

The interplay between travel behavior and public participation in sustainable urban mobility

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Research objective

Exploratory research on how people's involvement in participation processes relates to their mobility behavior

Research question

How does individuals' involvement in public participation processes relate to their mobility profile? What inter-individual differences can be observed for the various sociodemographic and vulnerability profiles?

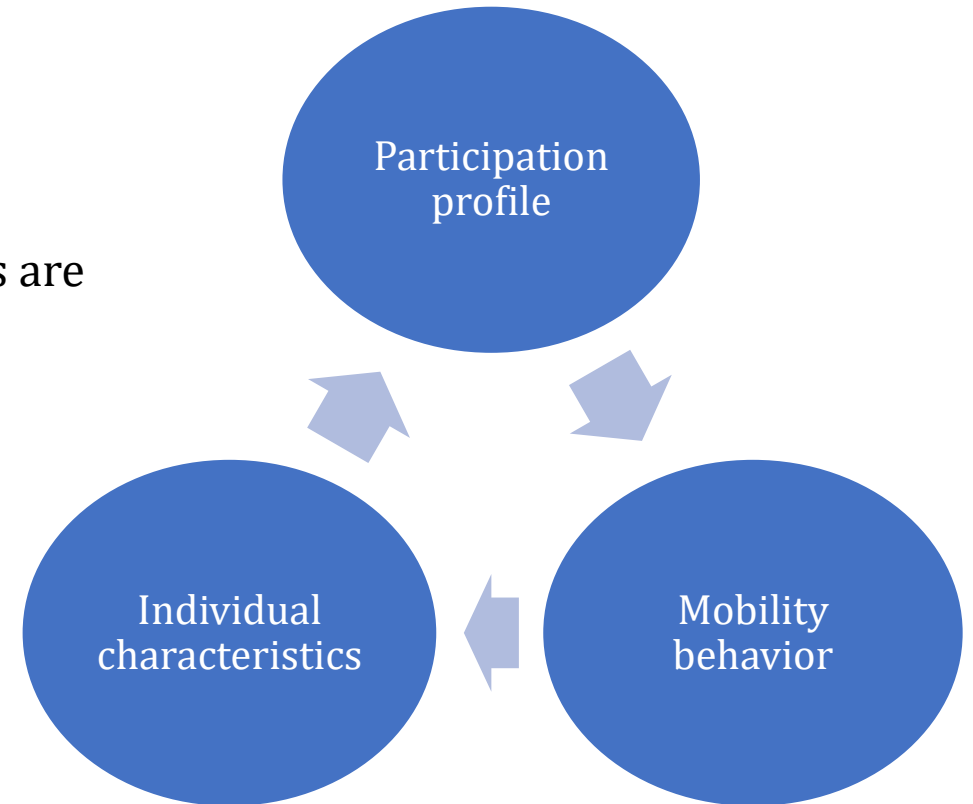
Method

Quantitative approach

Hypothesis

H1: People who are more involved in public participation processes are more likely to adapt sustainable choices such as active and shared mobility

H2: Different sociodemographic have different mobility and participation profiles



Method: survey design

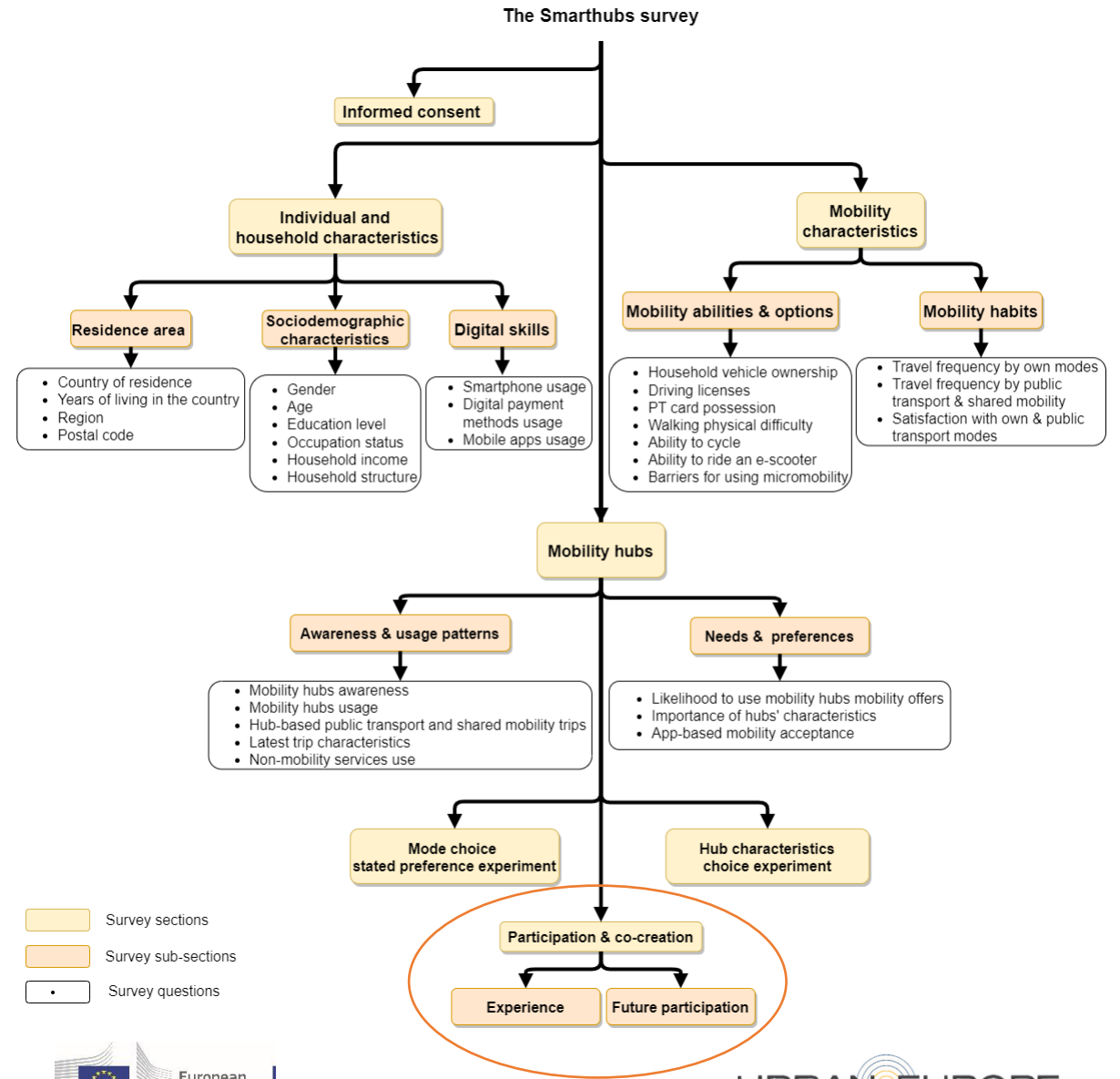
○ Four pillars

Individual

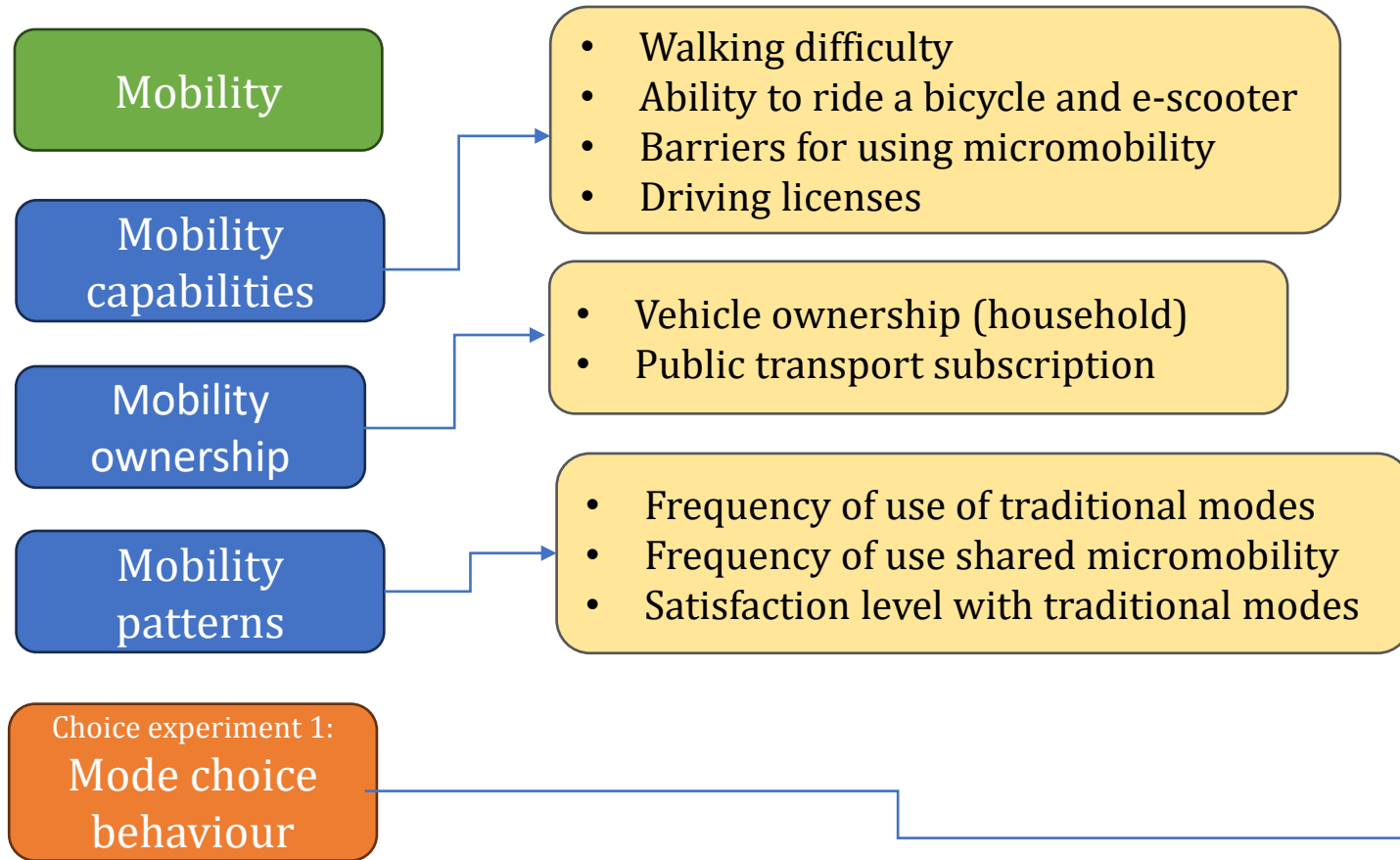
Mobility

Mobility Hubs

Participation and co-creation







Method: Survey components

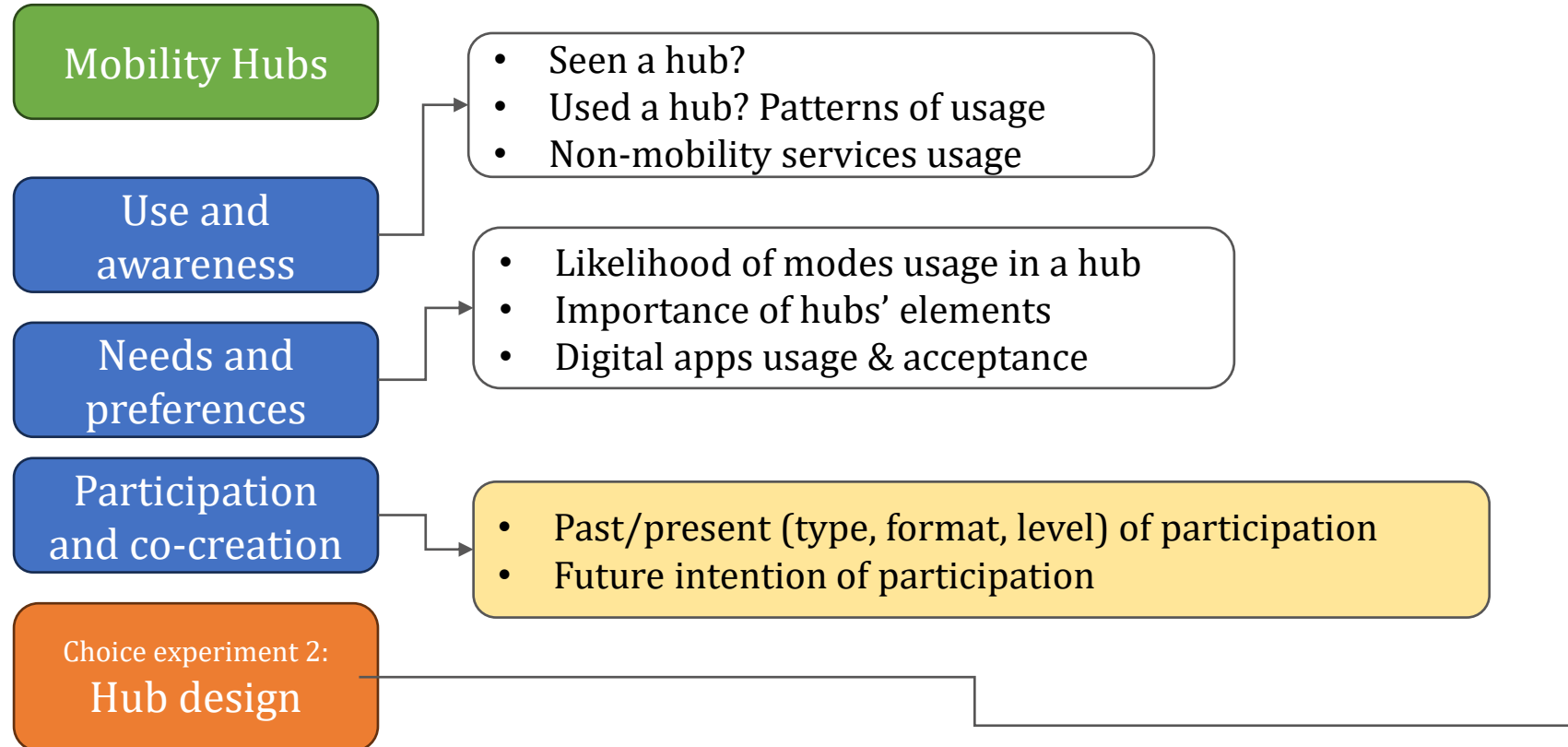


New scenario!

For your trip, you can choose any of the modes below. They are all available for you to travel by. Make sure you check the time (minutes), cost (€), and payment method values before you decide which transport mode you prefer for this new trip.

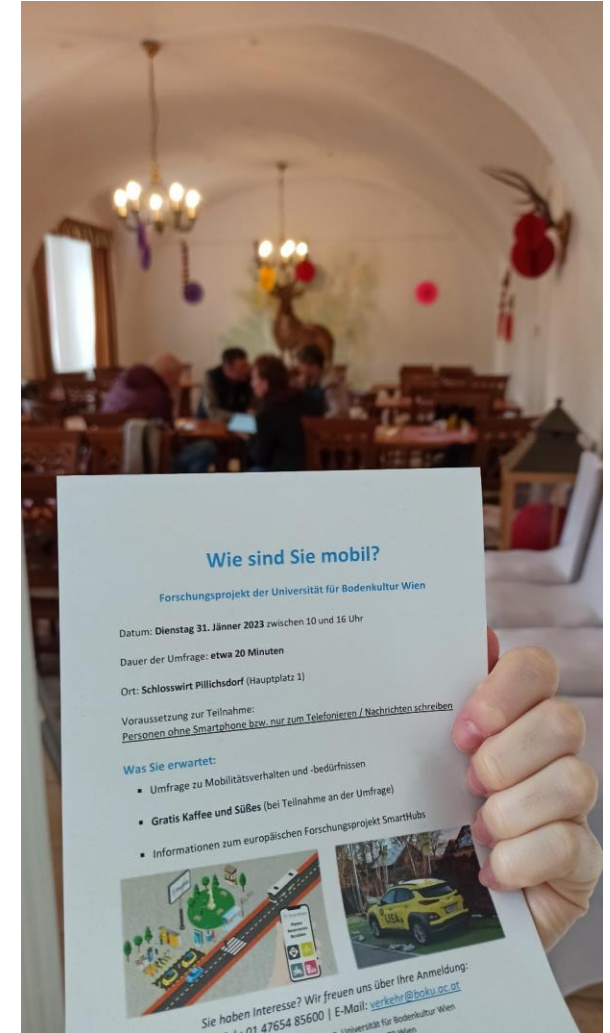
	Shared modes			Public transport	Own Car
	 Bike	 Car	 E-scooter		
Travel time	27 min	12 min	24 min	16 min	12 min
Walking time to the vehicle	3.5 min	3.5 min	3.5 min	3.5 min	2 min
Waiting time for the vehicle	1.5 min	3 min	0 min	1 min	-
Cost	0.9 €	2.3 €	4.8 €	1.2 €	5.5 €
Payment only via a mobile app	No	Yes	No	No	-

Survey components



Method: Data collection

- Data collection period: December - March 2023
- Brussels (BE), Munich (DE), Vienna & Lower Austria (AU), Metropolitan region Rotterdam/The Hague (NL)
- Data collection sources
 - Panel company (stratified sampling- quotas)
 - Assisted surveys of vulnerable to exclusion groups
 - Online distribution (convenient sampling)
- N=2515

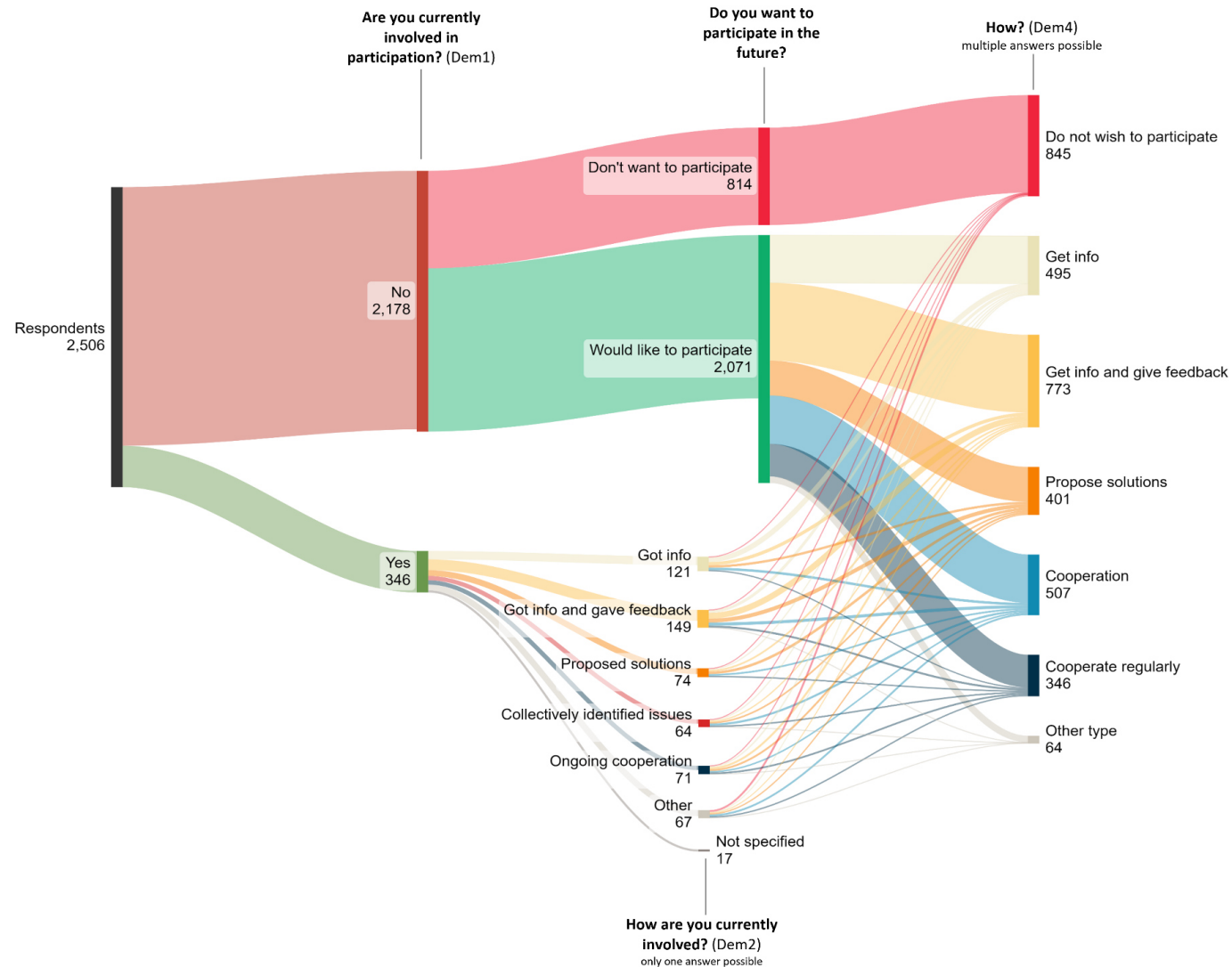


Method: Definitions

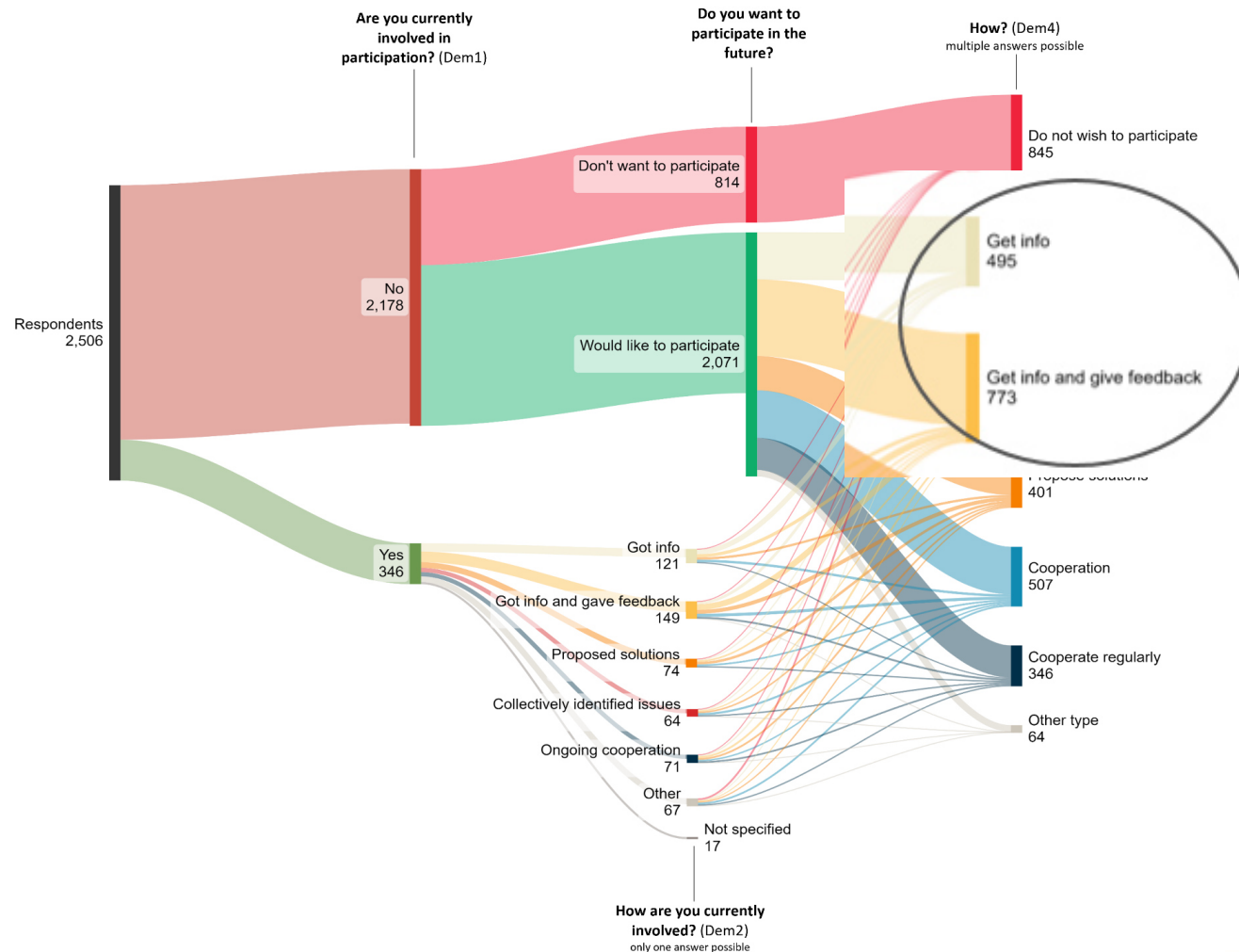
Active participation profile vs inactive participation profile

An individual with an active participation profile has experienced, at least once, a public participation process. The format of the participation process is not relevant for the characterisation of the activity.

Findings: Descriptive



Findings: Descriptive



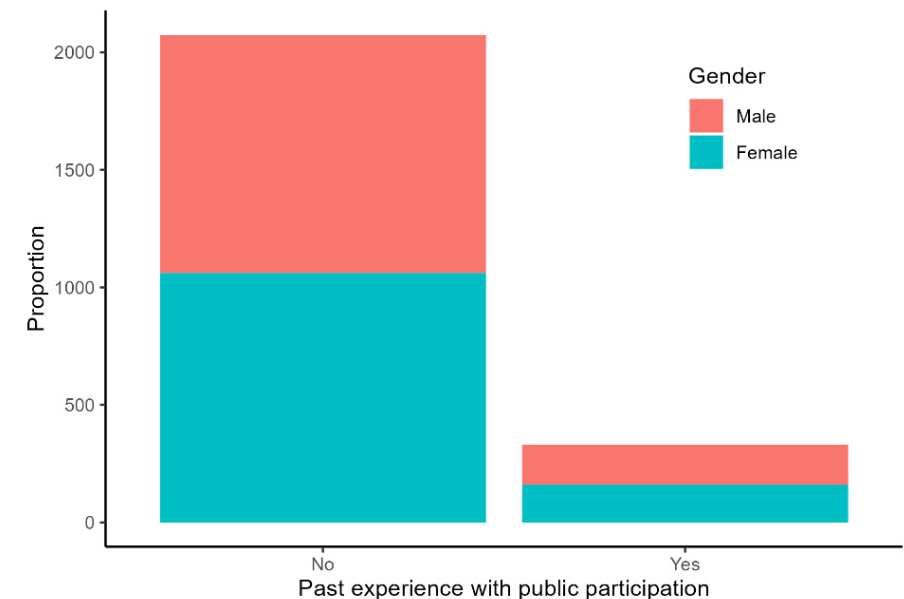
- Vast majority has inactive participation profile
- Existing interest to participate (in theory)
- Less demanding participation processes are more popular

Findings: Exploratory statistics

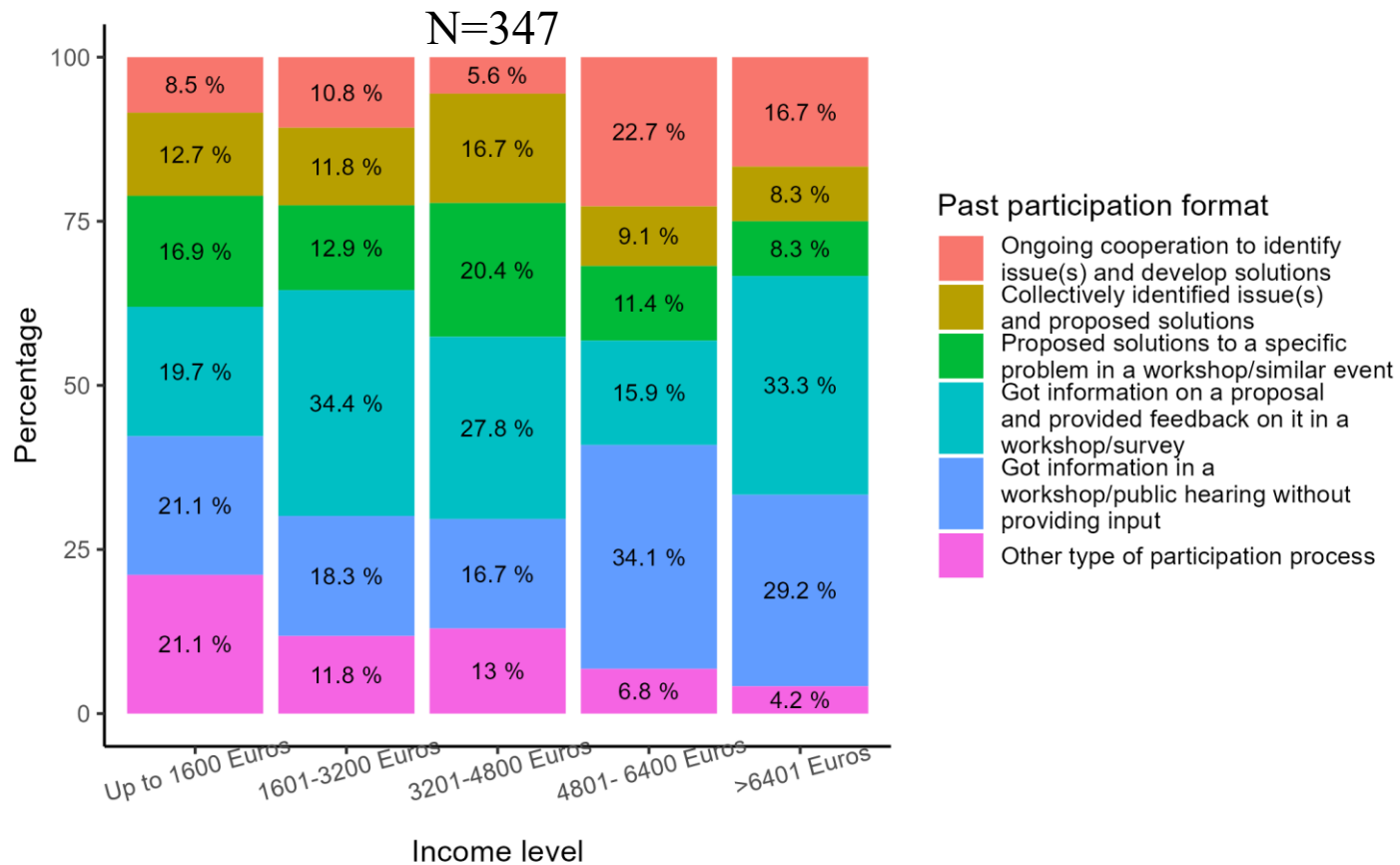


Exploring differences among different sociodemographic groups

- No significant gender gap in terms of active vs inactive participation profile (Chi-square, $\chi^2 = 0.866$, $p = .35$).
- Higher income is positively correlate with active participation profile (Kendall's rank, $z = 3.10$, $p = .002$).



Findings: Exploratory statistics



Past participation format

- Ongoing cooperation to identify issue(s) and develop solutions
- Collectively identified issue(s) and proposed solutions
- Proposed solutions to a specific problem in a workshop/similar event
- Got information on a proposal and provided feedback on it in a workshop/survey
- Got information in a workshop/public hearing without providing input
- Other type of participation process

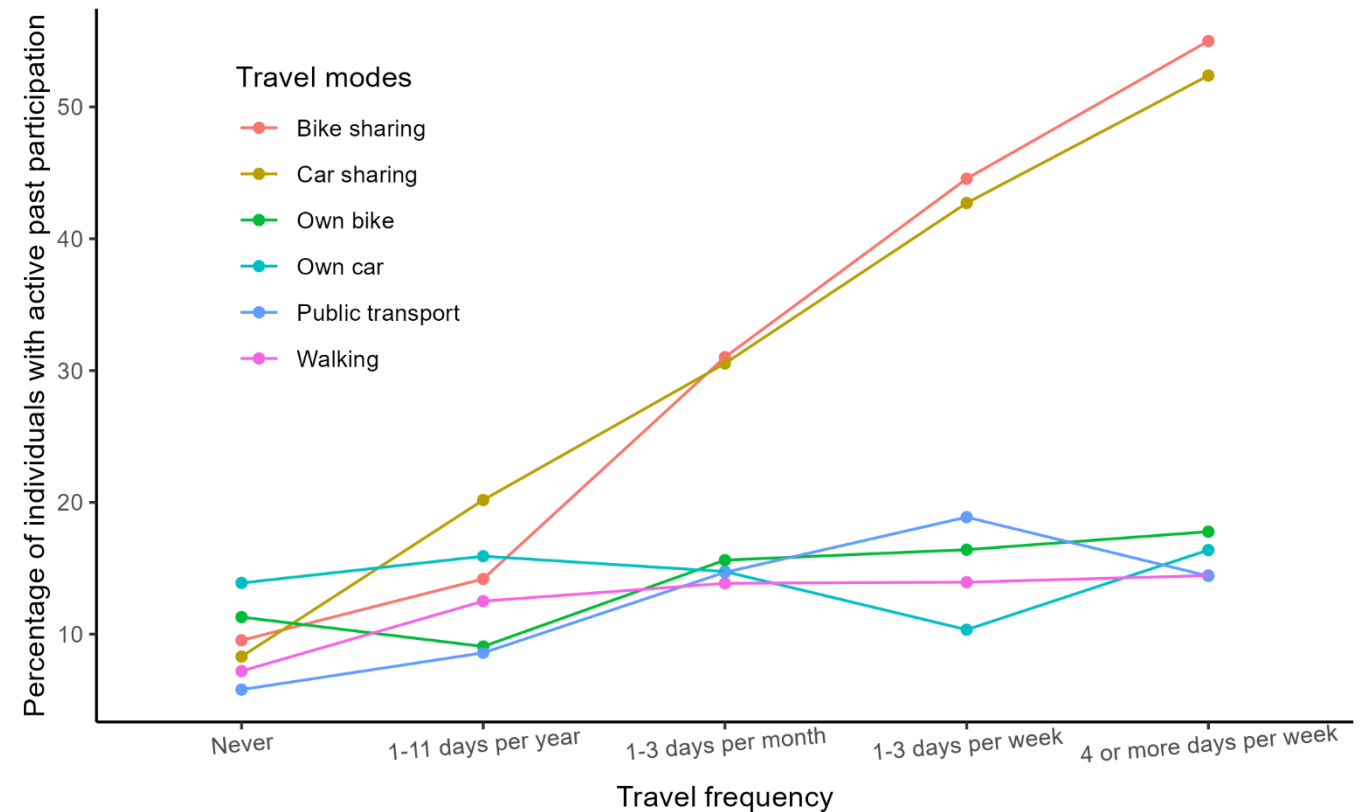
- Surveys and workshops are the most common participation formats
- High income earners more commonly in the more passive formats
- People from lower income households more distributed across the different process types

Findings: Exploratory statistics



Association with travel mode preferences and habits

- The higher the travel frequency by shared modes, the more people have an active participation profile
- Own car: non-users and infrequent users have the highest ratio with active participation profile



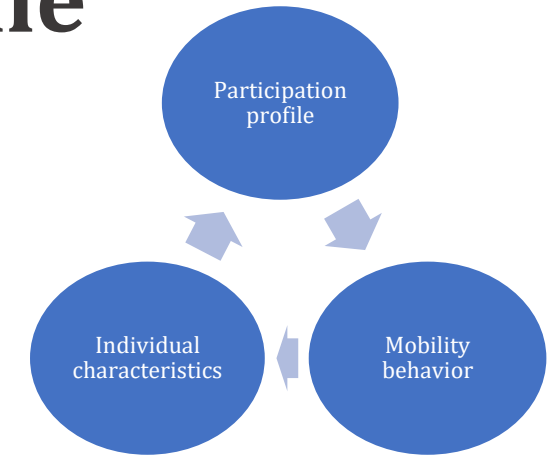
Findings: Modelling participation profile

Dependent variable

- Participation profile until now: active vs. inactive **(Yes/No)**

Independent- predictor variables

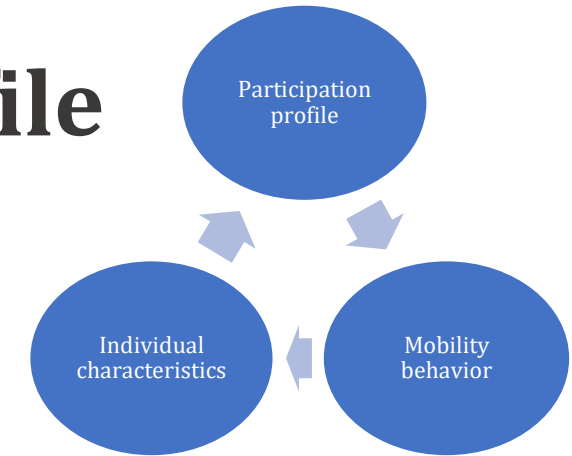
- Mobility profile (8 variables)
 - mobility habits: travel frequency by various modes
 - Mobility capabilities: driving license
- Sociodemographic characteristics – **multicollinearity testing**
 - Gender, Education
 - Digital skills: smartphone possession and app usage
- Binary logistic regression
- Probabilistic estimation of each dependent variable level to be in the active profile group



Findings: Modelling participation profile

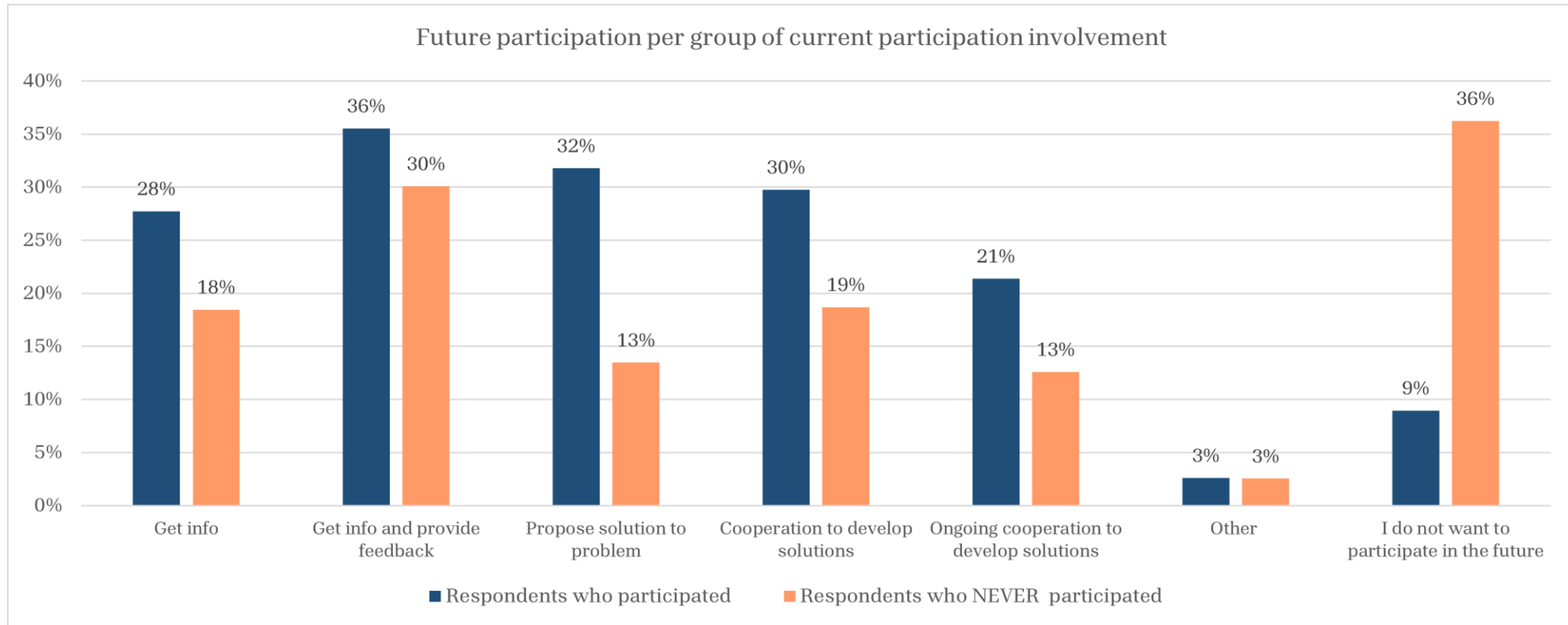
Positive effect ■ Negative effect ■ *Significant at least at 90% confidence

Predictor	interval	Estimate	p
(Intercept)		-2.720	<.001 *
Female		-0.003	0.976
Higher education level		0.397	0.003 *
Smartphone usage		-0.520	0.059 .
Car driving license		-0.071	0.703
Low travel frequency by bike sharing		0.370	0.033 *
High travel frequency by bike sharing		1.120	<.001 *
Low travel frequency by own bike		0.065	0.716
High travel frequency by own bike		0.094	0.551
Low travel frequency by e-scooter sharing		0.007	0.968
High travel frequency by e-scooter sharing		0.408	0.071 .
Low travel frequency by car sharing		0.822	<.001 *
High travel frequency by car sharing		1.687	<.001 *
Low travel frequency by own car		0.073	0.741
High travel frequency by own car		-0.111	0.480
Low walking frequency		0.293	0.476
High walking frequency		0.164	0.668
Low travel frequency by public transport		0.347	0.317
High travel frequency by public transport		0.467	0.179



Model summary	
Chi-square	290.92
Significance	<.001
Nagelkerke R²	0.21
AIC	1670.18
BIC	1779.73
Sample	N= 2359

Findings: Intention for future participation

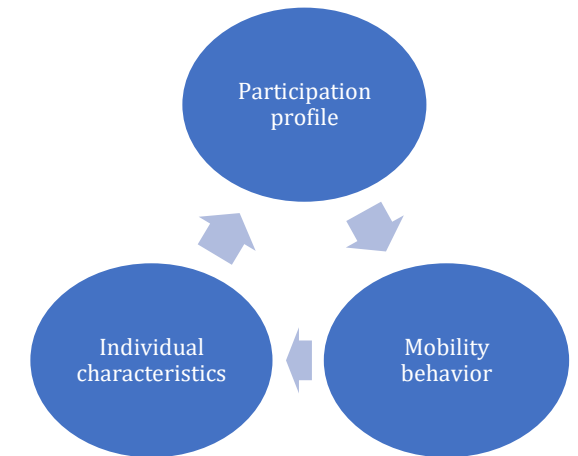


Findings: Modelling future participation profile

“Would you like to participate in decision-making processes to improve **mobility** offers **in your neighbourhood** in the future?”

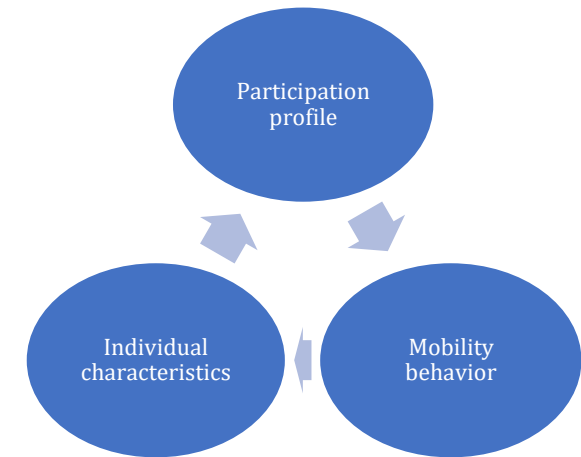
Binary logistic regression (Yes/No)

- Gender effect present, but male lower interest
- Younger people higher interest of engaging in future participation
- Mobility habits significant effects
 - The more people travel, the more likely to participate
 - Shared mobility positive effect



Conclusions and Recommendations

- ❑ Emerging interplay between mobility, sociodemographic, and participation profile
- ❑ The more active the mobility profile, in terms of variety, combination of modes, and intensity of travelling, the stronger the interest in getting involved
- Extend current model with further information with satisfaction with current mobility parameters
- Compare with different local contexts e.g, areas with high immigration rate, rural areas to examine the effect of the circumstances and identify excluded groups
- Explore order of events: **causality analysis**
- Further development and interpretation of the policy and justice implications of quantitative results



To share is to

Take care of you for your attention!

Looking forward to question and comments 😊

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