

## Modeling Route Selection Using Real-Time Information and GPS Data

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**Abstract :** Understanding the behavior of individuals and the different human factors that influence the choice when faced with a complex system such as transportation is one of the most complicated aspects of measuring in the components that constitute the modeling of route choice due to that various behaviors and driving mode directly or indirectly affect the choice. During the last two decades, with the development of information and communications technologies, new data collection techniques have emerged such as GPS, geolocation with mobile phones, apps for choosing the route between origin and destination, individual service transport applications among others, where an interest has been generated to improve discrete choice models when considering the incorporation of these developments as well as psychological factors that affect decision making. This paper implements a discrete choice model that proposes and estimates a hybrid model that integrates route choice models and latent variables based on the observation on the route of a sample of public taxi drivers from the city of Medellín, Colombia in relation to its behavior, personality, socioeconomic characteristics, and driving mode. The set of choice options includes the routes generated by the individual service transport applications versus the driver's choice. The hybrid model consists of measurement equations that relate latent variables with measurement indicators and utilities with choice indicators along with structural equations that link the observable characteristics of drivers with latent variables and explanatory variables with utilities.

**Keywords :** behavior choice model, human factors, hybrid model, real time data

**Conference Title :** ICSTTE 2020 : International Conference on Smart Traffic and Transportation Engineering

**Conference Location :** Boston, United States

**Conference Dates :** April 23-24, 2020