

On Flexible Preferences for Standard Taxis, Electric Taxis, and Peer-to-Peer Ridesharing

Authors : Ricardo Daziano

Abstract : In the analysis and planning of the mobility ecosystem, preferences for ride-hailing over incumbent street-hailing services need better understanding. In this paper, a semiparametric discrete choice model that allows for flexible preference heterogeneity is fitted with data from a discrete choice experiment among adult commuters in Montreal, Canada (N=760). Participants chose among Uber, Teo (a local electric ride-hailing service that was in operation when data was collected in 2018), and a standard taxi when presented with information about cost, time (on-trip, waiting, walking), powertrain of the car (gasoline/hybrid) for Uber and taxi, and whether the available electric Teo was a Tesla (which was one of the actual features of the Teo fleet). The fitted flexible model offers several behavioral insights. Waiting time for ride-hailing services is associated with a statistically significant but low marginal disutility. For other time components, including on-ride, and street-hailing waiting and walking the estimates of the value of time show an interesting pattern: whereas in a conditional logit on-ride time reductions are valued higher, in the flexible LML specification means of the value of time follow the expected pattern of waiting and walking creating a higher disutility. At the same time, the LML estimates show the presence of important, multimodal unobserved preference heterogeneity.

Keywords : discrete choice, electric taxis, ridehailing, semiparametrics

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