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## Barriers and preferences to mobility hubs: An analysis of users and non-users

Roxani Gkavra <sup>a\*</sup>, Linda Dörrzapf <sup>b</sup>, Christoph Kirchberger <sup>b</sup>, Yusak Susilo <sup>a</sup>, Oliver Roider <sup>a</sup>

<sup>a</sup> University of Natural Resources and Life Sciences, Institute for Transport Studies, Vienna, Austria

<sup>b</sup> Technical University of Vienna, Department Spatial Planning, Transportation System Planning, Austria

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This work addresses the following topic(s) from the Call for Contributions:  
(Please check at least one box)

- Placemaking to integrate urban spaces and mobility
- Promoting sustainable mobility choices in metropolitan regions
- Governing responsible mobility innovations
- Shaping the transition towards mobility justice
- System analysis, design, and evaluation
- other: \_\_\_\_\_

### Extended Abstract

#### Problem statement

Mobility hubs are physical locations which facilitate shared mobility services at specific, permanent and marked areas which are in proximity to public transport services (Geurs et al., 2022). Due to their potential to promote sustainability mobility hubs have attracted increased attention by the urban planning and the transportation practice, policy and research (Weustenenk and Mingardo, 2023). However, adaption of sustainable mobility options such as mobility hubs requires a successful meeting of the supply side and travellers' needs. The common practice of top-down design bears the risk that the provided mobility services, even if they adhere to standardized service quality requirements, fail to meet users' preferences. Consequently, their contribution to a more sustainable mobility system is limited. This study focuses on travellers' perspective and aims at identifying to what extend existing mobility hubs accommodate users' needs and at revealing for which reasons mobility hubs services are not already attractive to a larger share of the population. The assessment of the research objective will provide useful contribution to the ongoing discussion on the characteristics of current and future mobility hubs.

#### Research objectives

The present study aims at responding to the following two research questions: a) Which is the profile of current mobility hubs' users and non-users, b) which circumstances and characteristics (could) increase the attractiveness of mobility hubs? The research focuses on revealing people's current and future preferences regarding mobility hubs' operation and design as well as on recognising the barriers that currently prevent them from using hubs and their services.

#### Methodological approach

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\* Corresponding author Roxani Gkavra, Tel.: +436609023844.  
E-mail address: [roxani.gkavra@boku.ac.at](mailto:roxani.gkavra@boku.ac.at)

The study area of the present research consists of two very heterogeneous Austrian spatial entities: the Austrian capital and federal state Vienna and the federal state Lower Austria. Vienna has adopted shared mobility, and in particular mobility hubs, as an important element of public transport. The city has made a city-wide plan for a mobility hubs network. In Lower Austria, the initiative "Mobility.Lab in Lower Austria" was established with a single scheme, targeting to improve mobility offers in rural, low-density areas. Therefore, the two case study areas allow for gaining insight into mobility hubs' potential in both urban and rural locations.

The analysis is based on data collected by an international survey in the context of the Smarthubs project (2023). In order to analyse travellers' barriers and preferences to mobility hubs the survey examined the current usage cases of hubs and their components, such as shared micromobility, car sharing and public transport. Moreover, the survey participants reported how important they consider various elements of future mobility hubs, such as the plethora of mobility offers and the availability of non-mobility services. Apart from the importance of hub-based services, the survey examined the necessity of more hub features, including digital information and payment for the mobility offers. In order to understand the variability of needs and barriers across various population groups, the survey also collected data on participants' sociodemographic characteristics. The survey data collection via a panel company and open invitation for online participation lasted two months (December 2022 – January 2023). In total, 550 people who reside within the case study area provided valid responses to the survey.

### **(Expected) results**

The revealed data on how people use mobility hubs allow the identification of the circumstances which encourage the usage of their mobility services. The data analysis reveals the main patterns on trip characteristics (mode combination and sequence, trip purpose and distance) and user profiles. To further understand the characteristics that could enhance the usage of mobility hubs, the analysis focuses on the importance of the different characteristics as reported by the respondents. Although almost half of the sample rated all examined hub characteristics as significant, the availability of information, both online and at the hubs' location, is the parameter that most people indicated as highly important. In regard to other needs, it is worth mentioning that the ability to access, obtain information and pay for all hub-based services was considered even more important than the availability of different mobility offers in a hub.

The results on the preferences for future hubs could be related to the inconveniences that potential users face today. The descriptive analysis on the barriers mentioned by the survey respondents reveals that the most common reason for not travelling by shared modes is the preference for traveling by own vehicle. Nevertheless, there are noticeable differences among the factors that discourage using different shared mobility systems. For instance, although many people perceive shared e-scooters as dangerous, a small percentage has safety concerns regarding travelling by car sharing. Pricey rental fees and increased access/egress time are more relevant obstacles to the usage of car sharing. In the next steps of the analysis, the preferences and barriers to the usage of mobility hubs are examined in relation to characteristics (e.g. level of service of public transport and bike sharing stations) in the different areas survey in Vienna respondents reside.

### **References**

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