

CO-CREATION OF AN ACTIVE TRANSPORT PROMOTION MOBILE APP: A CONCEPT MAPPING PILOT

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Background:

- There are variety of commercially available apps to support active transport (AT), but with **low user engagement** (Siriaporn et al., 2022)
- Evaluated apps show **mixed results** of behavior change
- There is a need for an app-based intervention that are built on evidence to promote AT
- Participatory methods have been found useful in creating **successful behavior change interventions** (Eysenbach, 2008).
- **Concept mapping** is a mixed methods approach that collects ideas from multiple groups and represents them visually.

Research question:

What mobile app features and functionalities would people think is efficient in AT promotion?

Objective:

To identify mhealth (mobile devices to support health) features that can encourage AT



Target & platform:

- Broad target population: people older than 18 who work or reside in the South of France region.
- Study done **online**, GroupWisdom
- Concept mapping follows **4 main steps**

Step 1: Brainstorming

Participants were asked to answer, "what mobile app feature would encourage you to AT?"

After cleaning the data → **44 statements**.

*Recruitment was on-going throughout the study and participants were not required to complete every steps

Step 2: Sorting

Participants sorted the 44 statements based on their perceived meaning.

Step 3: Rating

Participants answered, "how effective would this statement be in your decision to engage in active transport?" based on a **5-point scale**.

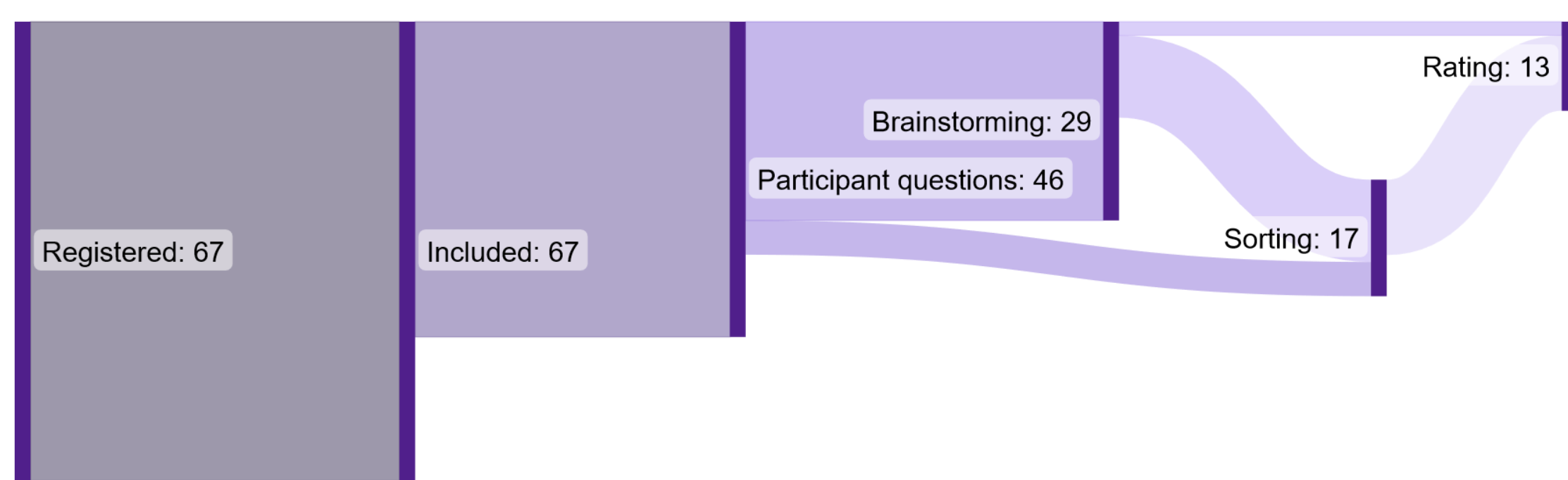
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Step 4: Analysis

Analysis and concept maps created via GroupWisdom platform

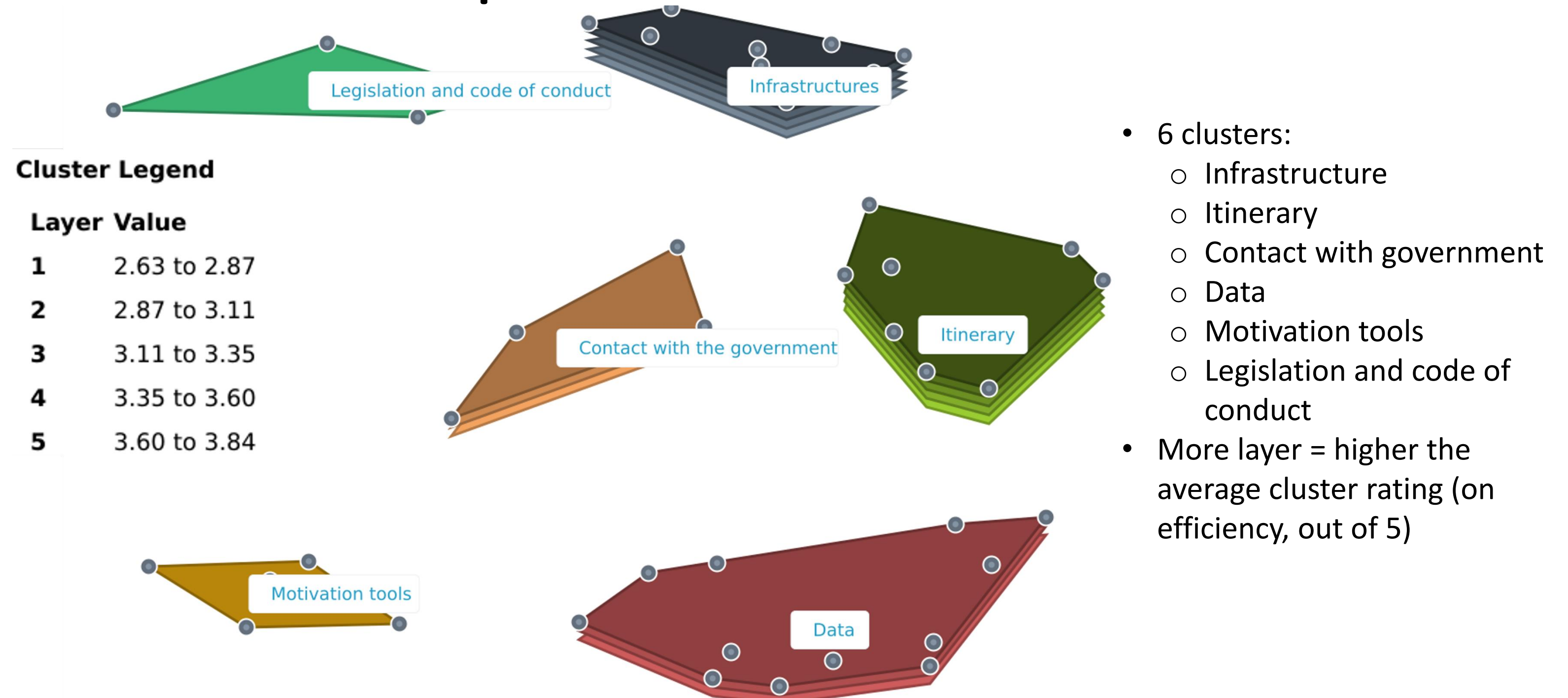
- Similar matrix and multidimensional scaling algorithm → **point map**
- Ward's method of hierarchical cluster analysis → **form clusters**
- **Go-Zones** = analyze the rating at **statement level**
- **Pattern Matches** = analyze the rating at **cluster level**

Participation rate



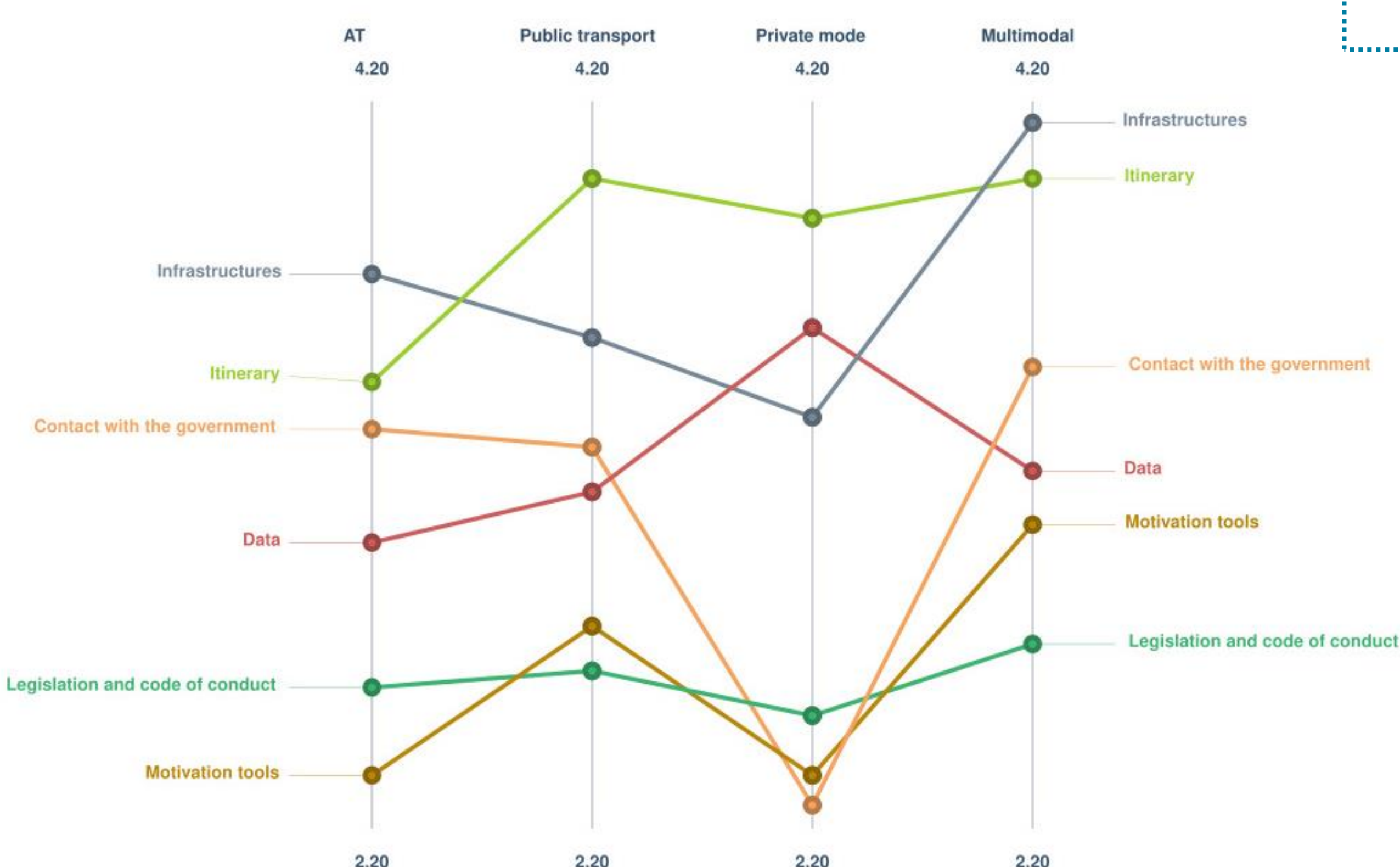
- High dropout rate
- Literature suggested 8-20 participants for variety of opinions (Trochim, 1989; Severens, 1995; Jackson and Trochim, 2002)
- However, difficult to disaggregate demographics. Ended with one true car driver.

Cluster map



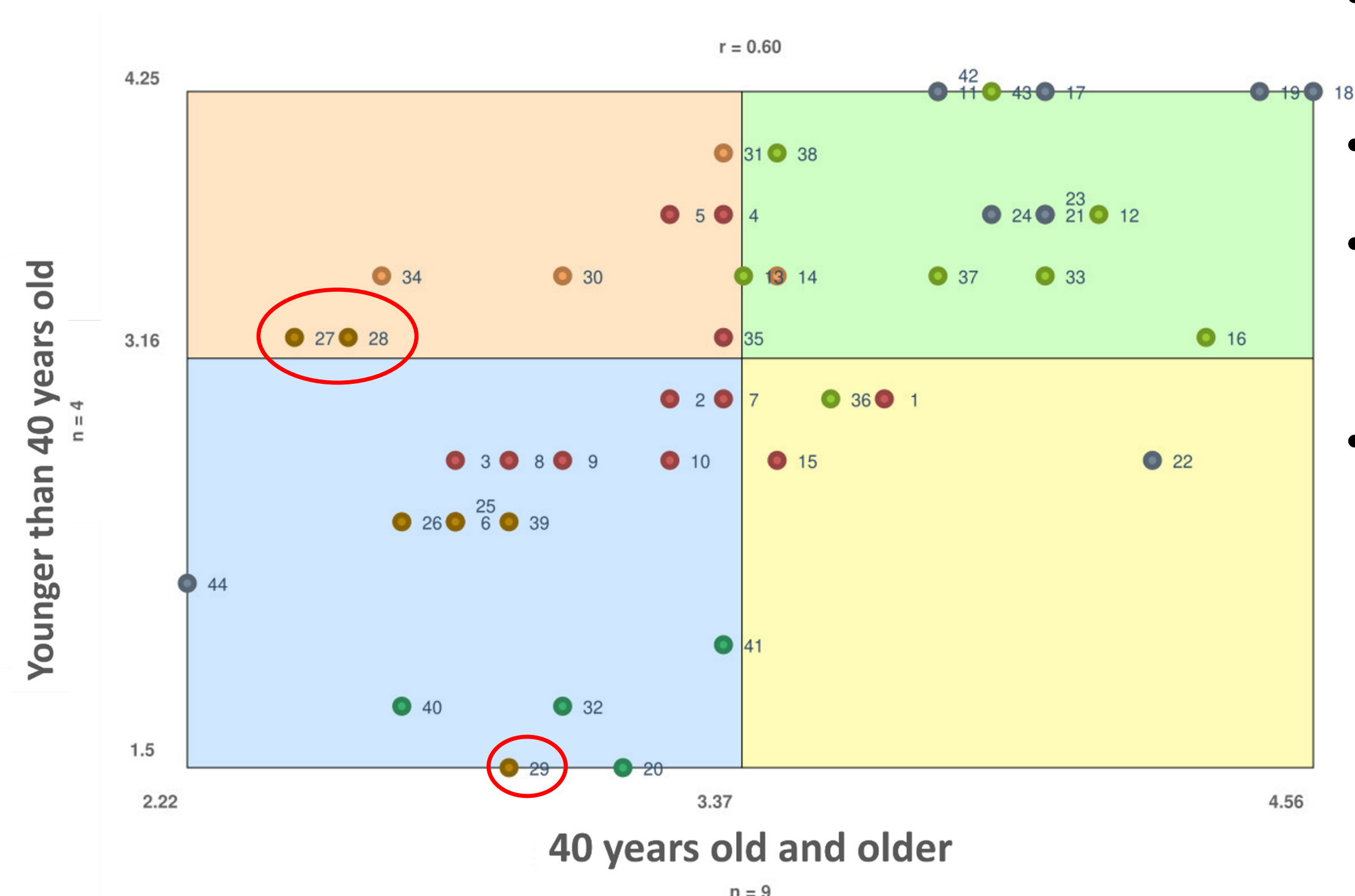
- 6 clusters:
 - Infrastructure
 - Itinerary
 - Contact with government
 - Data
 - Motivation tools
 - Legislation and code of conduct
- More layer = higher the average cluster rating (on efficiency, out of 5)

Pattern Matches



- Compare average cluster ratings
- Disaggregated by type of transport user
- Multimodal users rated every cluster higher than the other users, except for Data cluster

Go-Zone



- Average rating of statements for two demographic groups
- 40 and older (x-axis) vs. younger than 40 (y-axis)
- #27-28, > for younger group, < in older group
 - **Gamification and in-app challenges**
- #29, some interest in older group, none in younger group
 - **Invite friends on app**



- Even though asked about mobile app features = received much wider scope → intervention needs a **multidisciplinary approach**
- Different groups may need different approaches.
- AT-supporting infrastructures are important (Gouais et al., 2021; Goodman et al., 2014), but **other interventions are also needed** to successfully change travel behavior
- Itinerary cluster = 2nd highest average rating. **Actionable information** on how to engage in AT and may provide a sense that something can be done (Riley et al., 2021).
- Contact with the government cluster = 3rd highest average rating. **Communication with stakeholders can generate a sense of responsibility** and lead to personal behavior change (Riley et al., 2021).

Limitations:

- High dropout rate and respondent fatigue
 - Low participation but reached the recommended amount
 - But could not disaggregate the data well
- E-participation is helpful in reaching larger audience but more prone to drop-out (Yetano and Royo, 2015)
- Innovative ideas may be too abstract for the general public to produce.

INTRODUCTION

METHOD

RESULTS

DISCUSSION

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