

Comprehensive Travel Choice Investigation in Shared e-moped/ e-scooters Systems



Problem description

The growing trend of free-floating electric moped and scooter (e-moped/e-scooter) sharing systems is revolutionizing urban travel options. While these systems provide the convenience of flexible one-way transportation, they often lead to spatial-temporal uneven vehicle distribution, posing operational challenges for service providers. One approach to address the issue of rebalancing is to motivate users to take part in redistributing vehicles. The effectiveness of this user-based rebalancing depends on user travel preferences, including both pick-up and drop-off choices.

This thesis aims to investigate the travel decision patterns of e-moped/e-scooter users, considering various user and trip characteristics (like gender, income, trip purpose, start location, distance, weather conditions, ride fee sensitivity, and walking time) as well as vehicle attributes (such as battery range and vehicle type). Through a comprehensive analysis, this study seeks to provide insights into the intricate trade-offs between user traits, and vehicle features within the context of these shared mobility systems.

Assignment

The assignment will consist of:

- Literature Review and Field Investigation: Conduct an in-depth exploration of existing literature and conduct field investigations to identify additional factors that might influence users' decisions when choosing their mode of travel.
- Stated Choice Survey Design and Implementation: Create a well-structured survey that considers both established and newfound factors.
- Survey Result Analysis: Analyze survey data, focusing on stated choice modeling to uncover connections between factors and travel decisions

Background

- Should have: discrete choice models, and coding skills in Python or similar.
- Good to have: choice modeling packages (Biogeme or Apollo or ngene)

The project time span will be 6 months and the student needs to work with software packages during the course of this thesis (Supervisors are available to help and guidance)

Research Group

Sustainable Urban Multimodal Mobility Lab (SUM lab)

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