

Flexible estimates of heterogeneity in crowding valuation in the New York City subway

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This paper aims at better understanding passenger valuation of subway crowding in New York City. To this end, we conducted a stated preference survey with a discrete choice experiment where New Yorkers chose an alternative from a set of two hypothetical unlabeled subway routes based on occupancy levels and other attributes. We used the collected data to estimate crowding multipliers that quantify the trade-off between travel time and standee density. The previous studies have resorted to parametric heterogeneity distributions in analyzing preference variations in crowding multipliers, which can lead to misspecification issues. The contribution of this study is thus to estimate crowding multipliers using state-of-the-art semi-nonparametric models: logit-mixed logit (LML) and mixture of normals multinomial logit (MON-MNL), and compare them across different parameter spaces. The estimated distribution of crowding multiplier of LML and MON-MNL coincide below median, but the former underestimates and the latter overestimates above median. Even though these flexible logit models can be useful for a comprehensive economic analysis of transit service improvements, these differences in estimates make model selection an important avenue for future research.