Exploring the impact of a new public transportation alternative from a behavioural point of view

Problem description

When public transport passengers are faced with a new travel alternative, such as the opening of a new metro line, they experience a learning process in terms of incorporating such alternative into their daily routine. Today, this situation is modelled as if passengers were familiar with the level of service they will experience when travelling in this new alternative the same way they are with the rest of their existing choice set (i.e., perfect information). However, this is hardly the case, as it has been shown in the literature that there are factors such as the tendency to maintain habitual choices (inertia) or the uncertainty generated by an unknown alternative that affect choice. Thus, a better understanding of the adoption process of a new transportation alternative could improve the predictions we make today regarding the use of future network modifications and expansions.

Assignment

Master thesis projects related to this topic may involve:

- Understanding how level of service attributes of different new alternatives are perceived
- Exploring the role of the inertia / uncertainty in the choice making process
- Estimating choice models to capture the learning experience associated with the introduction of new services

To fulfill these results, a dataset collected in relation to the opening of two different metro lines in Santiago de Chile is available and can be used as part of this project. Alternatively, a stated preference data collection experiments may be designed and conducted.

Candidate

- Knowledge and interest in public transport travellers' behaviour
- Should be familiar with choice modelling. Panel data analysis is a plus
- Some experience in Python or R programming
- Willingness to develop data analysis skills

Research group

Smart Public Transport Lab, Department of Transport & Planning
Contact: Oded Cats o.cats@tudelft.nl, Jaime Soza-Parra j.sozaparra@tudelft.nl