I want to ride it where I like: measuring design preferences in cycling infrastructure

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Abstract

Sidewalk cyclists are a major concern to planners in many cities around the world: they are considerable in numbers, and increase the risk of injury not only to pedestrians but also to themselves. Considering this, planners need evidence to design streets that nudge users into a more desirable behavior from a social perspective. This study analyzes a stated preferences survey that investigates commuters' preferences for cycling at the sidewalk or street level. With this data, three models were calibrated: two Binomial Logit Models and an Integrated Choice and Latent Class Model. The three showed similar results in terms of preferences, with the ones including users' characteristics providing richer behavioral insight and a better fit to observed results. On average, respondents prefer infrastructure located at the road level, especially if it is wide and not built next to bus routes. This preference for the road is even stronger in commuters that cycle to work often. We also conclude that building at the sidewalk level is not recommendable, especially in dense urban areas, and that design of cycling infrastructure can and should be informed by quantitative methods like the one proposed here..

Keywords

Discrete choice, Integrated choice and latent class models, Urban cycling, Cycling infrastructure.