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Smart mobility hubs

Results of a large-scale survey & choice experiment

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SmartHubs

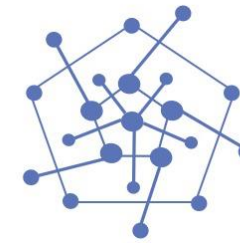
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Smart Mobility Hubs

as a game changer towards inclusive, sustainable urban mobility and accessibility in European cities

(May 2021-May 2024)



SmartHubs

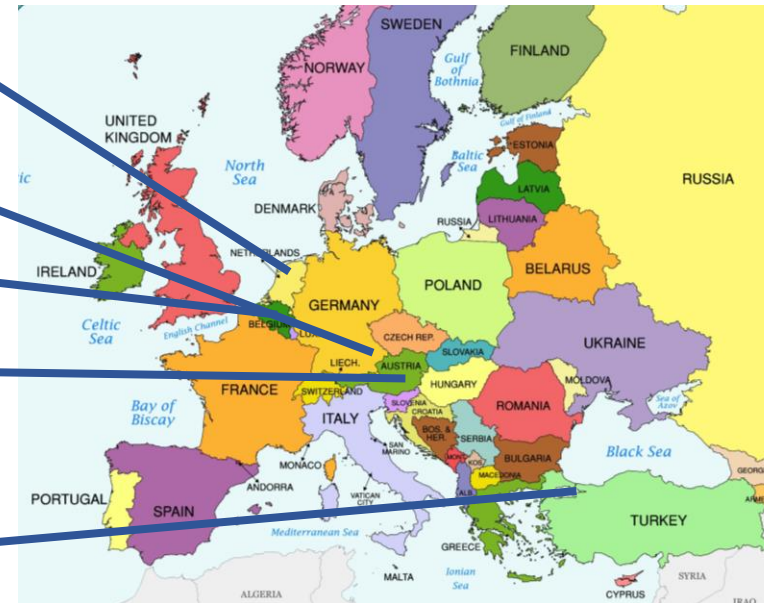
Rotterdam-The Hague (NLD): Gemeente Rotterdam, Gemeente Den Haag, MRDH, HTM, RET, NS Stations, CROW

Munich (GER): Munich PT (MVV), City of Munich, UPS

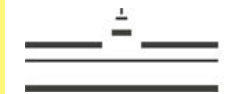
Brussels (BEL): Anderlecht, Brussels mobility

Vienna (AUT): Fed. Govt. Lower Austria, ITS Vienna region, Aspern-mobil LAB, Mobility Lab Graz, Stadt Umland Management Wien, 3420AG

Istanbul (TUR): Istanbul Metropolitan Municipality



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Smart Mobility Hubs

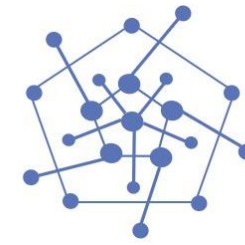
as a game changer towards inclusive, sustainable urban mobility and accessibility in European cities

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Our definition of a mobility hub:

“a shared mobility hub is a **physical location** where different **shared transport options** are offered at a dedicated, non-temporary and **recognizable location**, and **public transport** is available within **walking distance**”

(Geurs et al., 2023)



SmartHubs



(SmartHubs, 2022)

The SmartHubs integration ladder

The higher up the ladder, the “smarter” the mobility hub, and the higher the expected impact on user behaviour and societal impacts

- **Physical integration**

- Shared and PT services
- Conflict free
- Visibility and branding

- **Digital integration**

- MaaS application
- Training
- Analog alternatives

- **Democratic integration**

- Participation
- Vulnerable-to-exclusion groups
- Social learning

		Physical integration	Digital integration	Democratic integration
Smart Mobility Hub	4	Conflict free and place making	Integration of societal goals and policies, and consideration of universal design principles	Social learning
	3	Visibility and branding	Integration of service offers and consideration of universal design principles	Integration of different knowledge
	2	Wayfinding and consideration of universal design principles	Integration of booking and payment and consideration of universal design principles	Deliberative engagement of stakeholders, including (vulnerable) user groups
Mobility hub	1	Acceptable walking distance to shared and public transport, minimum inclusive design standards	Digital integration of information	Appropriate representation of stakeholder interests, no or limited attention for vulnerable user groups
Single mobility services	0	No physical integration	No digital integration	No stakeholder involvement and consideration of (vulnerable) user needs

(Geurs et al., 2023)

SmartHubs survey

Goal of the survey, to collect information on:

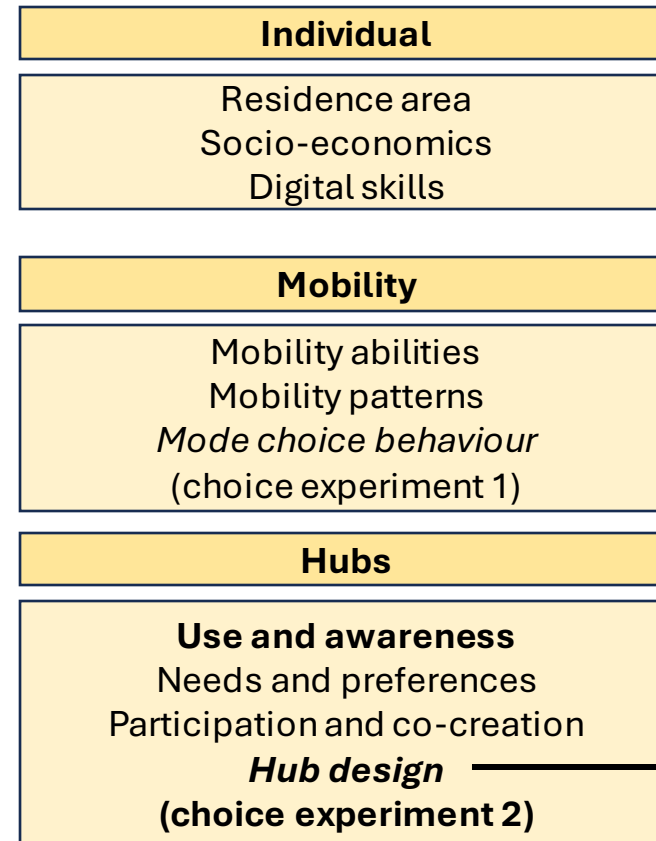
- ▶ Current users, usage patterns, needs and barriers of shared mobility and hubs
- ▶ Potential **users' profile**
- ▶ Circumstances for mode shift to hub-based mobility offers
- ▶ Preferences and **willingness to pay** for attributes of mobility hubs

Data collection

- ▶ Online panels, assisted surveys, online distribution
- ▶ December 2022 – Maart 2023
- ▶ Vienna, Brussels, Munich en Rotterdam – The Hague

Sample

- ▶ N = 2515, after data cleaning
- ▶ Stratified sample, focus on vulnerable-to-exclusion groups

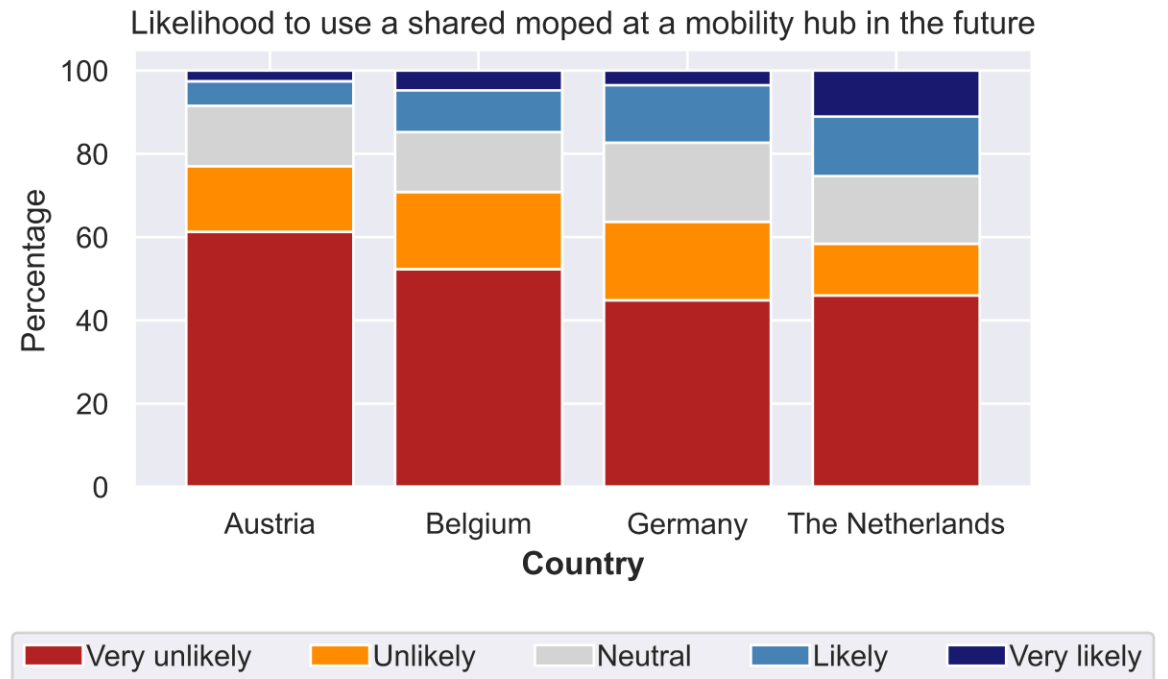
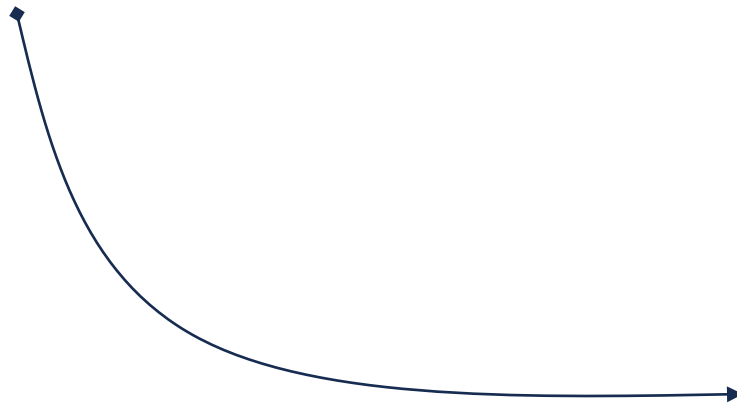


1. Intention to use shared vehicles at a hub

Intention to use shared modes at a hub

What determines this use?

- ▶ On average, **20,8%** **positive** on the use of shared vehicles at hub in the future
 - ▶ E-scooter: 23.9%
 - ▶ Moped: 17.3%




Intention to use shared modes at a hub


What determines this use?

- ▶ On average, **20,8% positive** on the use of shared vehicles at hub in the future
 - ▶ E-scooter: 23.9%
 - ▶ Moped: 17.3%

▶ Respondents with a **positive intention** to use a **shared vehicle** at a hub are:



Younger
Age ---> Intention
[-0.034 (<.001)]



Theoretical educated
Compulsory edu. ---> Intention
[-0.538 (<.001)]



PT users
PT gebruik = never ---> Intention
[-0.839 (<.001)]



Digitally skilled
DS = level 0/1 ---> intentie
[-0.512 (<.001)]

Data

Results based on OLR model
DV: Intention to use moped,
car, bike at hub
N = 2055 (Full sample)
Mc Fadden R-square: 0.095

Intention to use shared modes at a hub

Which groups are vulnerable-to-exclusion?

V2E-groups (*vulnerable-to-exclusion*), with a **lower intention** to use **shared vehicles at a hub**:



Older people



**Lower
educated**



Digitally excluded

Intention to use shared modes at a hub

Which groups are vulnerable-to-exclusion?

V2E-groups (*vulnerable-to-exclusion*), with a lower intention to use shared vehicles at a hub:



Older people



**Lower
educated**



Digitally excluded

V2E-groups have additional preferences and **barriers**:

- Prefer own vehicle
- Not safe
- Does not fulfil my travel needs

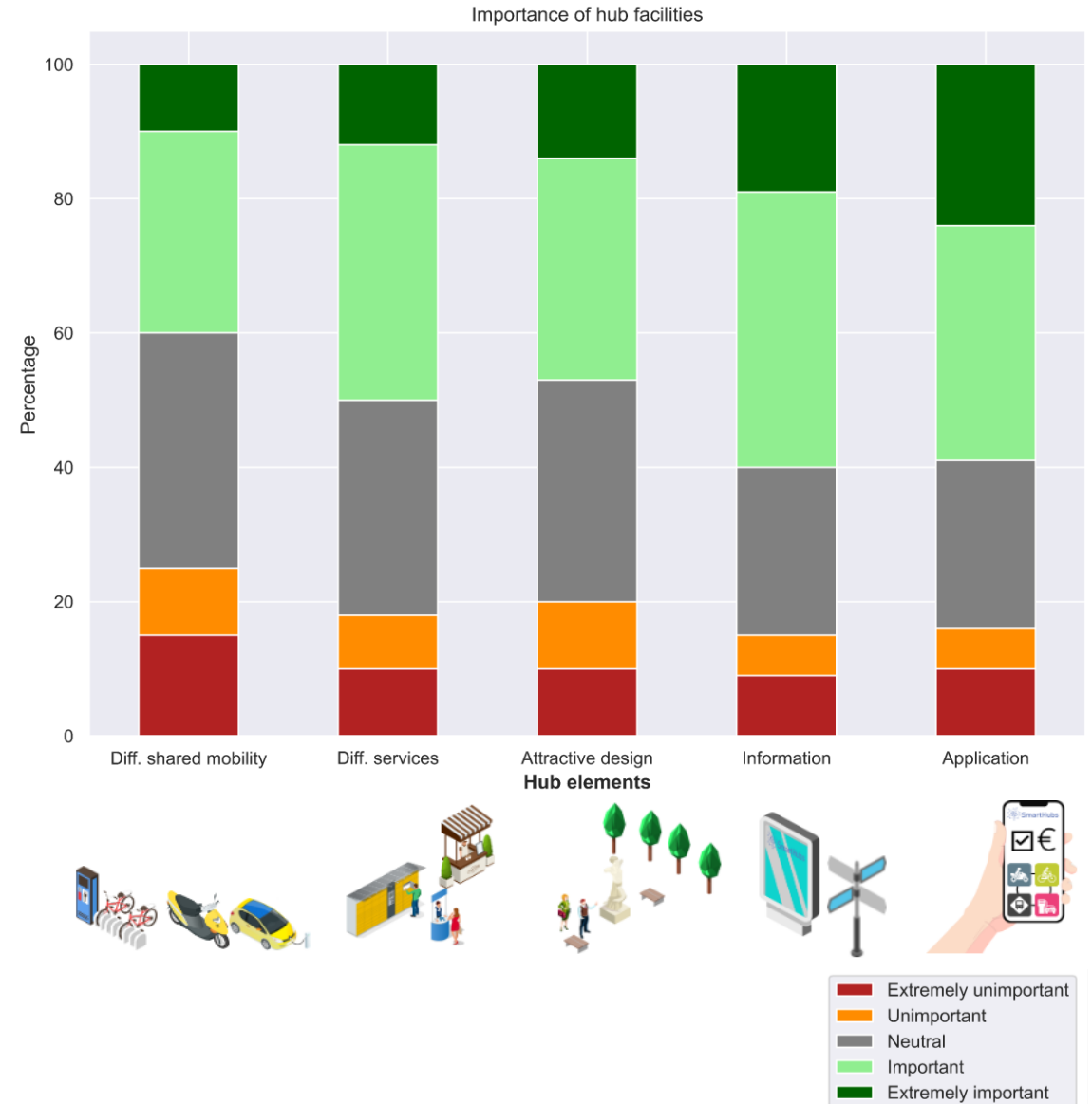
- Too expensive
- I don't know how to use it

- Not safe
- I don't know how to use it
- Don't trust shared modes

2. Preferences at the hub & willingness to pay

Design of the hub

- ▶ How **important** is it to have [x] at a mobility hub in your neighbourhood?
- ▶ No influence of potential costs
- ▶ **Most valued hub facilities:**
 - ▶ Information (wayfinding, travel info)
 - ▶ Application (MaaS: plan, book & pay)
- ▶ **Ease of use!**

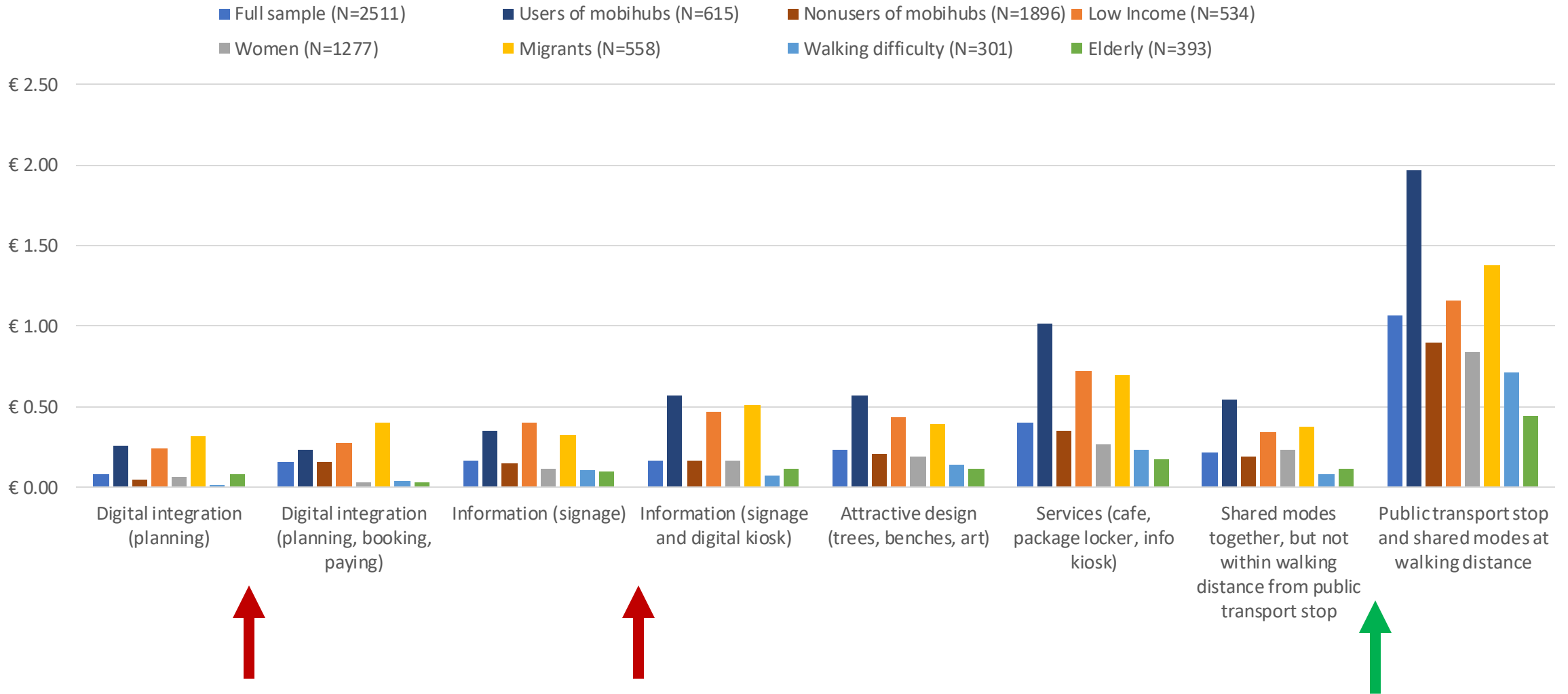


Stated choice experiment: Willingness to pay for elements of mobility hubs

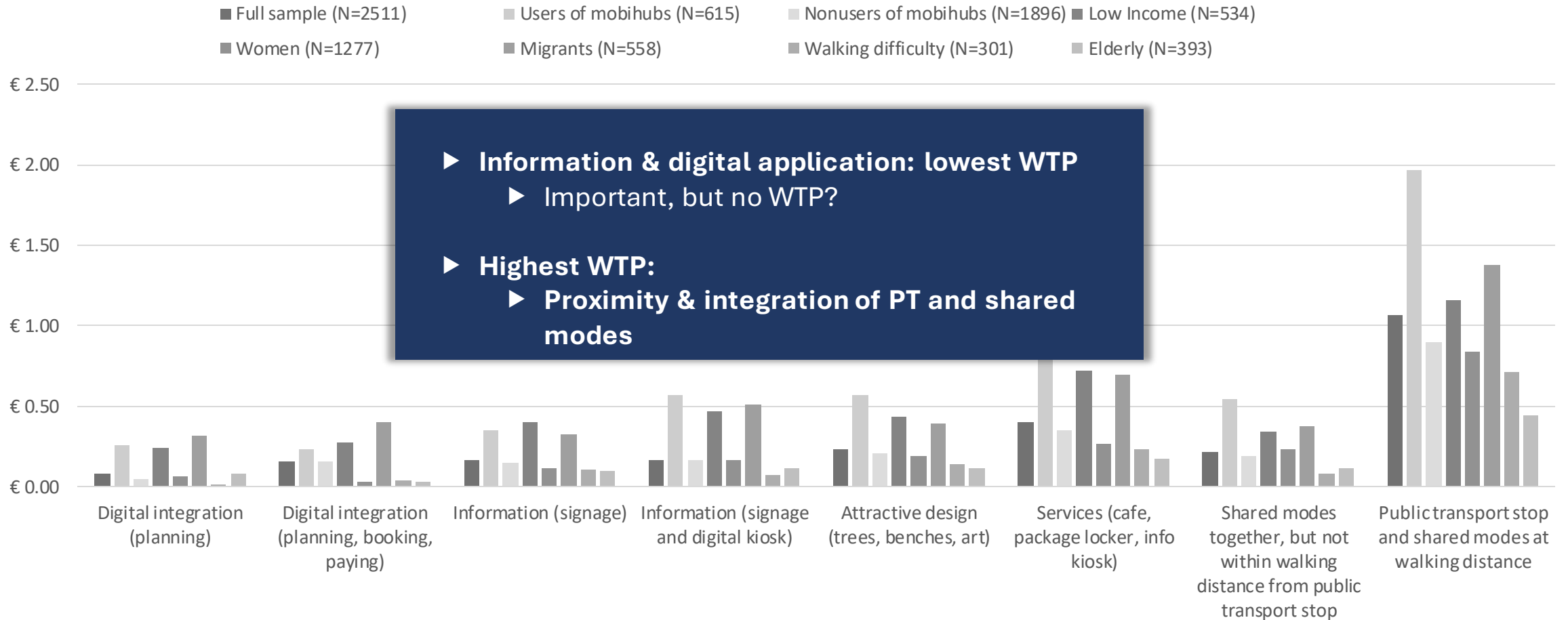


Data
N = 2511 (Full sample)

Willingness to pay for hub elements



Willingness to pay for hub elements



Smart mobility hubs

www.smartmobilityhubs.eu

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