Passenger preferences for (emerging) access/egress modes

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Mark van Hagen, Dorine Duives, Niels van Oort
CVS congress, Brussels, 23-24 November
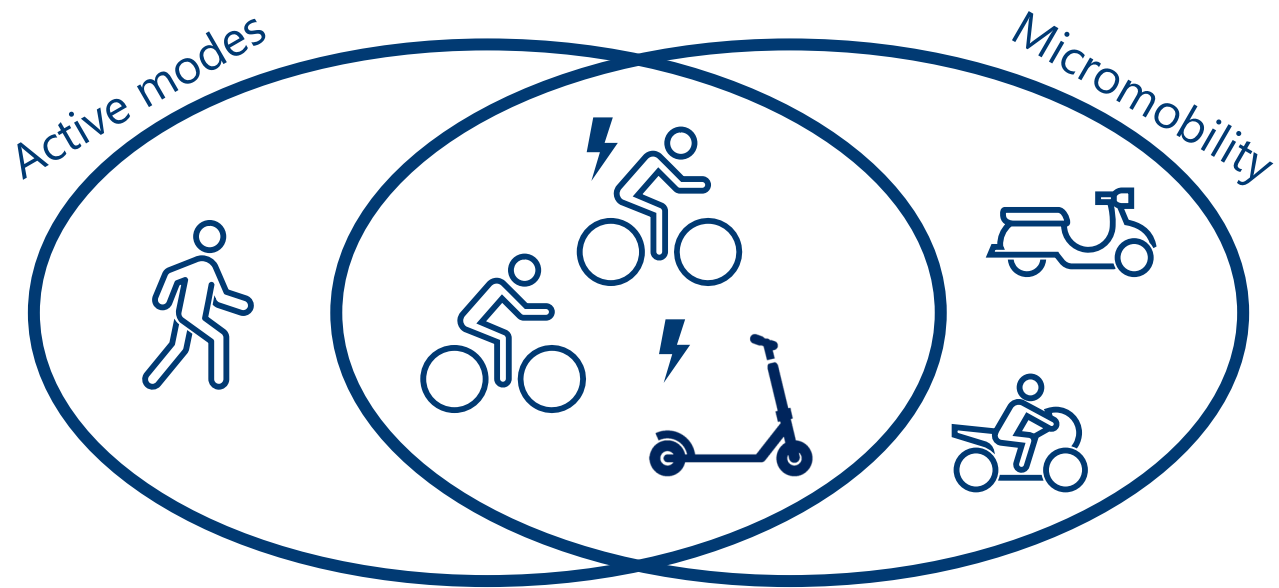
Access & Egress

❖ Home-end: **Bicycle > BTM > Walk…**

❖ Activity-end: **Walk > BTM > Bicycle…**

❖ Home-end trips tend to be longer
◊ Average home-end trip   3.8km
◊ Average activity-end trip   2.7km

❖ **5.3km**   Nearest train station

❖ **10.8km**   Important transfer station

Micromobility
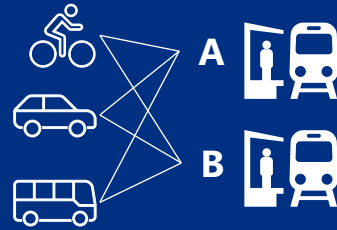
❖ Sharing economy revolution

❖ Overlap with active modes
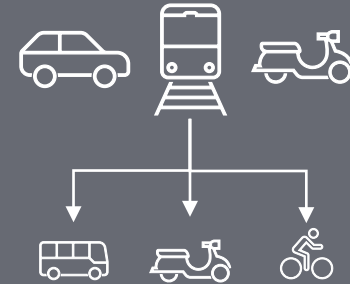
Active modes

Micromobility

Overview

Access/Egress

Study 1

A

B

Study 4

Micromobility

Study 2

Study 3

Lab
Smart Public Transport

Lab
Active Mode

TUDelft

Study 1: Setup

❖ Access mode & Station choice

Data collection
Dutch Mobility Panel (MPN)
10th Feb – 1st Mar 2020
1,076 valid responses
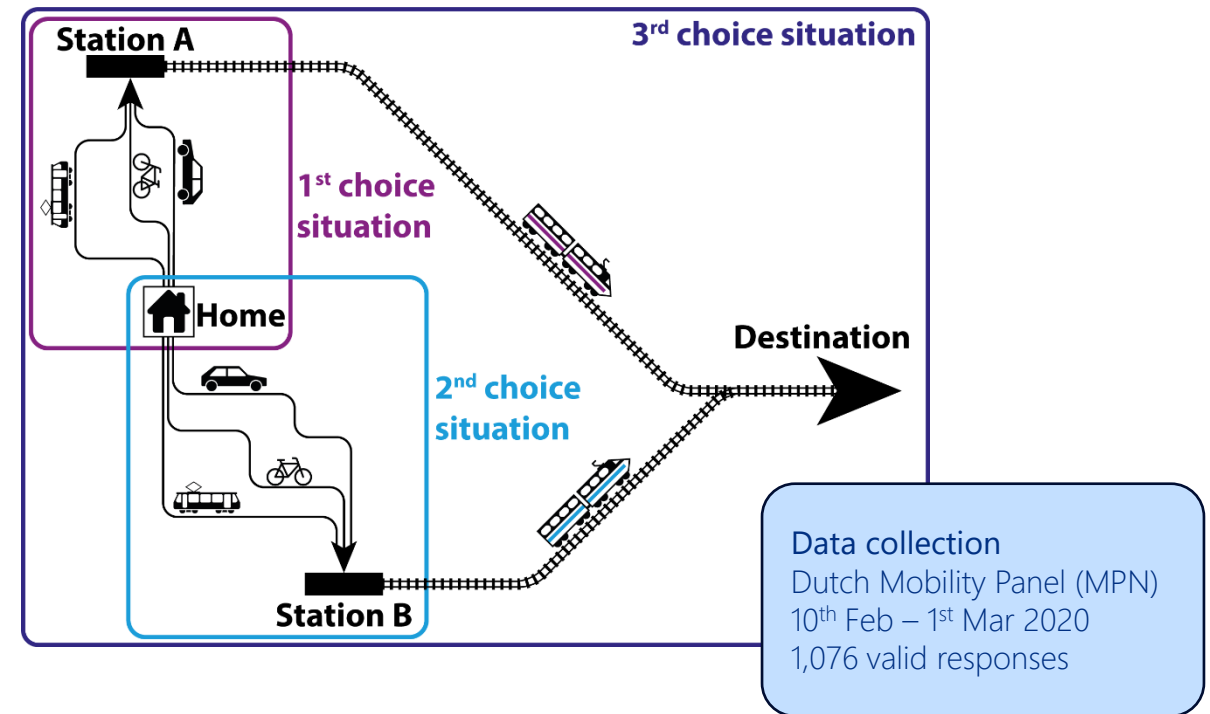
Study 1: Results

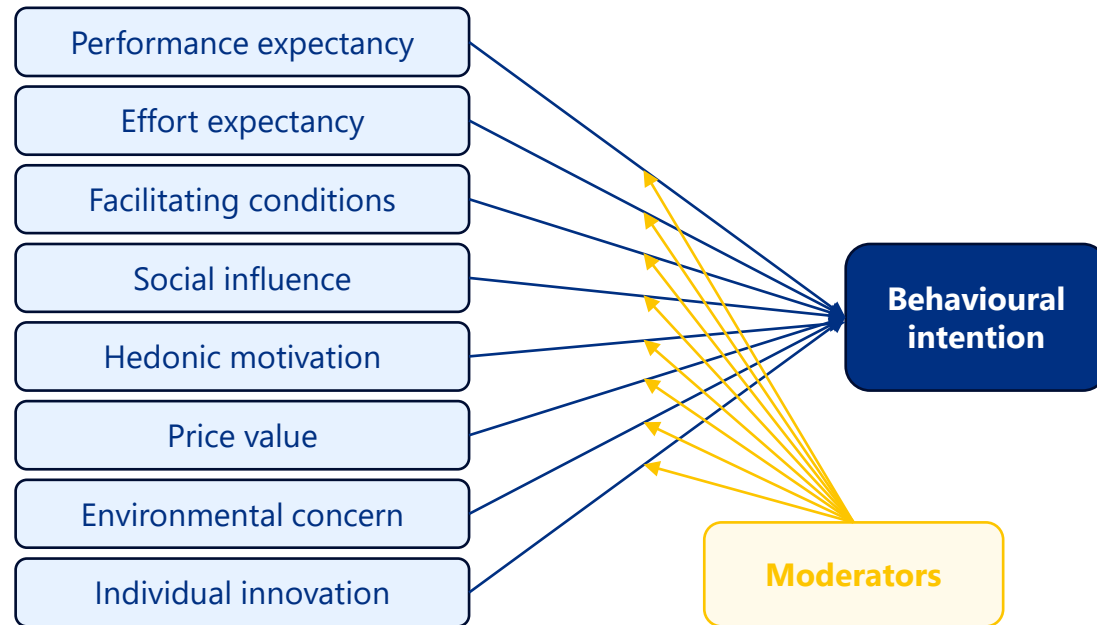|	High WtP	Low WtP	
Mode-first	21.6%	30.2%	51.8%
Station-first	25.9%	22.3%	48.2%
	47.5%	52.5%	

❖ **In-vehicle time ratio**   **1-1.5x**
◊ Access leg / Main leg

❖ **Parking search time**   **1-3x**
◊ Compared to main leg IVT

❖ **Transfer**
◊ **€3.50 - €5.00**
◊ **15min – 23min**   of main leg IVT

Study 2: Setup

❖ Intention to use neighbourhood mobility hubs

◇ UTAUT2 model

Performance expectancy

Effort expectancy

Facilitating conditions

Social influence

Hedonic motivation

Price value

Environmental concern

Individual innovation

Behavioural intention

Moderators

Study 2: Results

Traditional car owners
8%

Hub huggers
45%

Anti-new mobility individuals
22%

Hub-ready impacting travellers
25%
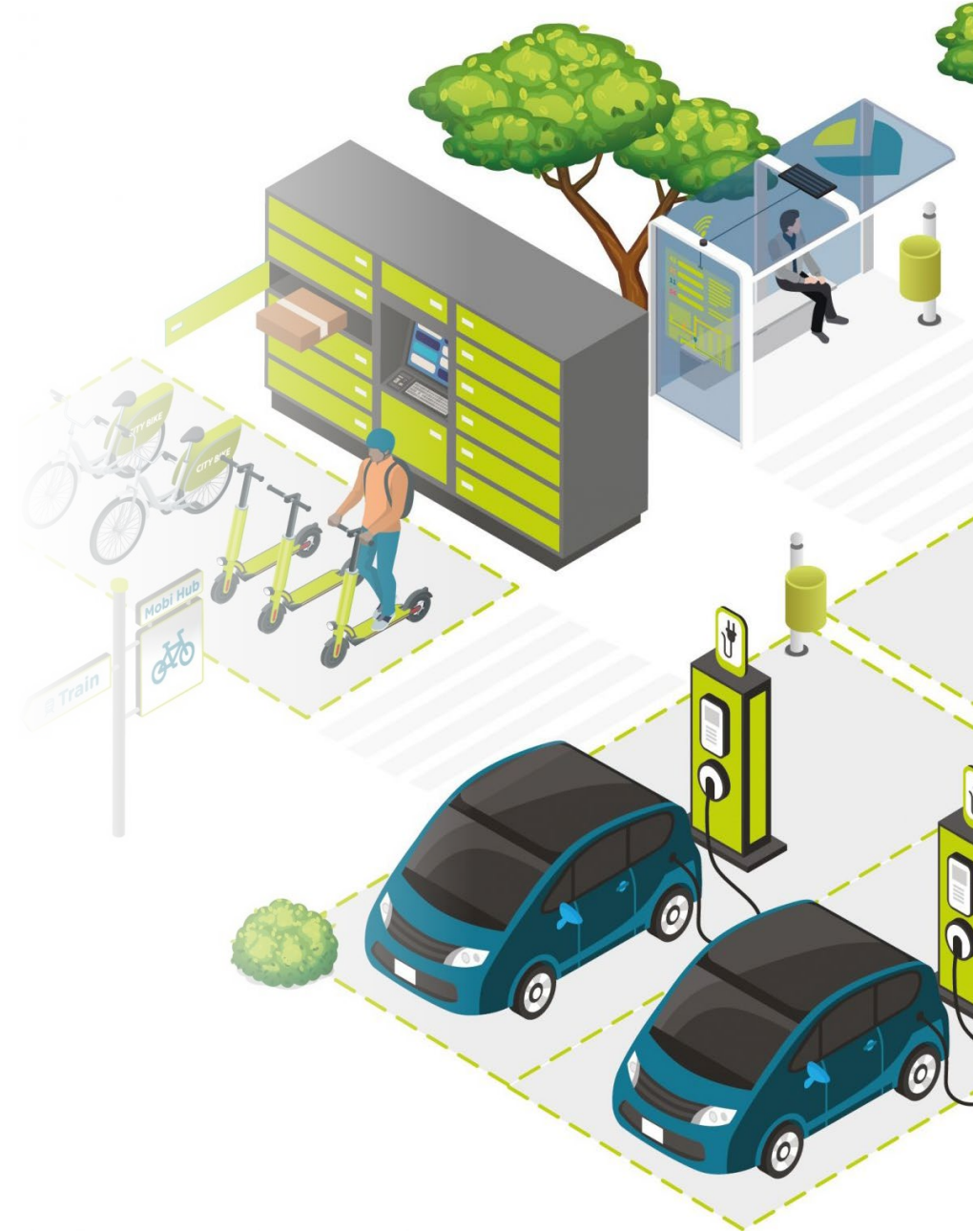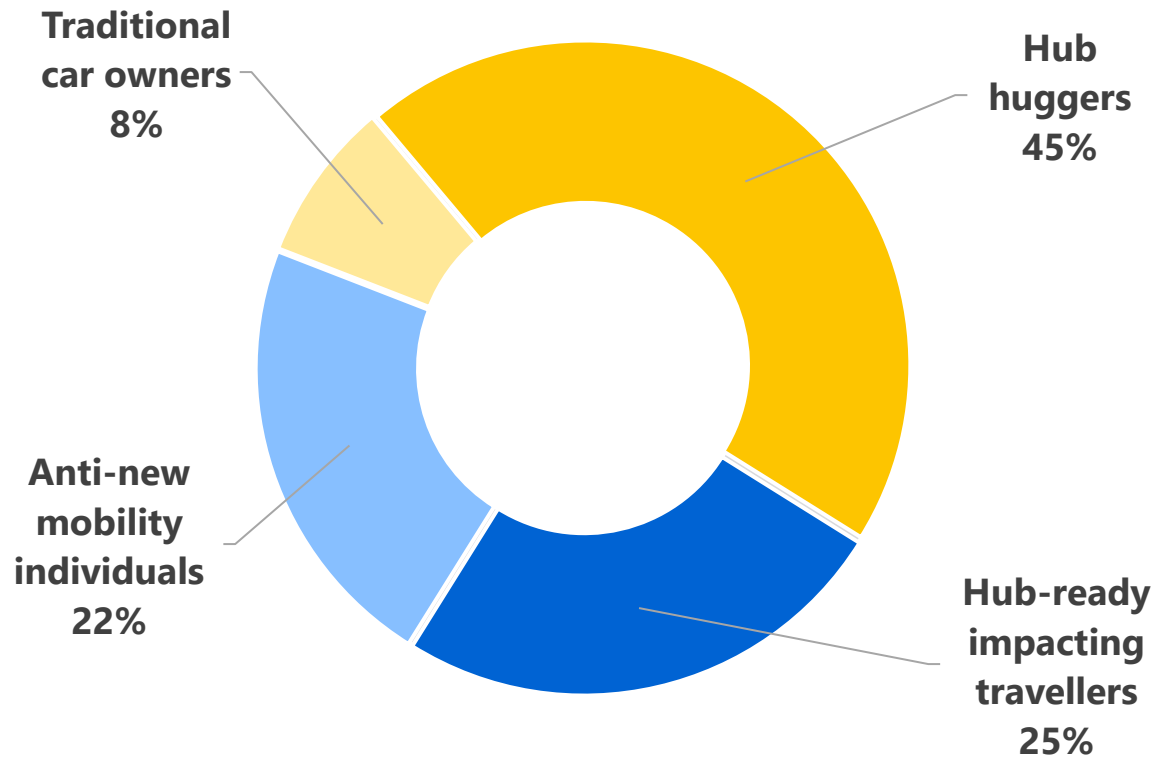
Study 3: Setup

❖ Running an errand in an urban area

Set 3: Imagine that the shared electric moped is not available. Which mode would you choose instead?

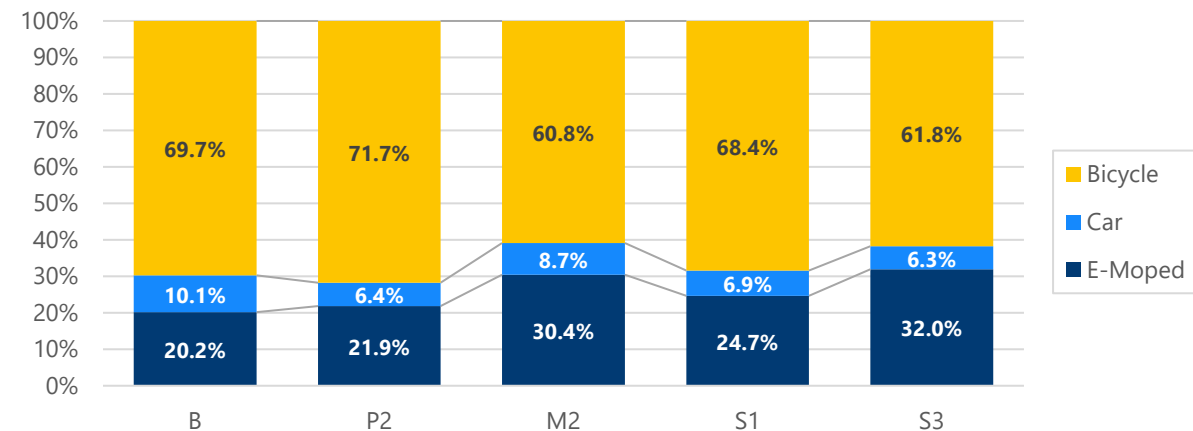| CAR	BICYCLE	
Travel time (one-way, excl. search- and egress time) — 15 min	Travel time (one-way) — 30 min	I would not make this trip
Parking costs per hour — €5,-		
Search time for parking spot — 0 min		
Egress time (from car to destination) — 0 min		

← →

Study 3: Results

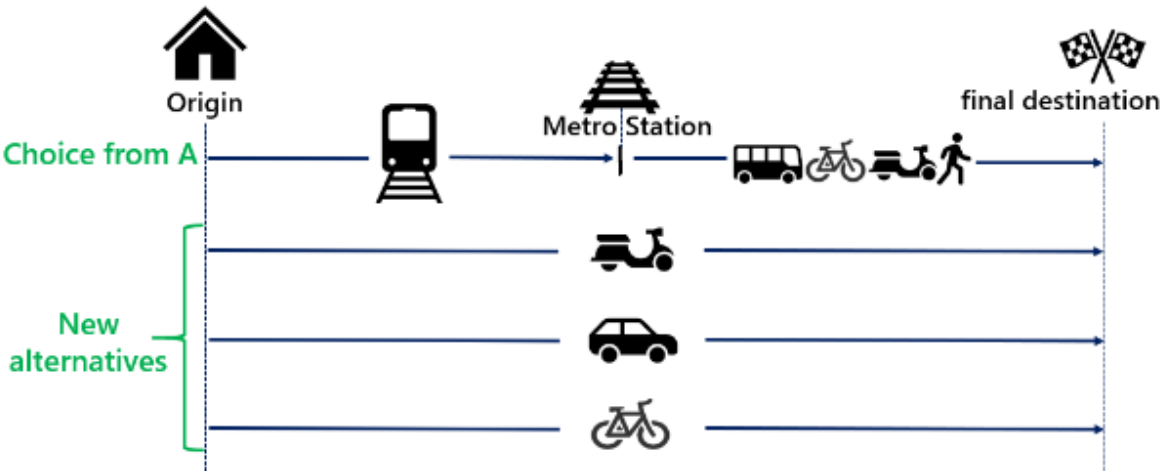❖ **Previous experience with mopeds has a substantial impact on attribute perception**
- ◊ Access walking time   **15€/h vs. 31€/h**
- ◊ Return availability   **33€/h vs. 88€/h**
- *(non-linear, increasing marginal disutility)*

Legend:
- **Bicycle**
- **Car**
- **E-Moped**

	B	P2	M2	S1	S3
Bicycle	69.7%	71.7%	60.8%	68.4%	61.8%
Car	10.1%	6.4%	8.7%	6.9%	6.3%
E-Moped	20.2%	21.9%	30.4%	24.7%	32.0%

Study 4: Setup

❖ **Main & Egress mode choice**

Study 4: Results

❖ **Differences in egress mode choice**

◊ All travellers vs. those who actually chose metro

Legend:
- ■ Bus/Tram
- ■ Shared Bicycle
- ■ Shared E-moped
- ■ Walking

Inner ring: 30%, 14%, 11%, 45%
Outer ring: 49%, 10%, 7%, 34%

Study 4: Results

Main leg

Metro ——— Car ———
E-moped [shared] - - - - Bicycle [own] ———

Egress leg

Bus/Tram ——— Bicycle [shared] ———
E-moped [shared] ——— Walking - - - -
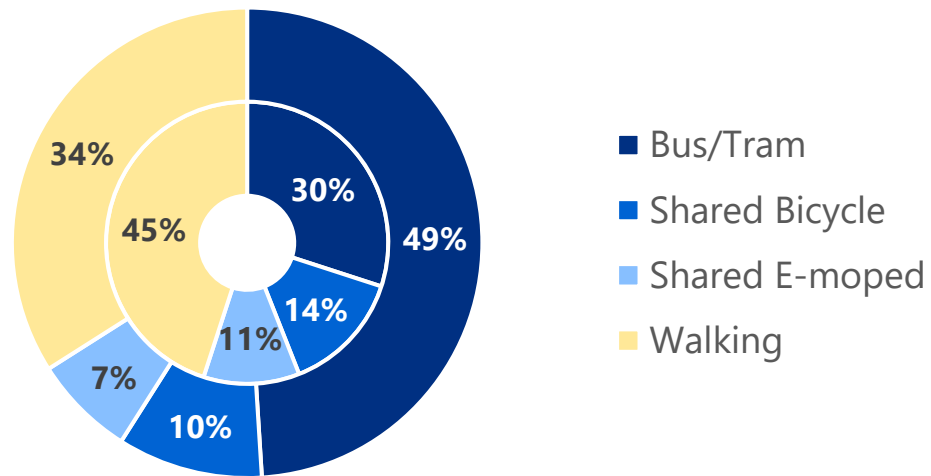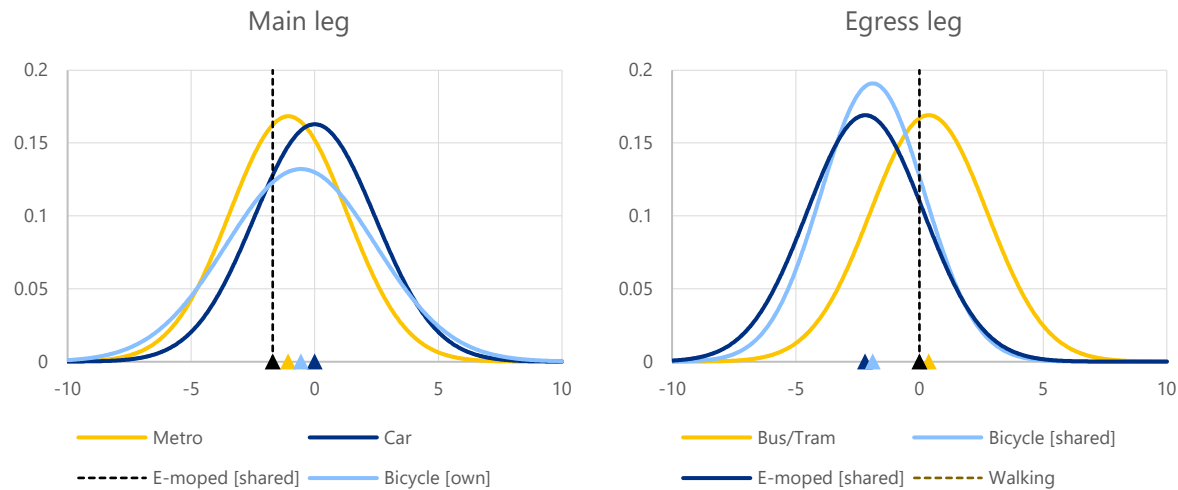
❖ Perception of travel time and cost
◊ Similar time perception
◊ Cost perception **3.8x more negative** on egress leg

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Conclusions

Past experience is a key influencing factor on adoption likelihood

Market segmentations show similar results
- ◊ Large share open to using it
- ◊ ~25% are sceptical

Careful selection of policy measures to achieve desired result

Questions?

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