Using MPD since 2016

- BPS Statistics Indonesia use Mobile Positioning Data (MPD) for Official Inbound Tourism Statistics since 2016
- Increase timeliness, better coverage, reducing work burden
- Before using MPD, Cross Border Survey is used
Regulations to Follow

- Statistics Law No. 16 of 1997 on Statistics.
- Ministry of Communication and Information Decree No. 20 of 2016 on Personal Data Protection in Electronic System
- No Personal Data Protection Bill (Privacy Act) yet.

Data Access through Contract

- Memorandum of Understanding with the telco parent company (Government-owned Enterprise), with Ministry of Tourism and private company for data processing (Positium)
- Annual Contract
Privacy Protected through Pseudonymization and k-Anonymity

✓ The subscribers is masked with hash, when data scientists processed
✓ The data produce is aggregate data (tables)
Data Architecture of Sandboxing

For Mobile Positioning Data
CHALLENGES

• Data access (No direct rule or regulation yet).
• Administrative and legal process (administrative review, contract, etc.)
• Once the MNO has committed, keeping that commitment
• MNO staff/data scientist lack understanding of Statistics
• Data processing volumes (up to 144 TB data/year)

“Easier to climb a mobile antennae than to get the data from telcos”
For Official Statistics

1. Quality Assurance
2. Sound Methodology
3. Privacy-Preserving Processing
Quality Assurance

Input Quality Checking (First gate)
- Data gaps
- Missing data
- Incorrect timestamps
- Duplicate record

Throughput Quality Checking (Second gate)
- Errors in data processing
- Overwrites

Output Quality Checking (Third gate)
- Anomalies checking
- Coherence with other data
- New phenomena can be explained
- Passed Calibration/Comparison with other data

- In-line with BPS QAF Handbook (for Census, Survey and Administrative data)
- In-line with UN QAF and Unece QAF for Big Data
- Quality check (Input, Throughput, Output)
MPD Use

Current:

- **Tourism (Inbound, Domestic, Outbound)**
- **Commuting Statistics**
- **Metropolitan Statistics Area**
- **Information Society**

What next:

- **Internal Migration**
MPD for Official Tourism Statistics

Press Release

https://www.bps.go.id/pressrelease.html
MPD for Official Tourism Statistics

Publications

STATISTIK KUNJUNGAN WISATAWAN MANCANEGARA
TAHUN 2019

INTERNATIONAL VISITOR ARRIVALS STATISTICS 2019

BADAN PUSAT STATISTIK

LAPORAN SURVEI WISATAWAN NASIONAL
(OUTBOUND)
TAHUN 2019

BADAN PUSAT STATISTIK
MPD for Other Statistics

Reports
THANK YOU

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