

Alternative sources of data for international migration statistics

Training Workshop on the Use of Administrative Data for Migration Statistics in Maldives

10-12 December 2024, Malé, Maldives

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**United
Nations**

Statistics Division

WHAT'S THE ALTERNATIVE?



BPS STATISTICS INDONESIA – MPD since 2017

8000
enumerators
for **domestic**
tourism survey



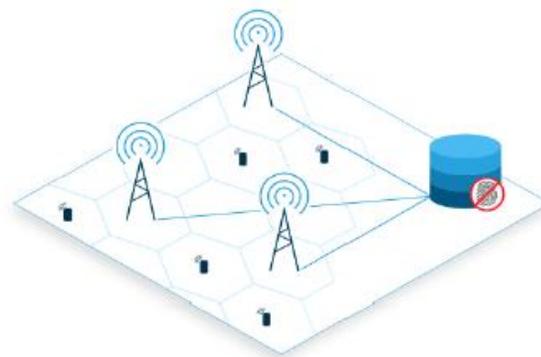
4
data scientists /
engineers
working on MPD



MOBILE PHONE DATA

Mobile Positioning Data (MPD)

Mobile Positioning Data is defined as any type of mobile network event data that are stored by the mobile network operator (MNO) that includes a subscriber identifier, time attribute and location.



Call Detail Records (CDR)

- Passively generated when a subscriber:
 - Makes or receives a call
 - Sends or receives an SMS
 - Uses mobile data
- Routinely stored by MNOs for billing purposes

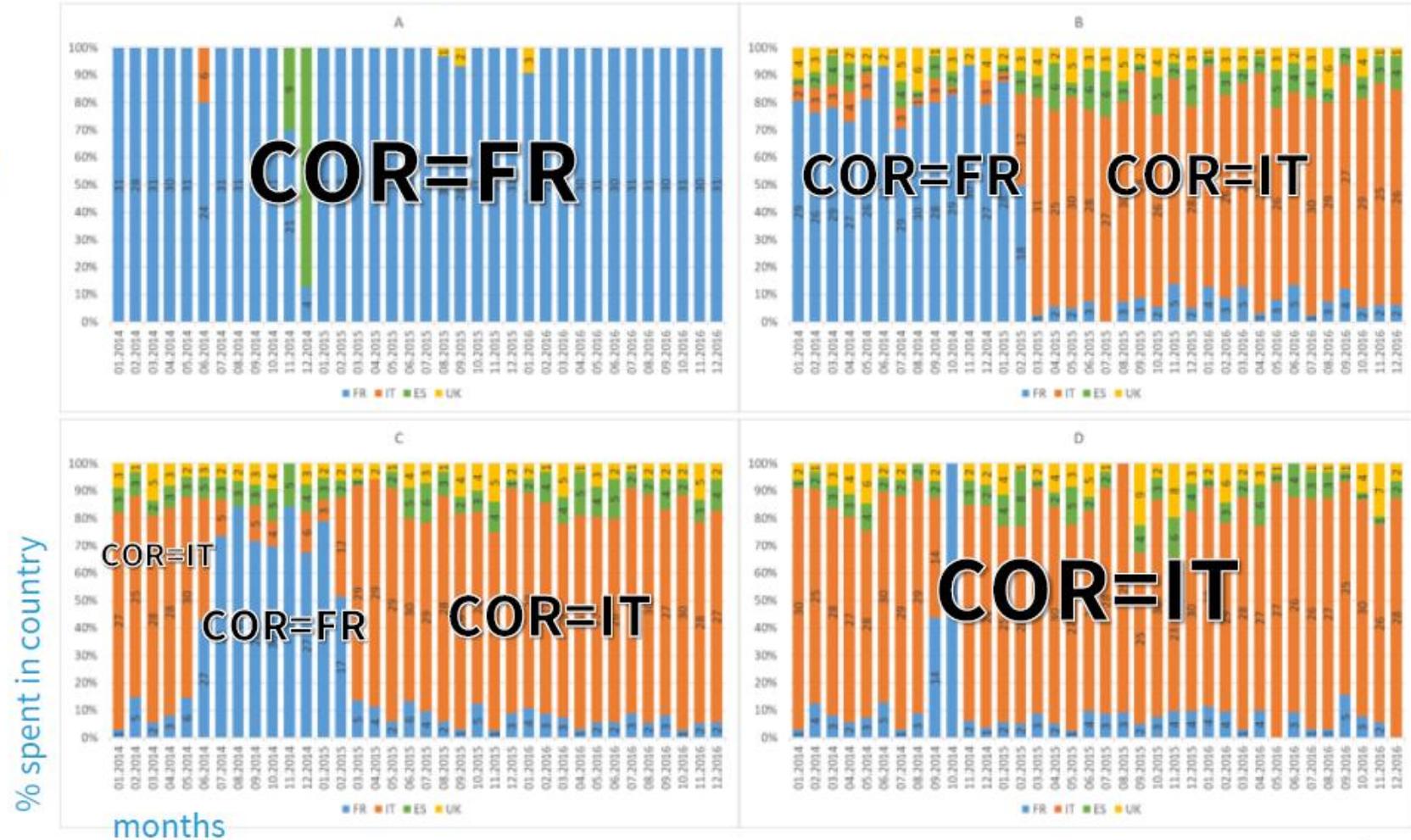
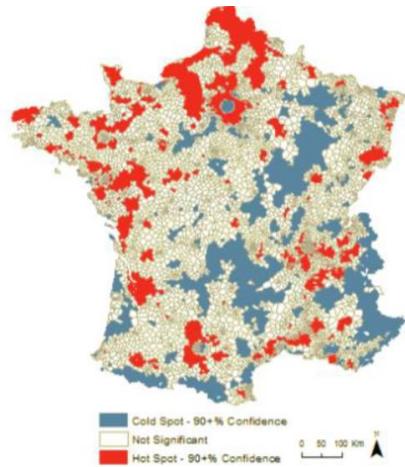
Passive Signalling Data

- Passively generated when a mobile device connects to the network
- More frequent than CDR data
- Very high volume storage



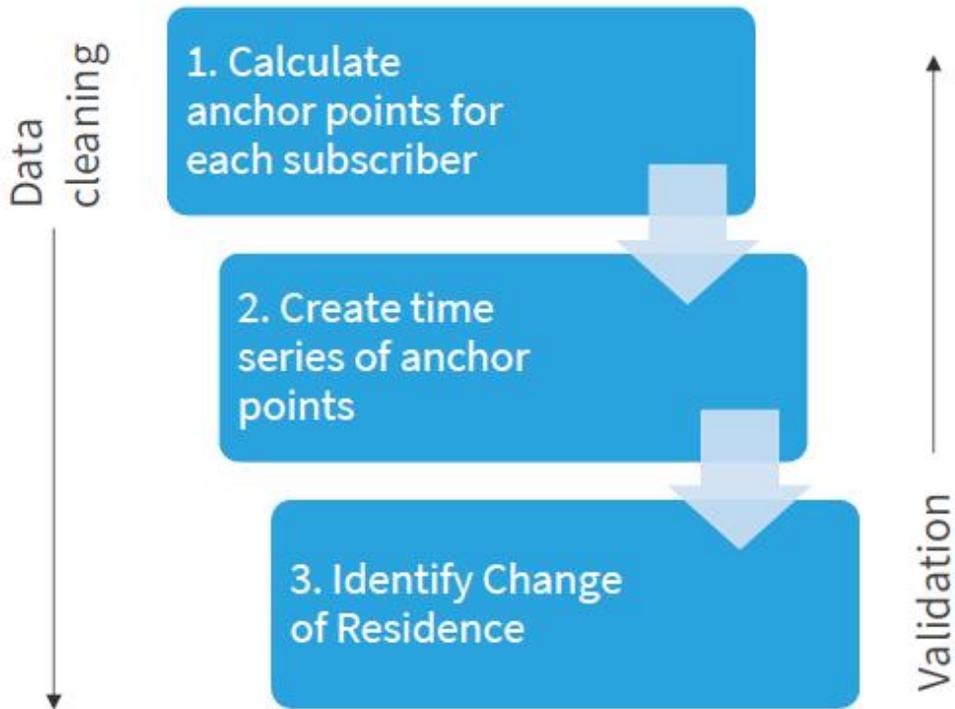
DETERMINING PLACE OF RESIDENCE

According to official definition, Country of Residence (COR) is the country where the person spends most of their year.



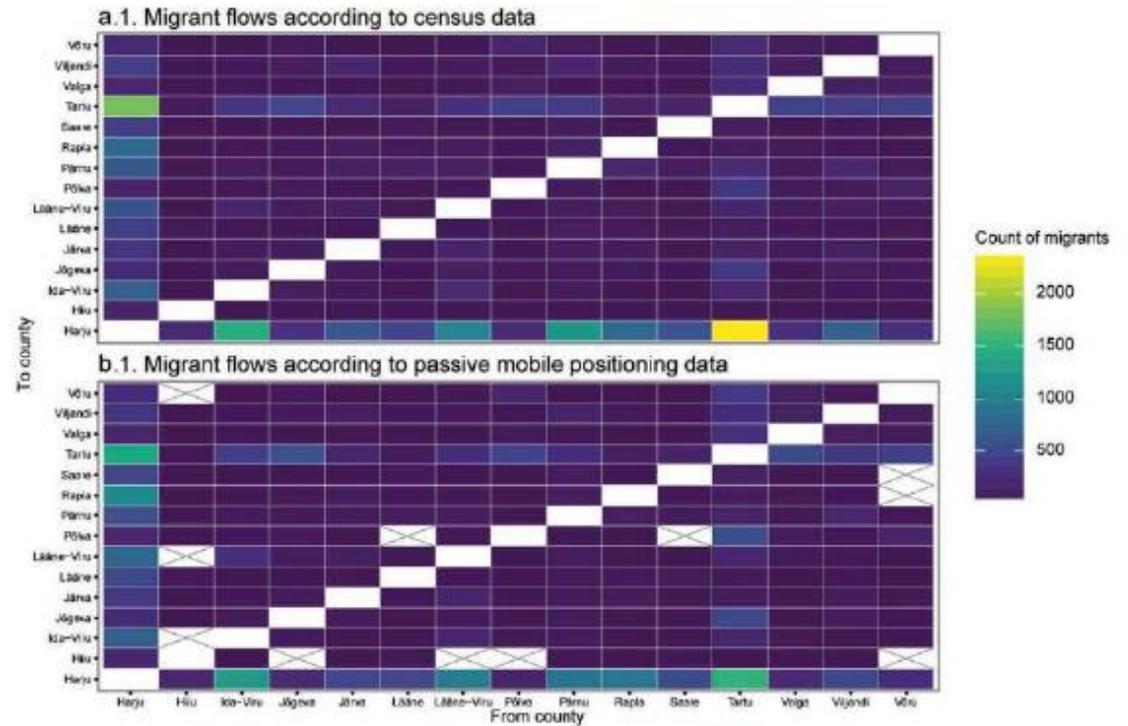
CASE STUDY: ESTONIA (INTERNAL MIGRATION)

Process



Kamenjuk et al. (2017) Mapping changes of residence with passive mobile positioning data: the case of Estonia <https://doi.org/10.1080/13658816.2017.1295308>

Results



Comparison of flows for internal migration between counties in Estonia according to census 2011 and MPD during the period 2010–2011. N= number of migrants between counties (LAU level 1).



UN COMMITTEE OF EXPERTS ON BIG DATA AND DATA SCIENCE



ABOUT ▾

EVENTS

TASK TEAMS ▾

HUBS ▾

UN GLOBAL PLATFORM

Mobile Phone Data

Task Team of the UN Committee of Experts on Big Data and Data Science for Official Statistics

Home > Task Teams > Mobile Phone Data

About Mobile Phone Data



Methodological Guides on the use of Mobile Phone Data (2022)

- [Displacement and Disaster Statistics](#)
- [Dynamic Population Mapping](#)
- [Measuring the Information Society](#)
- [Migration Statistics](#)
- [Tourism Statistics](#)
- [Transport Statistics](#)

GUIDANCE ON MOBILE PHONE DATA FOR MIGRATION STATISTICS

The screenshot shows a web page from the UN Statistics Wiki. The page title is "Methodological guide on the use of mobile phone data: Migration Statistics". The page is created by Clarence Lio (UNSD) and last modified by Francisco Rowe on Oct 20, 2024. The page content includes an introduction to the handbook, which aims to provide practical guidance on how to collect migration statistics using mobile phone data (MPD). The handbook is part of a series of five handbooks developed by the UN Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD) Task Team on MPD. The preparation of this handbook was led by the National Statistics Office of Georgia with technical support and guidance from the United Nations Statistics Division and the UN-CEBD Task Team on MPD. The handbook aims to inform statistical data users and producers about the opportunities of using Mobile Positioning Data (MPD) to produce migration statistics. This present Handbook represents information on the data sources, MPD quality issues, and other aspects, as well as methods (concepts, definitions, data processing algorithms, and quality assurance), results, and findings. This Handbook has been prepared by the MPD Task Team Migration Statistics Subgroup led by Francisco Rowe (University of Liverpool), with support from Mariana Jalagonia (NSO Geostat), Siim Esko (Positium), Samantha Watson (Flowminder), Elena De Jesus (UNSD), Ronald Jansen (UNSD), Francesca Grum (UNSD), Marzia Rango (UNOCC) and Michele Vespe (EU-JRC). The authors express their gratitude to Professor James Raymer and María Isabel Cobos Hernandez.

Methodological Guides on the use of mobile phone data

- Displacement and Disaster Statistics
- Dynamic Population Mapping
- Measuring the Information Society
- Migration Statistics
- Tourism Statistics
- Transport and Commuting

Also dynamic population mapping, tourism, transport

GUIDANCE ON DATA INNOVATION FOR MIGRATION POLICY

Why and how non-traditional data sources can contribute to better understanding migration-related phenomena

- (a) practical and technical aspects of using data innovations in migration statistics
- (b) added value of using new data sources and innovative methodologies to analyze migration phenomena difficult to measure using traditional data sources
- (c) good practices in addressing issues of data access and collaboration with multiple stakeholders, ethical standards, and security and data protection issues



MOBILE PHONE DATA PROJECTS



GDF GLOBAL DATA FACILITY

MOBILE PHONE DATA PROGRAM FOR POLICY: COHORT 1 LAUNCH WORKSHOP

WASHINGTON D.C.
OCTOBER 7-10, 2024



THE WORLD BANK
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ITU

GOBIERNO DE ESPAÑA
MINISTERIO DE ECONOMÍA, COMERCIO Y EMPLEO



<https://cros.ec.europa.eu/landing-page/multi-mno-project>



European Commission

Multi-MNO project



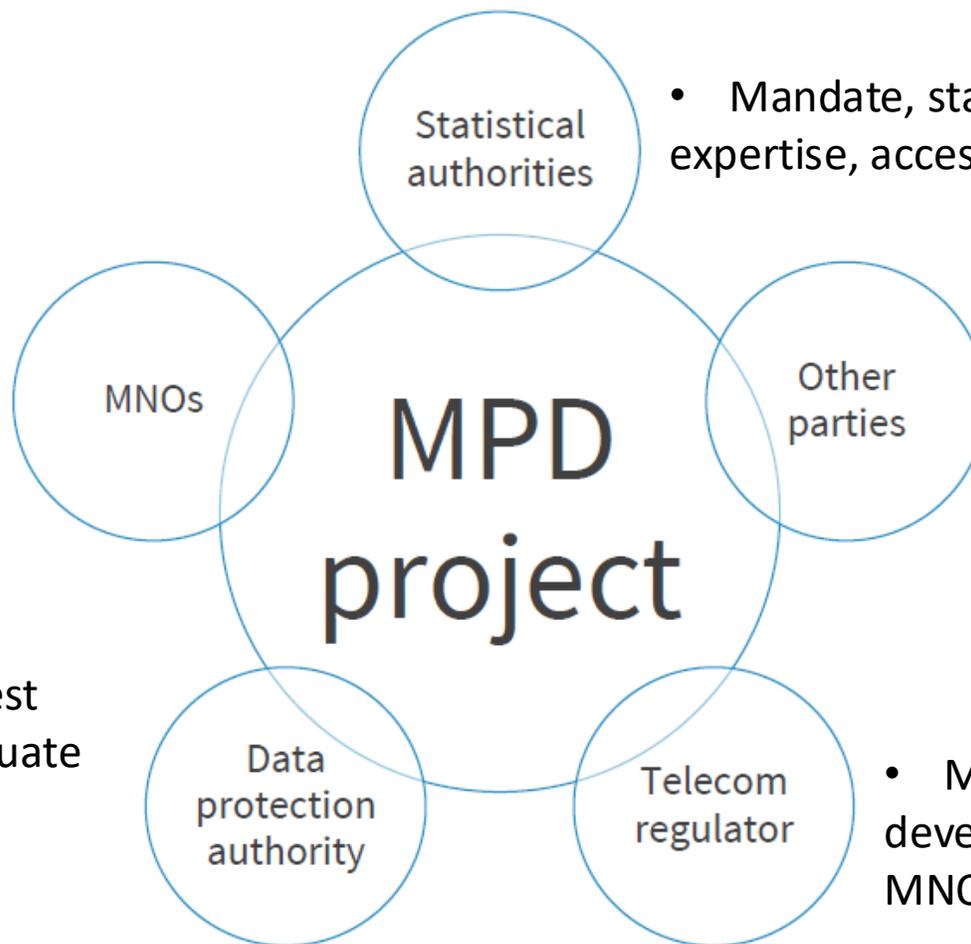
<https://www.worldbank.org/en/programs/global-data-facility/brief/putting-mobile-phone-data-to-work-for-policy>

EMBARKING ON MOBILE PHONE DATA USE FOR STATISTICS



- Data holder, IT expertise, knowledge of MPD data source, corporate responsibility, image, profits

- Balance between public interest and privacy preservation, evaluate data protection measures, enhance public trust



- Mandate, statistical authority, confidentiality, expertise, access to other data sources for validation

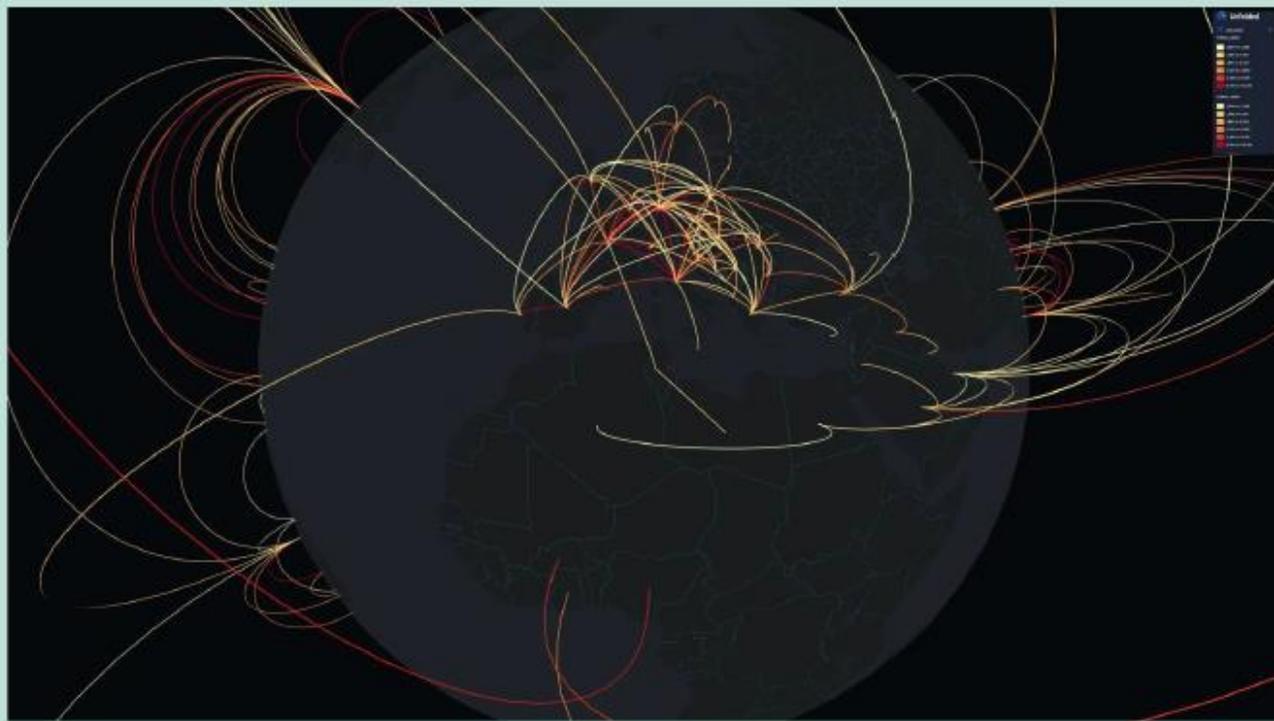
- Users
- Research community
- International organizations
- Legislators

- May have mandate to collect records, development agenda, regular contact with MNOs

SOCIAL MEDIA DATA

Data for Good Visualization

Travel Patterns show comparisons of the number of Facebook location history users moving across long distances, like cross-country air or train travel.



Meta

Data for Good

About

Data

AI Models

Social Capital

Impact

We empower partners with privacy-preserving data that strengthens communities and advances social issues.

Data for Good is helping organizations respond to crises around the world and supporting research that advances economic opportunity.

Step 1: Pull location data

We use GPS location updates for Facebook mobile app users who have opted into sharing location data.

Step 2: Aggregate data to country level

We only look at the country in the location data.

Step 3: Count users who changed country

For each day, we count the number of Facebook users who moved from country A to country B and vice-versa.



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THANK YOU!



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