New NSO vision: transformation and modernization of the Official Statistical System

Instructions: Click on the link to access each author's presentation.

Chair: Dominik Rozkrut

Participants:

Kabeli Mefane: Transforming and Modernizing National Statistics Systems: Leaving No One Behind

Malathi Ponnusamy: Building a National Data Infrastructure for Malaysia's Future: A Focus on Data Production and Innovation

Malgorzata Tarczynska-Luniewska*: Enterprises' ESG practices and sustainable development: challenges and opportunities for official statistics.

Zhihua Tang: Opportunities and Challenges Faced By National Statistical Offices In The Digital Era: The Recent Experiences From China

Fiona Dawe: Driving innovative and ambitious statistical change with user needs at the core

*Work presentation not available or non-existent

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Transforming and Modernizing the National Statistics System

by Kabeli Mefane, Lesotho Bureau of Statistics

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Outline

- Background
- Africa's Five Thematic Areas for Transformations
- How Integrated Systems (IS) and New Technology (NT)are core to five thematic areas
- IS and NT significance, benefits, and applications within NSS
- Success stories of Transformation and Modernization in Africa
- Inclusivity in statistical production
- Challenges and Opportunities

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Background

National statistics systems (NSS) in Africa serve as the backbone of evidence-based policymaking, providing critical data for informed decision-making and monitoring progress toward development objectives. “However, many African countries face challenges such as outdated methodologies, inadequate coverage, and limited data accessibility, which hinder the effectiveness of their NSS”. Therefore, NSSs in Africa have to improve their approach to generating statistics. In light of these, the Statistical Community in Africa has undertaken to pursue programs that are geared toward the transformation and modernization of their systems.

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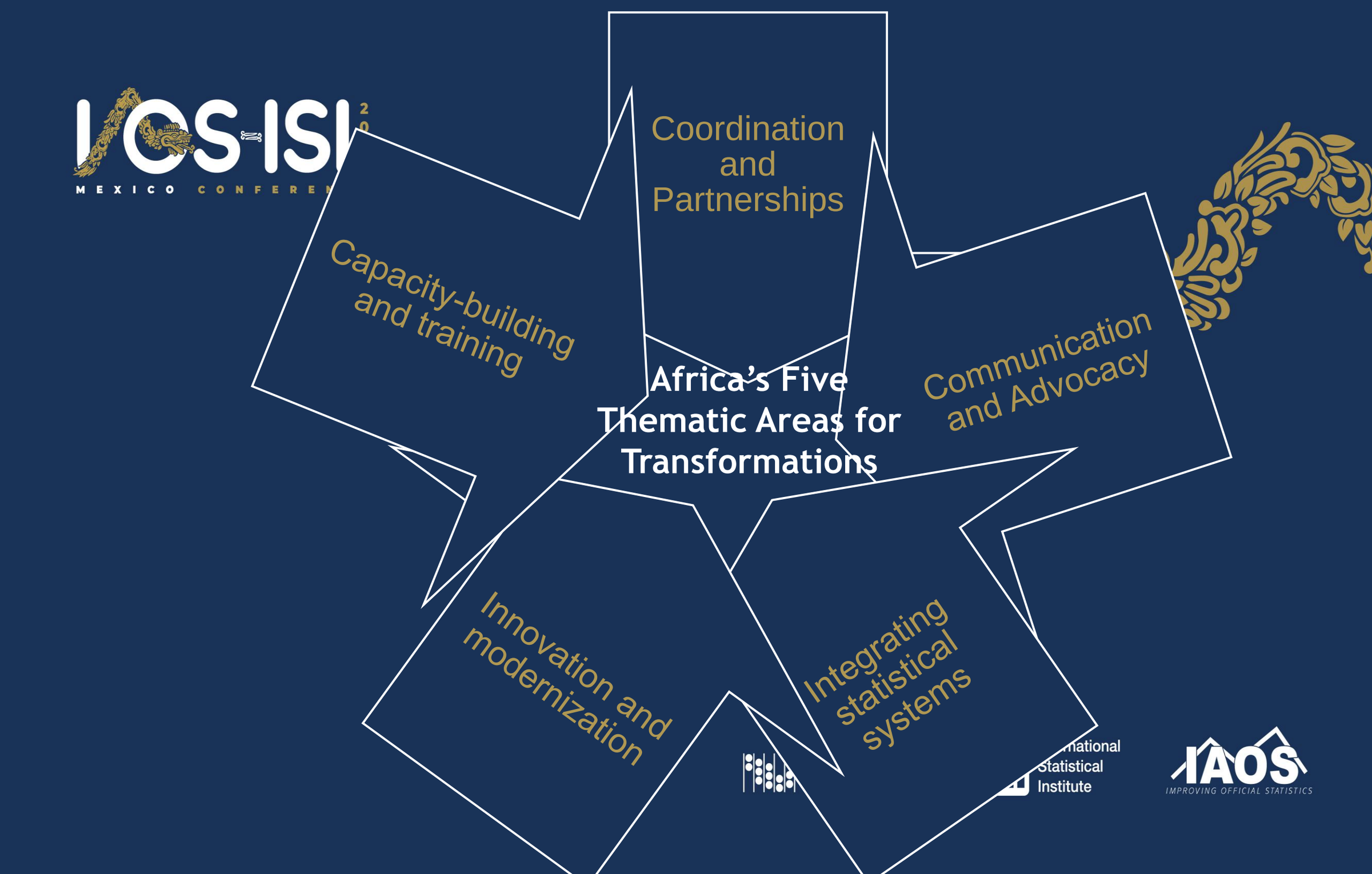
Coordination and Partnerships
Capacity-building and training
Communication and Advocacy
Africa's Five Thematic Areas for Transformations
Innovation and modernization
Integrating statistical systems

How integrated systems (IS) and new technology (NT) are core to 5 thematic areas

IS facilitate seamless coordination
NT enables real-time collaboration and data sharing

IS allow for the efficient dissemination while NT supports interactive data visualization and storytelling

IS streamlines the process of statistical production, NT automates repetitive tasks

IS facilitates the integration of new data sources. NT, including big data analytics, AI, and ML, enables innovative approaches

Technology-enabled training programs and capacity-building initiatives enhance the skills and capabilities of NSS staff

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Significance, Benefits, and Application within NSS

- Enhanced Data Quality
- Increased Efficiency
- Inclusivity and Equity

Significance

Applications

- Real-Time Data
- Improved Decision-Making
- Cost-Effectiveness

Benefits

- Mobile Data Collection
- Big Data Analytics
- Geospatial Analysis
- Cloud Computing
- Machine Learning and AI Data Visualization Tool
- Digital Survey Tools

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Transformation & modernisation in África

COMESA Harmonised Consumer Price Indices

Lesotho Data for Sustainable Development project

South African Statistical Quality Assessment Framework (SASQAF)

The **Africa Information Highway** (AIH) initiative by **AfDB**

Lesotho land cover mapper online tool (EOSTAT)

Most African NSOs including Lesotho use mobile data collection tools

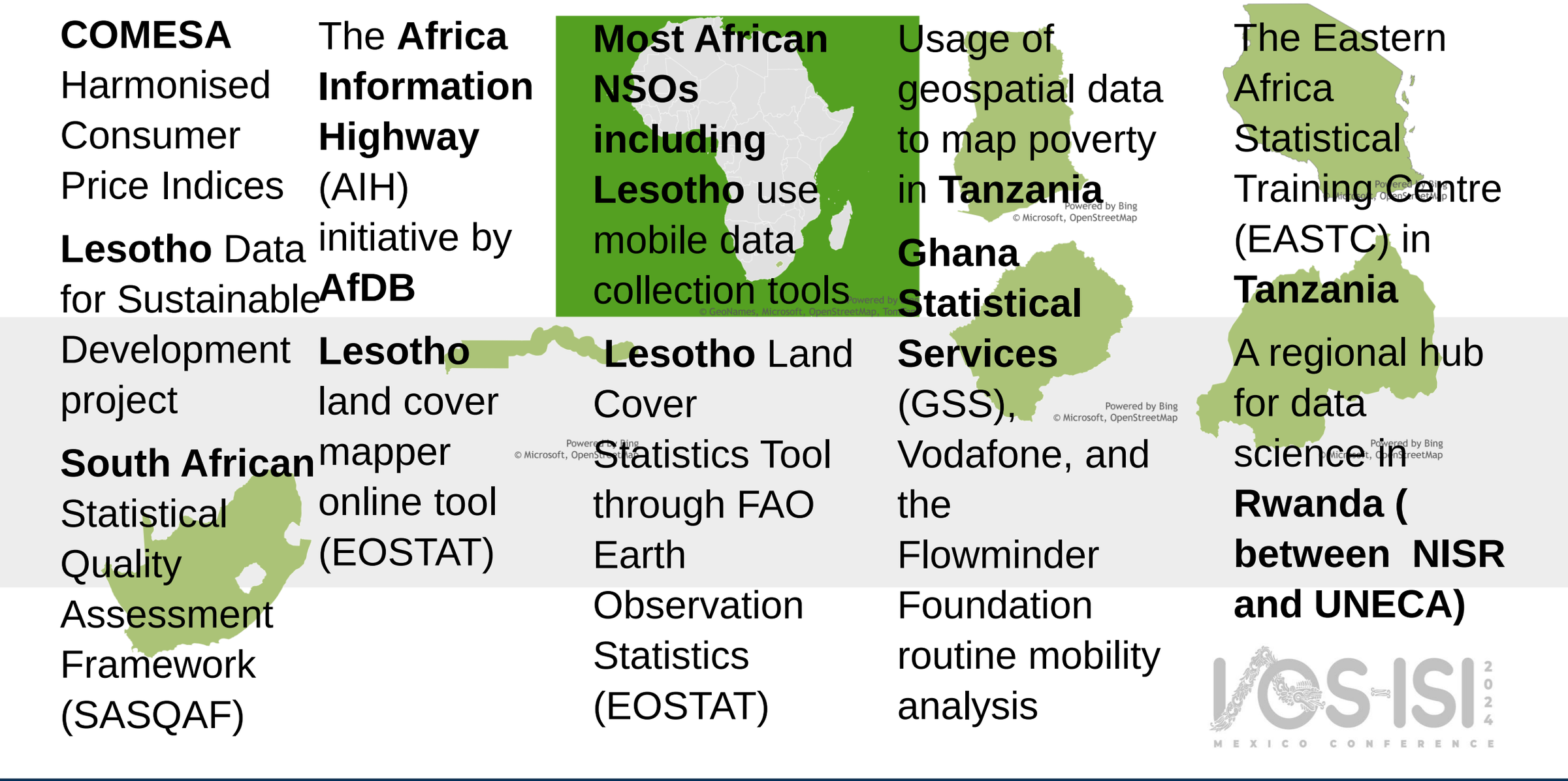
Lesotho Land Cover Statistics Tool through FAO Earth Observation Statistics (EOSTAT)

Usage of geospatial data to map poverty in **Tanzania**

Ghana Statistical Services (GSS), Vodafone, and the Flowminder Foundation routine mobility analysis

The Eastern Africa Statistical Training Centre (EASTC) in **Tanzania**

A regional hub for data science in **Rwanda (between NISR and UNECA)**



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Leaving No One Behind

Improved Data Quality

Enhanced Data Collection Methods

Disaggregation of data

Real-time Monitoring and Reporting

Integrated Information Systems

Tailored Approaches for Inclusivity

Data Accessibility and Dissemination

Data Privacy and Ethical Use

Capacity building to empower local stakeholders

Partnerships and Collaboration

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Some of the Challenges and Opportunities

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References

- United Nations. Economic Commission for Africa (2023-01). Road map for the transformation and modernization of official statistics in Africa, 2023–2030. Addis Ababa:. © UNECA,. https://hdl.handle.net/10855/49338”
- “United Nations. Economic Commission for Africa;(2022-03). Progress report on the transformation and modernization of national statistical systems in Africa. UNECA Committee of Experts of the Conference of African Ministers of Finance, Planning and Economic Development Meeting (40th : 2022, May 11 - 13: Dakar, Senegal). Addis Ababa :. © UNECA,. https://hdl.handle.net/10855/48311”
- “United Nations. Economic Commission for Africa; United Nations. Economic and Social Council; United Nations. Economic Commission for Africa; United Nations. Economic and Social Council (2022-08). Statistical capacity development in Africa: progress report for 2020−2022. UNECA Statistical Commission for Africa Meeting (8th: 2022, Oct. 24 - 26: Addis Ababa, Ethiopia). Addis Ababa : © UNECA,. https://hdl.handle.net/10855/49373”

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Kea leboha, Thank you, Merci, Gracias

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BUILDING A NATIONAL DATA INFRASTRUCTURE FOR MALAYSIA'S FUTURE: A FOCUS ON DATA PRODUCTION AND INNOVATION

PRESENTED BY: MALATHI PONNUSAMY

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OUTLINE

1. Introduction
2. Strengthening of the national statistical system (SNSS)
3. Data Governance
4. Data Integration
5. Innovation
6. Modernization in data collection & storage
7. Modernization in data dissemination
8. Conclusion

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INTRODUCTION

DOSM as the Official National Statistics Agency

The main government agency entrusted and responsible for **collecting**, **interpreting** and **disseminating** timely and up-to-date statistics.

1949

Statistics Malaysia was established in 1949 under the provisions of the Statistics Ordinance 1949 and was known as the Bureau of Statistics

1965

The Bureau of Statistics has changed its name to the Department of Statistics Malaysia and operates under the provisions of the Statistics Act 1965.

2018

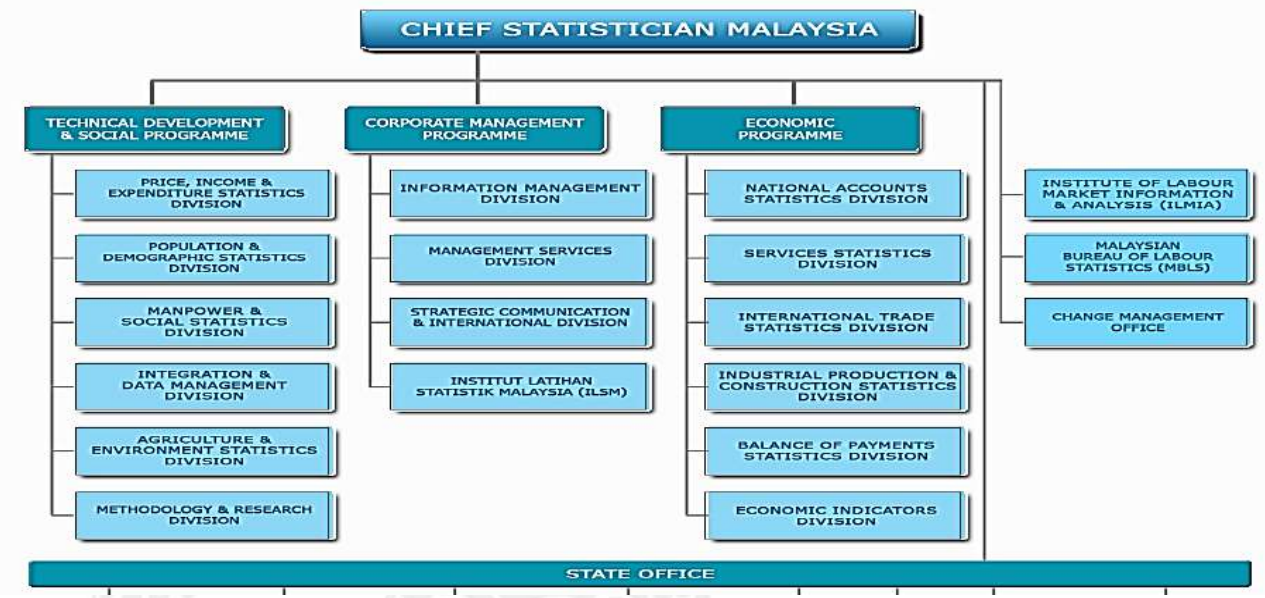
The Department of Statistics Malaysia is the main government agency under the Ministry of Economic Affairs

2020

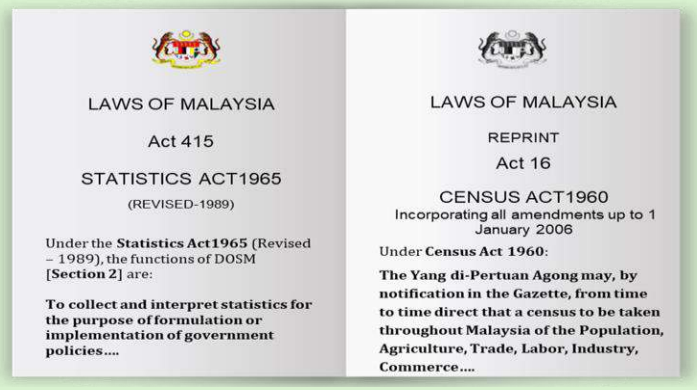
10 March 2020, the Department of Statistics Malaysia has been placed back under the Prime Minister's Office - regulated by the Minister in the Prime Minister's Office (Economy)

2023

In parallel with the formation of the Unity Government, the Department of Statistics Malaysia is the main government agency under the Ministry of Economy



SOURCE OF POWER


LAWS OF MALAYSIA

Act 415

STATISTICS ACT1965

(REVISED-1989)

Under the **Statistics Act1965** (Revised – 1989), the functions of DOSM **[Section 2]** are:

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

LAWS OF MALAYSIA

REPRINT

Act 16

CENSUS ACT1960

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....

Statistics Act 1965 (Revised-1989)

Census Act 1960 (Revised-1969)

INTRODUCTION

IMPORTANCE OF INTEGRATION, MODERNIZATION & INNOVATION

Data Overflow from Multiple Sources

- Data as a commodity is of high value and available in various agencies and platforms.
- Requires efficient and integrated data resource management.
- Requires a system framework towards holistic statistical production.

Data Requests Are Increasingly Complex

- The need for complex and granular information down to the smallest geographic level and according to various specific demographic characteristics.

Technological Revolution

- Support to change the integration platform and coordination of high volume data that is more efficient and effective.
- Parallel to the era of digital government and big data for the processing, structuring, analysis and handling of data in a better and effective way and save costs.

Environmental Change

- The uncertainty of the global situation requires preparedness in providing the latest inputs.
- Rapid economic evolution and business models.
- Increasingly complex social and environmental management.

STRENGTHENING THE MALAYSIA STATISTICAL SYSTEM

The strengthening of the National Statistical System will have a positive impact, including ensuring the availability of more comprehensive data in the government sector when formulating short-term and long-term national policies.

1 National Statistics and Data Council

Formation of a council which acts as the highest advisory body in giving direction to the national statistical system and the coordination of information at national level

2 Amendments of Statistics Act 1965 (Revised 1989)

Empower and support the strengthening of the National Statistical System

3 DOSM as the Central Agency of Statistical Services

Responsible in coordinating and controlling the production of statistics from Ministries, Departments and government agencies

4 Chief Data Officer (CDO)

As an agent of the coordination mechanism, access and cooperation of data sharing between agencies

5 National Big Data Analytic Centre (NBDAC)

Establish NBDAC as a service center for the development of national big data analytics products across sectors

6 Change Management Office (CMO)

Establish the CMO that set action plan and strategy, execute and monitor the implementation of the Strengthening of NSS

7 Capacity Building:

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

Strengthen human resources, career advancement of subject matter experts and building capacity for developing statistical literacy

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DATA GOVERNANCE : CORE AREAS

There are 6 core areas for Data Governance Framework In Malaysia

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. 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

3. Data Quality

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

4. Technology

- National Enterprise-Wide Statistical System (NEWSS)
- Integrated Population Census Syste (MyIPCS)
- StatsBDA
- StatsDW
- StatsDigital
- Stats Geoportal
- OpenDOSM Next Gen.
- Dashboards

5. Data Protection & Privacy; Ethics; Security

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

6. Partnership

- MoU's for Data Sharing
- Collaboration with Agencies

Source: United Nations' "Data Strategy of the Secretary-General for Action by Everyone, Everywhere, 2020-2022"

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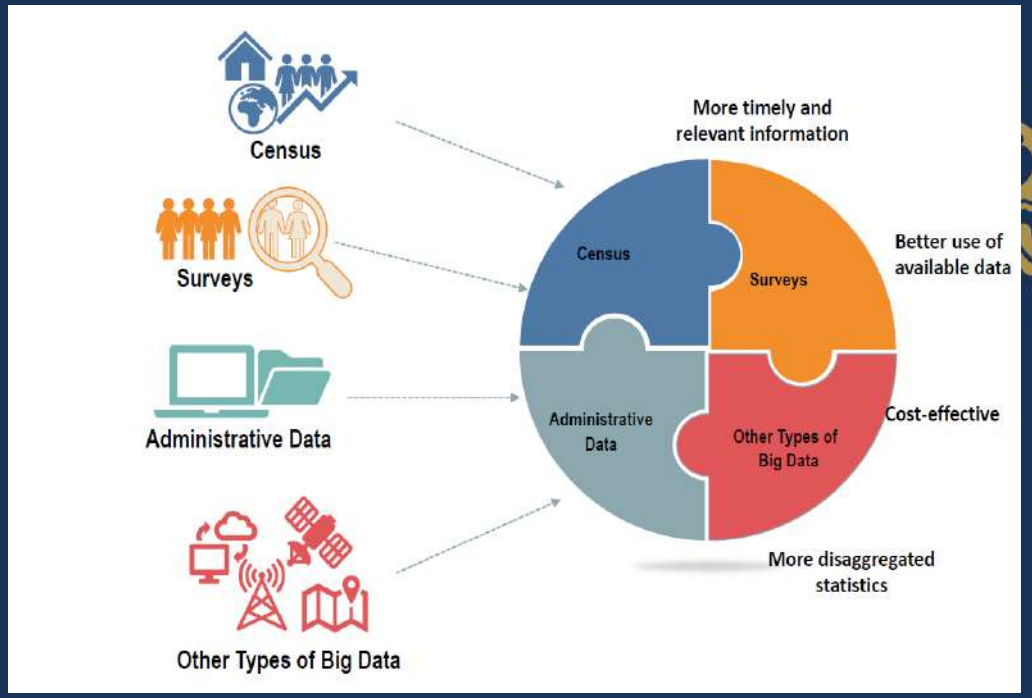
INTEGRATION



- Small Area Statistics: My Local Stats
- External Trade: Malaysia External Trade Statistics by State
- Population & Housing Census: Malaysia Population & Housing Census 2020
- Agricultural: The Agricultural Analytical System
- PADU: Central Database Hub

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MEMORANDUM OF UNDERSTANDING (MoU)

6
GOVERNMENT/ PRIVATE AGENCIES

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY
CIDB MALAYSIA
SSM SURUHANJAYA SYARIKAT MALAYSIA
Suruhanjaya Sekuriti Securities Commission Malaysia
Expired
MPC MALAYSIA PRODUCTIVITY CORPORATION
BANK NEGARA MALAYSIA CENTRAL BANK OF MALAYSIA

16
GOVERNMENT UNIVERSITY

UUM Universiti Utara Malaysia
Universiti Teknologi MARA
UMT
UTHM Universiti Tun Hussein Onn Malaysia
Universiti Islam Antarabangsa Malaysia
UMS Universiti Malaysia Sabah
USM Universiti Sains Malaysia
UTM Universiti Teknologi Malaysia
University of Malaya
Universiti Kebangsaan Malaysia
Universiti Malaysia Pahang
Universiti Malaysia Perlis
Universiti Pendidikan Sultan Idris
UNIMAS Universiti Malaysia Sarawak
UPM Universiti Putra Malaysia
UTeM

1
INTERNATIONAL

SESRIC

37

9
PRIVATE UNIVERSITY

msu management & science university
MUST Malaysia University of Science and Technology
UTP
MMU Multimedia University
SUNWAY UNIVERSITY
Universiti Tenaga Nasional The National Energy University
A·P·U Asia Pacific University of Technology & Innovation
UNITAR International University

6
PRIVATE

BIOTECHCORP
KUMPULAN SME BANK
HDC Halal Development Corporation
BURSA MALAYSIA
SMECORP MALAYSIA
CCBM INDUSTRIES

STRATEGIC COLLABORATION

POS MALAYSIA

KWSP EPF

BERNAMA

TENAGA NASIONAL
Better. Brighter.

6

STRATEGIC COLLABORATION

IYRES
INSTITUTE FOR YOUTH RESEARCH MALAYSIA

UNITED NATIONS

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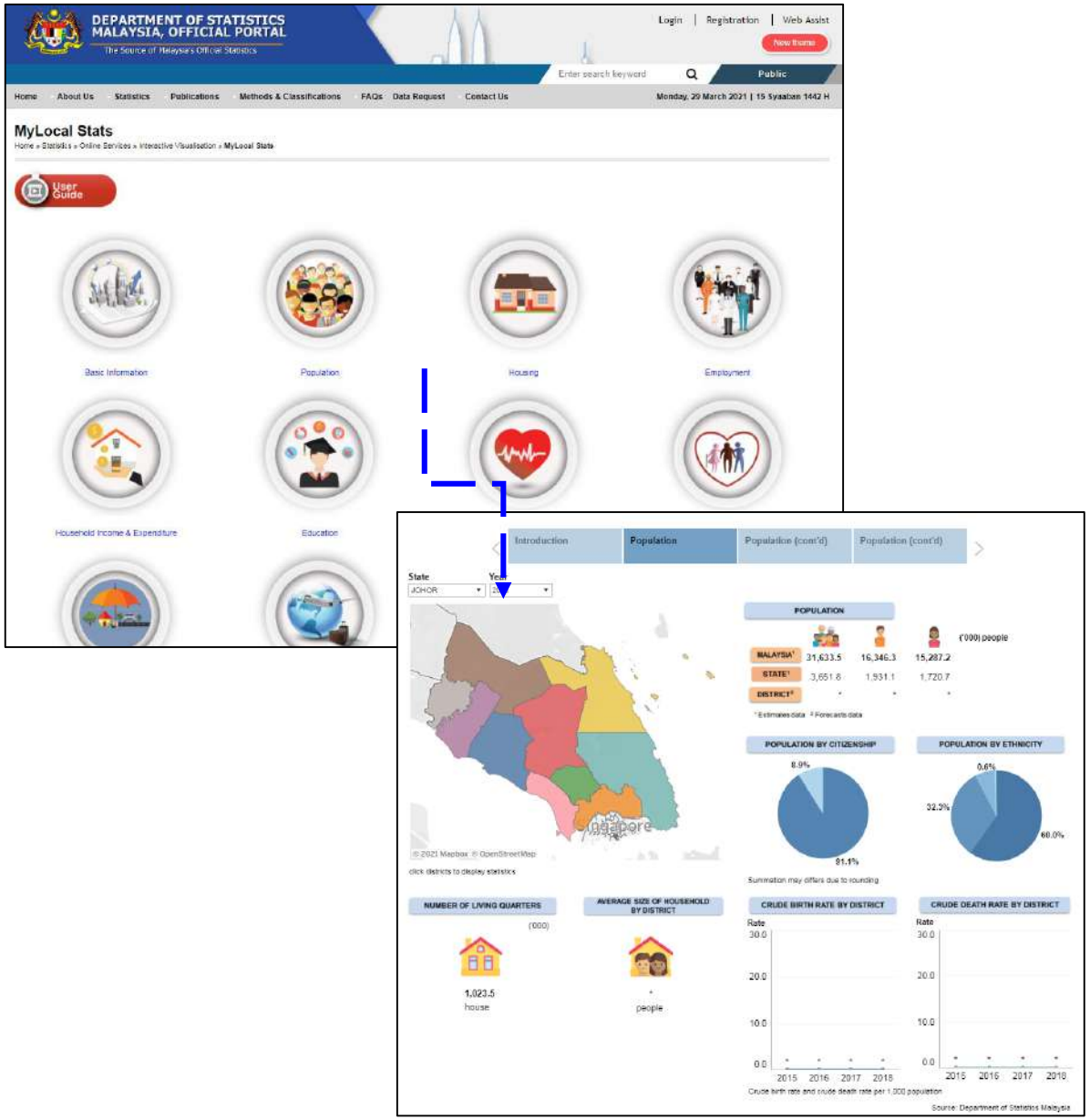
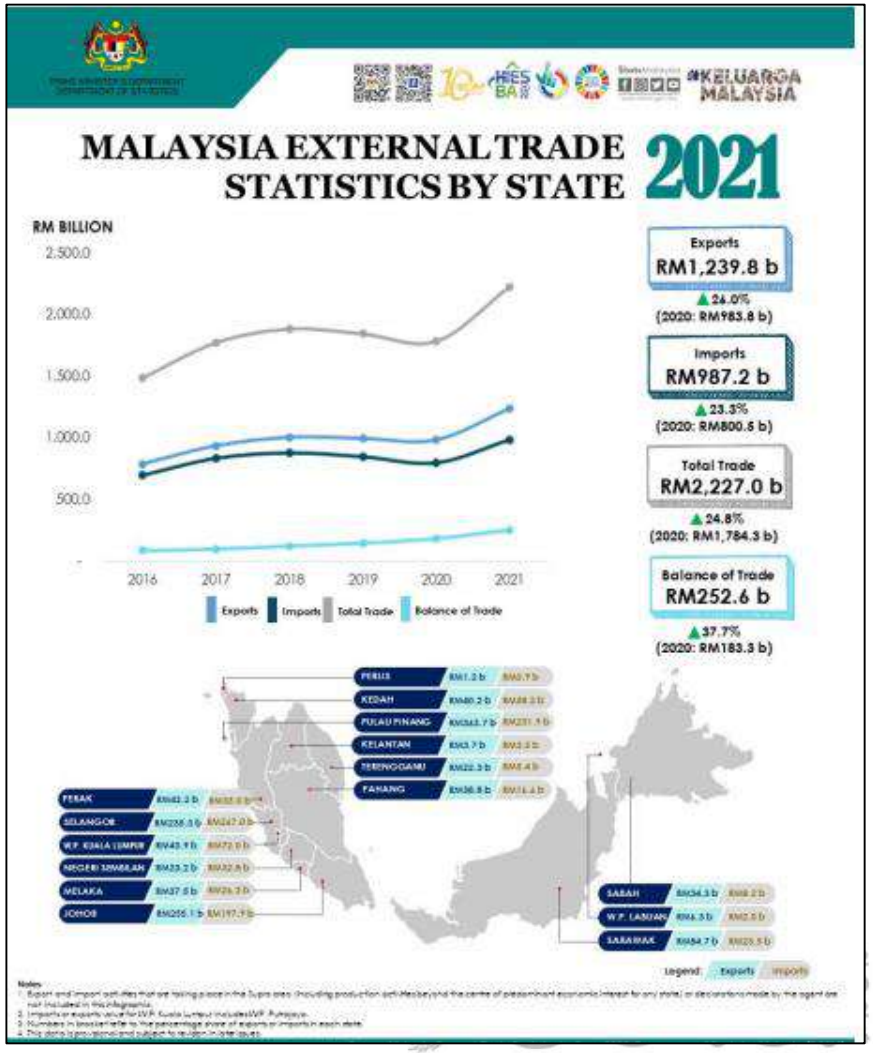
My Local Stats

- **My Local Stats**, is a publication of economic and social statistics which is comprehensive at the district level combines survey data and other types of auxiliary data (census and administrative data).
- Covering **20 Indicators: basic information; population; housing; energy use; household income and expenditure; education; health; welfare services; public safety; communication and recreation; internet and social media; basic facilities; gross domestic product; consumer price index; exports and imports; agriculture; mining and quarrying; manufacturing; construction and services.**
- The compilation is **based on Handbook on Social Indicators** which was published by the United Nations Statistics Division (UNSD) (https://www.dosm.gov.my/v1/uploads/images/Online%20Services/MyLocal%20Stats/MyLocalStats_Web_Guide_HD.mp4).



MALAYSIA EXTERNAL TRADE STATISTICS by STATE

- Presents statistics on annual Malaysia's External Trade pertaining to imports and exports at the state level according to major / selected commodities and country of origin and destination for the period of 2019 to 2021.
- This statistics are generated from **Trade Enterprise Characteristics (TEC)** module under Statistics Big Data Analytics (STASBDA), Department of Statistics Malaysia which is an initiative to integrate two different statistics domain, namely, international merchandise trade database and Malaysia Statistical Business Register (MSBR) (https://statsbda.dosm.gov.my/).
- This statistics provide imperative information to policy makers in formulating strategic planning for states involved in international trade and dominate Malaysia's exports (https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam).



POPULATION & HOUSING CENSUS 2020

- Administrative data will be integrated with census data to **complement and enrichment** of census data.

COMPLIMENT CENSUS DATA

- **Prison Department**
  Prisoner
- **National Anti Drug Agency**
  Residents of Drug Rehabilitation Center
- **Welfare Department**
  Homeless
- **Ministry of Health**
  Patient (eg: Mental Health)

ENRICHMENT CENSUS DATA

- **Civil Service Department**
  Government Staff (HRMIS)
- **Welfare Department**
  Disability people
- **Ministry of Women, Family and Community Development**
  Number of residents in Institutional living quarters
- **National Registration Department**
  Citizen resident
- ***Jabatan Kemajuan Orang Asli***
  Aborigins
- ***Pos Malaysia***
  House Address
- ***Tenaga Nasional Berhad***
  House Address
- ***Telekom Malaysia***
  House Address
- **Election Commission of Malaysia**
  Registration of Voter
- **Immigration Department**
  Non-Citizen resident
- ***Lembaga Tabung Haji***
  Number of pilgrims and Tabung Haji depositor
- **Department of Survey and Mapping**
  Geospatial information
- **RISDA**
  Small estate holder
- **Implementation Coordination Unit**
  eKasih data (financial assistance)
- **Ministry of Health**
  Number of nurses dormitory
- **Income Tax**
  Tax Payer
- **Kementerian Pendidikan Malaysia**
  Higher Institution Student

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THE AGRICULTURAL ANALYTICAL SYSTEM

- This new platform was created to facilitate access and for the purpose of analysis of national as well as local-level agricultural data
- The Agricultural Analytical System is an initiative of the Department of Statistics Malaysia (DOSM) under the **Public Sector Data Analysis (DRSA) 2.0 project.**
- This platform displays agriculture statistics that focused on **four (4) products** namely oil palm, rubber, poultry (chicken and duck) and fisheries (marine and aquaculture).

  (https://drsa-agriculture.netlify.app/index.html).

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PADU: CENTRAL DATABASE HUB

INTRODUCTION TO PADU

Introduction

PADU contains profiles of individuals and household members including citizens and permanent residents aged 18 years and over in Malaysia. This profile information will be updated regularly through the integration of administrative data from various sources. Through this ecosystem, people can continuously improve and update information in the PADU system.

PADU Objectives

1. Providing a secure, comprehensive and "near real time" main country database for regular analytical production and digitization without leaks.
2. Basic formulation and process of making decisions based on data.
3. Balancing the fiscal position through targeted policy implementation.

PADU's goal

1. Increase the efficiency of the Government service delivery system.
2. Carry out confirmation in the use of limited resources.
3. Carrying out strengthening of the social system through increasing economic and people's welfare.
4. Close the socioeconomic gap by meeting people's needs and balancing development.

STRATEGIC COLLABORATION

KEMENTERIAN EKONOMI

JABATAN PERANGKAAN MALAYSIA KEMENTERIAN EKONOMI

UNIT PEMODENAN TADBIRAN DAN PERANCANGAN PENGURUSAN MALAYSIA

KWAP LHDN PERKESO TM SSM

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INNOVATION

- Unlocking spatial insights: GIS technology advancements in Malaysia
- Big data for official statistics: Malaysia’s experience
- Modernization in data collection and data storage

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GEOSPATIAL TECHNOLOGY FOR MYCENSUS 2020

Pre-Enumeration

Period Plan
Process
Platform
Base map

Updating
1. Enumeration Block (EB)
2. Full Listing of Living Quarters (LQ)

ArcGIS · QGIS Trademark · JUPEM · PLANMalaysia (Jabatan Perancangan Bandar dan Desa) · SmartMap

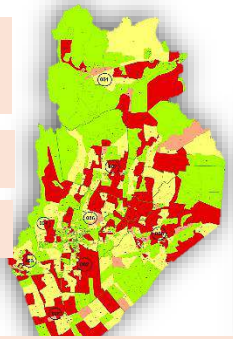
Sources
1. Administrative Boundary
2. Use of Satellite Image
3. Field Work
4. Google Map

Enumeration

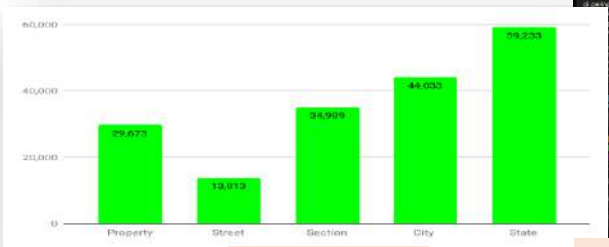
DSM DSL Operation

Census Database

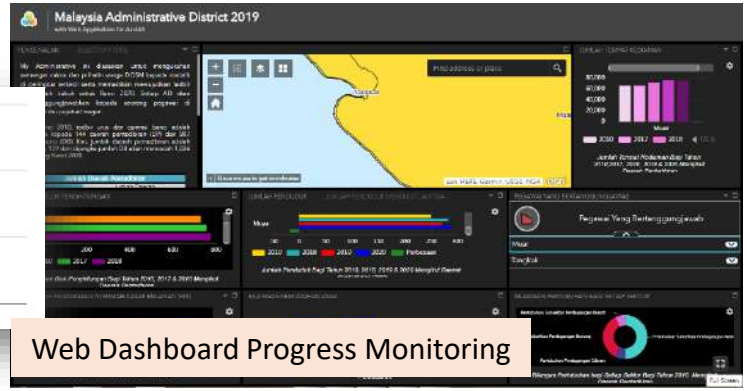
Census Map



DOSM State Progress



Daily Report

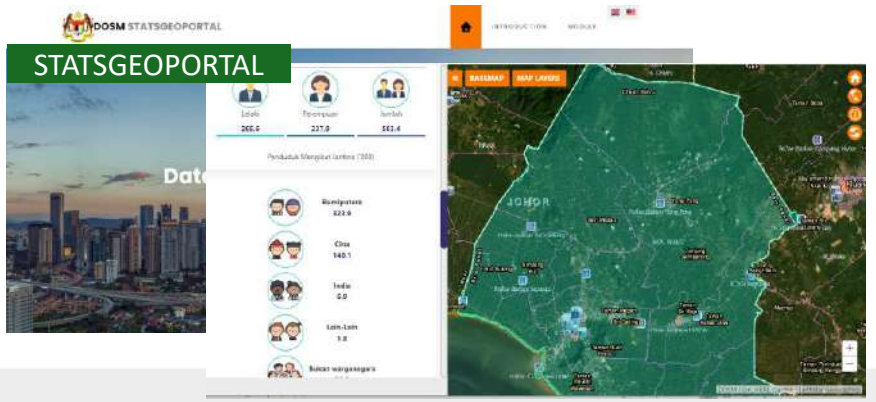


Web Dashboard Progress Monitoring

Post Enumeration

MYCENSUS2020 PORTAL

STATSGEOPORTAL



https://statsgeo.mycensus.gov.my/geostats/

BIG DATA FOR OFFICIAL STATISTICS: MALAYSIA'S EXPERIENCE

Statistics Big Data Analytics (STATSBDA)

Trade by Enterprise Characteristics (TEC)

involves integration of high volume of structured data with fuzzy matching technique

Price Intelligence (PI)

modernizing data collection method with web crawling technique

Public Maturity Assessment on Official Statistics (PMAOS)

uses text mining technique for sentiment analysis

OpenDOSM

Kawasanku

Nowcasting Malaysia's GDP with Machine Learning

JOB MARKET INSIGHTS

Informal Sector And Micro Industry (SIIM) Database

Integrating administrative data with non-traditional sources like social media, aiding government decision-making..

Earth Observation (EO)

Using satellite imagery for environmental insights and improving official statistics' quality.

Social Protection Data Management

DOSM leads in preparing a centralized Social Protection Database, enhancing social protection policies

FUTURE RESEARCH

Mobile Positioning Data (MPD)

a dynamic proxy indicator assessing economic activity and human commuting patterns.

MODERNIZATION IN DATA COLLECTION

Integrated Population Census System (MyIPCS)

MyIPCS
MALAYSIA INTEGRATED POPULATION CENSUS SYSTEM

Malaysia Statistical Population Profile (MSPP)

Malaysia Statistical Address Register (MSAR)

Census Mode

e-CENSUS
SELF RESPONSE VIA ONLINE
Online declaration

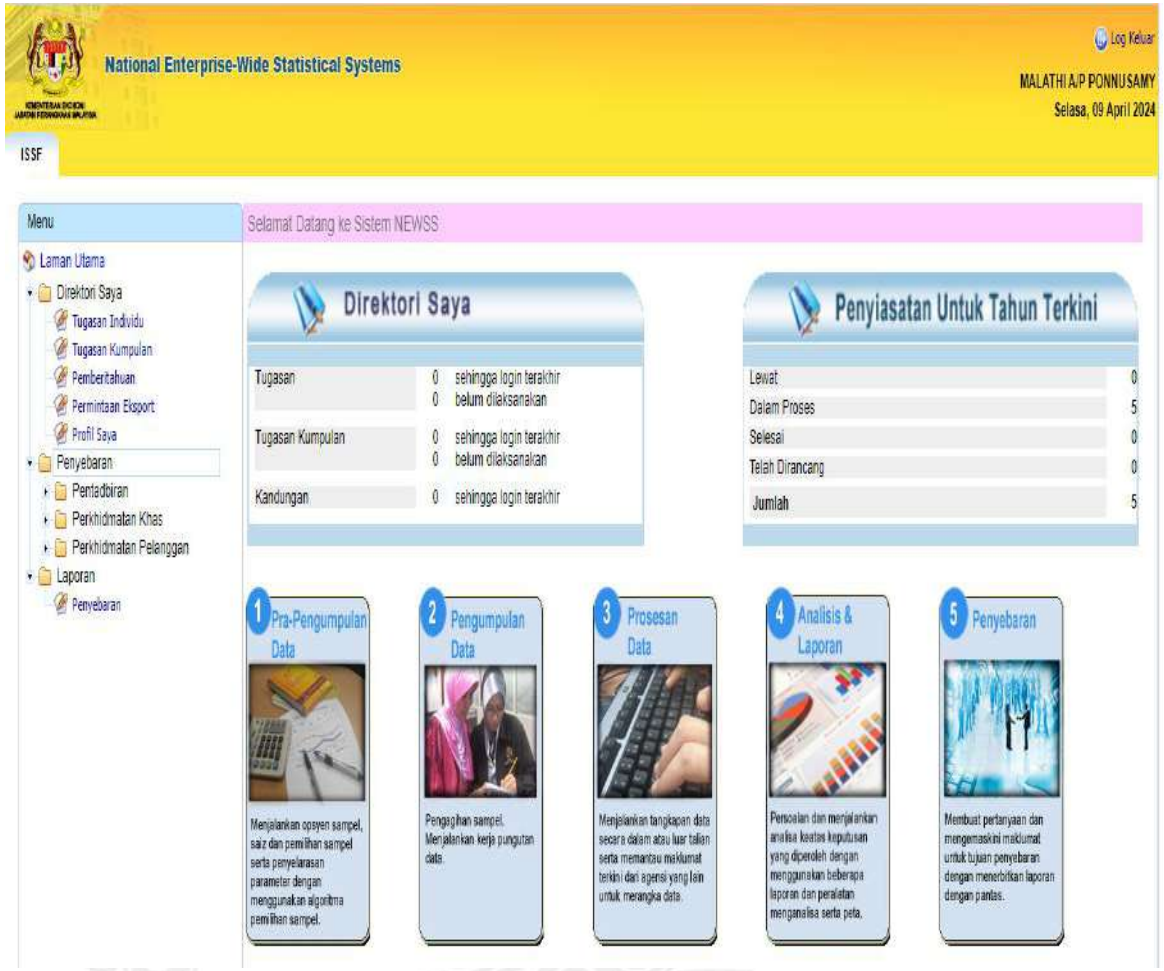
CATI
COMPUTER ASSISTED TELEPHONE INTERVIEW
Telephone interview

CAPI
COMPUTER ASSISTED PERSONAL INTERVIEW
Face to face interview using tablet

PAPI
PAPER AND PEN INTERVIEW
Face to face interview

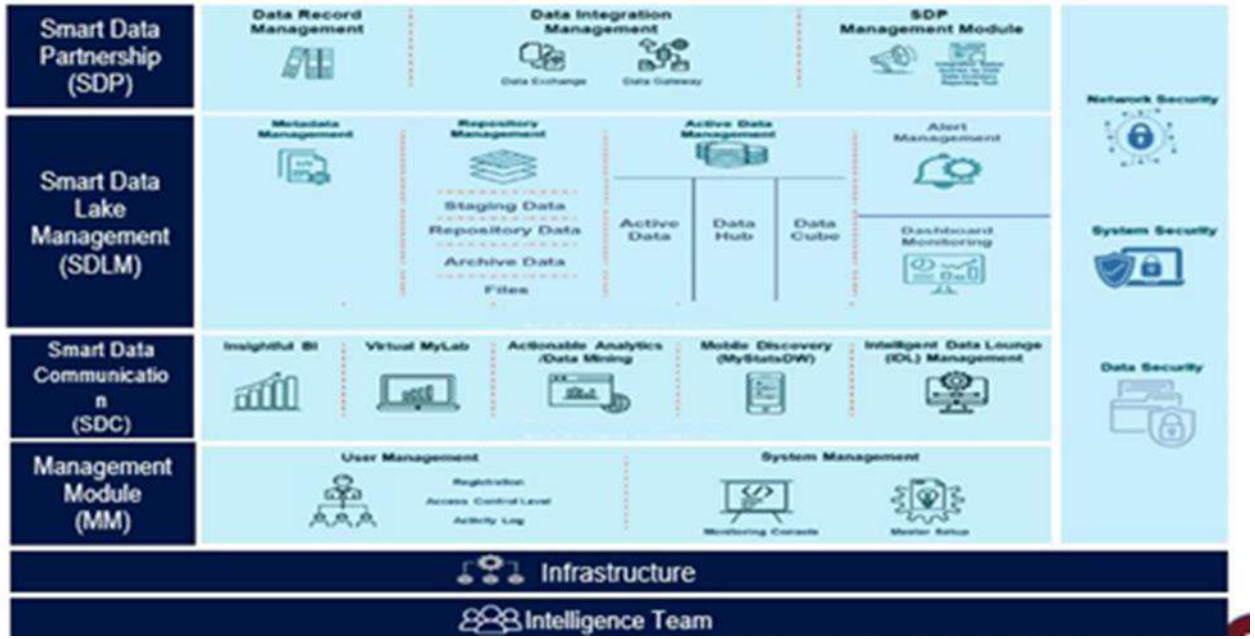
DOPU
DROP OFF AND PICK UP
Self declaration by respondent

MODERNIZATION IN DATA STORAGE



StatsDW
Statistics 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.



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DISSEMINATION

- Online services :DOSM Official Portal, Visual interactive, Dashboard
- Social media platform : Facebook, Twitter, Instagram, Youtube
- Media release : Press Statement, Stas Alert, Infographics, Newsletter
- Mobile applications: Bizz Code, Msic Code, My Local stats

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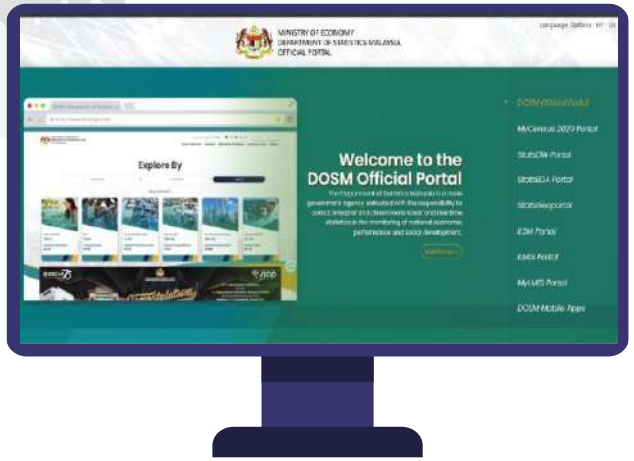
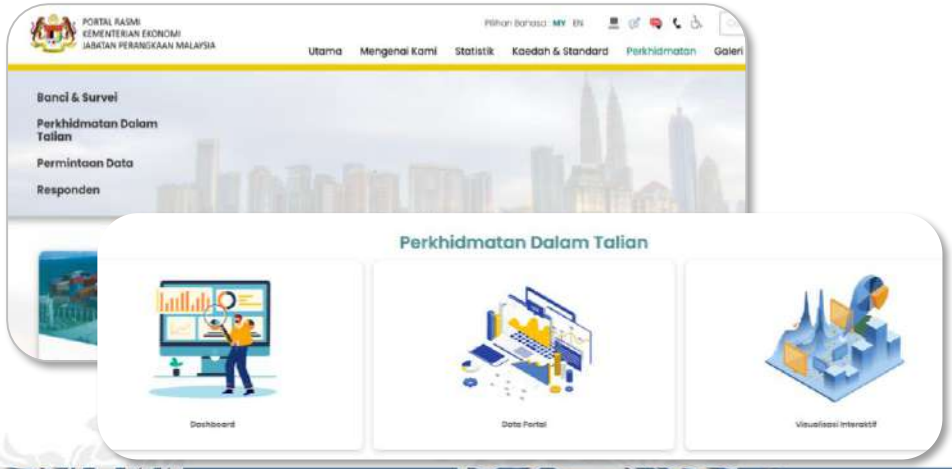
ONLINE SERVICES

Portal DOSM

www.dosm.gov.my





Official Portal

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

Visual Interactive

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

Dashboard

1. Agricultural Analytical System
2. Tourism Dashboard
3. Malaysia Economic Recovery Dashboard
4. MyPrice Dashboard
5. National Occupational Accident & Disease Statistics
6. Job Market Insights
7. My Job Profile
8. Malaysia Labour Market Interactive Data (MyLMID)
9. Population and Housing Census of Malaysia Dashboard (MyCenDash)
10. OpenDOSM
11. Kawasanku
12. MyDemography
13. Malaysia Input-Output Table (MyIOT)
14. SDG Dashboard

MODERNIZATION IN DATA DISSEMINATION

DOSM Social Media Followers

Facebook Stats Malaysia

www.facebook.com/StatsMalaysia

FACEBOOK

Followers	48,182
Reach	45,149
Engagement	27,942

Youtube Stats Malaysia

www.youtube.com/statsmalaysia

YOUTUBE

Suscribers	2,332
Views	217,628
Video	546

Twitter Stats Malaysia

www.twitter.com/statsmalaysia

TWITTER

Followers	18,315
Tweets	12,140

Instagram Stats Malaysia

www.instagram.com/statsmalaysia

INSTAGRAM

Followers	9,332
Posts	6,069

Infographic dan *FB Live*

Infographic

Jan - Mac	:	25
April - June	:	38
July - Sept	:	28
Oct - Dec	:	31
TOTAL	:	**122**

FB Live

Jan - Mac	:	49
April - June	:	51
July - Sept	:	46
Oct - Dec	:	66
TOTAL	:	**212**

(Updated until 29 December 2023)

MODERNIZATION IN DATA DISSEMINATION

Media Release, 2023

a. DOSM Interview on Electronic Media

NEWSPAPER		
Jan-Mar	:	121
April-June	:	98
July-Sept	:	243
Oct-Dec	:	140
Total	:	**602**

TV		
Jan-Mar	:	121
April-June	:	123
July-Sept	:	179
Oct-Dec	:	36
Total	:	**459**

RADIO		
Jan-Mar	:	3
April-June	:	29
July-Sept	:	9
Oct-Dec	:	45
Total	:	**86**

ONLINE		
Jan-Mar	:	1,144
April-June	:	1,119
July-Sept	:	4,476
Oct-Dec	:	3,647
Total	:	**10,386**

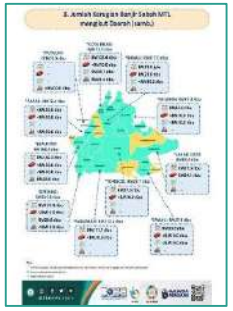
b. Media Coverage (Online and Print)

2023

Jan-Mac	:	1,265
April-Jun	:	1,280
Julai-Sept	:	1,372
Okt-Dis	:	3,787
JUMLAH	:	**7,704**

(Updated until 29 December 2023)

Newsletter, 2023



2023	2022	2021
78	88	62

2020	2019	2018
97	14	19

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MODERNIZATION IN DATA DISSEMINATION

Mobile application

Available on the App Store

Get it on Google play

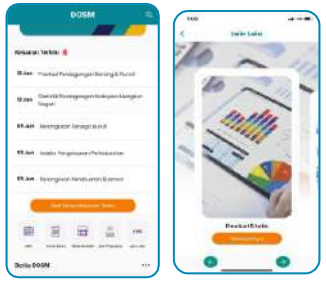
Both of these applications can be downloaded via the Apps Store (IOS) or Play Store (Android) with the search words **DOSM** and **BizCode**

DOSM

Statistics at the district level in the form of infographics that are easier to understand by all levels of society. This information is introduced through the mobile application of the interactive system. MyLocal Stats will help users to access statistics up to the district level for local development planning.

MyLocal Stats

Annual Release Calendar (ARC) DOSM



BizCode

A platform for sharing code and statistical classification activities based on international classification standards. BizCode@Stats makes it easy for users to get codes and information interactively and mobile.

CONCLUSION

1. Statistics, spearheaded by DOSM, are pivotal for shaping economic development.
2. DOSM's continuous efforts enhance the effectiveness of the National Statistical System.
3. Collaborative initiatives aim to transform public perception of statistics, emphasizing their significance.
4. The implementation of centralized databases, partnerships, and accessibility measures ensures the integration of reliable data.
5. Continuous technical expertise, benchmarking of best practices, and capacity building are crucial for producing sophisticated statistical products.
6. Investments in human resources and technology, particularly in data science, analytics, and skilled data scientists, are necessary for sustainable progress.

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Not available

Monika Rozkrut and Malgorzata Tarczynska-Luniewska:

Enterprises' ESG practices and sustainable development: challenges and opportunities for official statistics

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Opportunities and Challenges Faced by National Statistical Offices in the Digital Era: The Recent Experiences from China

Mr. LYU Haiqi, Mr.XU Yipin,Ms. ZHAO Junli and Ms.TANG Zhihua
Research Institute of Statistical Science
National Bureau of Statistics of China(NBS)

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Opportunities

Enriched data sources

Effective techniques

New releasing channels

Challenges

Rising demands for official data faced

More competitions

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国家统计局
National Bureau of Statistics of China

Content

Active Exploration & Innovative Practices of NBS in the Digital Era

CASE 01

Digital Economy Accounting

CASE 02

Statistical Cloud Program

CASE 03

Remote Sensing Application

CASE 04

The Application of Third-party Payment Data in Retail Sales Statistics

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Active Exploration & Innovative Practices

Statistical Monitoring and Accounting of the Digital Economy

- Classification standards & Calculation of value-added accounting in the core industries of the digital economy
- Statistical system of new industries, new formats, and new business models
- Statistical system for strategic emerging industries

Active Exploration & Innovative Practices

Accelerating the Digital Transformation of Statistics

- Statistical cloud program
- Online reporting system
- Data collection through handheld terminal devices
- Smart Statistics

Active Exploration & Innovative Practices

Deepening the Application of Big Data

- Agricultural statistics: the application of remote sensing technique
- Population statistics: the application of administrative records and cellular signaling data
- Retail Sales statistics: the application of online consumption and Third-party Payment data

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CASE 01 Digital Economy Accounting

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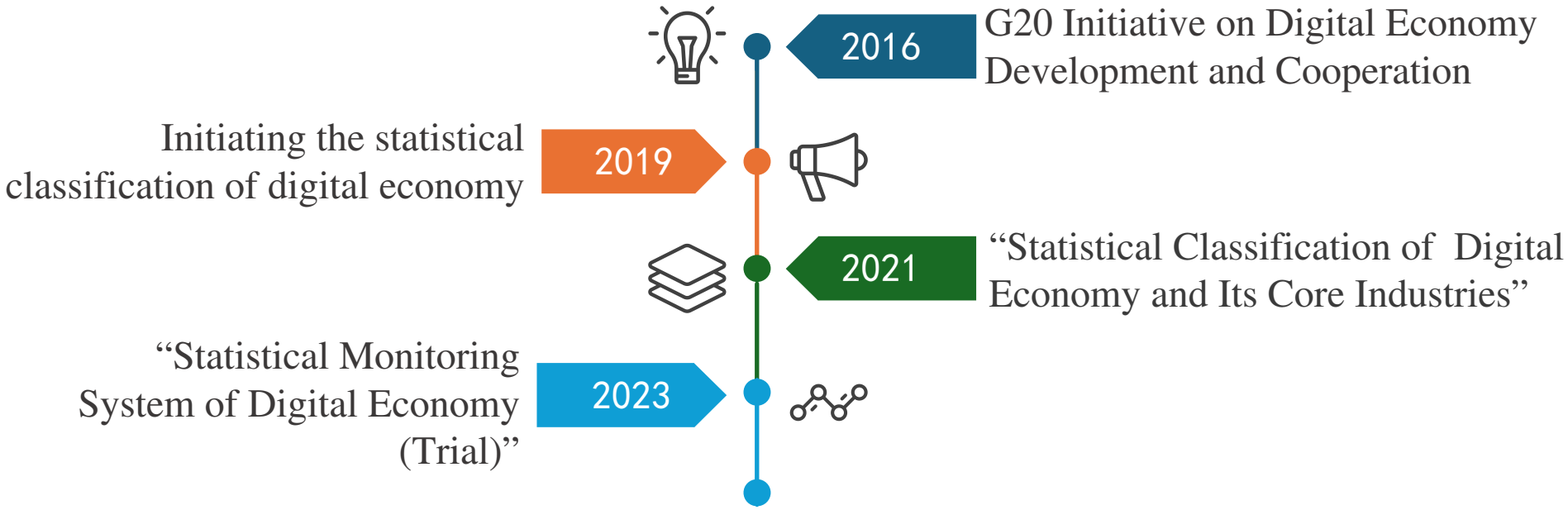
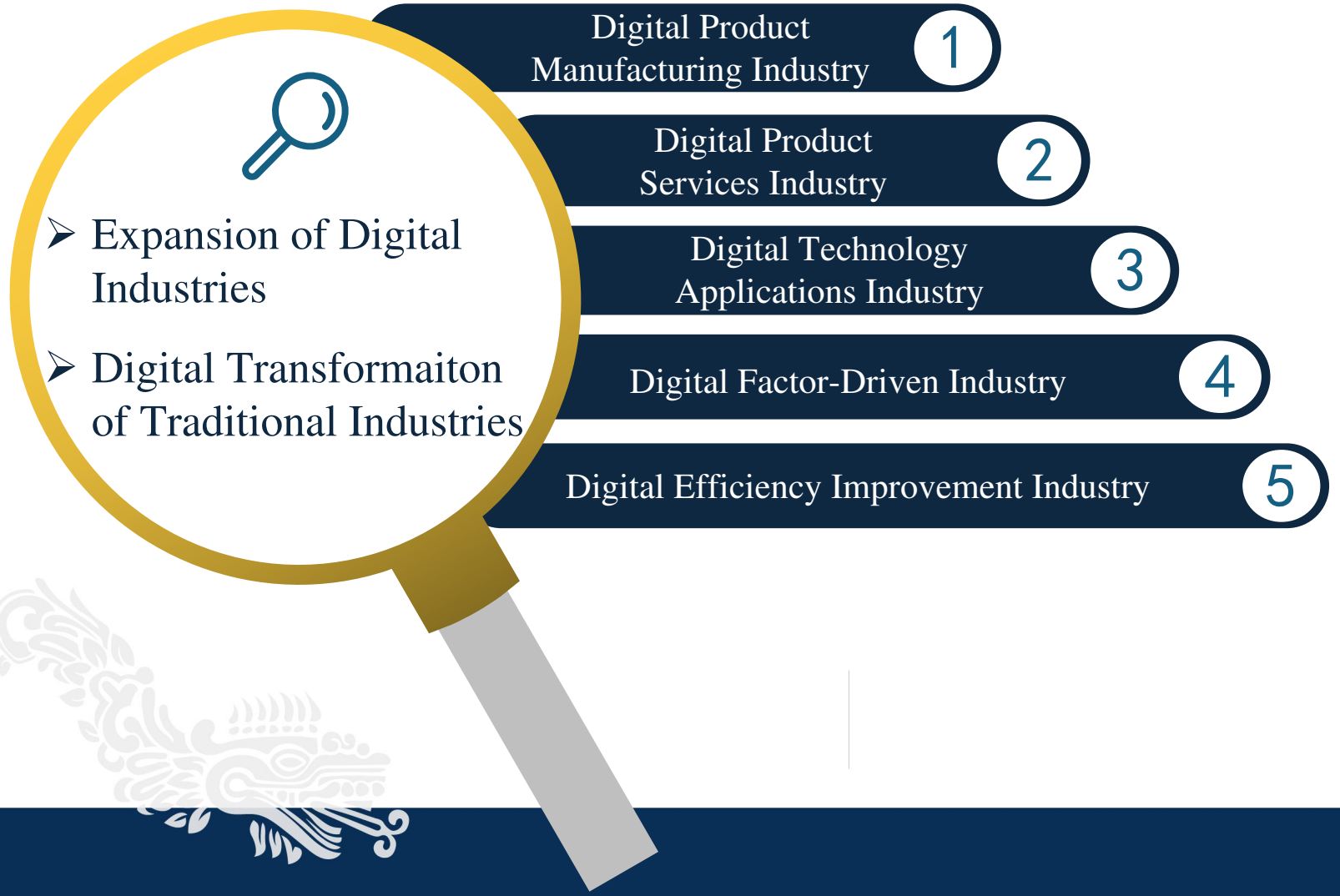
CASE 01 Digital Economy Accounting



Inclusion of Digital Economy in the Fifth National Economic Census, Generating comprehensive and industry-wide digital economy statistical data

CASE 01 Digital Economy Accounting



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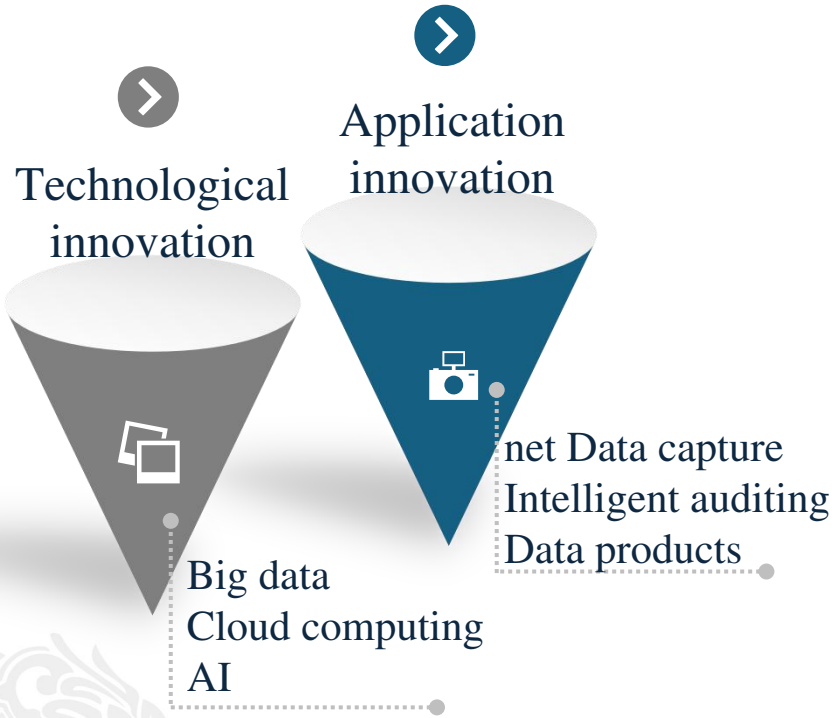
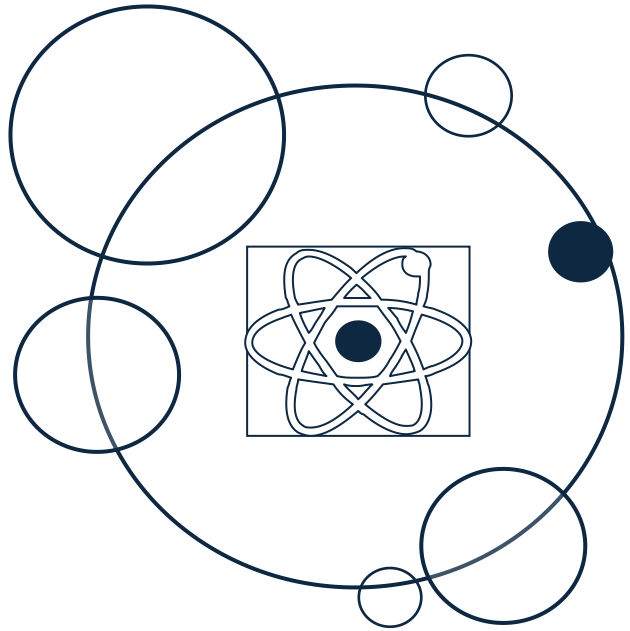
CASE 02 Statistical Cloud Program

CASE 02 Statistical Cloud Program



- Intelligent centralized management
- Statistical workflow reengineering
- Standardized construction of statistical informatization

CASE 02 Statistical Cloud Program



ONE-STOP Service

website portal and users

ONE-STOP Management

business processes and data resources

CASE 02 Statistical Cloud Program

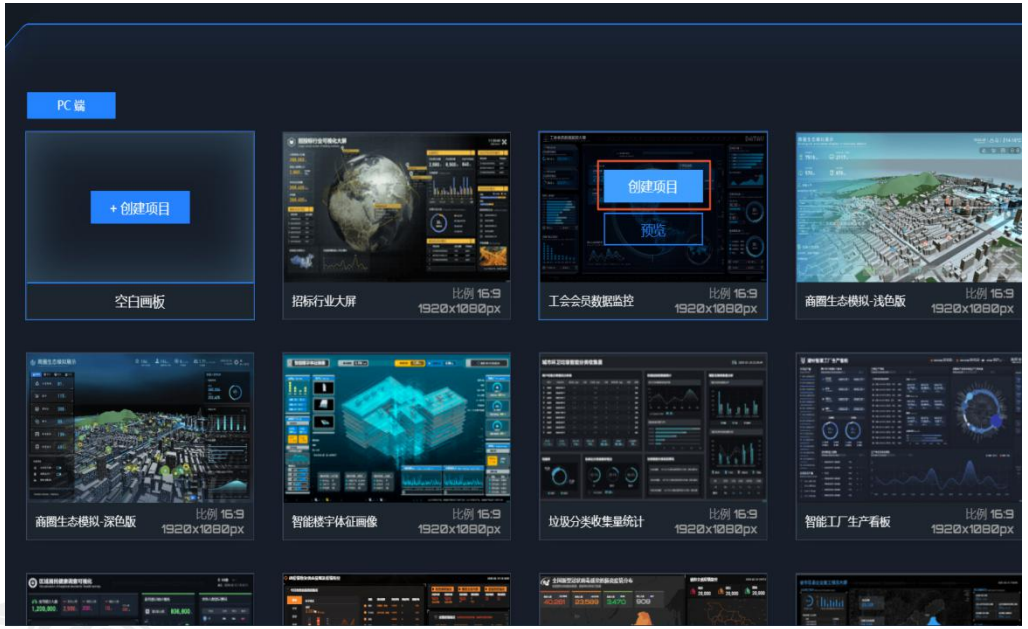
Intelligent centralized management

CASE 02 Statistical Cloud Program

- ✓ Over 140 optimization algorithms
- ✓ One-stop solution for process-oriented modeling
- ✓ Drag-and-drop operations
- ✓ Visual configuration capabilities

CASE 02 Statistical Cloud Program

Data visualization



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CASE 03 Remote Sensing Application

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CASE 03 Remote Sensing Application

Background

For a long time, the household interview has engaged in China's agricultural statistics to obtain survey information.

With the rapid development of China's economy and society, this survey method faces more and more challenges.

How to address these issues?

Need to strengthen the ability to collect data directly from the source (ground) .

Conducted the application research and practice using remote sensing big data during the past 20 years.

CASE 03 Remote Sensing Application

A new survey system

Establish a “space-air-ground” three-dimensional modern agricultural statistical survey system

a new survey system

CASE 03 Remote Sensing Application

Remote sensing satellites form a "space based" survey capabilities

Drones complement the "in-air" survey capabilities

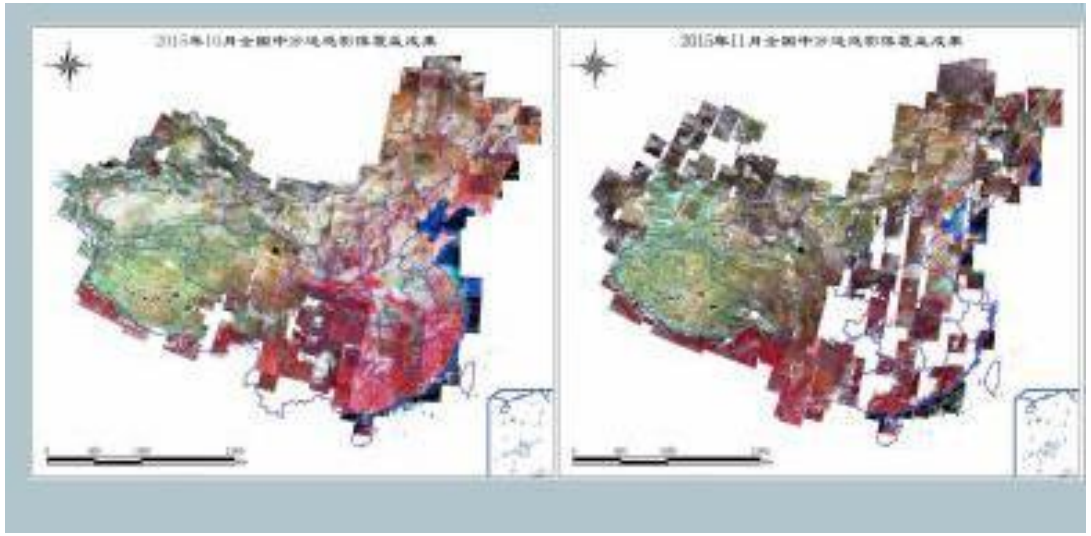
PAD solidifies “ground” survey capabilities

CASE 03 Remote Sensing Application

A new survey system

Agricultural survey has entered a new stage of "ground survey" from "household survey".

- Combination of satellite, drone, and PAD
- Needs of ground survey in various survey scenarios have been met



CASE 03 Remote Sensing Application

Specific operational applications

Established a wide coverage of "ground survey" network

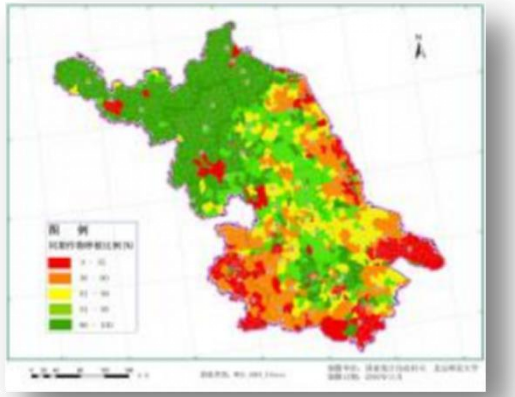
- Automatically recognize drone images.
- A total of nearly 9,000 survey villages have been established
- Three randomly selected grid of 200m×200m in each sampled village.
- Almost 1.01 million plots were randomly selected for survey.

CASE 03 Remote Sensing Application

Specific operational applications

Measure the acreage of large-scale major crops

- Using satellite remote sensing images with a spatial resolution of ten to sixteen meters.
- According to the planting characteristics of crops in different regions, suitable remote sensing image classification methods are adopted.
- Rice, wheat, corn, soybean, cotton and etc.



CASE 03 Remote Sensing Application

Specific operational applications

High-frequency monitoring of main crop growth.

- Monitor the growth of main crops 2-3 times per month during the key growth periods.

- Reflect the overall growth situation, timely helping crop growth judgment and yield estimation.

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CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

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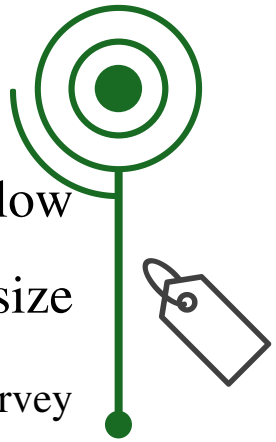
CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Units above the designated size

Comprehensive survey



Units below the designated size

Sampling survey

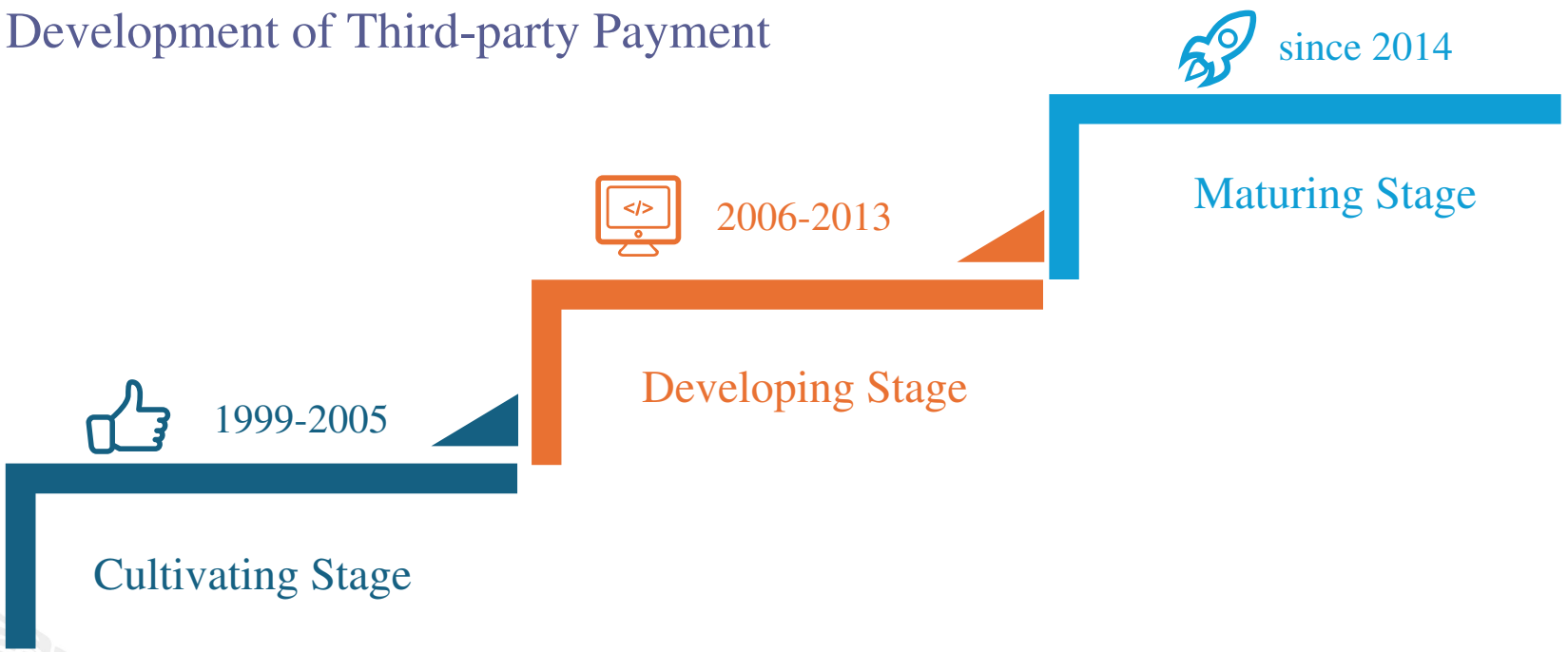
CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Challenges in Retail Statistics

Innovative Statistics Methods

What is Third-party Payment?

CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics



CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Third-party Payment Business Modes

1 By transaction type

2 By fund flow

C2C、C2B、 B2C、B2B

C2B: Consumers pay to merchants when shopping or enjoying services. It is the primary transaction type of personal retail payments.

3 By payment method

CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Consumers

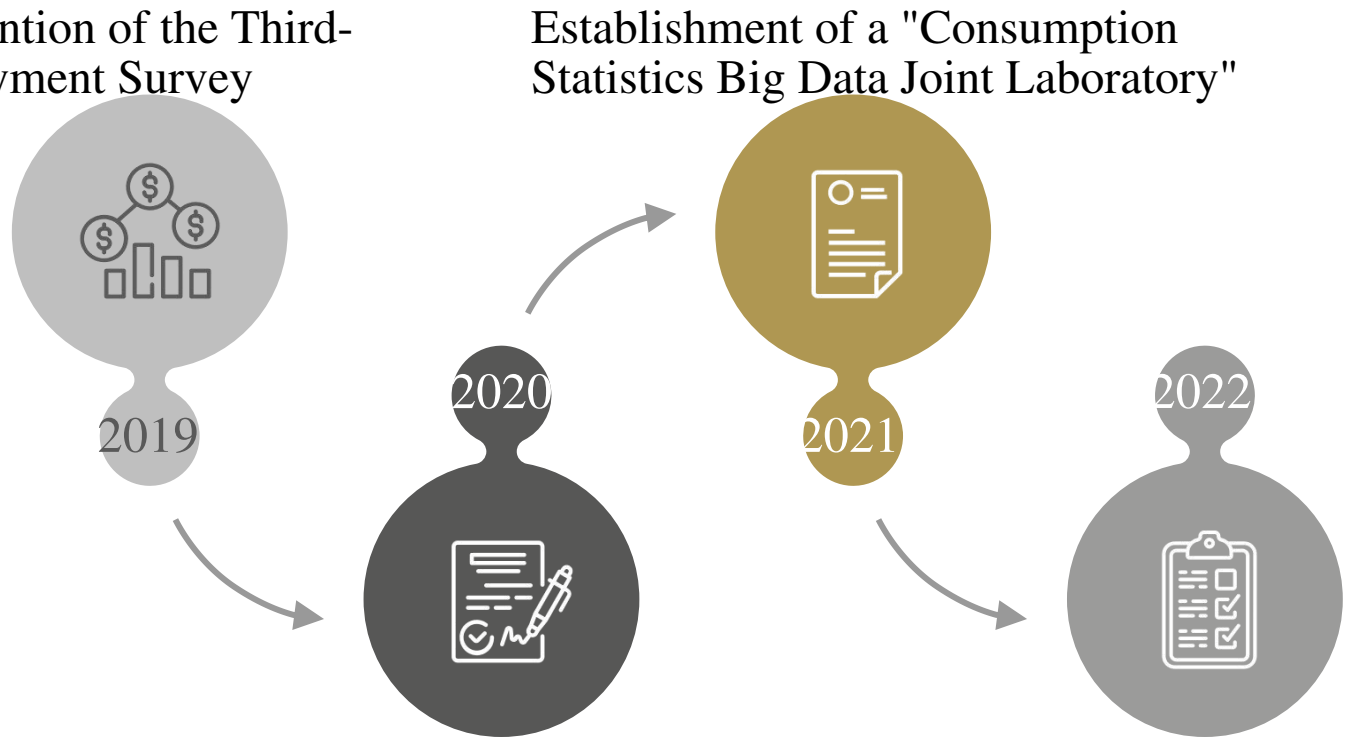
Multiple acceptance methods

Multiple payment accounts

Merchants in various industries

- Wholesale
- Retail
- Restaurant
- Insurance
- Health
- Public payment
- Traffic
- Real estate
- ……

CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics



CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Implemention of the Third-party Payment Survey

Purpose of the survey

- Transaction volume
- Transaction structurethe market
- Development situation

Scope of the survey

Licensed non-bank payment institutions.

Content of the survey

Transactions of goods and services provided by authorized merchants.

- Payment transaction amount,
- Number of payments,
- Number of authorized merchants,
- Data grouped by product and service categories.

CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Establishment of a "Consumption Statistics Big Data Joint Laboratory"

Supplementing the evaluation of retail sales of consumer goods below the designated size

Supplementing data sources of service consumption market statistics

- Tracking and monitoring transaction data
- Measuring and calculating monthly growth of turnover

Monitoring holiday consumption market and carrying out related statistics

CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Supplementing the Evaluation of Retail Sales of Consumer Goods below the Designated Size

Figure: Growth rate of monthly turnover of sample merchants below designated size using third-party payment system (%)

CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

Supplementing data sources of service consumption market statistics

Figure: Turnover Growth Rate in the Health Industry (%)

CASE 04 The Application of Third-party Payment Data in Retail Sales Statistics

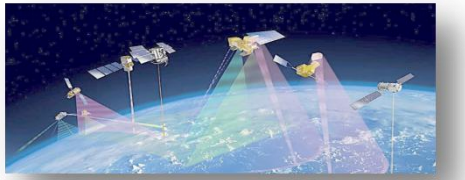
Subject Research

- Completed the research on the application of third-party payment data in retail sales statistics
- Research on the application of acquiring institution transaction data in consumer market statistics (in 2023)
- Research on the application of Third-party Payment data in consumption market statistics based on machine-learning Algorithms (in 2024)

The Recent Experiences from China

Digital Economy Accounting

Statistical Cloud Program



Remote sensing application

The Application of Third-party Payment Data in Retail Sales Statistics

http://www.stats.gov.cn/

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NBS of China

tangzhh@stats.gov.cn

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Driving innovative and ambitious statistical change with user needs at the core

Fiona Dawe

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Why do we need to measure the population?

Planning and development

Public health and social care

Housing

Education

Transport

Other

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Population statistics have always evolved alongside society

1801

The first UK Census was set up to check there was enough bread production for the nation.

2021

Digital first

97% response rate

89% of the population completed the census online, with over 50% of those on a mobile phone

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Our vision: transforming population and migration statistics

The census gives us a brilliant, detailed snapshot of England and Wales **but**…
Accuracy declines from census day. Local detail quickly out-of-date

Alternative data sources could provide **more frequent, inclusive, and timely statistics:**

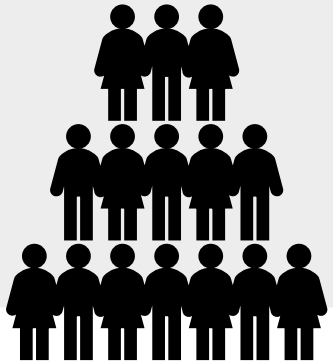
Administrative data will be at the core of this system.

More local information every year, not just once a decade

More responsive to society's changing needs

Population estimates: more consistent level of detail and accuracy over time

Migration estimates: observed patterns, not stated intentions



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Consultation on the future of population and migration statistics in England and Wales

Ran from June to October 2023

Proposals included:

- Improved population statistics
- Estimates of how and where we live and the make-up of our communities
- Estimates comparing different attributes at local level
- Analysis of outcomes over time

Do these meet your needs? What needs don't they meet?

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Raising awareness

- Conferences
- Webinars
- Meetings
- Events
- Roundtables
- Emails
- Newsletters
- Social Media

706 Responses

Sector	Count of question “What sector does the organisation belong to?”
Individual response	366
Local government	147
Charity or voluntary	52
Central government	34
Other public body, e.g., health, transport, or emergency services	31
Business, industry or commercial	21
Academia or research	18
Religion or faith	8
Devolved administration and associated bodies	9
Other (includes sectors such as Think Tanks, Journalism, Media)	20

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National Statistician and Inclusive Data

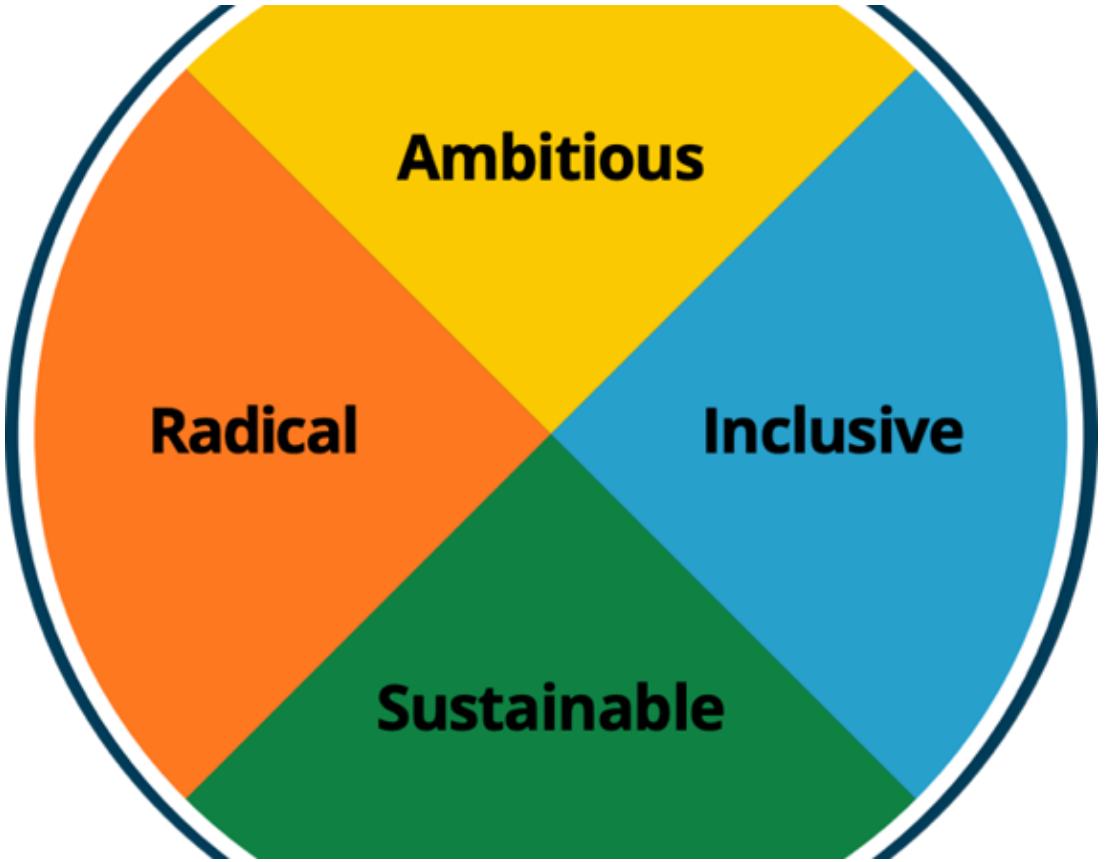
Inclusive Data Task Force: An independent task force with a strategic purpose - to make a radical step-change in inclusivity of UK data and evidence

National Statistician's Inclusive Data Advisory Committee: monitor progress of the implementation of the IDTF recommendations and give advice on a range of issues.

Focus on Children and Young People and Disability

Future innovation

- Supplementary surveys
- New administrative data sets
- Differential models
- Collaboration with Local Authorities



Current and Future Engagement

Current Examples	Moving forward Examples
Central and Local Information Partnership (CLIP) subgroup	All those plus…
Consultations	Partnerships/case studies
Conferences such as BSPS	ONS Local
Informal communications through business teams	Webinars and events
Seeking feedback on our publications	Options for building capability such as demography “masterclass”
Social media – Tweeting statisticians	

Sustainable engagement

10 Historical

Consultation

Ongoing

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