



Analysis of driver's response to real-time information in Switzerland

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Abstract

We present behavioral models designed to capture the response of drivers to real-time traffic information. In 2003, we have conducted a survey in Switzerland in order to collect both Revealed Preferences (RP) and Stated Preferences (SP) about choice decisions in terms of route and mode. The RP data contains socio-economic characteristics of the individuals in our samples, their actual usage of ITS as well as their actual route and mode choice behavior. The SP data provide us with stated route and mode choices when drivers are faced with different hypothetical choice situations involving real-time information about the state of the network. First we present a Mixed Binary Logit model with panel data to analyze the drivers' decisions when traffic information is provided during their trip by the mean of Radio Data System (RDS) or Variable Message Signs (VMS). This model is referred to en-route choice model. Second we present Nested Logit models capturing the behavior of drivers when they are aware of traffic conditions before their trip. These last models allow to predict pre-trip route choice decisions with regard to route and mode when traffic information is available. The calibrated models are subsequently included in a simulator which predicts travelers' behavior in specific scenarios (described by adjustable parameters) allowing the sensitivity analysis of the demand with regard to the variations of various parameters. In this paper, we discuss the results of the estimation process, including some comments about the Value of Travel Time Savings (VTTS) and present some scenarios developed with our simulator.

Keywords: Discrete choice; Response to traffic information; Route and mode choice.

1. Introduction

Intelligent Transportation Systems (ITS) are aiming at the improvement of transportation systems through advanced information and control technologies. Namely, Dynamic Traffic Management Systems (DTMS) combine those technologies with the appropriate decision-aid tools.

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