



An introduction to ODISSEI

Tom Emery | 5 November 2019 | CESSDA Widening Skopje 2019

Who are we?

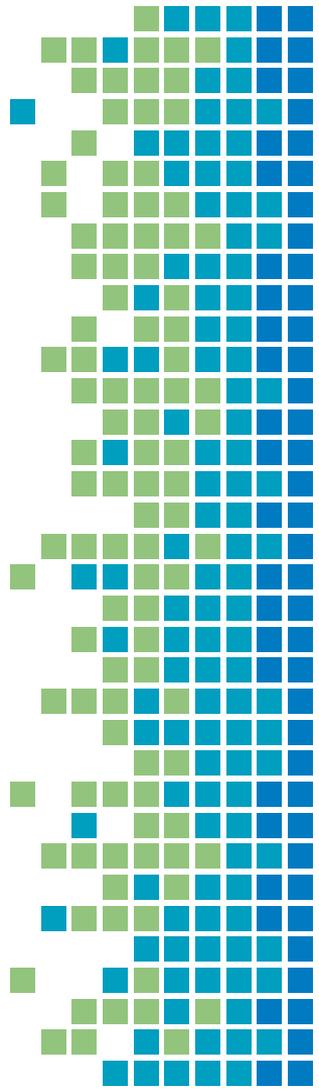
ODISSEI has 32 members that together contribute €1.2 million per year. These include universities, research institutes, ministries and government research agencies. The number of members is continuously growing and diversifying.



Who are we?



Sociaal-culturele ontwikkelingen in Nederland



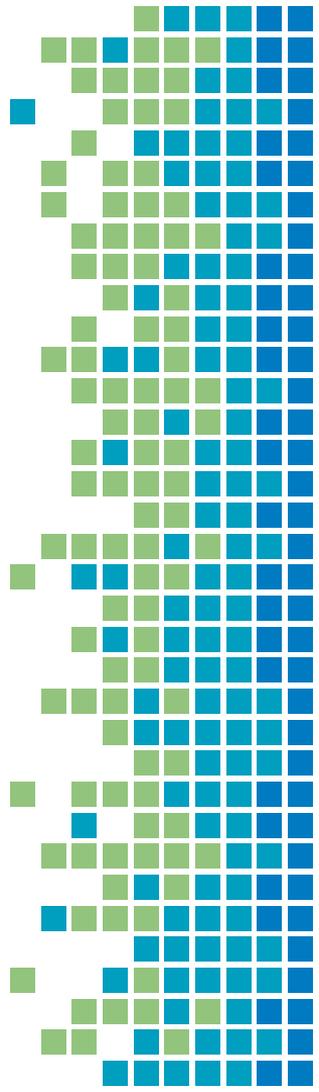
CBS Microdata

- Individual Population Register
- Organizational Registers (Companies, Charities etc)
- Tax Records

- High quality Persistent Identifiers everywhere
- Pseudo Anonymized data is available for research



SURF SARA



What do we do?



Microdata Services

Secure access to CBS data for around 700 researchers from a broad range of scientific disciplines

HPC Access

Development of a secure HPC environment for social scientists for the analysis of survey and register data.

LISS Panel

A national laboratory for high quality methodological and scientific innovations.

Standards

Definition and implementation of standards within the social sciences to increase interoperability, monitoring change and improving data quality.

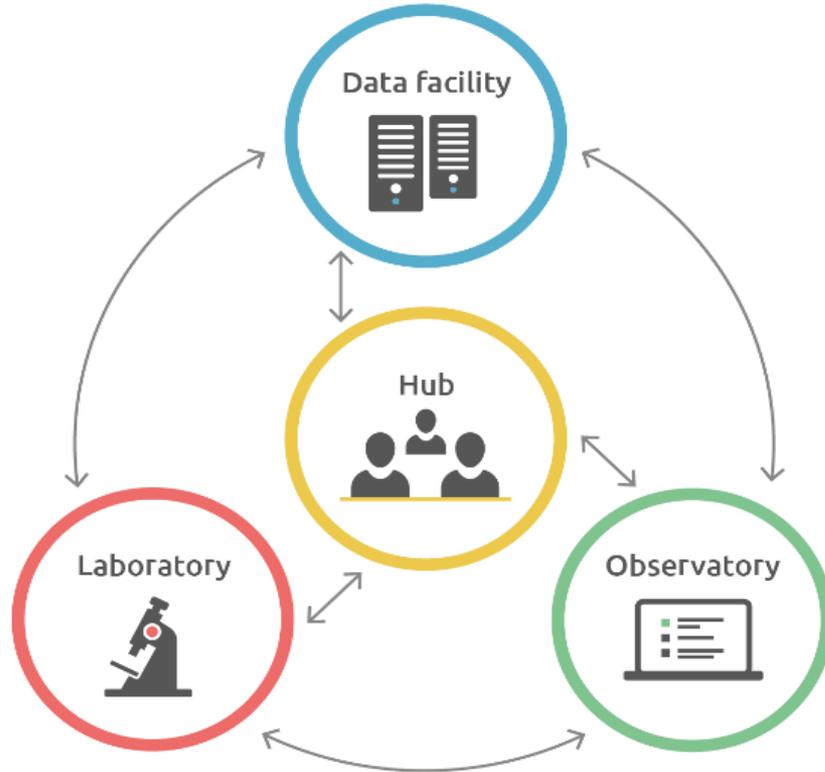
Financing Fieldwork

Maintaining existing panels such as SHARE, ESS, EVS and GGP. Promoting open access data collections in the social sciences with a good price-quality ratio.

Communications

Building bridges with other disciplines, representing the interests of social scientists and participating in international initiatives.

ODISSEI Roadmap





What can we do?

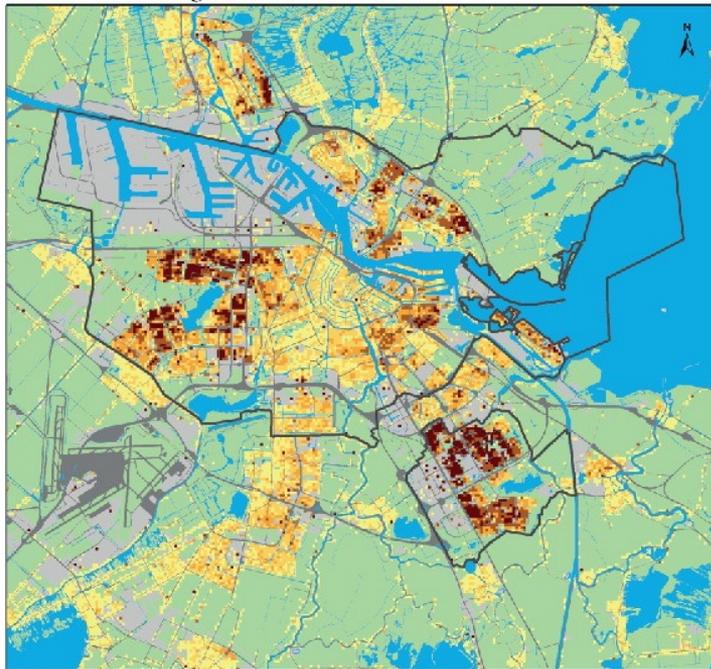
Use Cases in the ODF



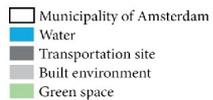
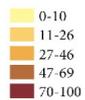
Geo-Spatial Analysis

- Precise mapping of specific populations or variables
- For example, % of population with 'Non-Western' heritage
- Calculated at small scale 100m x 100m (n = 308,010)
- Calculation repeated for increasing catchment area to measure entropy

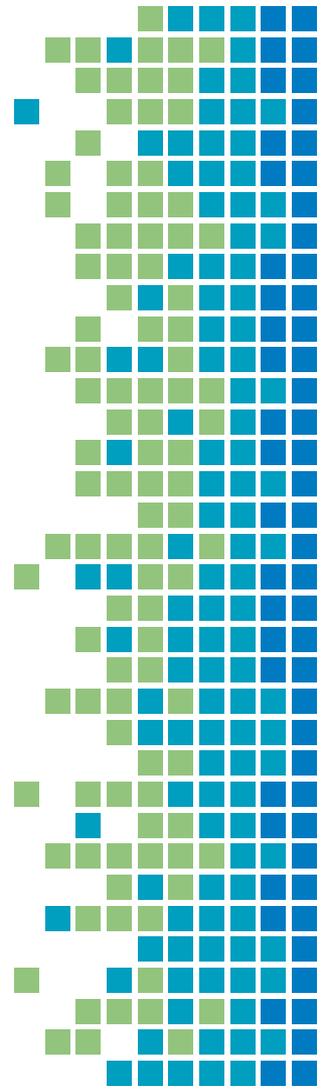
A) 100m×100m grid cells



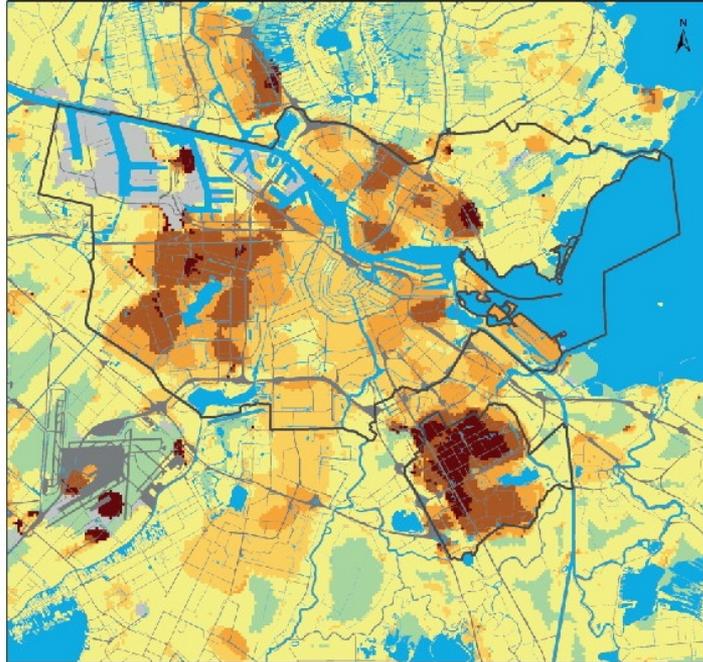
Share of people
with a non-Western
background (%):



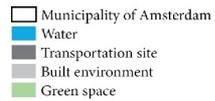
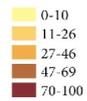
Authors' calculations based on data
from the Statistics Netherlands (CBS)



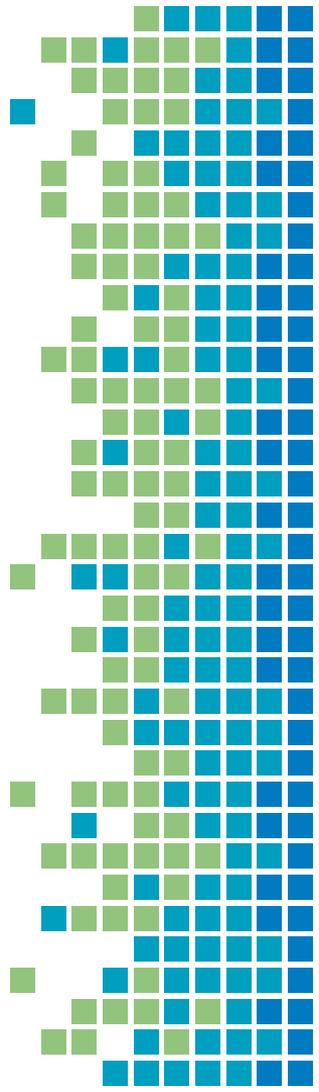
B) 500m radius



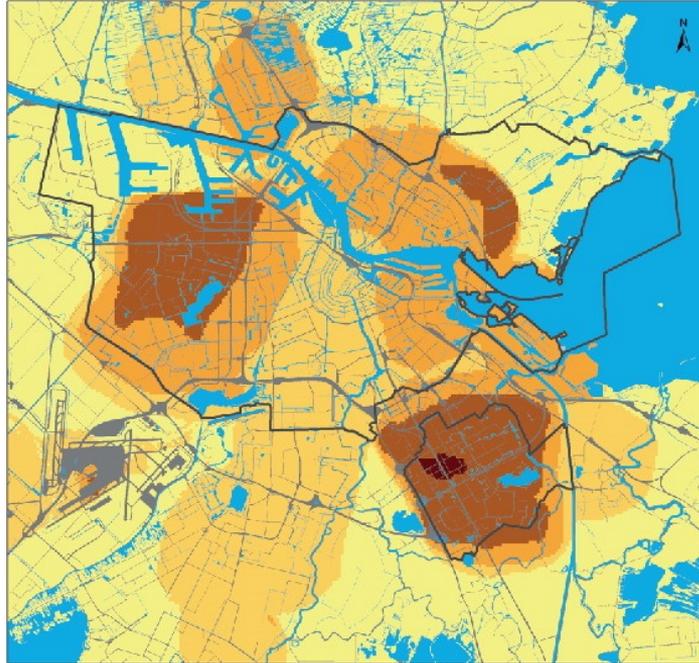
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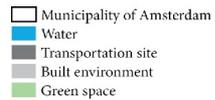
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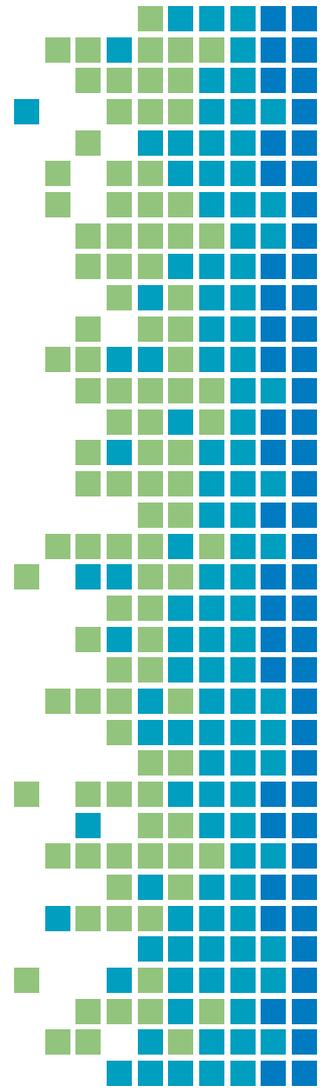
C) 2000m radius

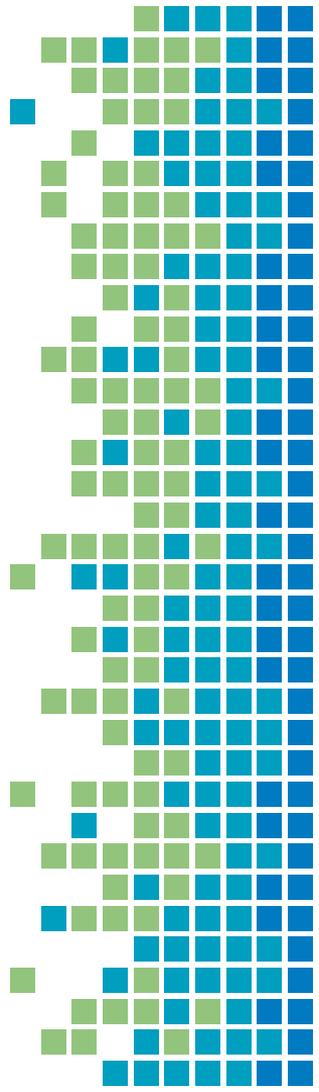
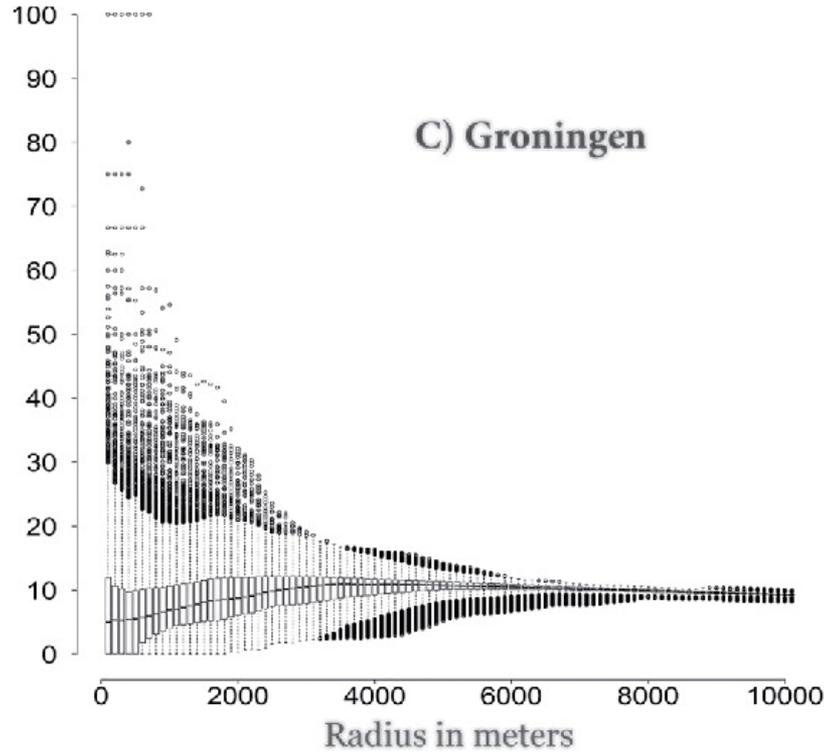


Share of people
with a non-Western
background (%):



Authors' calculations based on data
from the Statistics Netherlands (CBS)







Geo-Spatial Analysis

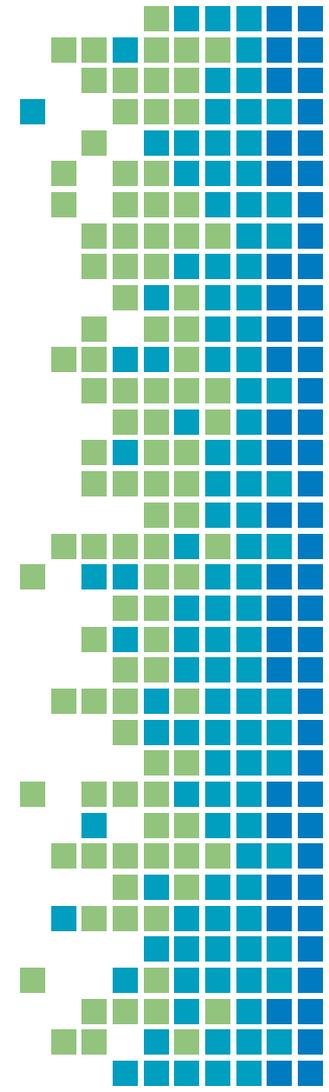
- This took four months to run at CBS on one Node
- ODF allows us to distribute the job
- This allows analysis to expand to temporal analysis multiple indicators
- Resulting data can also be integrated into any other ODF analysis

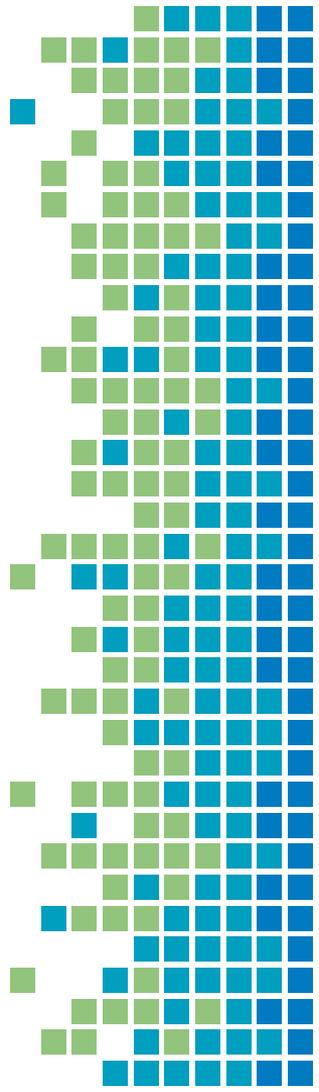
Petrović, Ana, Maarten van Ham, and David Manley. "Multiscale Measures of Population: Within- and between-City Variation in Exposure to the Sociospatial Context." *Annals of the American Association of Geographers* (2018): 1-18.



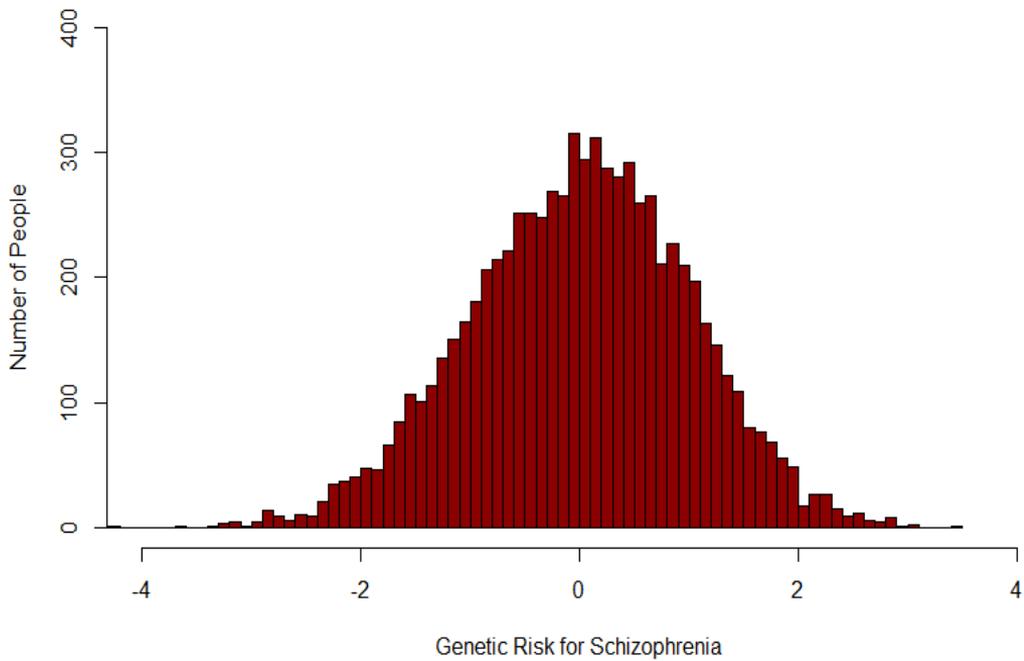
Genetic Analysis

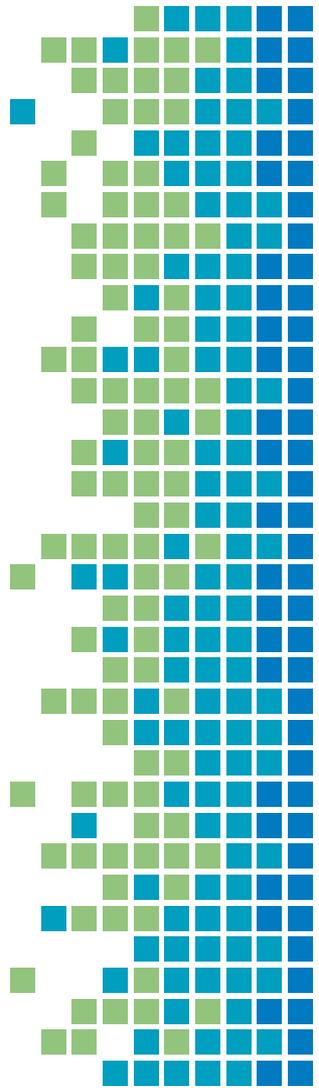
- National Twin Registry (11,000 Genetic Samples)
- Linking Genetic Data to Registers (with Consent!)
- Data is big, computation is demanding (GWAS)
- One persons genetic data is bigger than the register
- Too big for CBS





Genetic Analysis





Genetic Analysis





Genetic Analysis

- Genetic Analysis is already done at SurfSara
- The ODF can allow the enrichment of medical data with Administrative data
- Better environment for interdisciplinary research

Colodro-Conde, Lucía et al. 2018. "Association Between Population Density and Genetic Risk for Schizophrenia." *JAMA Psychiatry*. Retrieved July 5, 2018 (<http://archpsyc.jamanetwork.com/article.aspx?doi=10.1001/jamapsychiatry.2018.1581>).

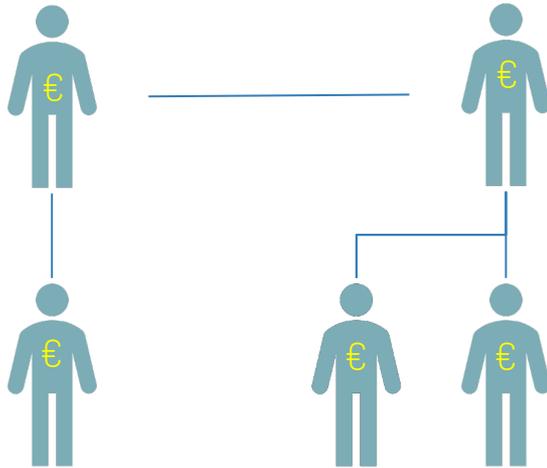


Social Network Analysis

- CBS data used for demographic research to match partners or parents and children etc.
- But... the main constraint is computational
- Small scale sub sample analysis: 4,000 links per person
- Scaling up would be 72 billion links for the whole Dutch population

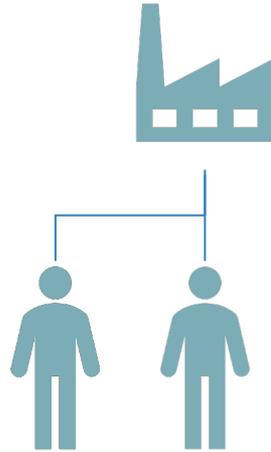


Social Network Analysis



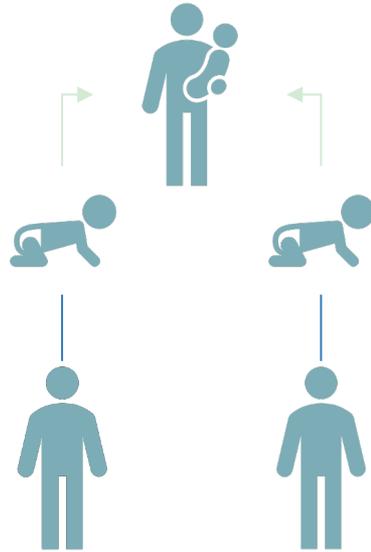
Family Networks

Social Network Analysis

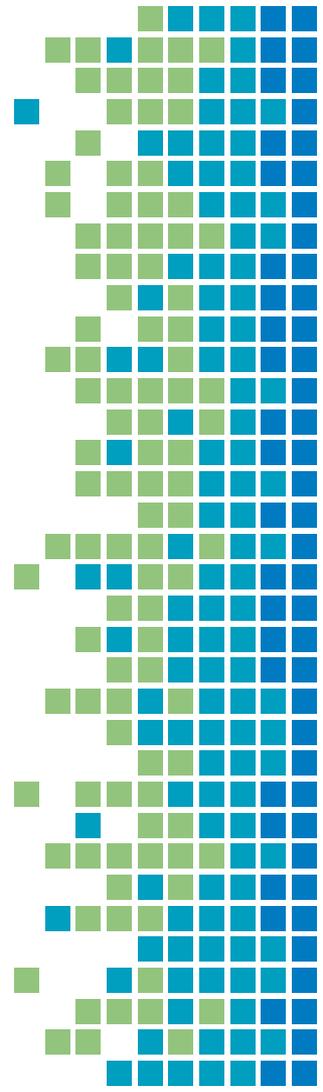


Colleague Networks

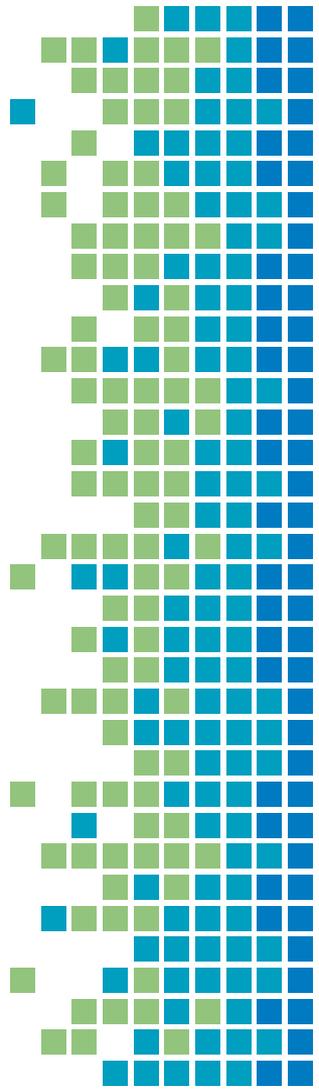
Social Network Analysis



School Networks



Social Network Analysis



- Many, many possibilities
- Network Linkages made can be reused in the ODF
- E.g. calculating entropy of specific characteristics across social network and geospatial dimensions simultaneously



**Thankyou for
your
attention**

<https://odissei-data.nl>