Chair of Transportation Systems Engineering
TUM School of Engineering and Design
Technical University of Munich

Transport and Socio-Economic Vulnerability in Europe: A Microdata-Based Analysis

Master's Thesis (open topic)

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Description

Access to affordable and reliable transport shapes how people reach jobs, education, healthcare and social life. At the same time, transport costs, limited services and disruptions affect population groups very differently. Understanding *who* is vulnerable, *why*, and *how this differs across Europe* is essential for fair transport and climate policy, a topic that has gained strong attention at the European level in recent years, for example through the debate on transport poverty. This thesis builds on large-scale, harmonised **individual- and household-level survey microdata covering European countries**, with detailed information on income, living conditions, material deprivation, health, employment and working arrangements, as well as mobility-related aspects such as car availability and public transport use. Parts of the data follow the same respondents over several years, allowing changes over time to be studied.

Possible Directions

- Transport poverty and affordability across countries and socio-economic groups
- Car dependency and its financial consequences for households
- Commuting, working arrangements and the ability to adapt to transport disruptions
- Changes in mobility-related disadvantage over time

Example topic – Barriers to public transport use in Europe: A large share of Europeans rarely or never use public transport. For some this is a choice, for others it is not: services may be unavailable, unaffordable, inaccessible or perceived as unsafe. The thesis would analyse who faces which barriers, how this differs between countries, and what this implies for transport policy.

Requirements

- Good Python skills (e.g., pandas, data analysis and visualisation)
- Genuine interest in transport, social and policy-related questions
- Motivation to work independently with large datasets and to develop your own ideas

Starting Date

As soon as possible

How to Apply

If interested, please email your resume, academic transcripts, and preferred start date to Hamza Begic (hamza.begic@tum.de). Your own idea for a research question is encouraged.