AMSTERDAM INSTITUTE FOR ADVANCED METROPOLITAN SOLUTIONS

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Daily Mobility Patterns

The relationship with attitudes towards different modes

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allegro

Why do we investigate this?

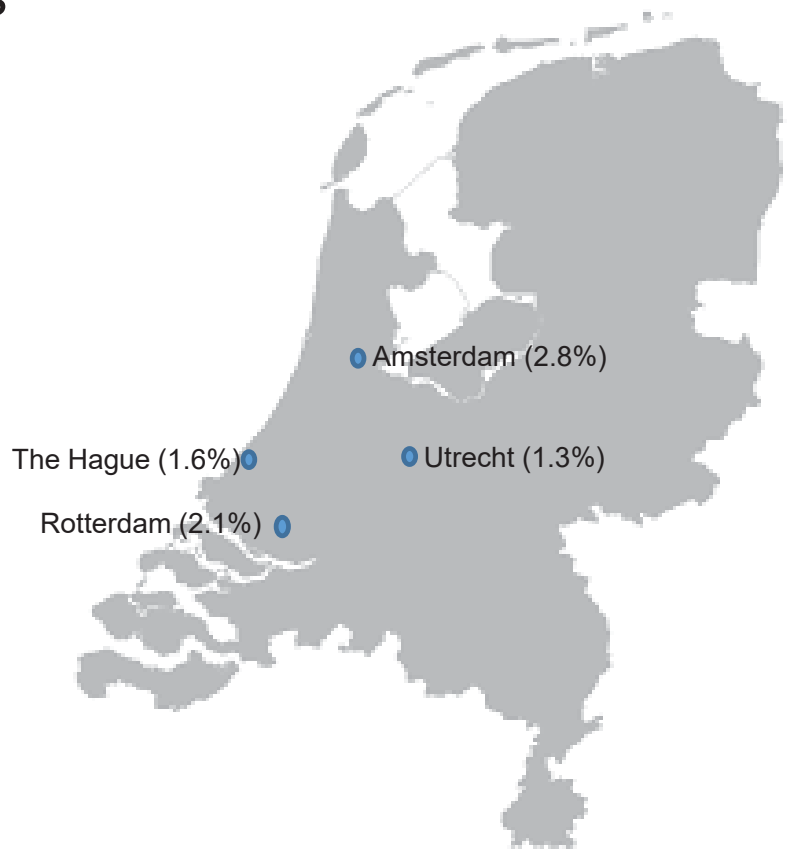
- Interest into active modes is growing (i.e. walking and cycling)
- Governments have set goals to increase active mode share
- Daily mobility pattern shows mode use over the day

- Attitudes are considered important predictors of travel behaviour
- Understand relationship between the daily mobility pattern and the attitude towards modes (used and unused)

- Provide input on where to focus for achieving mode shift goal

Data: Mobility Panel Netherlands

- Longitudinal data on individuals travel patterns
  - Household survey
  - Individual survey
  - 3-Day travel diary
  - Additional survey (e.g. focus on attitudes)
- Data from 2016
- 2,425 individuals



Definition of daily mobility pattern

Measuring the attitudes towards modes

- 7 questions per mode on attitudes

- Travel by ... is
  - Fun
  - Comfortable
  - Time saving
  - Relaxing
  - Safe
  - Flexible
  - Prestigious

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1	2	3	4	5

Methodology

Population

Daily mobility pattern classes

Class 1
Class 2
.
.
Class n

Relationship?

Attitude factors

Factor 1
Factor 2
.
.
Factor n

Attitude questions

Travel by car is comfortable
Travel by car is relaxing
.
.
.
.
.
Travel by train is fun

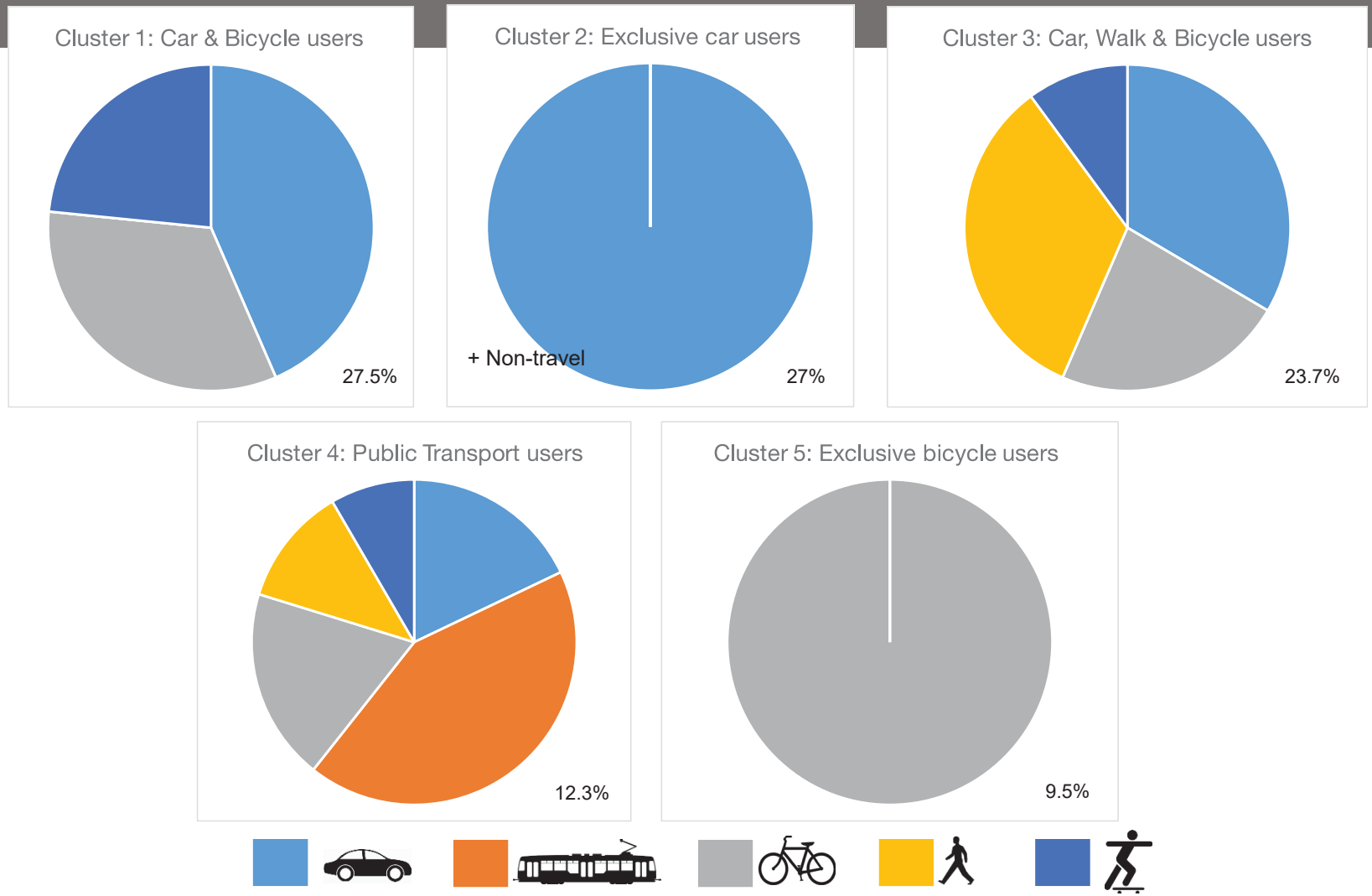
Latent clusters of mobility patterns

- Divide individuals into clusters, based on their mobility patterns

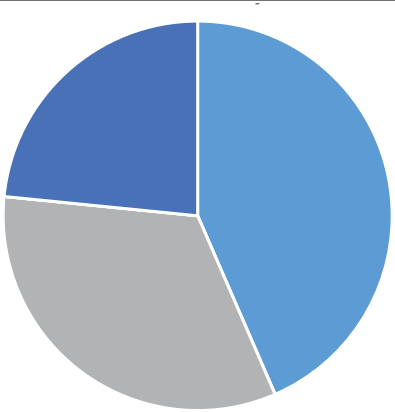
- 5 clusters showed best result, described by
  a) Public Transport users
  b) Exclusive car users
  c) Car & Bicycle users
  d) Exclusive bicycle users
  e) Car, walk, & bicycle users

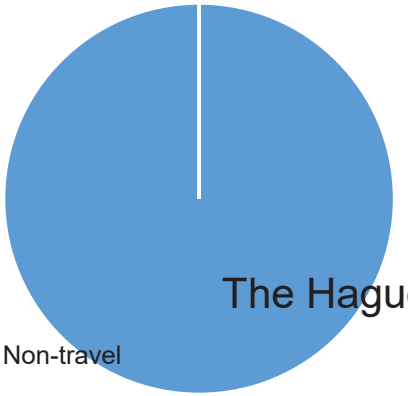
- Which cluster is the largest?

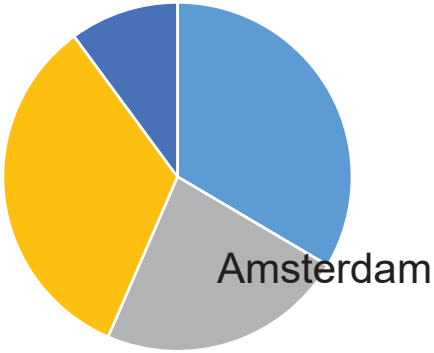
Latent clusters of mobility patterns



Latent clusters of mobility patterns







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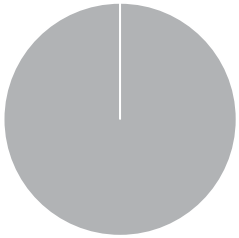
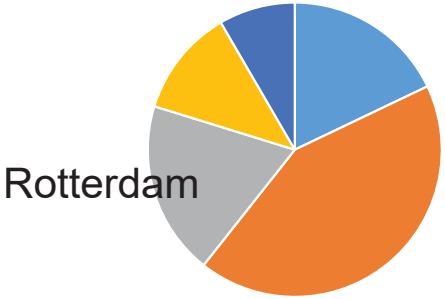
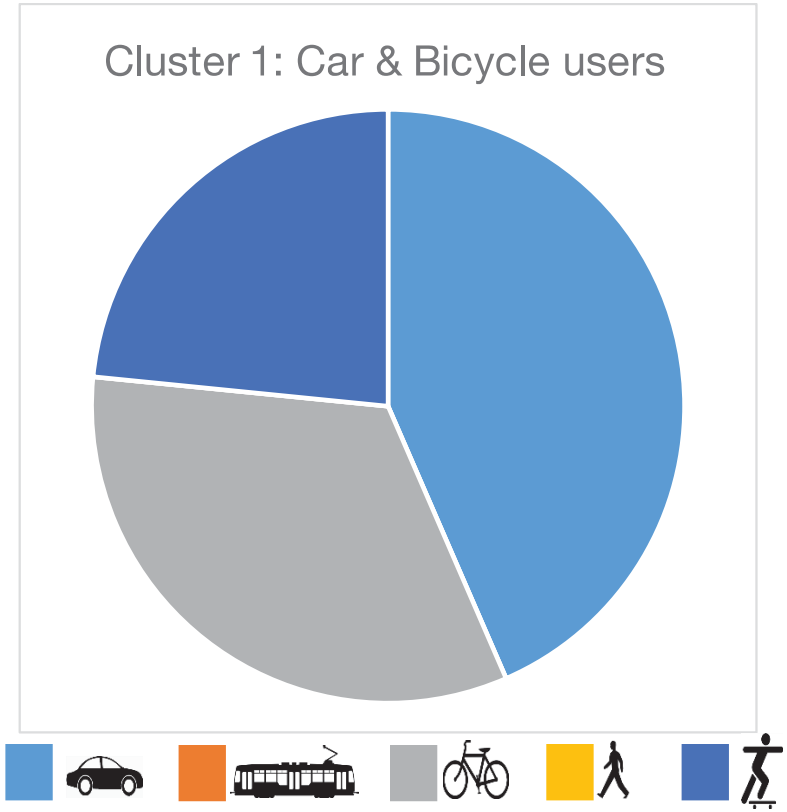




Small sample sizes for cities, more research is needed!

The average profile of individuals

In comparison to other clusters



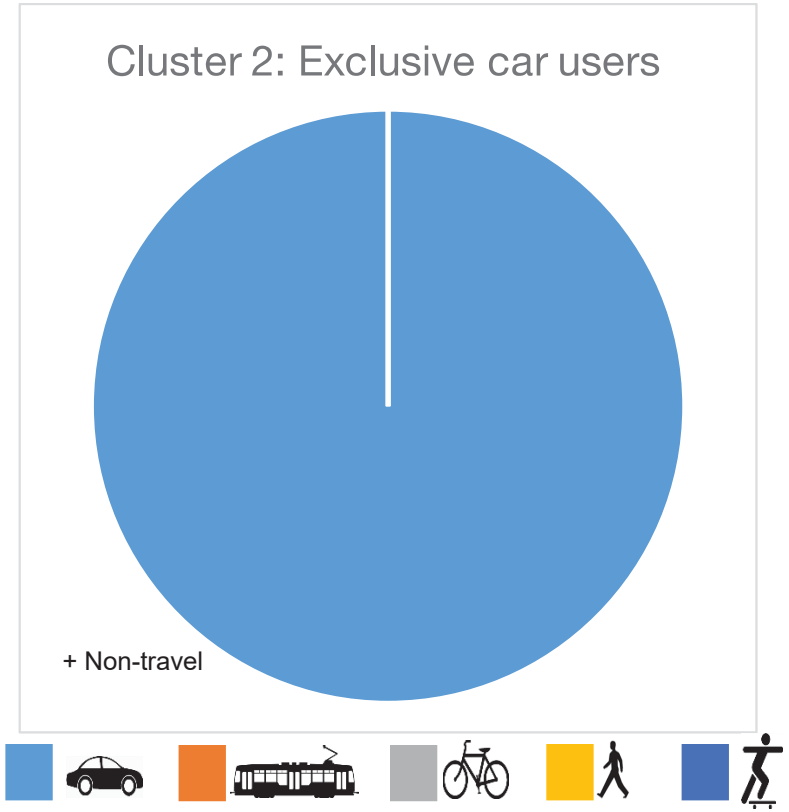
- 40+ years old
- Working or retired

- Lives in a medium-sized city

- Mostly owns a car and a bicycle
- Drives car around 30 km per day
- Cycles around 4 km per day

The average profile of individuals

In comparison to other clusters



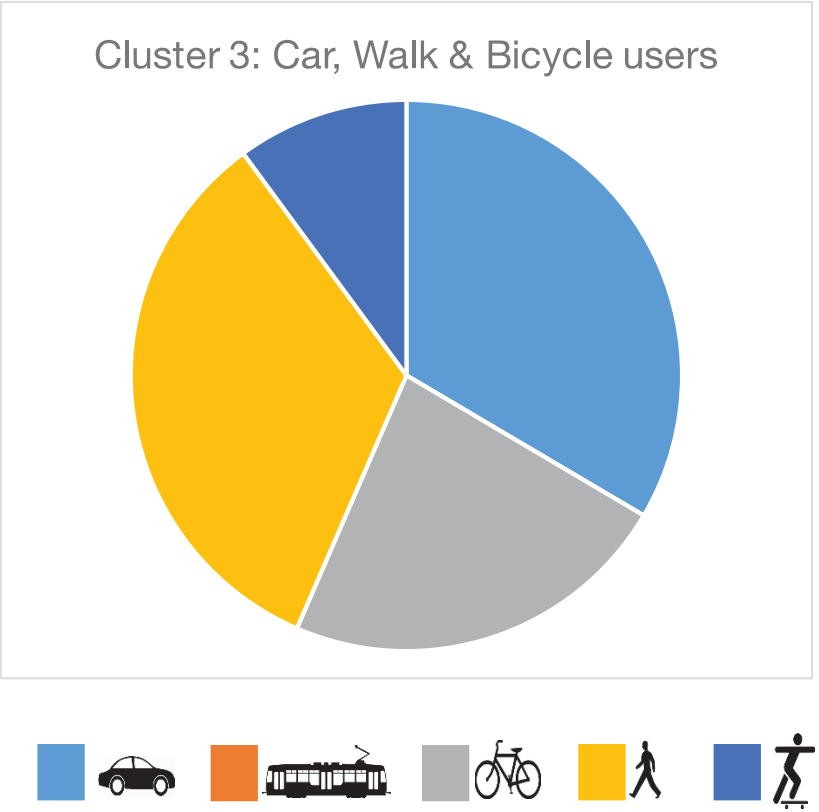
- 40-64 years old
- Working or unemployed
- Mostly male
- Medium level education

- Lives in rural area
- Lives in a 3+ person household

- Owns a car
- Drives car around 46 km per day

The average profile of individuals

In comparison to other clusters



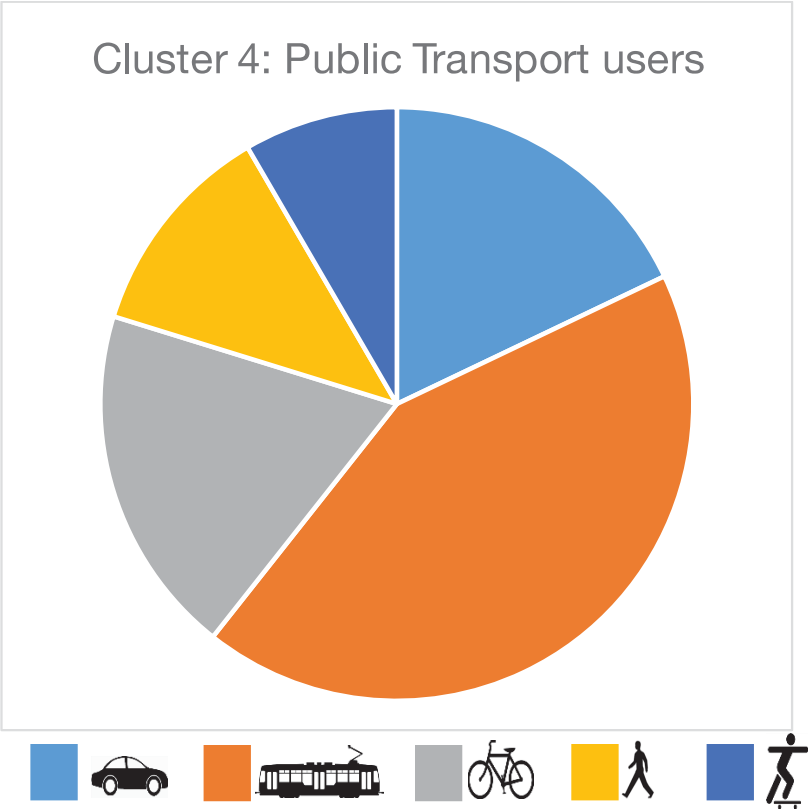
- 40+ years old
- Unemployed or employed
- Mostly female
- Medium level education

- Lives in a 2-person household

- Mostly owns a car and a bicycle
- Drives car around 24 km per day
- Cycles around 3 km per day
- Walks around 1.5 km per day

The average profile of individuals

In comparison to other clusters



- Up to 40 years old
- Student or employed
- High education level

- Lives in a big city
- Often a 1-person household

- Owns a bicycle
- Travels around 55 km with Public Transport
- Cycles and walks smaller distances

The average profile of individuals

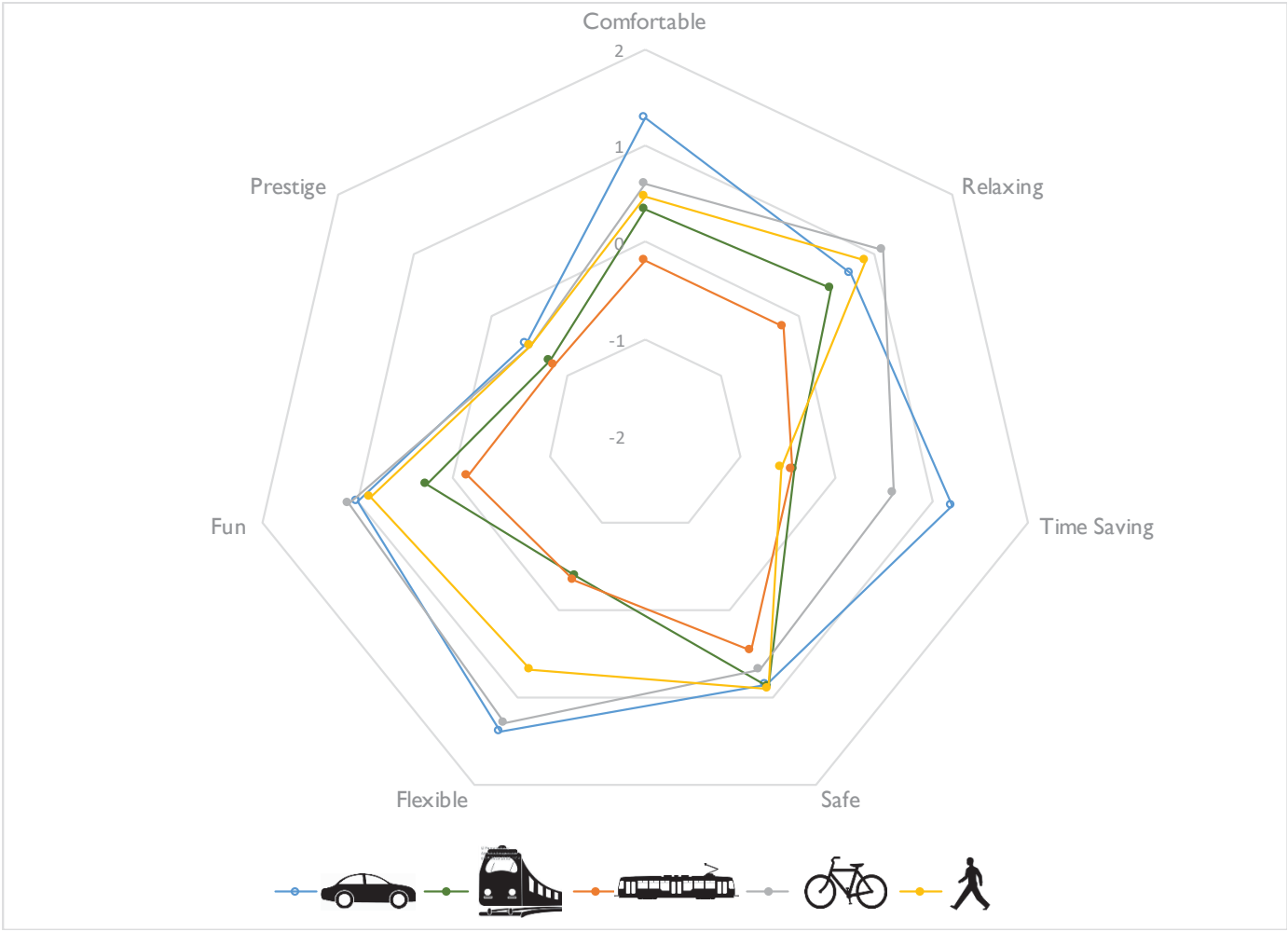
In comparison to other clusters

- Often young (<20 years)
- Student or employed
- Mostly female
- Low education level (still studying)

- Lives in a big city
- Lives in a 3+ person household

- Owns a bicycle
- Cycles around 9 km per day

Attitudes towards modes



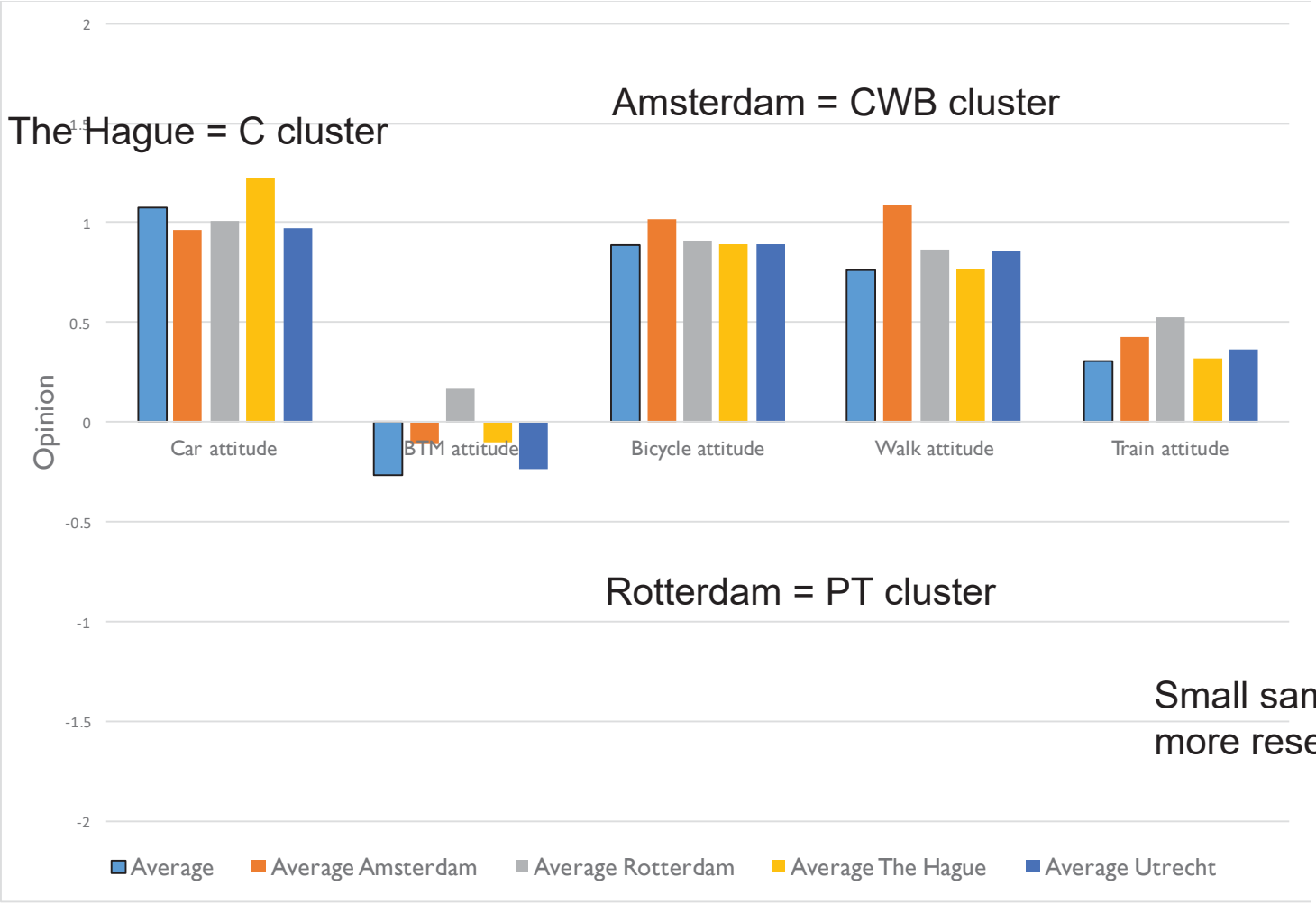
Factors of attitudes

- How are the opinions clustered?
  a) Based on the same opinion towards a mode
  b) Based on the same opinion towards an attitude, regardless of the mode

- Factors
  - Car attitude
  - BTM attitude
  - Bicycle attitude
  - Walking attitude
  - Train attitude
  - Attitude to the prestige of modes
  - PT efficiency attitude
  - PT safety attitude

It is harder to change someone's mind if they are negative/positive on all attitude aspects concerning a given mode!

Attitudes towards modes



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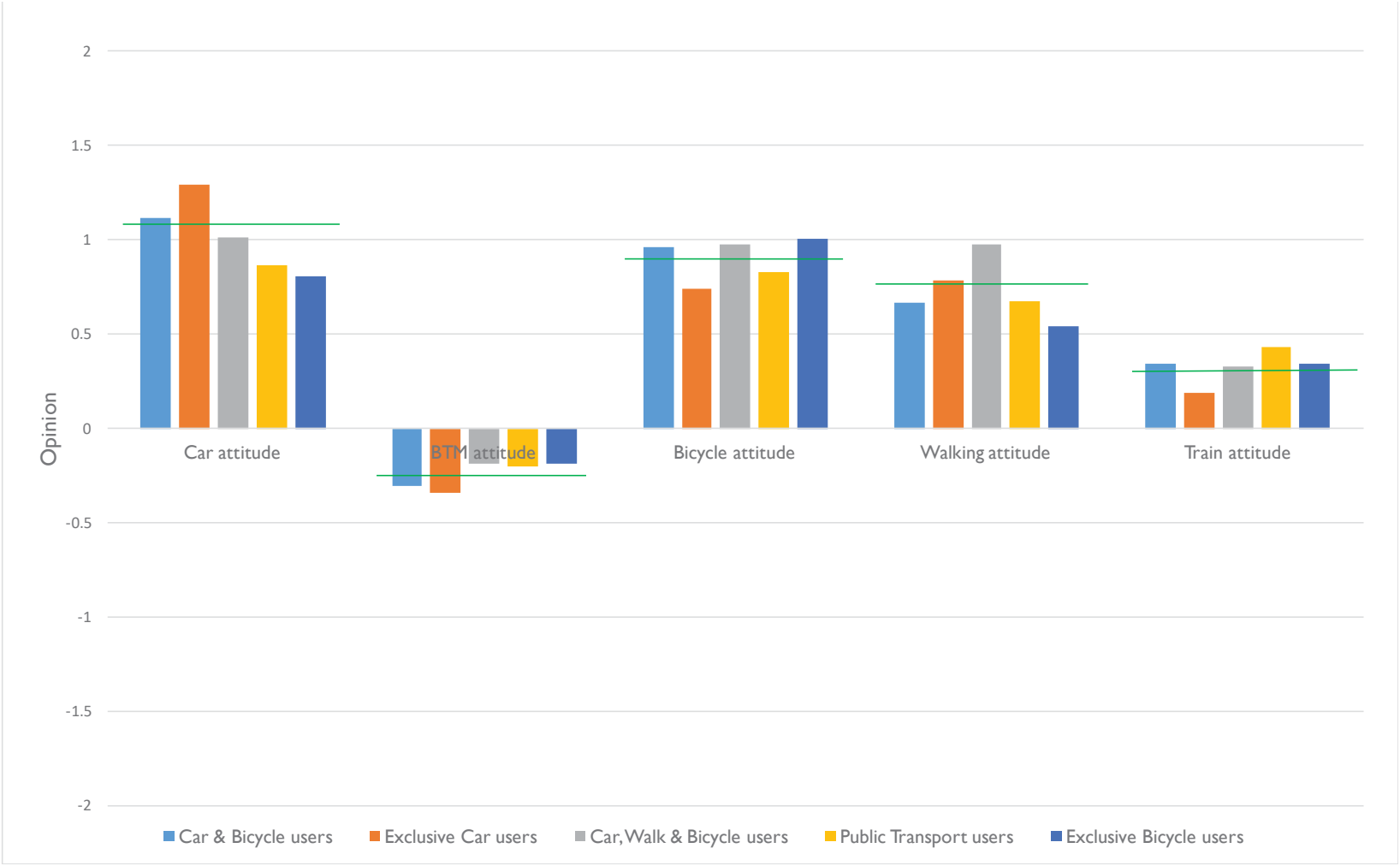
Mobility pattern clusters versus Attitude factors



Conclusions

- Five different clusters of daily mobility patterns
  - Car & Bicycle, Car only, Car & Walk & Bicycle, PT, Bicycle only
- More positive attitude towards modes in the daily mobility pattern
  - Presence of significant relationship between attitude and mobility pattern
- Less positive to public transport modes (bus, tram, metro & train)
- More positive to private modes
  - Larger differences between clusters for walking and the car

Conclusions

- One year of data, so cannot identify directionality in the relationship between attitudes and mobility patterns
  - Just know there is a relationship, not what are cause and effect

- However, it might be hard to change mobility pattern for people
  - Who only use one mode (e.g. Car only users)
  - Who are more negative towards unused modes (especially if towards PT and Bicycle)

- Instead focus on the people
  - Who already are more flexible in their pattern (use more modes)
  - Who already use active modes (increase their use)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