Assessing the Quality of Mobile Phone Data as a Source of Statistics

Session 20 – Big Data
Oriented Systems

02/06/2016

gerdy.seynaeve@proximus.com
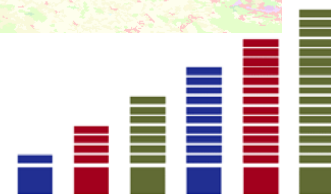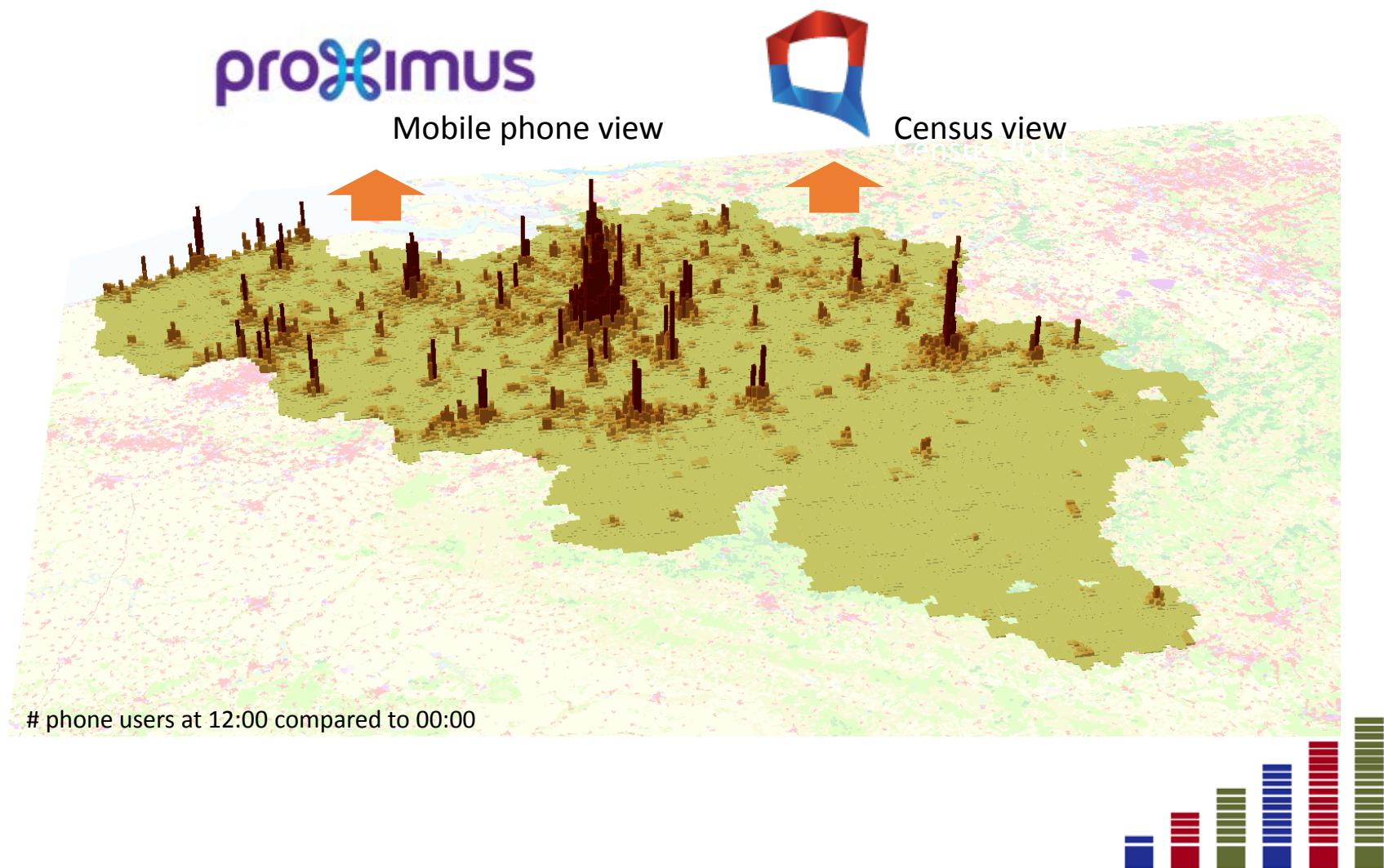
Madrid, May 31 - June 3

Focus

Use mobile phone data as a measure of resident population

- Validity
- Accuracy
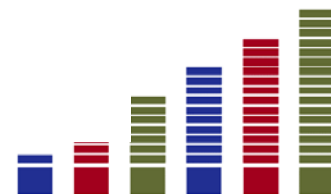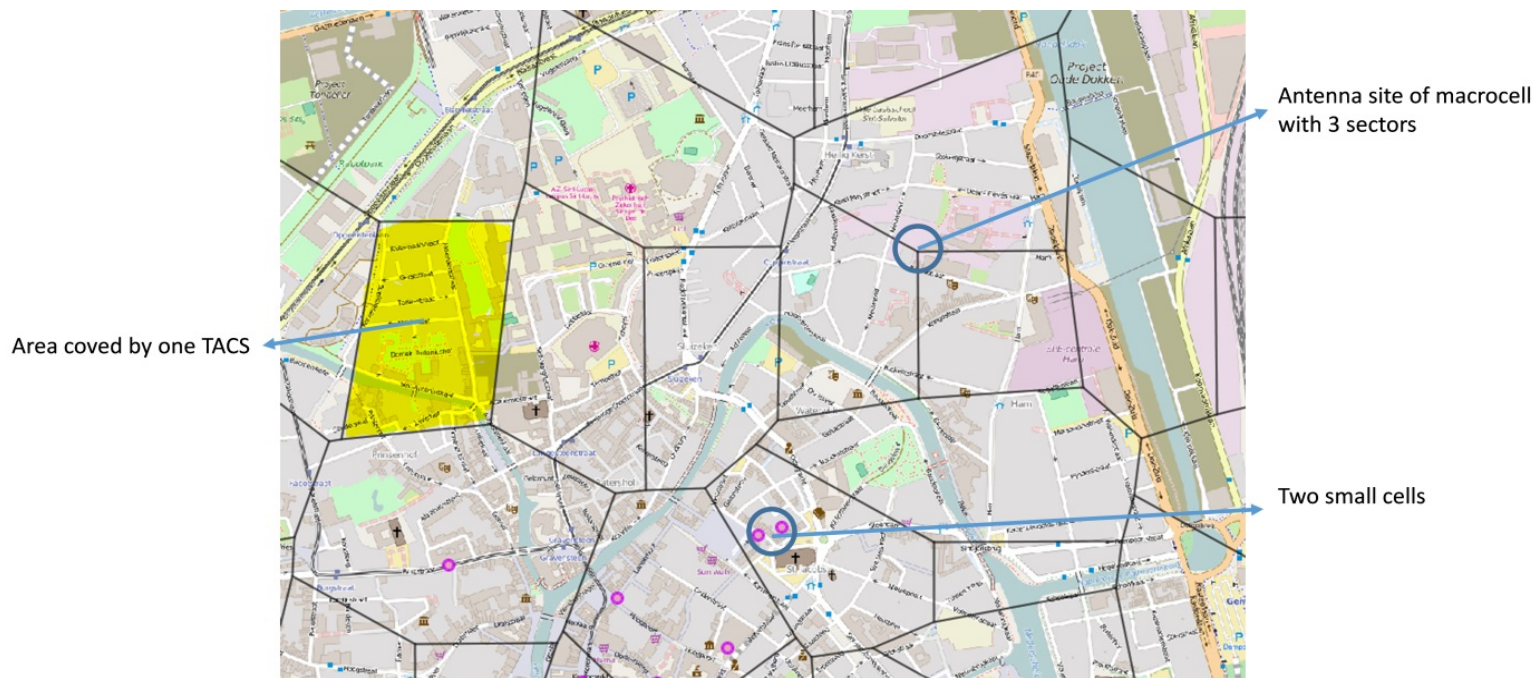- How to increase value further

=> Comparison with census 2011
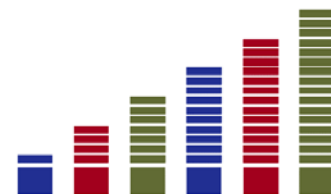
2 versions of the truth

Mobile phone view   Census view

phone users at 12:00 compared to 00:00

Mobile phone data

Use of network signalling vs Call Data Records

Abstraction of network complexity (TACS - Technology Agnostic Cell Sector)

Antenna site of macrocell with 3 sectors

Area coved by one TACS

Two small cells

Census data

Place of residence

Geocoding of addresses to Voronoi / grid
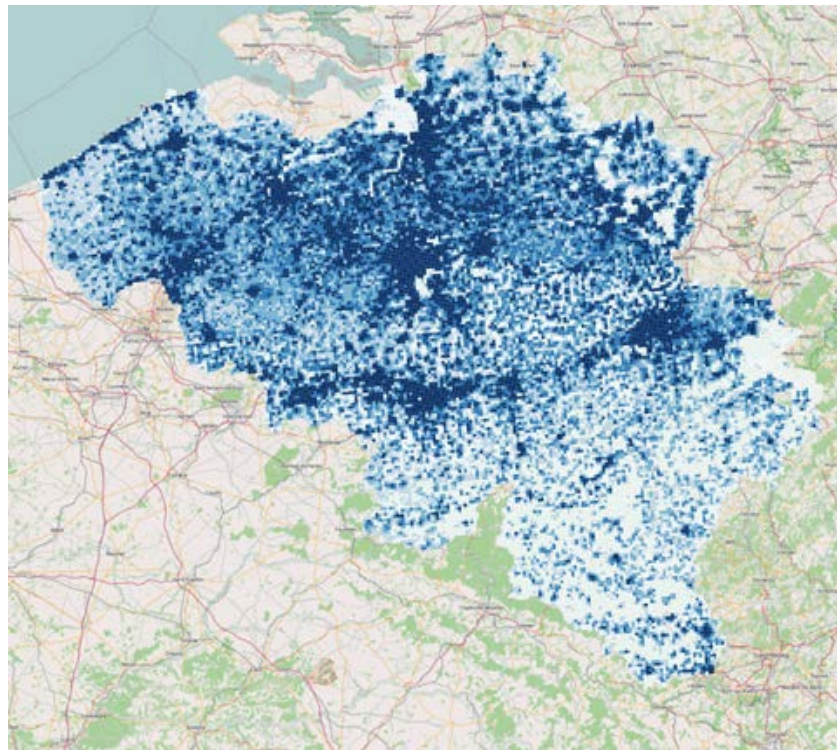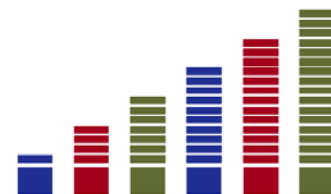
Results for population density
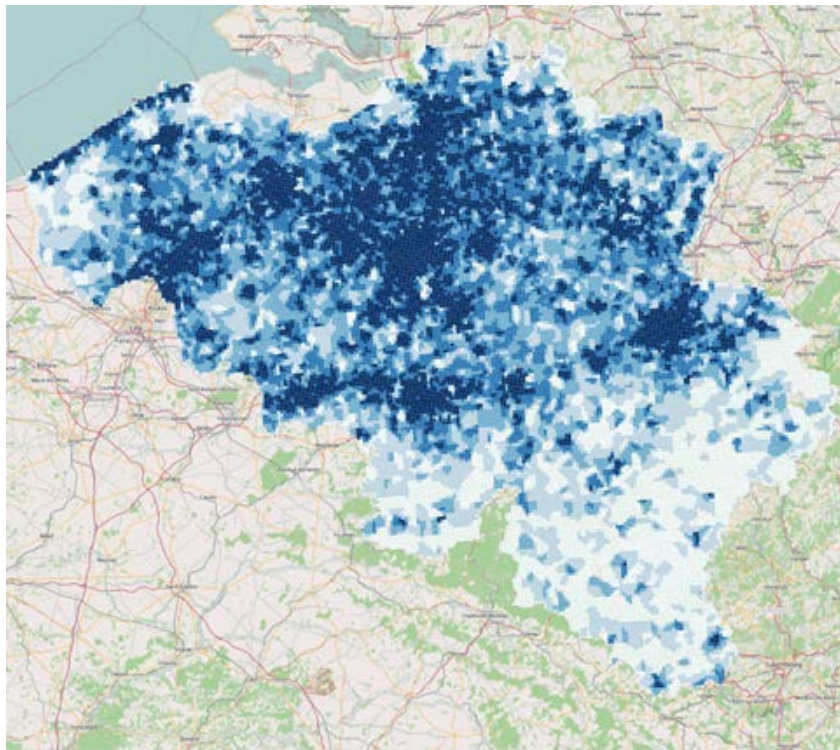
Mobile phone data based

1 day @ 04:00

Census based

2011 data

Mapping to grid
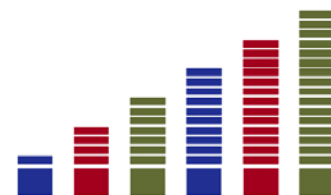
Correlation
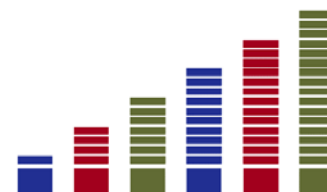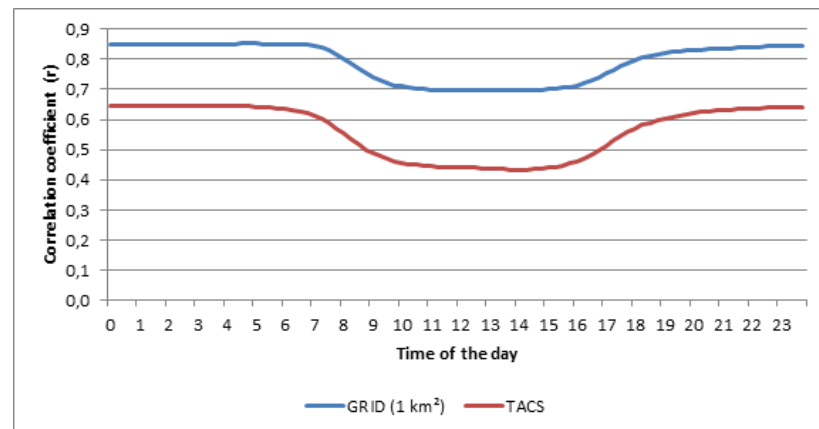
Cell traffic profiling

Conclusions

Mobile phone data is a valid & accurate approximation of actual present population
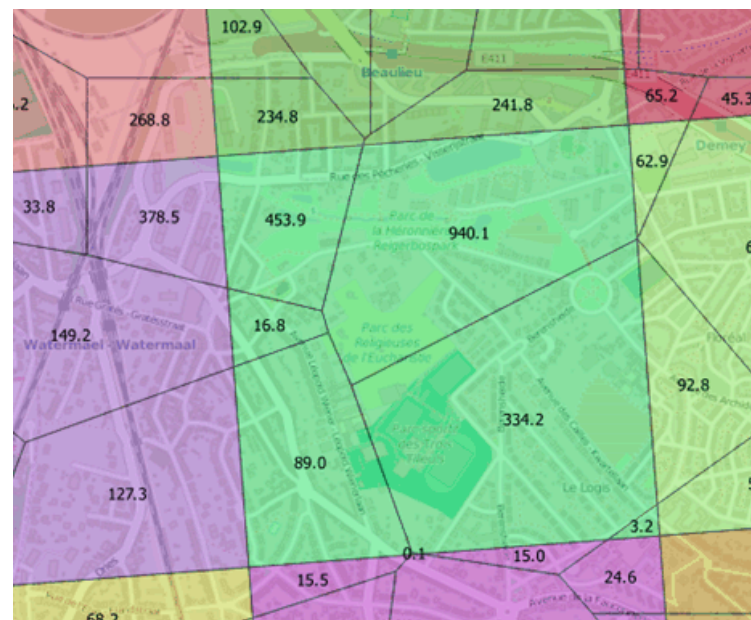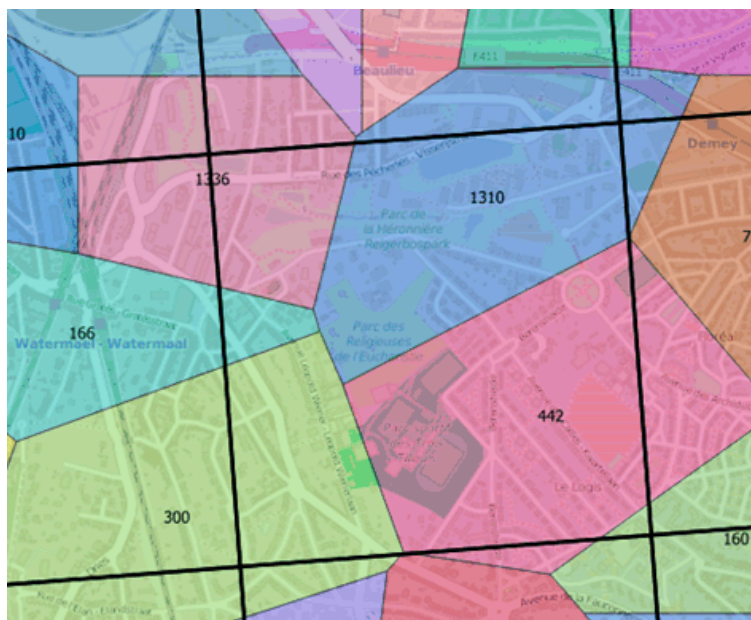
- Available, huge, 24/24 7/7, objective
- Largely unexplored

A large potential for future research in many area

- population
- tourism
- migration, transport & mobility
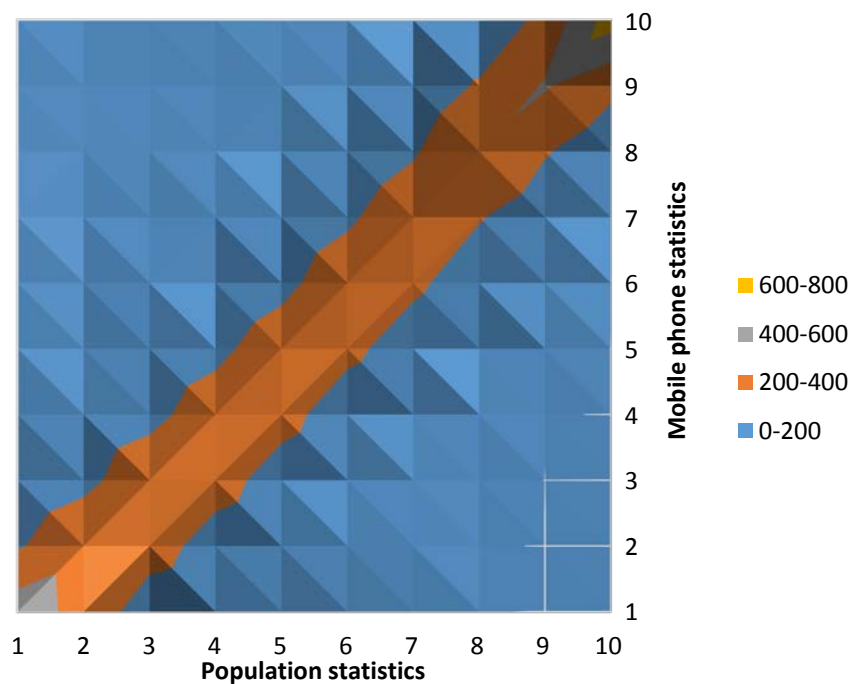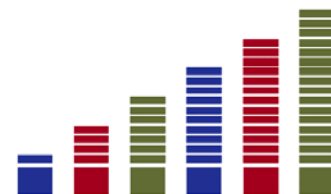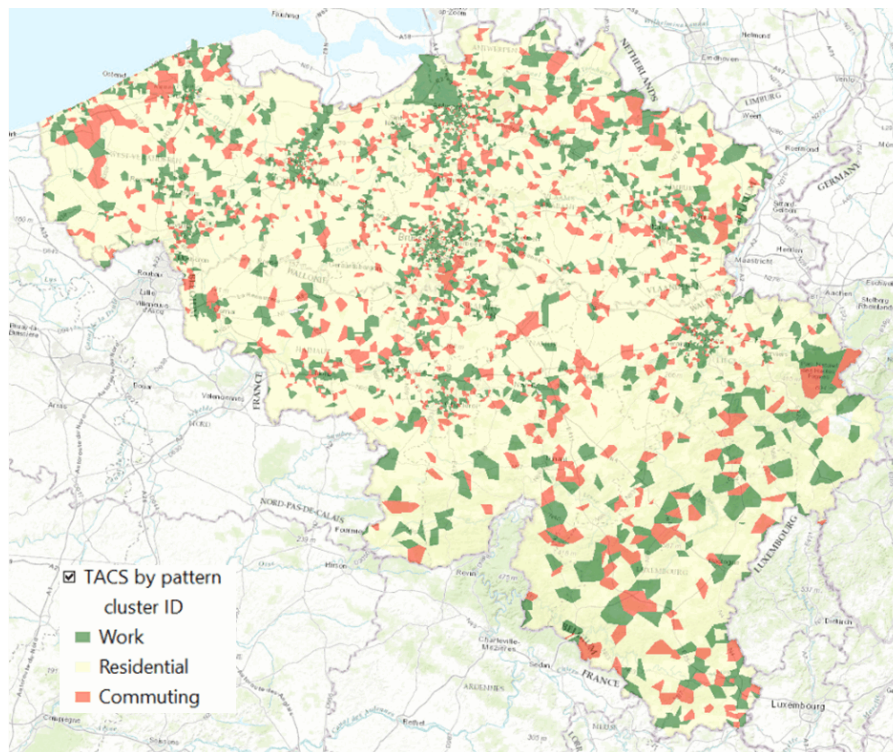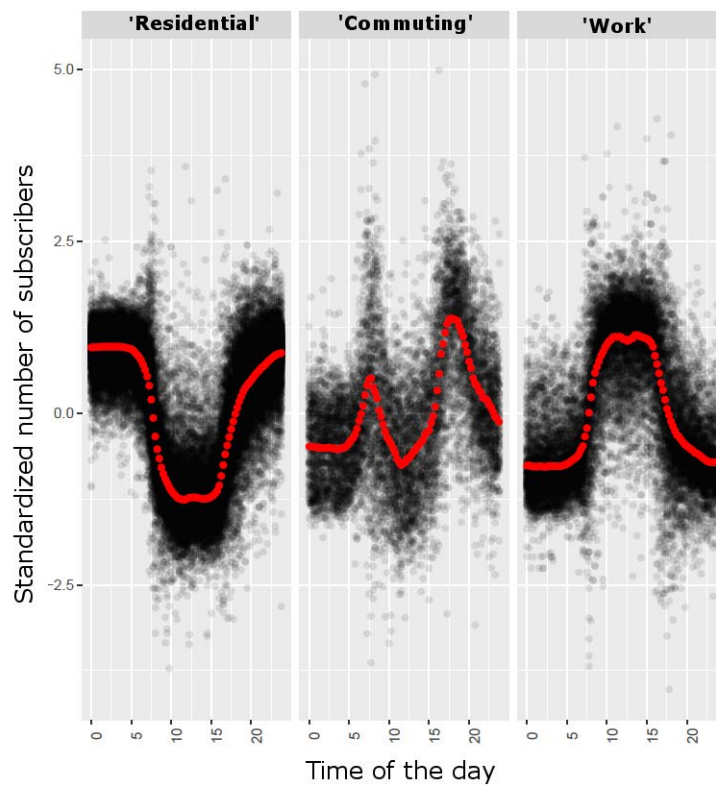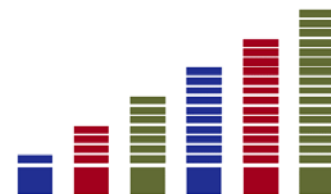- ...

Opportunity for efficient & coherent use of 1 source for different purposes

Authors

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