

Passenger preferences for (emerging) public transport access/egress modes

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Short (max 250 ch)

To get a crucial understanding of train travel, micromobility and how they can interact and complement each other, we investigated the perceptions and preferences of individuals.

Long (max 750): 675

Making the mobility sector sustainable is a key part in the transition to a climate- and carbon-neutral society (European Parliament, 2023). For trips too long to be performed by active modes (walking, cycling), public transport is the most sustainable alternative available to travellers. With a high capacity and efficient use of resources, it is ideal for transporting larger numbers of people over longer distances. (Brons et al., 2009).

In the Netherlands, 39% of all train passengers arrive to the station by bicycle, with over half a million bicycle parking spaces offered around the country (Dutch Railways, 2023). And although some travellers have their own bicycle on both the home and activity side of the train trip, most only have a bicycle on their home-end, meaning they have to rely on other forms of transportation on the activity-end, such as walking or local public transport (buses, trams, metros). A bicycle-sharing scheme is also available at almost 300 stations, with over 21 thousand bicycles, resulting in 5.4 million total trips in 2022 (Dutch Railways, 2023).

In recent years, the rise of digitalisation and increased use of smartphones have brought along with them many new shared (electric) (micro)mobility alternatives to the mobility ecosystem, such as car-sharing, (electric) bicycle-sharing, e-scooters, e-steps to name but a few. Currently mainly present in larger cities and used predominantly for shorter trips within urban areas, they do hold the potential to improve the accessibility of public transport stations, especially for more distant access/egress trips due to the assistance of electric motors.

To get a crucial understanding of train travel, micromobility and how they can interact and complement each other, we investigated the perceptions and preferences of individuals; how they perceive these emerging modes, how likely they are to use them and what they find important when making their travel decisions. We looked into the joint access-mode and train station choice, analysing how the quality of access modes and train service at a specific station affect each other; in other words, how do people trade-off attributes from different legs of the same trip. Secondly, we investigated the potential to use various shared mobility services, included a comparison when pitted against the car and bicycle.

Lastly, we evaluated the impact of introducing shared e-mopeds on public transport, considering it as both an egress mode at the activity-end of the trip, as well as a potential competing mode for the main leg of the journey.

We show that more positive perceptions of micromobility and a higher intention to use such services is often linked with past experience using such services, digital savviness (knowing how to use a smartphone), a more multimodal travel behaviour portfolio (particularly frequent use of public transport) and a higher

achieved level of education. We analysed latent market segments and uncovered similar patterns, with a somewhat large share of those ready to use (shared) micromobility, with around a quarter of the population being more sceptical, but then also residing in rural areas, having a lower level of education and being less skilled with digital technology.

These results provide valuable insights for policymakers on how to proceed with introducing such services. Selecting the correct policy is vital to achieve a desired modal shift, as introducing new modes can also result in shifts from modes which are already at a satisfactory level (e-mopeds attracting cyclists for example). We show that shared e-mopeds can be both a competitor and ally to public transport, meaning that the service implementation strategy is key to secure the desired outcomes and mitigate the negative side-effects.

Future research should also compare how the various new micromobility services compete with each other for new and existing travellers. Additionally, checking for potential induced demand of such services, both as a the main mode or simply as an access/egress mode, would be valuable for policymakers.

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