Anonymization of longitudinal demographic data
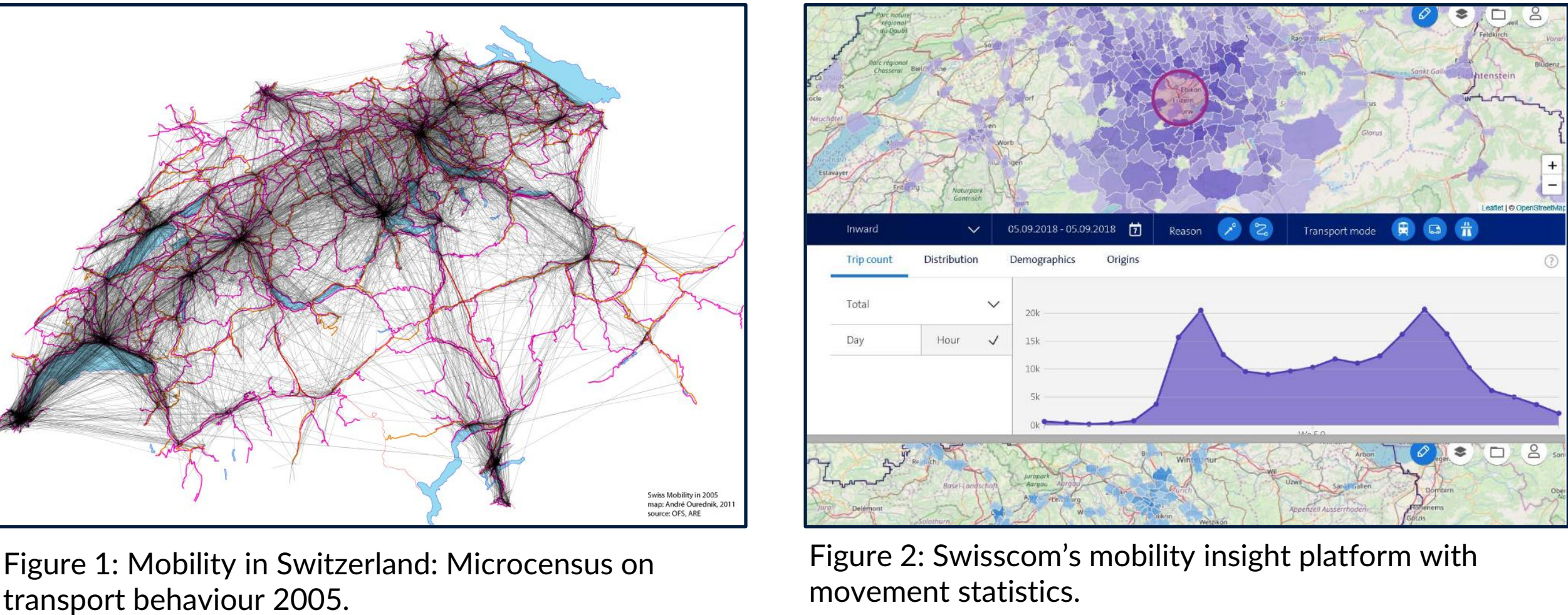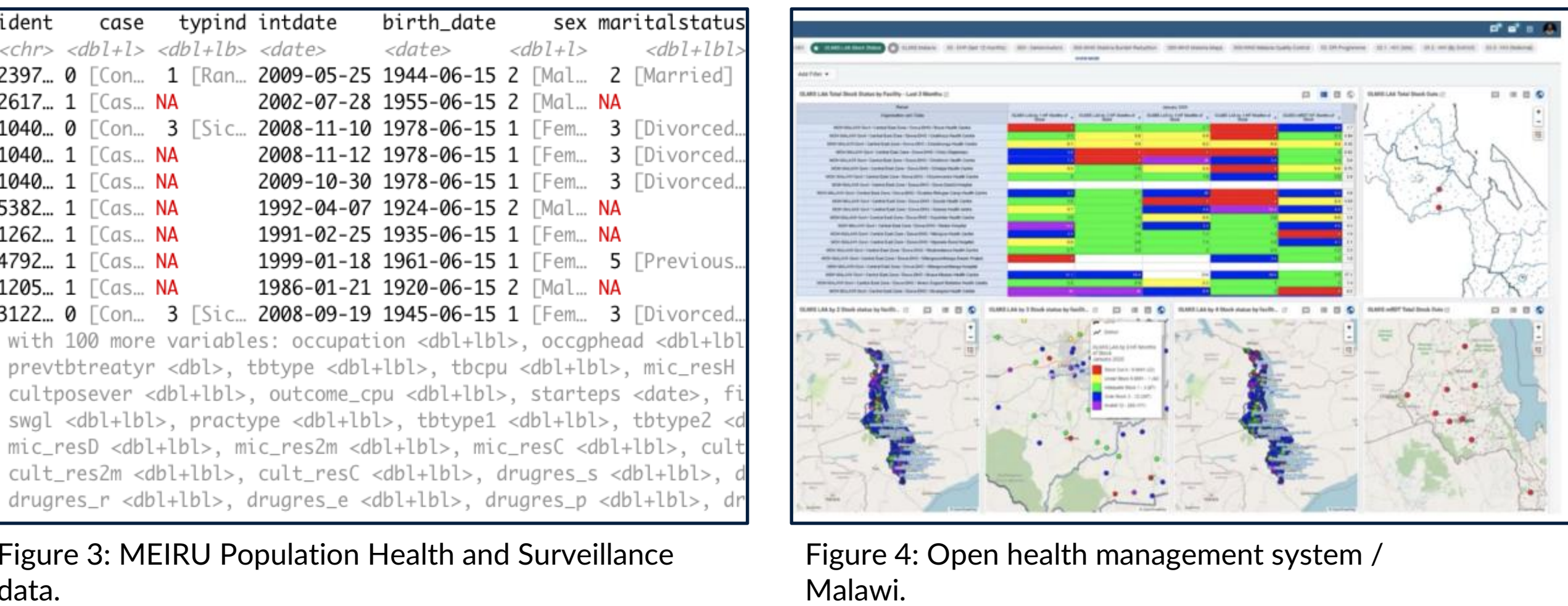
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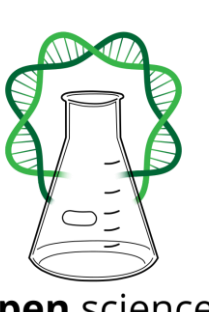- *Swiss Data Anonymization Competence Center*

BACKGROUND: Longitudinal data analysis, which involves repeated observations of individuals, is valuable source of information, but limited by data protection laws. Techniques like Statistical Disclosure Control and Synthetic data generation are essential for safe data use. However, there's a notable research gap for longitudinal data, particularly in fields like health and mobile traffic, where data must often be detailed for meaningful analysis.

Example Mobility Tracking

Figure 1: Mobility in Switzerland: Microcensus on transport behaviour 2005.

Figure 2: Swisscom's mobility insight platform with movement statistics.

Example Public Health

Figure 3: MEIRU Population Health and Surveillance data.

Figure 4: Open health management system / Malawi.

Open Science, Open Access, Open Data

Research data that results from publicly funded research should be

- **findable**, **accessible**, **interoperable**, **reusable** ('FAIR principles')
- therefore **replicable**, **transparent**, **trustworthy**
- as open as possible, as closed as necessary

Commission Recommendation (EU) 2018/790 on access to and preservation of scientific information

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Main finding goes here, translated into **plain English.** **Emphasize** the important words.

Visualize your findings with an image, graphic, or a key figure.

Take a picture to **download**

Challenges anonymizing longitudinal data

- Temporal Uniqueness:
- Re-identification Risk
- Consistency in Anonymization
- Data Granularity
- Loss of Data Utility
- Updating Anonymized Data
- Dynamic Features

- Extra Graphs
- Extra Correlation tables
- Extra Figures
- Extra nuance that you're worried about leaving out.
- **Keep it messy!** This section is just for you.
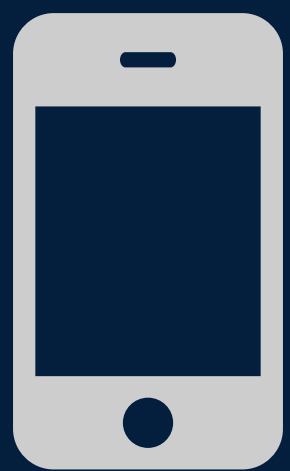
METHODS

1. Collected [what] from [population]
2. Tested it with X process.
3. Illustrate your methods if you can.
4. **Try a flowchart!**

RESULTS

- Graph/table with **essential results only**.
- All the other correlations in the ammo bar.