Abstract

Ahmed O. Idris

Evaluating Transit Ridership Overestimation in Mode Shift Modelling.

This paper aims at investigating the over prediction of public transit ridership by traditional mode choice models estimated using revealed preference data. Five different types of models are estimated and analyzed, namely a traditional Revealed Preference (RP) data-based mode choice model, a hybrid mode choice model with a latent variable, a Stated Preference (SP) data-based mode switching model, a joint RP/SP mode switching model, and a hybrid mode switching model with a latent variable. Comparing the RP data-based mode choice model to the mode choice models with latent variable showed that the inclusion of behavioural factors (especially habit formation) has improved the models significantly. Moreover, the reasons why traditional mode choice models tend to over predict transit ridership were elucidated by revealing the role played by different transit level of service (LOS) attributes and their relative importance to mode switching decisions. It is clear that the SP data complements the RP information, resulting in improved forecasting performance. Findings of this study provide general guidelines for developing accurate transit ridership forecasting models.