Call for Master Thesis at the Institute for Transport Studies

Working Title

Exploring the impacts of reclaiming street-spaces and adding cycling infrastructure to the transport system in Vienna

Starting Situation / Framework Conditions

COVID-19 pandemic has opened a window of opportunity for urban resident to change their behaviours, and one of the most common travel behavior change is the raise of bicycle use during and after pandemic period. This also has provided an opportunity to the stakeholders to reclaim some of the spaces on urban streets to be re-allocated to cycling infrastructure.

Whilst the benefits of cycling are undeniable, there's on ongoing debate whether we should be more/less aggressive in allocating urban space to more sustainable and physically active modes, like bicycle. In this thesis, we will use a transport model tool to analyse the impacts of different scenarios of cycling infrastructure implementation in Vienna.

The trip- and zone- based transport modeling framework (as usually implemented in planning models e.g. Visum, Transmodeller etc.) have been very useful in estimating the characteristics of inter-zonal trips. That is said, those planning model have some limitations in analyzing intra-zonal travel, something that cyclists tend to do in their daily trips. In this thesis, this methodological gap will be addressed with the use of agent-based simulation software, MATSim.

Aim of the Master Thesis

- To evaluate the impacts of cycling infrastructure implementation at selected parts of Vienna to the rest of public transport performance in the city. Some extreme scenarios will be formulated to not only demonstrate the benefit of cycling but also the importance of the synergy of physically active modes with other transport modes in the city.
- to analyze benefits and risks of the solutions, even beyond transport planning;
- to develop recommendations and strategies how city administrations and public transport operators can progress on this matter.

Methods

- In executing this work, an agent-based simulation will be used. The students will have an opportunity to learn and familiarize themselves with such tool. A basic understanding of and interest at transport demand modelling is expected. A mentor in learning the software will be provided. Some familiarity with Java is expected as a starting point to learn the simulation tool.

Co-operations

- Depending of the individual choice of the research questions and the quality of the work, a presentation may be possible to an audience of experts and practitioners in the mobility sector, including DAVeMoS' partners e.g. Stadt Wien and Wiener Linien.

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Notice

Language: English