Institute of Transportation Engineers
Arizona State University

School of Sustainable Engineering and the Built Environment

Modeling Framework for Socioeconomic Analysis of Managed Lanes

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When - Friday, February 26, 2016, 3 — 4:30 PM
Where - GWC 573 (PARKING)
Food & Drinks will be provided

Speaker

Dr. Sara Khoeini obtained her Ph.D. in Transportation Systems Engineering at from Georgia Institute of Technology and her Master's in Transportation and Highway Engineering from Clemson University. Khoeini's research focuses on innovative methods of collecting, modeling, and forecasting travel behavior with application of "big data" sources. Khoeini has published more than ten peer-reviewed journal and conference papers. Khoeini received the best student paper award at the 2013 Freeway Operation and Managed Lane Conference and Helene M. Overly Memorial Scholarship from the Women's Transportation Seminar(WTS). She has also been selected as the National Center for Sustainable Transportation "Student of The Year" at Georgia Institute of Technology.

Abstract

Managed lanes are a type of congestion pricing that use occupancy and toll payment requirements to utilize roadway capacity more efficiently. The widespread adoption of managed lanes motivates to study the distribution of congestion pricing benefits across different socioeconomic groups and to develop advanced statistical models forecasting the managed lanes demand with respect to users attributes. This research is a case study of the conversion of a High Occupancy Vehicle (HOV) lane to a High Occupancy Toll (HOT) lane, implemented in Atlanta I-85 on 2011. To minimize the cost and maximize the size and complexity of the collected data, an innovative and cost-effective modeling framework for socioeconomic analysis of managed lanes has been developed with application of "big data" sources. This study enhances managed lanes' travel demand models with respect to users' socioeconomic characteristics and introduces a comprehensive modeling framework for the socioeconomic analysis of managed lanes. The methods developed through this research will inform future socioeconomic impact assessment studies in transportation and urban planning. These methods will also help better predict the interactions between users travel behavior and the transportation systems benefitting from "big data" sources.

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