

Mobility hubs impacts on mobility patterns and behavioural change



INTRODUCTION

Mobility hubs are designed to offer multiple mobility services that can accommodate various mobility needs of different population groups. By increasing the availability, relevance and attractiveness of the services, mobility hubs can enhance the accessibility and resilience of mobility networks. Evaluating mobility hubs' effectiveness in improving accessibility and sustainability requires understanding the behavioural changes that might occur due to their addition to the mobility network. The SmartHubs Deliverable 5.1 aims at providing insight into the impact of mobility hubs on current and future mobility patterns and at quantifying changes in travel behaviour, especially in mode choice behaviour.

METHODOLOGY

The study is based on the analysis of data collected from December 2022 to February 2023 in four urban areas: Brussels Capital Region (Belgium), Munich (Germany), Vienna (Austria), and Rotterdam/The Hague (The Netherlands), and in the rural areas of the Federal State of Lower Austria. The SmartHubs standardised survey design aimed at gaining insight into the characteristics (sociodemographic, mobility, and environment) of current and potential users of mobility hubs as well as on people's barriers and willingness to use mobility hubs under various circumstances (Figure 1). The survey explored all three dimensions (physical, digital, and democratic) of the SmartHubs integration ladder and captured potential effects of mobility hubs on travel choices via a stated preference mode choice experiment. The experiment examined whether people would be willing to shift from their preferred private to a hub-based mode in case public transport and three different sharing modes were added (bikes, e-scooters or mopeds, and cars) to their mode choice set. By exploiting the sample of 2516 survey respondents, the analysis reveals the overall potential of mobility hubs as a game changer of mobility behaviour.

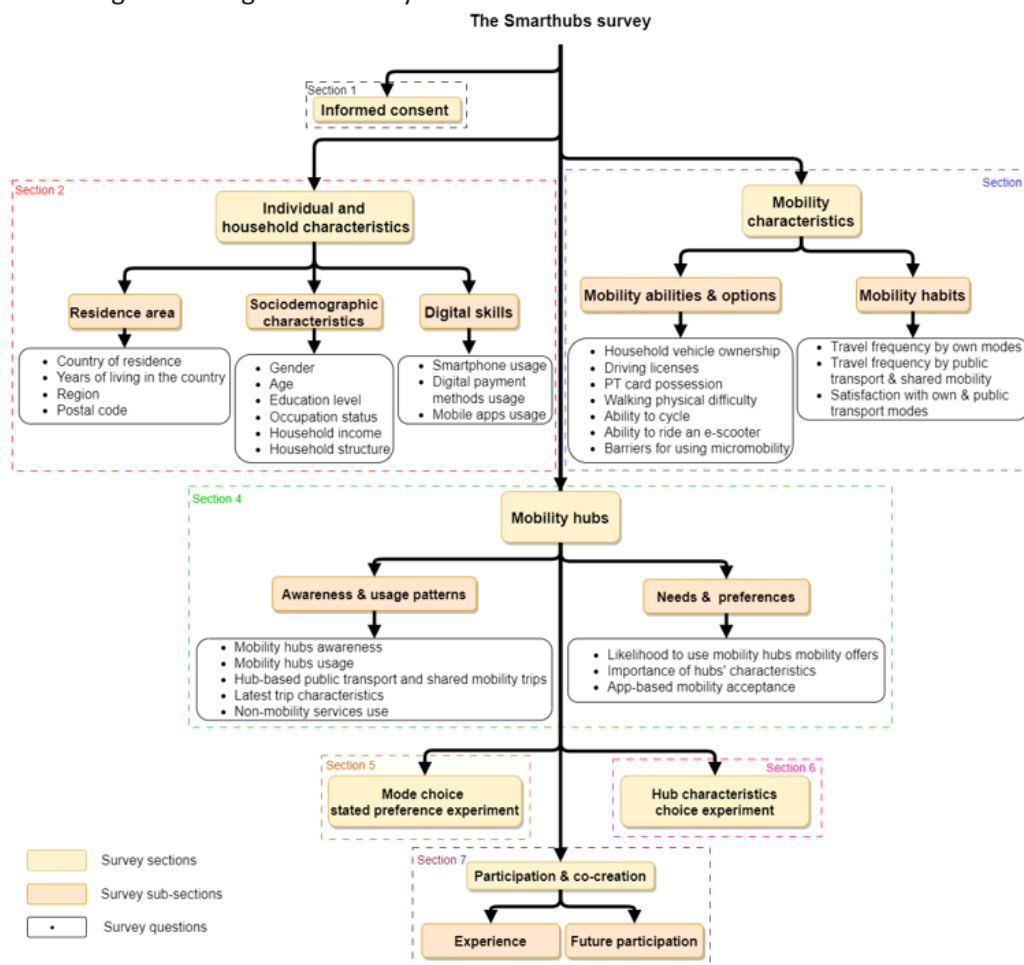


Figure 1. SmartHubs survey design

FINDINGS

The analysis uncovers that there is a population group as we name the “Mobility chameleons”, which accounts for around 30% of the population. This group has embraced shared mobility and already benefits from the introduction of shared mobility schemes. “Mobility chameleons” satisfy their travel needs by being flexible in regards to their travel mode selection. They seem to alternate and combine various shared, private and public transport modes to conduct their trips. Higher digital skills and income are consistent and positively correlated to the probability of belonging to the “mobility chameleons” cluster. However, most people have not transformed into “mobility chameleons” yet, and are still reluctant to or see no benefit in using shared instead of private modes. Nevertheless, both the unrestricted and restricted mode shift analysis indicates that there is stronger potential for shared mobility once it increases its presence and accessibility.

The results also suggest that the latest additions to the shared mobility system, e-scooter and moped sharing, influence mode choice behaviour. People seem to perceive these modes as similar to shared bikes. As such, on the one hand, these micromobility modes seem to compete with bike sharing in terms of modal split. On the other hand, these services could complement bike sharing when the latter is unavailable due to either vehicle unavailability in stations or system disruption. Despite this nest in the mode choice behaviour of the stated preference experiment, the analysis on the trips that people currently conduct by shared mobility suggests significant differences. For instance, while both bike and e-scooter sharing are used for unimodal trips, people select the latter most commonly as access mode to public transport.

CONCLUSIONS

The synthesis of the findings highlights the emergence of a new mobility gap: the digital mobility gap. The results indicate that individuals with low digital mobility skills are less inclined to be “mobility chameleons” and use mobility hubs services, primarily due to their limited possession of smartphones. These findings underscore the importance of the SmartHubs integration ladder, which suggests that “smart” mobility hubs can only be realized by offering integrated digital access to mobility services that adhere to universal design principles. Without considering universal design, mobility hubs and shared mobility systems may fail in their mission to enhance mobility accessibility.

Furthermore, the study reveals the influence of local context on the impact of mobility hubs. While certain findings are consistent across different European regions, there exists significant variation in the determinants of travel behaviour and the needs and preferences of populations regarding mobility hubs. Further international comparison research would be useful to enrich our understanding on the impacts of mobility hubs across different part of the Europe.

POLICY IMPLICATIONS

The higher interest of young people on shared mobility and their increased presence in the “mobility chameleon” class indicate that the future mobility demand can differ from the patterns established by older generations. Taking measures and preparing policies that ensure the possibility of mobility hubs to accommodate the various present and evolving needs of this generation, for example due to life changing events such as having kids or home location change, could increase the probability that this generation maintains the usage of shared and, consequently, sustainable mobility in the future.

The digital mobility gap, highlighted by our findings, could be avoided by decreasing or completely removing the barriers faced by people with reduced digital mobility skills. Hub operators could try to offer alternative, “conventional” access to their vehicles, e.g. via customer cards. Trainings and information distribution on the usage of mobility apps could also alleviate the gap. Considering the needs of people with low digital skills is also crucial for public transport services. Since the latter is, and should remain, the backbone mode for people with a wide range of sociodemographic background, the transition to digitalised public transport systems should follow a process that ensures the accessibility by all population groups.

COLOPHON

DATE

07.02.2024

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VERSION

1.0

WEBSITE

www.smartmobilityhubs.eu

FULL DELIVERABLE:

This text summarises the SmartHubs impact analysis of mobility hubs. For the full deliverable D5.1, please refer to:

Gkavra, R., Roider, O., Susilo, Y. 2024. Mobility hubs impacts on mobility patterns and behavioural change. SmartHubs Deliverable D 5.1. Available at:

https://www.smartmobilityhubs.eu/files/ugd/c54b12_34adbea6988f477aa01feaf7d0f0d182.pdf



This project is supported by the European Commission and funded under the Horizon 2020 ERA-NET Cofund scheme under grant agreement N° 875022

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