population Profile = Malaysia Statistical Population Register (MSPR)



Gov Agency

## Geocode Awesome @Google Sheet

The longitude and latitude (X,Y) will be automatically generated



Open Source

1 Gmail account = 1,000 address per day

Precision LOA1  
(automated & randomly checking): 70-80%

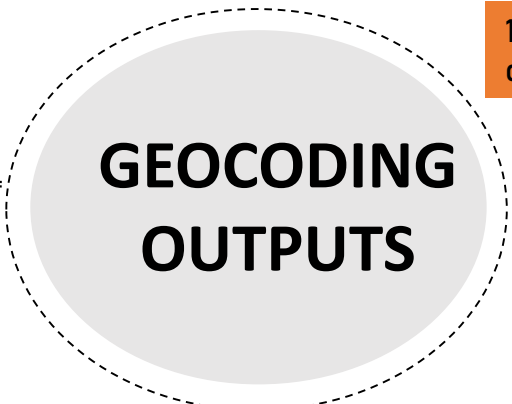
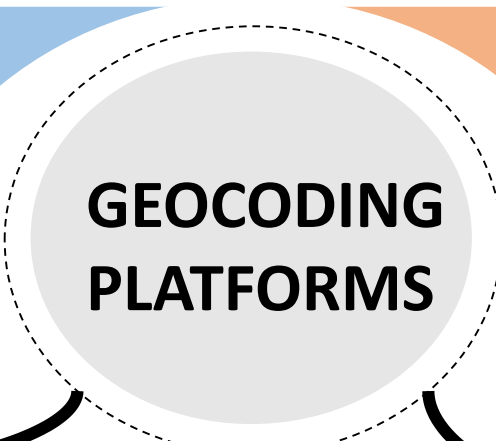
Precision LOA2  
(manually verification manual/details): 85-95%

## MyGeoTranslator @PGN

The matching locality is determined based on geocoded data (e.g. state, administrative district, mukim/locality and election boundaries (parliamentary and Subnasional Statistics of State Legislative Assembly))



1 account = 10,000 address per day



Automation		INPUT		OUTPUT	
ID	Shape	IDCODE	ADDRESS	ADDRESS	LONGITUDE
1	P	103.10089034457225	Automation	0	Automation
2	P	103.03640000000003	Automation	0	Automation
3	P	102.99363667700004	Automation	1	Need to Verify
4	P	103.10423237115877	Automation	0	Automation
5	P	103.0869063586299	Automation	0	Automation
6	P	103.09055000000006	Automation	0	Automation
7	P	103.06999000000008	Automation	0	Automation
8	P	102.94922502000009	Automation	1	Need to Verify
9	P	103.10554000000008	Automation	0	Automation
10	P	103.03638570677249	Automation	0	Automation
11	P	103.03466250504644	Automation	0	Automation
12	P	103.03640000000003	Automation	0	Automation
13	P	103.69776195087366	Out Singapore	0	Out Singapore
14	P	86.55184999999994	Out	0	Out
15	P	0.4904381350000335	Out	0	Out

Level 2 -Verify (Manually/Detail) through Google Map/Google Earth/field work

END

# CASE STUDY

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June 2022: A case study was conducted in Mukim Ayer Hitam, Johor, Malaysia focusing on the community's self-updating of basic information about living quarters (LQ) and population

Outcome: A dashboard comprising 22 Enumeration Blocks, 2,705 geocodes of each LQs, 6,798 individuals and 150 geocodes for establishments and basic facilities including schools, hospitals/clinics, homestays and natural disaster areas (potential flood areas).

This case study is a collaboration between the Department of Statistics Malaysia and District Office of Muar, Johor, Malaysia.





The first step in integration is identifying the key indicator for each data sources. For MSBR, the main identifier is the CCM number. Meanwhile, for MSAR it is the Address ID and NGDBBP and for MSPP, Identification Card Number and Address ID are used as identifiers.

MALAYSIA STATISTICAL BUSINESS REGISTER	MALAYSIA STATISTICAL ADDRESS REGISTER	MALAYSIA STATISTICAL POPULATION PROFILE
ESTABLISHMENT_ID	ADDRESS_ID	ADDRESS_ID
BUSINESS_REG_NO	NGDBBPTK	NGDBBPTK
REGISTERED_NAME	DISTRICT	DISTRICT
TRADING_NAME	MUKIM	MUKIM
STREET_1_B	BU_NO	BU_NO
STREET_2_B	LQ_NO	LQ_NO
TOWN_B	UNIT_NUMBER	UNIT_NUMBER
POSTCODE_B	LEVEL	LEVEL
STATE_B	BLOCK	BLOCK
DISTRICT	BUILDING_NAME	BUILDING_NAME
MUKIM	STREET_NAME	STREET_NAME
SECTOR	SECTION_NAME	SECTION_NAME
MSIC 2008	CITY_NAME	CITY_NAME
YR_KATEGORI_EKS_PKS	POSTCODE	POSTCODE
NGDBBP	STATE_CODE	STATE_CODE
LONGITUDE	LONGITUDE	IDENTIFICATION CARD NO.
LATITUDE	LATITUDE	NAME
		RELATION
		SEX
		MARITAL STATUS
		ETHNIC
		RELIGION
		EDUCATION LEVEL
		OCCUPATION
		SALARY
		DISABLED PERSON
		INVOLVED AGRICULTURE ACTIVITY

Figure 1: MSBR, MSAR and MSPP



## Step 1: Verification of geocode for each establishment and living quarters

Geocode for each establishment and living quarters in Mukim Air Hitam will be verified by overlying with spatial layer (desktop canvassing). If there are any discrepancies, it will be checked and confirmed through fieldwork conducted by DOSM State's Office.

REGISTERED_NAME	STREET_1_B	STREET_2_B	TOWN_B	STATE_E	X_MYG	Y_MYG	NGDBBP202
HONG LEE PLANTATION SDN. BHD.	LOT 1223, PARIT TURUN,	LEDANG,	BUKIT GAMBIR	JOHOR	102.6546	2.211	01020056
FONG SOON POULTRY FARM SDN. BHD.	5 GROUND FLOOR, JLN CENGAL	OFF JALAN GENUANG, SEGAMAT	SEGAMAT	JOHOR	102.82754	2.500400004	01024045
INN SOON FARMING SDN. BHD.	NO.188, JALAN ISMAIL, NO.84 KAMPONG GELANG CHINCHIN	SENGGARANG, SEGAMAT	BATU PAHAT JOHOR	JOHOR	103.0592733	1.74529556	01029039
BBC PELITA PLANTATION (JEPAK) SDN. BHD.	LOT 1040 JALAN KAMPUNG MURNI JAYA	LAYANG - LAYANG	KULAI. JOHOR	JOHOR	102.8142546	2.573063058	01144049
LEW PENG ENTERPRISE SDN. BHD.	LOT 207, LORONG SEROJA 2,	TAMAN MEDAN JAYA	KOTA TINGGI	JOHOR	103.5379129	1.80530001	01134047
FISH WORLD AQUARIUM TRADING	LADANG FELDA INAS SELATAN	MUKIM SEDENAK	KULAI	JOHOR	103.8834953	1.722812982	01135018
LADANG FELDA INAS SELATAN	NO. 37 JALAN NAGASARI	SEGAMAT BARU	SEGAMAT	JOHOR	103.4452862	1.726078126	01007013
SLK GEMILANG SDN. BHD.					102.85254	2.493529987	01142017

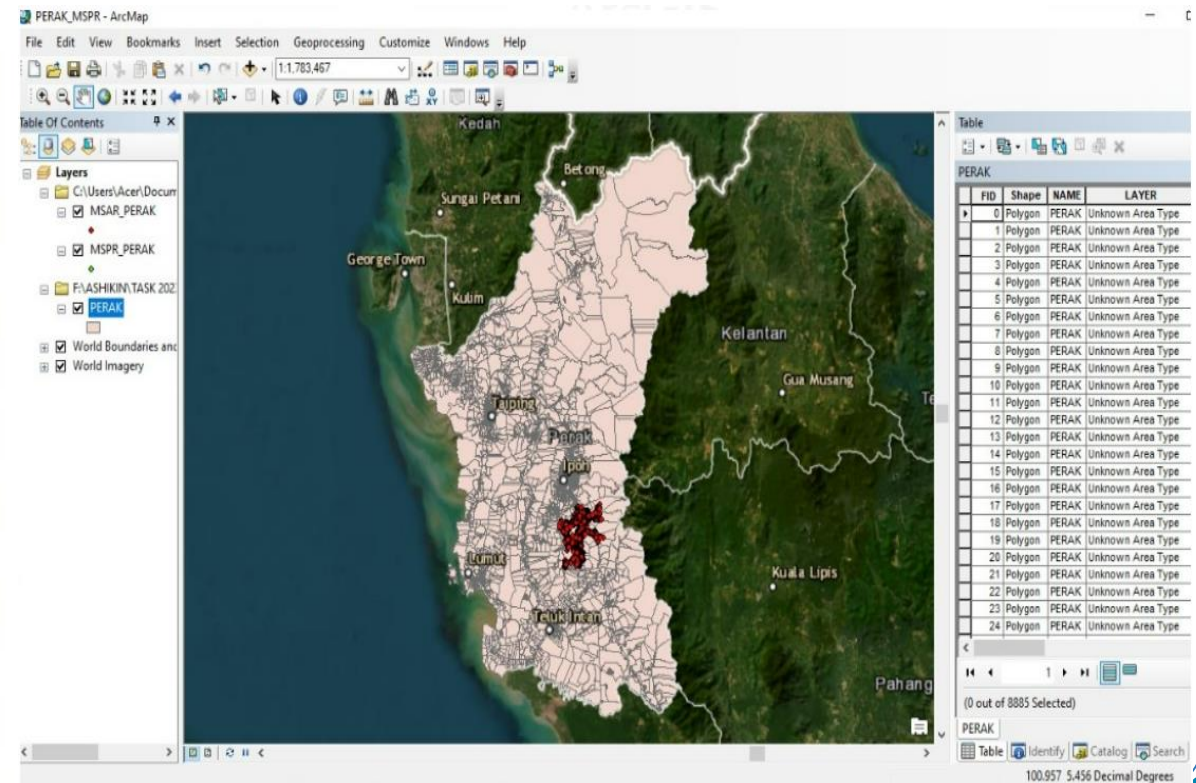


## Step 2: Upload the excel file into ARCGIS and ARCGIS Enterprise



Excel file with the selected variables, such as establishment, living quarters and other basic facilities (schools, homestays etc.) will be compiled into a single file (zip. file).


MSAR_PERAK.cpg	27/7/2023 11:57 AM	CPG File	1 KB
MSAR_PERAK.dbf	27/7/2023 11:57 AM	DBF File	211,012 KB
MSAR_PERAK.prj	27/7/2023 11:57 AM	PRJ File	1 KB
MSAR_PERAK.sbn	27/7/2023 11:58 AM	SBN File	403 KB
MSAR_PERAK.sbx	27/7/2023 11:58 AM	SBX File	10 KB
MSAR_PERAK.shp	27/7/2023 11:57 AM	SHP File	1,153 KB
MSAR_PERAK.shx	27/7/2023 11:57 AM	SHX File	330 KB
MSAR_PERAK	27/7/2023 12:02 PM	Compressed (zipp...	3,296 KB









## Step 3: Visualisation of linkages MSBR, MSAR and MSPP by using ARCGIS Enterprise





**Malaysia Statistical Business Register (MSBR)**  
– Information on Business Registration and Locality






**Malaysia Statistical Address Register (MSAR)**  
– Living Quarters Basic Information and Locality





**Malaysia Statistical Population Register (MSPP)**  
– Information on Resident base on Living Quarters and Locality



**Information on Others Facilities, disasters, etc**

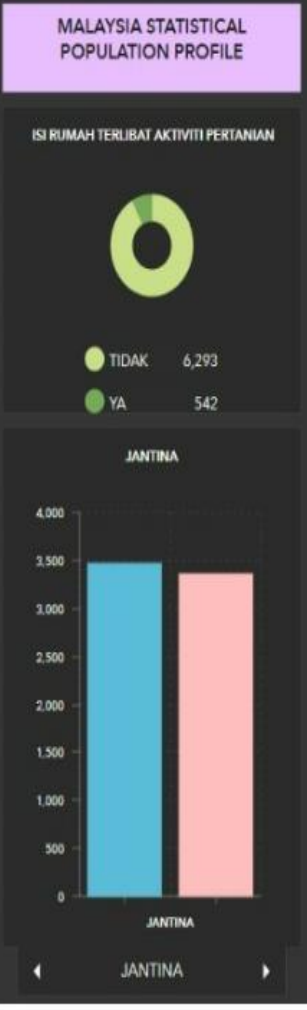
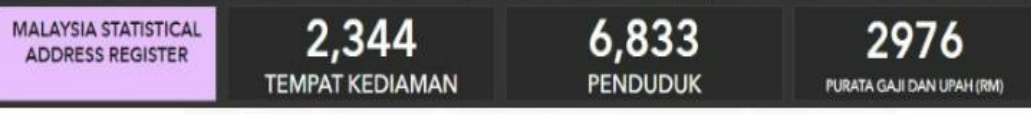
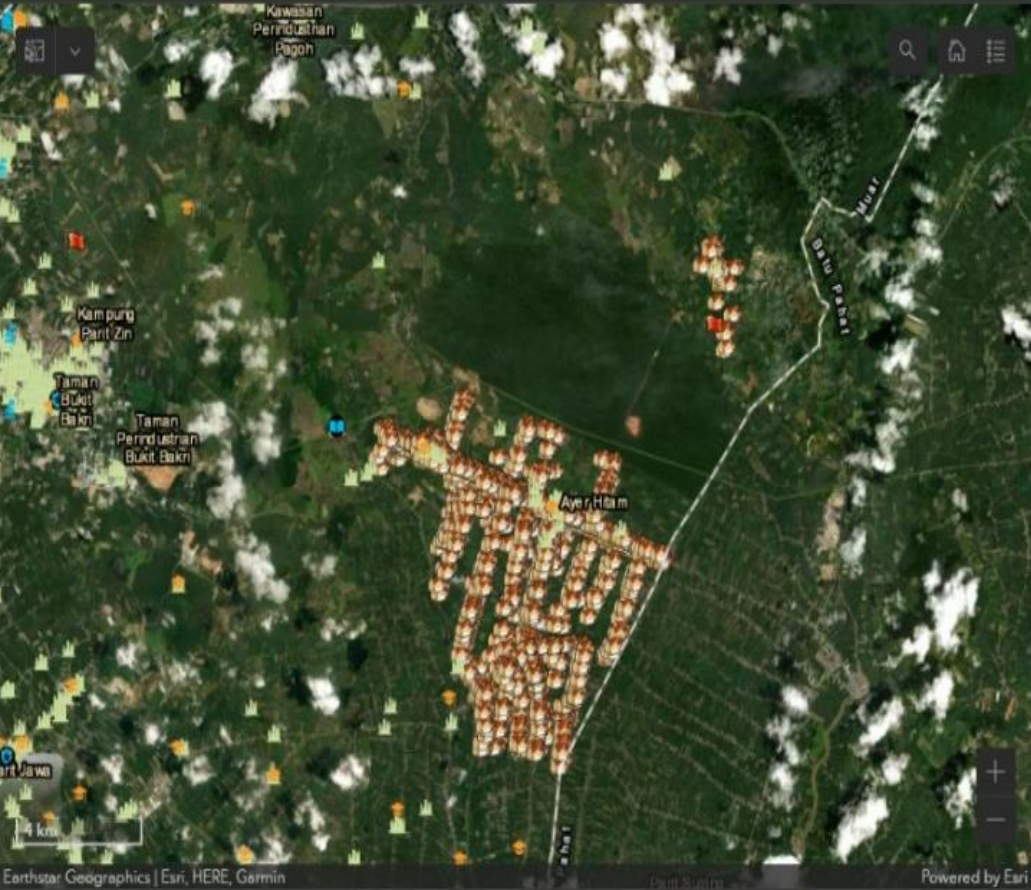


## MAKLUMAT SOSIAL EKONOMI DAERAH MUAR

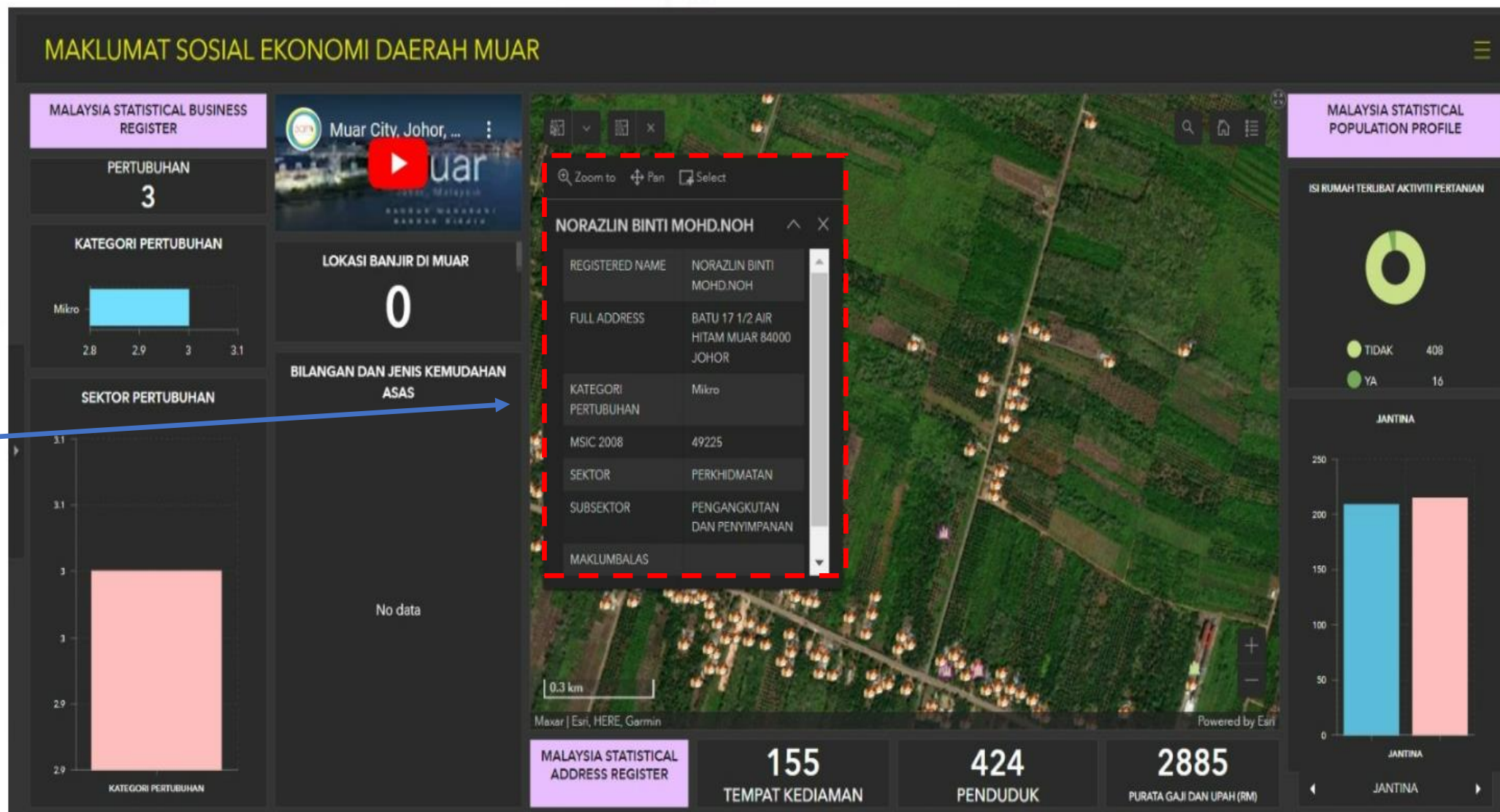
No. of Establishments

Size of Establishments (Micro, small, medium, large)

Establishments by sector (Services/ Manufacturing/ Construction/ Agriculture)







**MALAYSIA STATISTICAL ADDRESS REGISTER**

**155**  
TEMPAT KEDIAMAN

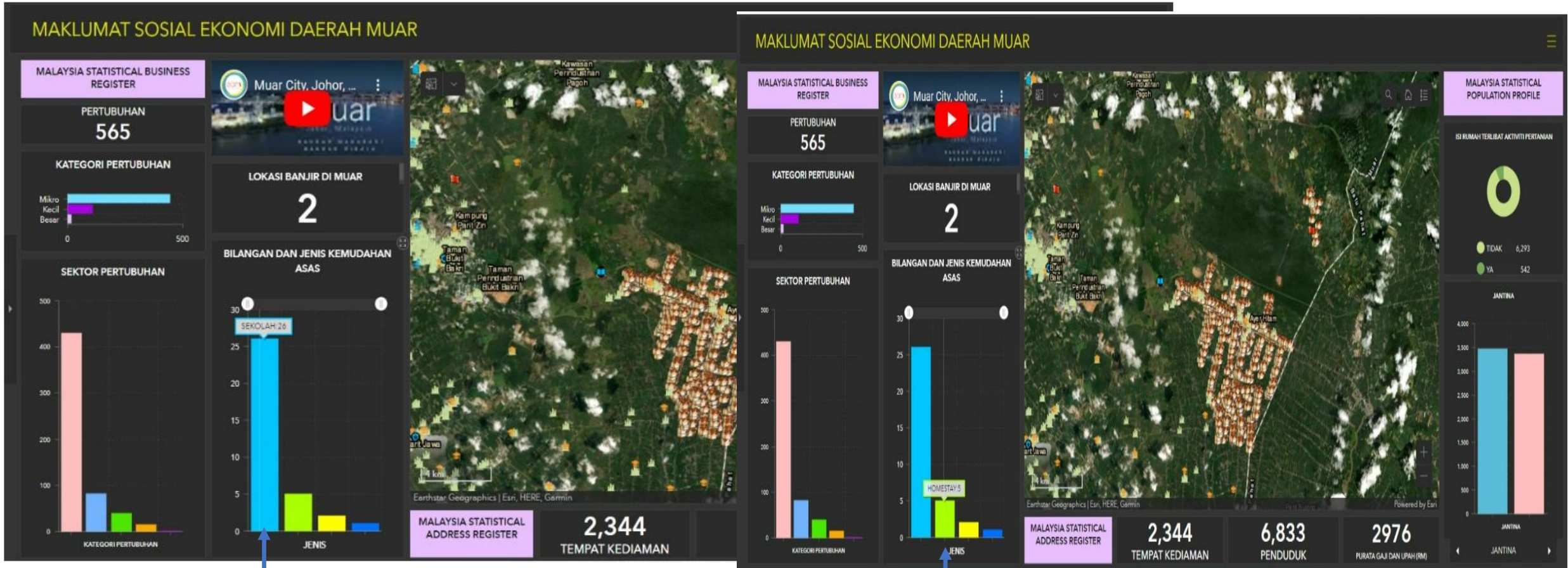
**424**  
PENDUDUK

**2885**  
PURATA GAJI DAN UPAH (RM)

Profiles of Establishments (Registered name, address MSIC 2008, sector/subsector, etc)



# DASHBOARD (Basic Facilities in Muar)



No. of Schools

No. of Homestays

Depending on the necessary variable or plot



It is a must in order to provide efficient aid to targeted population



Push factor for local authority and create awareness



Provide solid foundation for reliable & accurate statistical area

- Example: During the previous COVID 19, most businesses were affected especially the micro, small, and medium establishments

- The assistance or aid delivery for those affected can be more efficient (stratified by the size of the establishments)

Any planning & implementation can be implement efficiently



Different localities have different planning and implementation

Monitoring of births and deaths establishments more easily carried out



Latest establishments profiles serve as input for economic census – reducing the operational costs and resources requirement



## COLLABORATION

- A strong and good collaboration with the district local authorities and communities is essential
- Dedicated focal point

## DATA QUALITY

The changes of establishments and population are quite dynamic

## HUMAN CAPITAL

- Human resources are limited since this case study relies on existing resources
- Specific skilled officers are needed to do the integration and linkages from many databases with spatial data and visualisation through dashboard

## DATA MANAGEMENT

– Need to do data profiling, standardisation and cleansing as well as text matching before visualization through dashboard

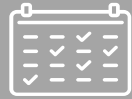


This case study has been extended to other districts or localities in different states across Malaysia, such as Besut (Terengganu), Langkawi (Kedah), Perak (Perak Tengah), Seremban (Negeri Sembilan), Kota Bharu (Kelantan), Pekan (Pahang) and other locality in other states



In preparation for Agriculture Census 2024 preparation, approximately 20,000 establishments were geocoded based on their addresses using the Geocode by Awesome Table and will be verified by DOSM state's office

Moving forward, all the establishments in MSBR will be geocoded based on their addresses and will be allocated to state DOSM for verification



**The first case study in Mukim Ayer Hitam, Muar, Johor is undertaken by the DOSM in collaboration with the District Office of Muar, Johor**



**This case study was initiated with the aim to inspire the other districts in Malaysia**



**Any policy and aids at the district level can be targeted based on the specific needs and groups**



**The success of this initiatives depends on the collaborations between District Office, community and state DOSM.**