

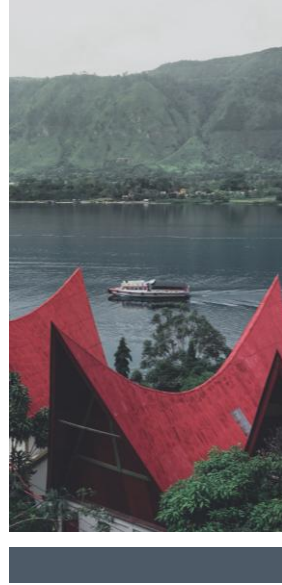
MODERN STATISTICS, MEANINGFUL IMPACT: THE BPS-STATISTICS INDONESIA TRANSFORMATION STORY

Presented at the International Forum Digital Transformation of National Statistical Systems

Astana, 6 November 2025



Sonny Harry Budiutomo Harmadi
Vice Chief Statistician of BPS-Statistics Indonesia





Congratulations on the
105th Anniversary of the Establishment of
**QAZSTAT – Bureau of National
Statistics Agency**
for Strategic planning and reforms of
the Republic of Kazakhstan.

BPS–Statistics Indonesia warmly welcomes collaboration with Qazstat
and stands ready to work together for a better future.

CHALLENGES: BETWEEN WHAT IS AND WHAT SHOULD BE

CURRENT CONDITION

Data Quality,

Official statistics are high quality but limited in scope, estimation, and frequency.



Data Quality Improvement,

Expand coverage, improve estimation and frequency.

Respondent Burden,

Respondents face overlapping surveys (internal & external), low awareness, rigid questions, and inappropriate timing.



Reducing Respondent Burden,

Enhance communication, avoid overlap, refine methods, and integrate instruments.

Internal Burden,

Too many surveys, use of multiple app, overlapping schedules, and limited resources.



Reducing Internal Burden,

Reduce survey numbers, integrate tools and schedules, improve HR mapping.

BETTER

FASTER

CHEAPER

EASIER

DESIRED CONDITION

CHALLENGES AND GREAT OPPORTUNITIES

BPS-STATISTICS INDONESIA MUST UNDERGO TRANSFORMATION

BPS-Statistics Indonesia Moving Up a Level

Presidential Regulation No. 1 of 2025

- ✔ **Strengthens BPS's role** (equivalent to a Ministry) in supporting data-based policy and enhances BPS's capacity in managing national statistical functions.
- ✔ Enables BPS **to lead the provision of accurate and integrated national statistics**

Transformation of National Statistics

Statistical Modernization

- ✔ Shift from conventional practices to the use of technology (e.g. Big Data, AI).
- ✔ **Integration of various BPS surveys with administrative data to reinforce official statistics.**

First-Ever Milestone in History

National Single Data on Socioeconomic Conditions (Based on Presidential Instruction No. 4 of 2025)

- ✔ Produce national single data used for **targeting government programs.**



**"The higher you soar, the stronger the wind you face;
the faster the world changes, the quicker we must take steps."**

CONVENTIONAL PRACTICE IN STATISTICS

Conventional Practice

Standard or traditional way of doing something that has become widely accepted over time.



**Why we need
move on?**

It is more time-consuming and expensive.

The data revolution is creating a demand for adaptive data provision

- **More Timely**
- **More Granular**
- **More Relevant**

TRANSITION FROM CONVENTIONAL PRACTICE...

Now

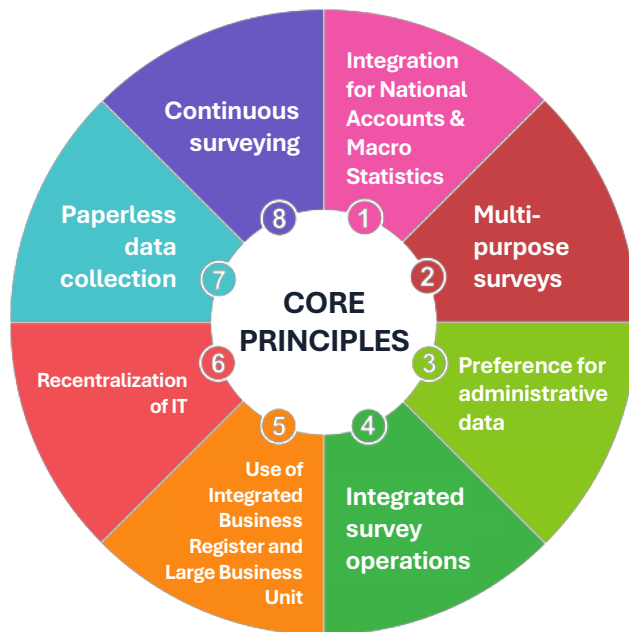
Future...

1	Full Enumeration Census	→	Registered-Based Census
2	Paper-Based Surveys & Face-to-Face Interviews	→	CAPI, CATI, CAWI
3	Large-Scale Sample Surveys	→	Big Data Analytics & Small Area Estimation (SAE)
4	Manual Data Processing	→	Optical Character Recognition (OCR), Machine Learning & Artificial Intelligence
5	Printed Statistical Reports	→	Statistical Dashboards & Open Data Portals, API-Based Data Access
6	Decennial Census	→	Dynamic & Continuous Data Collection using Administration Data

STATISTICAL BUSINESS FRAMEWORK AND ARCHITECTURE (SBFA): A Strategic Blueprint for Modernizing BPS's Statistical Production Processes



Since 2016, BPS has been committed to modernizing its statistical business processes, as outlined in the **Statistical Business Framework and Architecture (SBFA)**.



From the eight key principles, **the main challenges for BPS** are:

- ✓ Meeting the needs of National Accounts and Macro Statistics (1)
- ✓ Reducing the number of surveys (3)
- ✓ Integrating survey operations (4)



NATIONAL SINGLE DATA ON SOCIOECONOMIC CONDITIONS (DTSEN): FOUNDATION FOR SOCIAL PROTECTION AND INTEGRATED NATIONAL DEVELOPMENT

Prior to the Reform...

Government interventions have relied on data collected separately by each ministry.

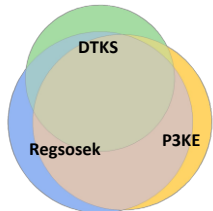


Statistics Law No. 16 of 1997 **prohibits the sharing of individual-level data**, inefficient for targeted interventions.



- ✓ Inefficient use of budget.
- ✓ Inconsistent intervention targets.

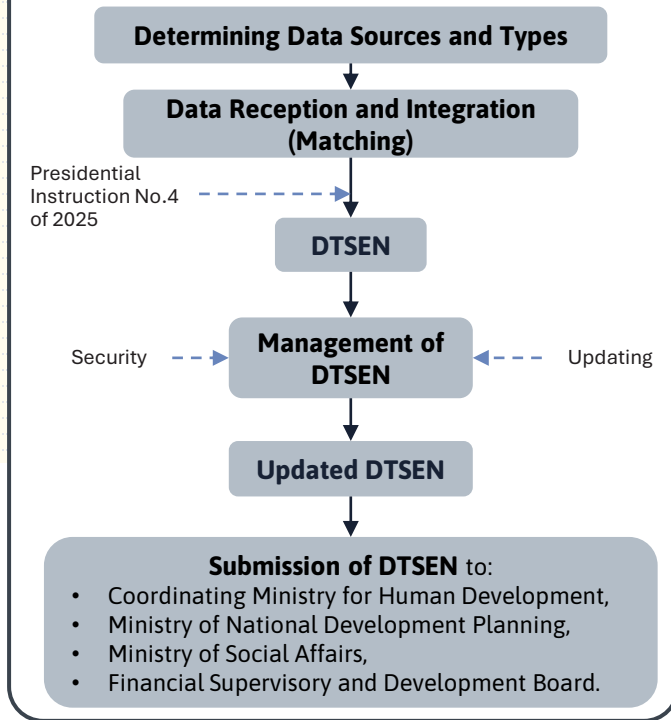
10 days after his inauguration, President Prabowo Subianto directed the preparation of a unified socioeconomic data for social assistance programs.



Presidential Instruction No. 4 of 2025 concerning DTSEN

DTSEN is a **single database of individuals and/or households** containing the **socioeconomic data** matched with population records.

BPS' Role: Establishment, Management, Updating, and Reporting of DTSEN



MOBILE POSITIONING DATA (MPD) UTILIZATION: TURNING MOBILITY INTO TOURISM INSIGHTS



MPD – big data from **mobile network interactions that precisely capture human mobility**, offering valuable source for statistical indicators in tourism, transportation, and population statistics.



1 Domestic Tourism

Number of trips based on
Origin and Destination Matrix
(ODM)



2 Inbound Visitor

Number of visits at the
national border



3 Outbound Tourism

Proportion of outbound trips
by country of destination

Business Process Transformation

Traditional Survey

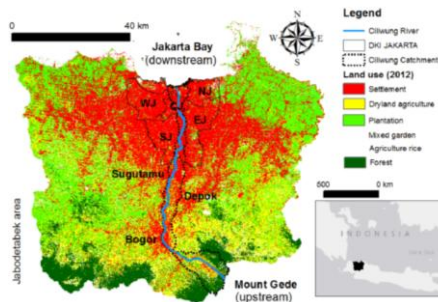
- ✓ Attached in the Socio Economy Survey.
- ✓ Using independent direct interview survey from 2017 until 2019

MPD Utilization

- ✓ 2016: initial study with MoT to obtained cross-border inbound data.
- ✓ 2018-2019: BPS studied of MPD utilization for domestic tourism.
- ✓ 2020: **MPD adopted as official data source.**

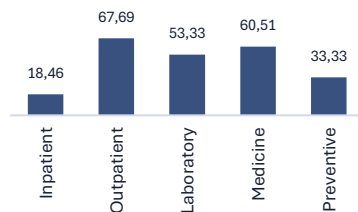


The Insights ...



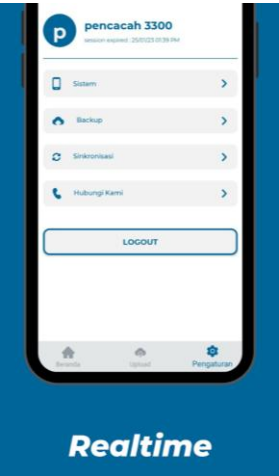
MPD reveals that economic and transport linkages can boost tourism in interconnected regions.

Percentage of Outbound Trips for Health Purposes by Type of Health Expenditure, 2024

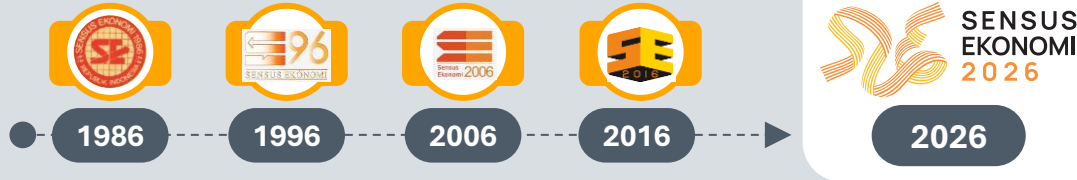


The data indicate the need for **developing medical tourism in Indonesia.**

AI'S IMPLEMENTATION ON THE 2026 ECONOMIC CENSUS



The 2026 Economic Census (SE2026) Fifth Economic Census



AI or AI-POWERED APPLICATION

Gen-AI

ISIC Classifier

FASIH

Instrument
Builder for Data
Collection

IPAS

Data Analytical
Software

Bung Itung

Chatbot

*Faster, Cheaper,
More Accurate and Efficient.*



STRENGTHENING DATA AND INFORMATION SECURITY THROUGH INTERNATIONAL STANDARDS AND AN INTEGRATED MANAGEMENT SYSTEM



Since 2021,
BPS has been
certified with
ISO 27001:2022
for its:

- ✓ Data Center (DC),
- ✓ Disaster Recovery Center (DRC),
- ✓ Population Web Services, and
- ✓ FASIH systems



In 2024, BPS-CSIRT **won first place**
in the National Cyber Exercise.
BPS:

- ✓ Implemented an **Information Security Management Policy** (BPS Regulation No. 10/2023).
- ✓ Assigned **dedicated IT security personnel** for continuous monitoring and incident response, supported by BSSN*.

*BSSN: National Cyber and Crypto Agency

BPS-Statistics Indonesia is strongly committed to maintaining data security and personal data protection for all data managed by the institution.

STATISTICAL REFORM IN INDONESIA: STRENGTHENING THE LAW, KEEPING PACE WITH CHANGE

SUPPORT FROM UNSD

Strengthening the capacity and role of NSO to **adapt to the evolving data ecosystem** and advance the SDGs.



Indonesia is currently in the **process of drafting the Statistical Bill** in collaboration with the Legislature to ensure that it is **aligned with current developments and needs**.

1

Data Acquisition

2

Exchange Microdata by Name by Address

3

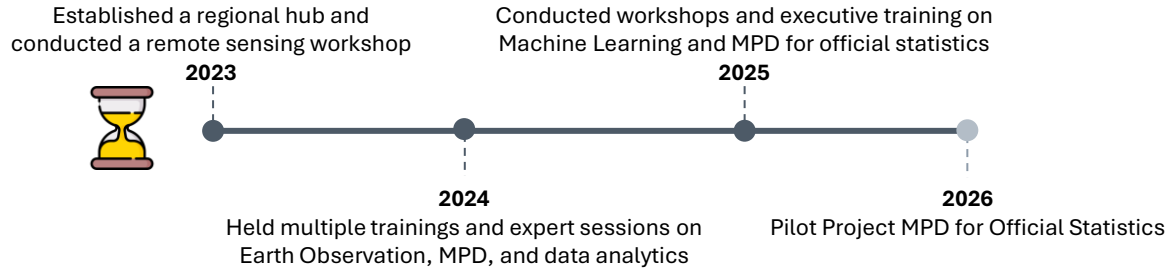
Provision of National Statistical Infrastructure and Development of a Statistical Data Center

UN REGIONAL HUBS FOR BIG DATA AND DATA SCIENCE

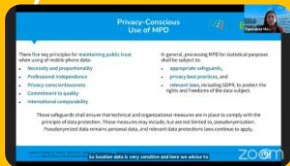


The Regional Hub for Big Data and Data Science supports Asia-Pacific countries in **modernizing official statistics through big data** and focusing on human resource readiness.

Indonesia will be a catalyst for the development of big data and data science for official statistics in Asia and the Pacific, with the support and collaboration with all parties



KAZAKHSTAN ALREADY JOINED UN REGIONAL HUBS



22 Mar '24
Webinar “From MPD to Official Statistics: A Journey”



29 Jul – 2 Aug '24
Workshop “MPD Processing and Analytics for Official Statistics”



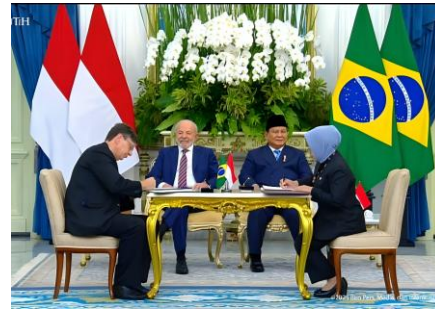
3 – 7 Feb '25
Workshop “Machine Learning to Official Statistics”

“To support the emerging data ecosystem, NSOs need, in particular, to strengthen their operational processes and develop their digital capabilities.”

– OECD / PARIS21, Digital Transformation of National Statistical Offices

“Collaboration among National Statistical Offices is essential to build a stronger and more resilient global data ecosystem.”

– United Nations World Data Forum



Thank You!
Спасибо



Padar Island, East Nusa Tenggara