

A Backcasting Approach to Sustainable Urban Mobility: Empowering Shared Mobility for Systemic Change

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Abstract There is an urgent need for a sustainability transition in the current mobility system because of the various problems it causes, such as climate change, congestion, and pollution. One of the possible solutions that can help reduce the negative externalities of urban mobility is shared mobility, which can help reduce kilometers traveled, vehicle emissions, and ownership. Shared mobility includes shared micromobility, car-sharing, and ride-sourcing. In this paper, the focus is on two different shared mobility services present in Tallinn: car-sharing and shared micromobility.

This work combines the multi-level perspective (MLP), which explains how systemic change happens, with the sociotechnical imaginaries (STI) framework, which helps to explore desirable and feasible futures. As transitions are multi-actor processes with different perspectives about their desirable pathways, this study looks for a collective vision among various actors related to shared mobility services in Tallinn.

Tallinn was chosen as a case to study because there is a need for a sustainability transition in its mobility system, and there are at least nine shared mobility services present in the city. This makes Tallinn an important and interesting case to study from the perspective of niche innovation acceleration and the governance of a sustainability transition.

The focus of the study is on exploring what kind of a future service providers and policymakers desire for shared mobility services, how they can achieve that future, and what obstacles are on the way. By learning about the ways to achieve the desired future, different ways to empower the niche innovations and destabilize the current regime can be explored. Furthermore, by studying the barriers, it is possible to reveal the bottlenecks regarding the transition.

To answer the research question "how do service providers and policymakers perceive the role of shared mobility in the sustainability transition of Tallinn's mobility system?", semistructured interviews with the actors were held, and the thematic analysis method was used to analyse the gathered data.

The findings of this study provide insight for both policymakers and service providers on how to empower shared mobility, destabilize the dominant mobility regime, and achieve sustainability goals in the mobility system. As this study looks for a collective vision, it is possible to give the decision-makers in the „cockpit“ feasible and desirable ideas about what changes are needed to transform the system and achieve a more sustainable future in mobility.