



Managing big data on a national scale: Infotechnological Mobility Observatory

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<https://imo.ut.ee>

28.08.2018

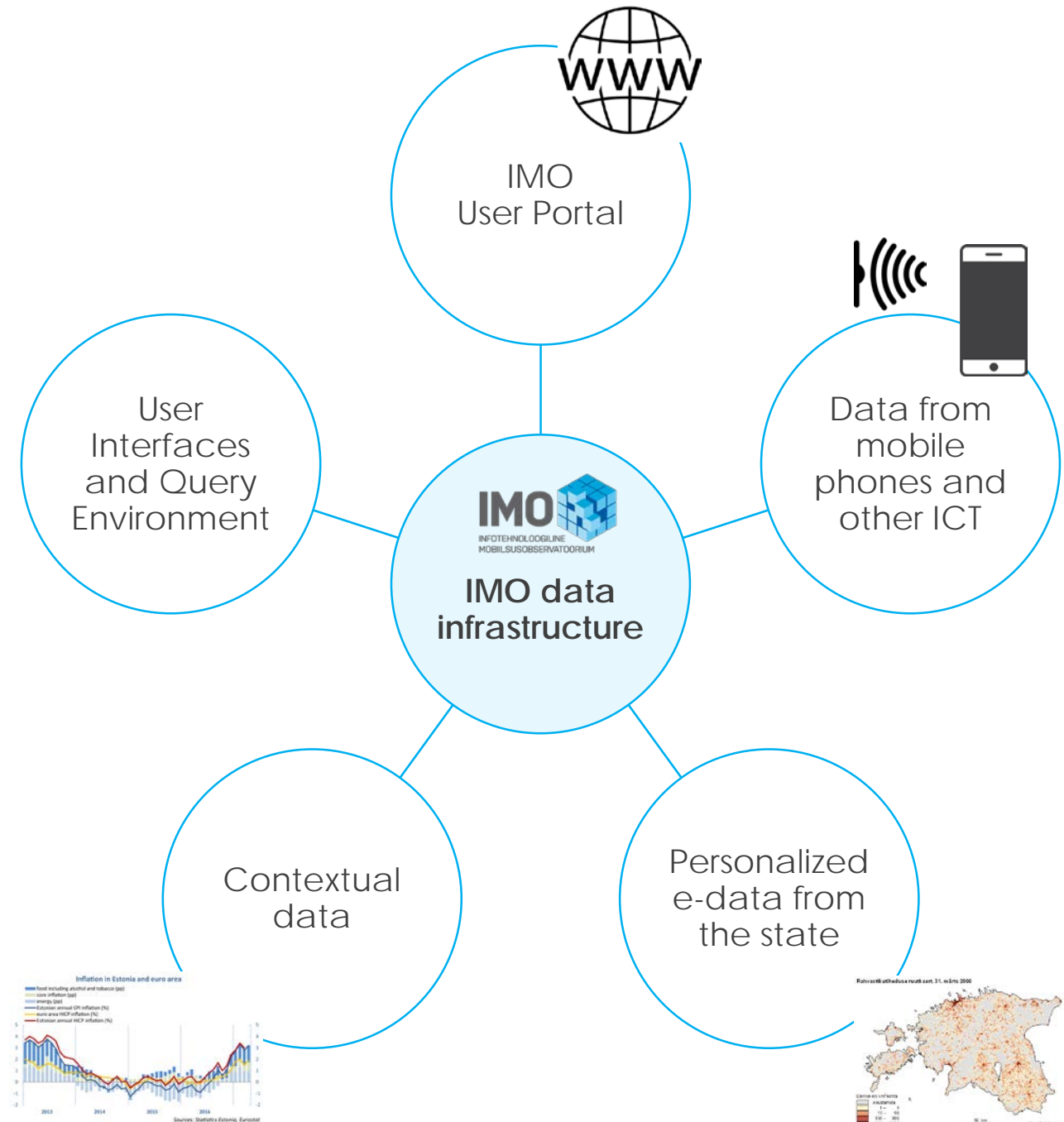
Migration and mobility are both the great potential and challenge of the 21st century!

- Mobility as a phenomenon has changed.
- Understand the context and causality → cause and effect.
- Data governance – better decision making ← data infrastructure.



What is IMO?

- The aim of IMO is to develop a **data infrastructure that supports mobility studies.**
- **Integrate different data:**
 - data obtained from mobile phones and other IT tools,
 - country-specific e-data (censuses, registers, databases, etc.),
 - contextual data and descriptions (environmental information, land use functions, etc.).





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Partners

- University of Tartu
 - Department of Geography (coordinator)
 - School of Economics and Business Administration
- Tallinn University
- Tallinn University of Technology
 - Institute of Logistics
 - Institute of Cybernetics
 - Department of Computer Control
- Statistics Estonia

National official statistics

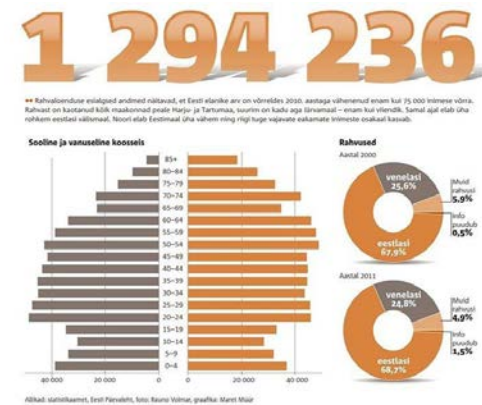
Integration, linking, harmonization

ID level

- ID level based linking.
- Integrating and linking data from censuses (1989, 2000, 2011) and other datasets from Statistics Estonia.
- Integrating and linking national registries and results from studies.
- Harmonizing data.

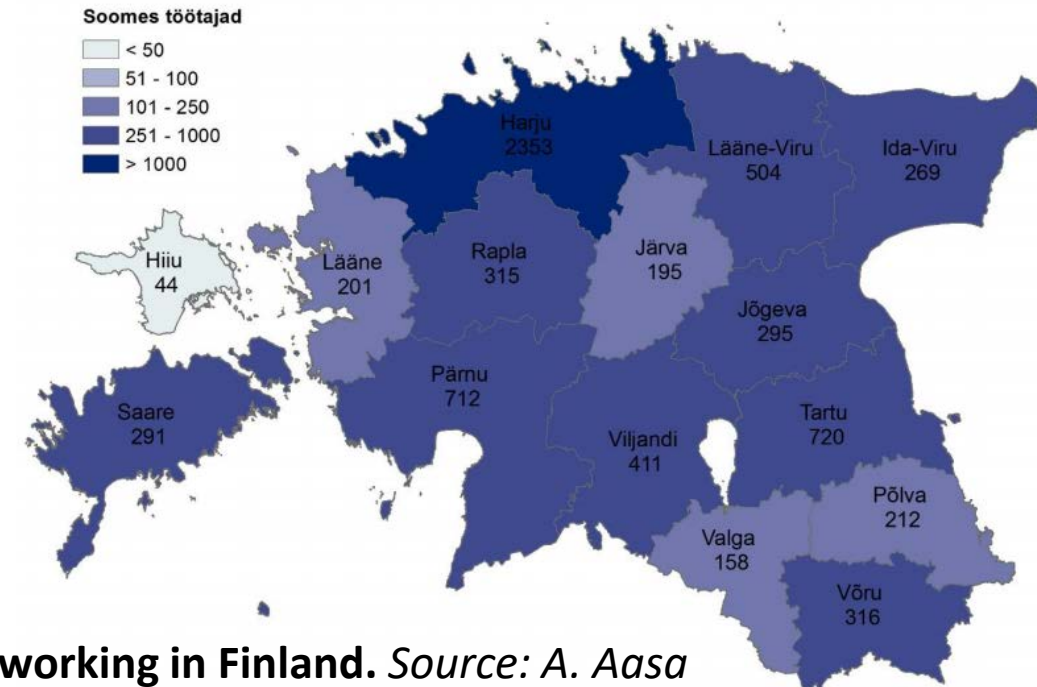
Spatial level

- Data integration and binding.
- Methodological harmonization
 - Definitions
 - Classifications (e.g. ISCO)
 - Spatial units (urban, rural areas)
- Comparability in time.
- Comparability between different datasets.



Mobile Data

- Integrating mobile phone based data and other ICT data into a scientific database → data from 2006.
- Make the data more usable for the public.
- Anchor points – home, work, etc. locations.
- Mobility patterns.
- Population distribution.
- Migration and commuting patterns.
- Tourism information.



Estonians working in Finland. Source: A. Aasa

Sensor data

- Developing sensor networks.
- City sensors, traffic sensors, counters, etc. (e.g. traffic density and congestions).
- Smart City monitoring.
- Mobility data.
- Contextual information.



Making data more available for the researchers

- User portal: <https://imo.ut.ee/>
 - Central database in UT/Statistics Estonia.
 - Internationally accessible e-environment.
 - Data labs in TTU, UT ja Statistics Estonia.
-
- Access to data – levels, rules.





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Making data available for the public

- Analytical interests of public authorities:
 - Transportation flows
 - Migration (education, work)
 - Transnationality and border mobility
 - Tourism, etc.
- Output for entrepreneurs.
- “Open Data” data layers, machine readable data.

Bank of Estonia – Tourism statistics



Statistical indicators

Eesti English Help Print

Estonian Bank > Statistical indicators > External sector statistics > International travel statistics

Table Figure

COUNTRY: INDICATOR: STEP: FROM: TO:

DISPLAY

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Inbound travel

updated 08/08/2018

	Q1/2018				Q2/2018			
	Total number of visits	Number of overnight visits	Total length of visits (days)	Length of overnight visits (days)	Total number of visits	Number of overnight visits	Total length of visits (days)	Length of overnight visits (days)
TOTAL	1,030,613	574,689	2,894,986	2,439,062	1,746,470	913,270	4,504,632	3,671,432
EU 28	742,814	414,765	2,111,550	1,783,501	1,273,053	682,720	3,374,484	2,784,151
CIS	220,851	118,489	558,335	455,973	236,007	120,681	570,600	455,274
AU Australia	2,585	1,283	6,315	5,013	10,599	3,745	21,345	14,491
AT Austria	3,507	2,377	12,977	11,847	9,993	5,943	24,684	20,634
BY Belarus	1,112	468	2,357	1,713	1,189	432	2,194	1,437

<http://statistika.eestipank.ee>

Bank of Estonia – Tourism statistics



Statistical indicators

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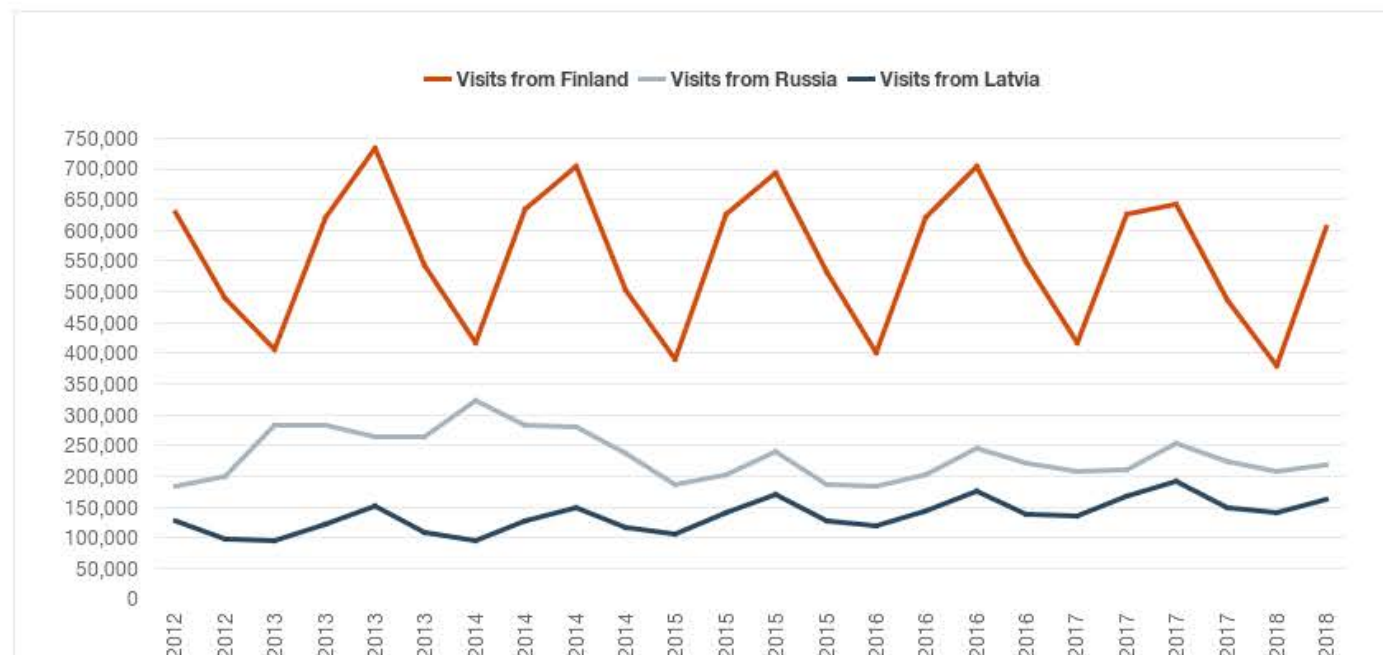
Estonian Bank > Statistical indicators > External sector statistics > International travel statistics

STEP: FROM: TO:

quarter pick 2012 Q3 2018 Q2

DISPLAY DOWNLOAD SEND

Inbound travel updated 08/08/2018



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Thank you!