

Estonian COVID-19 mobility analysis tool

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Positium

Background

- Urgent need for a tool to support decisionmaking of the Estonian government COVID-19 crisis committee
- Positium has been providing mobility information from mobile positioning data (MPD) for 13 years
- Traditional data sources won't work in the new pandemic situation

Mobility analysis tool

- MPD - passive mobile positioning data.
- Mobile network cell level resolution
- Anonymised mobile network log data – GDPR compliant
- Methodology by Positium and Statistics Estonia
- In house calculation by 3 mobile network operators
- Sample covering 100% Estonian mobile subscribers
- 6 mobility index methodologies prepared
- 1 mobility index selected for the analysis tool



Mobility index

- Stationary cell phones + 95% stationary cell phones
- Actively moving cell phones

Parameters calculated for every subscriber:

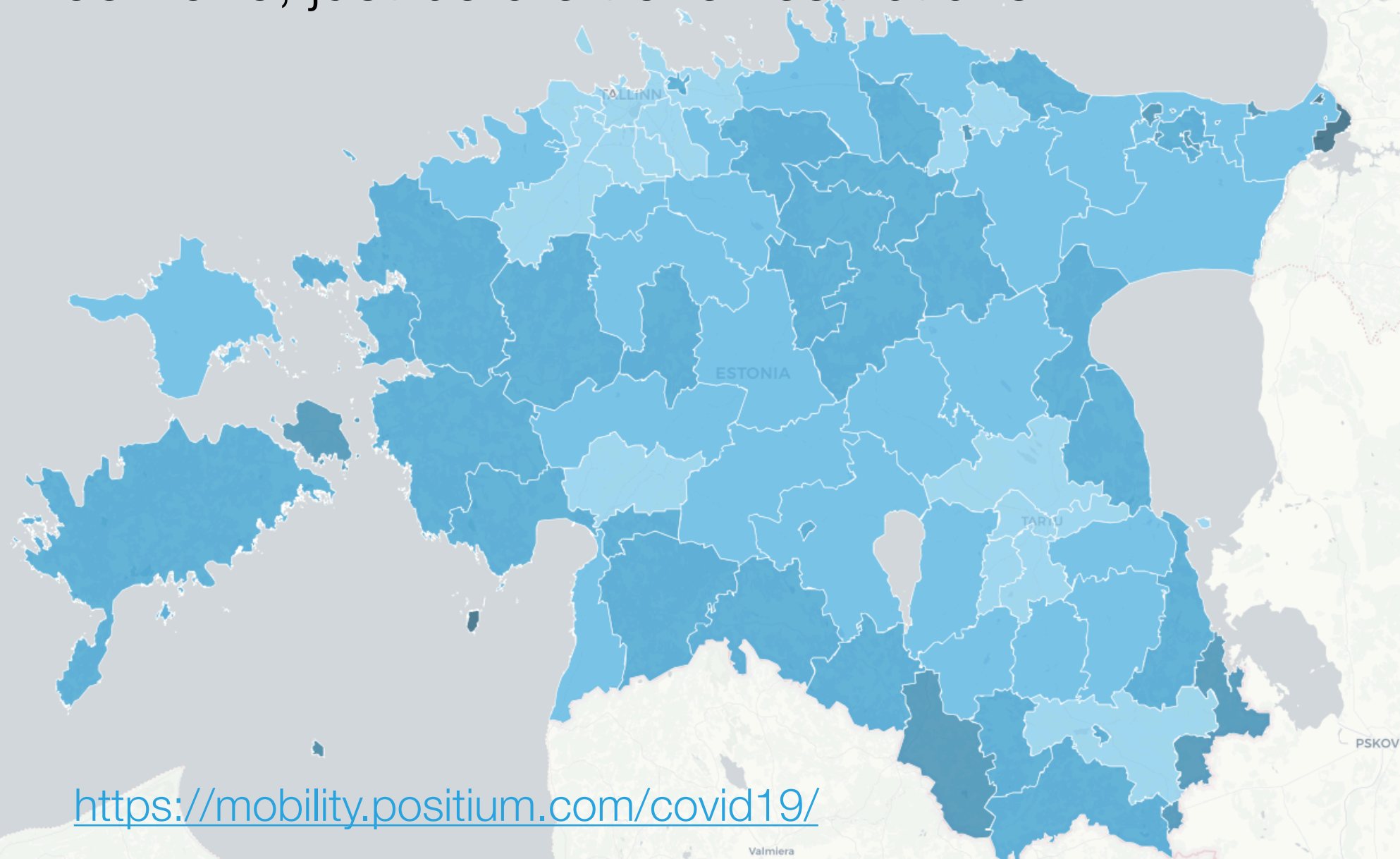
- Main location (range: 500m in urban context, up to 3 km in rural)
- Time away from the main location
- Range from the main location
- No of network cells visited

The share of local and 95% local cell phones 12.03.2020, just before travel restrictions

• Municipality
● County

Choose a date
12.märts.2020

Info



Kuusalu vaid

| | |
|-----------------------------------|-----|
| Moving cell phones | 64% |
| Moving and Non-moving cell phones | 36% |

Local cell phones
%

12.03.2020

| | |
|---|--------------|
| ■ | Data missing |
| ■ | 1 – 10% |
| ■ | 11 – 20% |
| ■ | 21 – 30% |
| ■ | 31 – 40% |
| ■ | 41 – 50% |
| ■ | 51 – 60% |
| ■ | 61 – 70% |
| ■ | 71 – 80% |
| ■ | 81 – 90% |
| ■ | 91 – 100% |



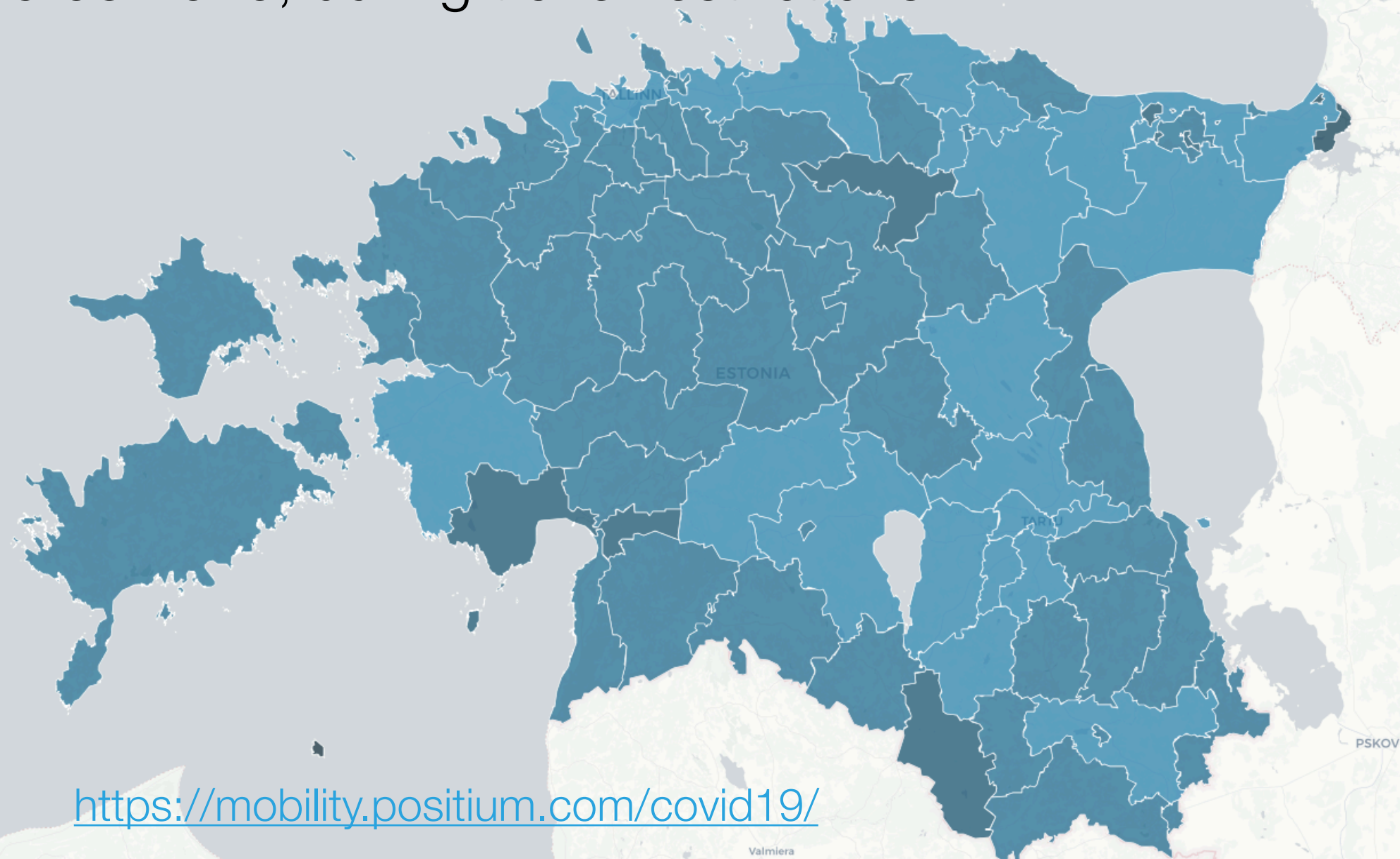
<https://mobility.positium.com/covid19/>

The share of local and 95% local cell phones 29.03.2020, during travel restrictions

• Municipality
• County

Choose a date
29.märts.2020

Info



Kuusalu vald

| | |
|-----------------------------------|-----|
| Moving cell phones | 43% |
| Moving and Non-moving cell phones | 57% |

Local cell phones
%

29.03.2020

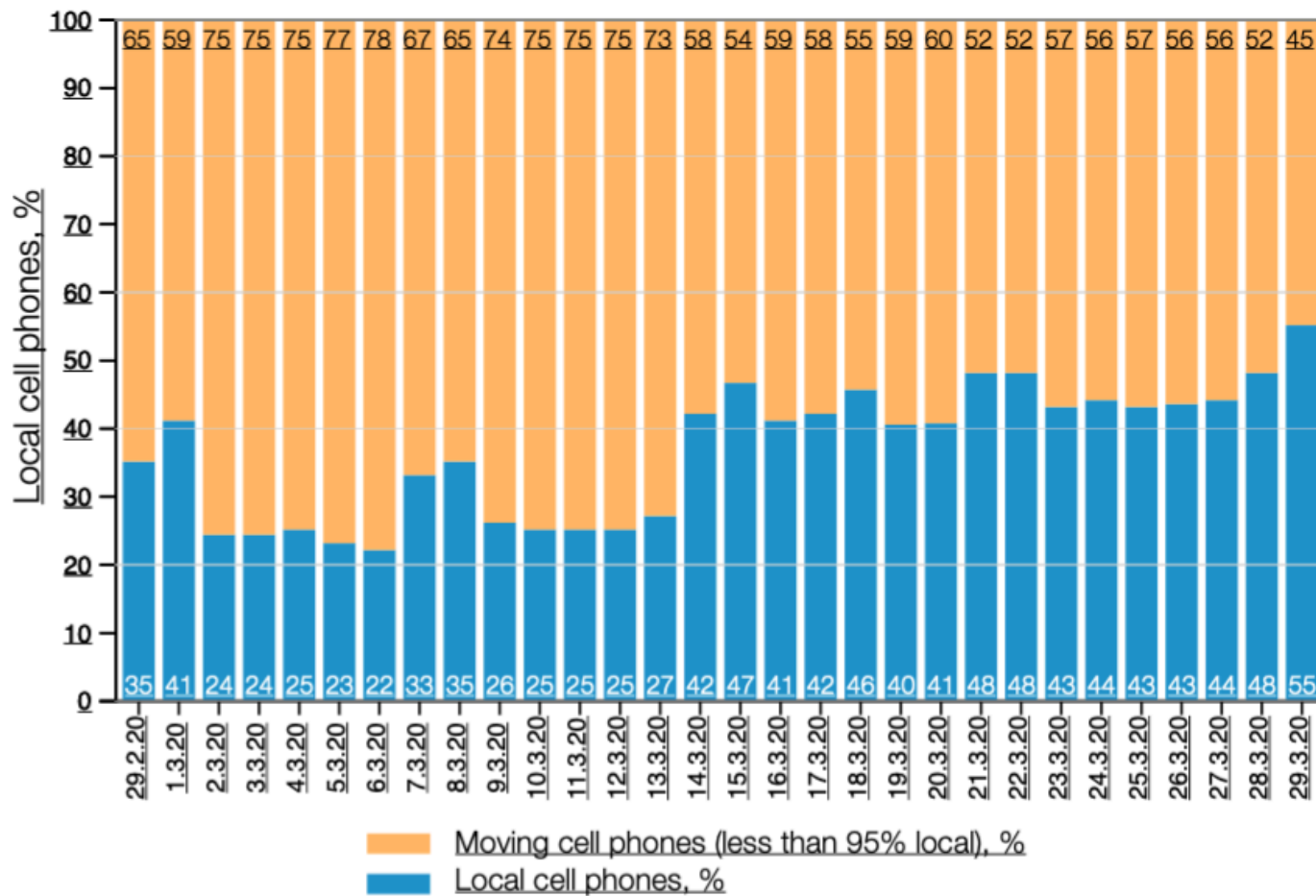
| | |
|---|--------------|
| ■ | Data missing |
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| ■ | 91 – 100% |



<https://mobility.positium.com/covid19/>

■ Stationary + 95% stationary cell phones
■ Actively moving cell phones

Tallinn



Conclusions

- MPD came quickly into focus when there was an urgent need for reliable and extensive knowledge on population mobility
- MPD has been used for transportation planning, official statistics and other applications over 13 years
- MPD has a potential for transportation & mobility statistics, there is a range of applications

Thank You!

Questions?

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