

Choice Models with Errors in Human Perception of Physical Quantities: *Applications in Driver Behavior Modeling*

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Thursday, May 11, 2023 • 1:30 pm–2:45 pm (US Arizona)

Hybrid Attendance Options

Register for Virtual Attendance: <https://bit.ly/3oqeduV>

In-person: College Avenue Commons (CAVC) • Room 425 ([map](#))

*A light lunch will be served during the seminar for all in-person attendees.



About the Talk

Human perceptions of physical quantities, such as travel times, travel distances, and speeds, play an influential role in travelers' choices and their perceived level of service (LOS) of transportation facilities. Consider, for example, the decisions drivers make in traffic streams, such as whether to accelerate or decelerate and how much to accelerate or decelerate. Drivers need to perceive the physical quantities representing the evolving traffic environment around them – such as space gaps and relative speeds with respect to vehicles around them – and then make their decisions. It is common knowledge that humans make errors in perceiving such physical quantities. The errors include both systematic biases and random errors. However, the analyst/modeler typically measures only objective values of the physical quantities; it is anything but easy to measure human perceptions. This talk will present recent advances in discrete choice modeling literature on representing the errors humans make in perceiving physical quantities. These advances involve a combination of the psychophysics of human perception and the identifiability of parameters in econometric choice models. Two relevant applications will be discussed – one on modeling driver behavior in heterogeneous traffic streams and another on analyzing user-perceived LOS of interrupted traffic facilities. The talk will end with a discussion of related open research questions in travel behavior contexts, such as mode choice and route choice.

About the Speaker

Dr. Abdul Rawoof Pinjari is an Associate Professor in the Department of Civil Engineering and the Chairperson of the Centre for Infrastructure, Sustainable Transportation and Urban Planning (CISTUP) at the Indian Institute of Science (IISc) in Bengaluru, India. His research is on modeling human choices in transportation systems, with applications in human mobility and travel behavior analysis, travel demand forecasting, public transportation systems, and land-use – transport interactions. His current focus is on understanding traveler behavior in complex travel environments characterized by uncertain travel times and a multitude of travel options with varying levels of uncertainty and information availability. Abdul is currently the Chair of the *International Association for Travel Behaviour Research (IATBR)*; an Associate Editor of *Transportation Research Part B*; and serves on the Editorial Boards of other journals, including *Transportation*, *Journal of Choice Modelling*, and *Transportation in Developing Economies*. He has a bachelor's degree from the Indian Institute of Technology Madras, a MS degree from the University of South Florida, and a PhD degree from the University of Texas at Austin; all degrees are in Civil Engineering.

This seminar will be presented in-person and webcast live to a worldwide audience using Zoom.

To register for the webinar, please visit: <https://bit.ly/3oqeduV>

Recordings of all sem(web)inars may be accessed by semester at <https://tomnet-utc.engineering.asu.edu/seminars/>.

For any assistance, please contact Irfan Batur at ibat@asu.edu