

# Recent Advances in Choice Modeling: Applications to Travel Behavior & Traffic Safety Research

*Presented by Dr. Rajesh Paleti, Ph.D.*

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## **Abstract**

Within the transportation sector, on-road vehicular travel on roadways accounts for a substantial portion of greenhouse gas emissions. At the same time, increasing urban populations, combined with the continued use of the car as the primary means of travel, has led to increased delay, decreased travel time reliability, and increased fuel consumption. The number of fatalities due to road accidents, although on the decline, is very large and road accidents remain the leading cause of death among young teenage drivers according to the most recent data available on mortality rates. Given the nature of these problems and the multitude of factors involved, transportation research has become truly interdisciplinary cutting across the fields of urban planning, environmental sciences, safety, and sociology. Also, complicated problems necessitate using rigorous mathematical and statistical techniques. Thus, a good statistical and econometric background has become an essential and integral element of transportation research. In this talk, Rajesh will discuss some of the recent methodological advances in choice modeling and their practical application to travel behavior and traffic safety research.

**Dr. Rajesh Paleti** is currently working as a transportation systems modeler in the civil engineering firm Parsons Brinckerhoff. Prior to starting this job, he graduated from the University of Texas at Austin with a doctoral degree in Civil Engineering in December, 2012. Rajesh's substantive research interests include a) activity-based travel demand modeling, b) land-use and transportation planning, c) evaluation of the effect of changing demographics, evolving vehicular technologies, transportation demand management and land-use management strategies, and congestion pricing measures on traffic congestion, energy use, and mobile-source emissions, and d) transportation safety. His methodological research interests and expertise are in the areas of econometric and mathematical modeling of consumer behavior, including discrete choice and discrete-continuous econometric systems. His principal approach to research is generating novel econometric and statistical models for analyzing human behavior with potential applications to many problems related to transportation. He has several publications in international transportation journals on a range of topics spanning transportation systems modeling & simulation, sustainable transportation, air quality and energy impacts, and transportation safety.