Themen für studentische Arbeiten:

Leiter der Arbeit: Axhausen

Assistant/in: Sarlas

Titel der Arbeit

A direct transit ridership model for Zurich

Beschrieb der Arbeit:

The prevailing approaches for tackling the issue of transit ridership modelling entail the use of either simulation or of four step models, which however normally come with adherent computational difficulties and shortcomings. Direct demand modelling approaches on the other hand can provide a trustworthy alternative in a computationally less- expensive way. Their advantage is that they can provide, in a straightforward way, insights regarding the factors affecting the demand for public transportation.

Publicly available data from VBZ reporting the ridership figures for all the lines running on the city of Zurich will be used. The ridership demand will be modelled on a stop level, both in terms of boarding and alighting passengers, forming in essence trip generation and distribution models. At first, a descriptive analysis of the ridership demand will be carried out to identify and understand the travel patterns concerning the public transport use in Zurich. In the next step, regression analysis will be used to identify and quantify the causal factors. OLS model and spatial models (GWR and SAR) will be estimated, while spatial panel data models might be of potential relevance as well. The inclusion of different explanatory variables (e.g. line characteristics, population and job density, points of interest, stop connectivity etc.) will be tested, in terms of explanatory power and prediction capability. The results will be useful both from a transport planning and operational point of view, while besides their stand-alone value they can also be integrated later on in a direct demand modelling framework, tailored for urban areas. The thesis will test the feasibility of applying spatial regression models for trip generation (and distribution) models.

Mindestumfang: 24 KP

Empfohlene Lehrveranstaltungen: Familiarity with the statistical programming language R for data processing, econometrics course(s), basic knowledge and understanding of GIS

Besonderheiten: