

Author Response to Reviews of

If you build it who will come? Equity analysis of park system changes during COVID-19 using passive origin-destination data

Authors

Journal of Transport and Land Use, 8606

RC: Reviewer Comment, **AR:** *Author Response*, ☐ Manuscript text

We are grateful to the two anonymous reviewers for their continued review and consideration of the manuscript. In this document we have highlighted [additions to the text of the manuscript with blue letters](#) and ~~text removed from the manuscript with red letters~~. This marks refer to changes resulting from this revision, and not since the initial manuscript submission.

1. Reviewer A

RC: The revised manuscript addresses most of my original concerns, and I believe it is close to being publishable. However, a few issues remain.

AR: *We are grateful that the reviewer found our paper worthwhile.*

1.1. Effects Interpretation

RC: First, I agree with the authors' interpretation of the segmented modeling results, i.e. that residents of block groups with high proportions of Black individuals are more sensitive to distance. However, I think the textual description (p. 17) of the marginal rate of substitution for distance and size from Table 3 (p. 18) might still be incorrect. Wouldn't visitors be willing to travel 29% farther to reach parks twice as big (0.391/1.358 from the Network Distance model)? See Yves Croissant's (2010) "Estimation of Multinomial Logit Models in R: The mlogit Packages": <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.303.7401&rep=rep1&type=pdf>

1.2. Additional Utility

RC: Second, I appreciate the authors' explanation for why there is some additional utility simply from having more options. However, the authors should explain in the text of the manuscript how they calculated that benefit (p. 21 in section 4.1). Specifically, it would be useful for less modelling-savvy readers to understand how the authors calculate the portion of the increased consumer surplus that comes just from having additional choices versus the portion that comes from the characteristics of the additional choices.

1.3. Impacts Caveats

RC: Third, the authors did a nice job caveating their estimated monetary benefits and explaining how they derived the cost coefficient (p. 21 in section 4.1). To make the monetary benefit estimation even more relatable to readers, they should also note how frequently the additional surplus accrues (one time? Annually? Every park

trip?). I assume that residents would see this surplus each time they make a park trip?

- RC:** Fourth, in discussing the distributional equities of the increased consumer surplus, the authors should note that in reality not all residents of each block group share the same utility equations (as indicated by the segmented models) and that the distributional equities might thus be different in reality.
- RC:** Fifth, the authors should better caveat the fact that street closures might not serve the same purposes as parks and thus might not be subject to the same utility functions. This is similar to the good point made by Reviewer E in the second sentence of comment 2.1.

2. Reviewer E

- RC:** I appreciate authors addressed some of my comments and comments. Some major issues still need to be addressed before the manuscript is accepted for publication. I would suggest revising and resubmitting it, with major revisions to be conducted.

2.1. Surrounding Land Uses

- RC:** On land uses at destinations (2.1): The authors stated in their response to my concern about not accounting for non-leisure or recreational trip purposes associated with subjects selecting a closed street as a destination the following: “It seems strange to consider including retail and restaurant opportunities surrounding a park in the destination choice model —if that is the suggestion — given that these facilities would have been shuttered during the COVID lockdowns when the street conversions were active.”

One excellent example of what I refer to is provided by our colleague Kelly Clifton et al. in their work titled ‘Development of destination choice models for pedestrian travel’ published a few years ago in Transportation Research Part A, and that include park availability and pedestrian environment measures, as well as other land-uses that may reduce the probability of a person walking to specific destinations. My comment does not suggest adding land uses surrounding parks, but accounting for potential destinations, people may reach the pedestrianized spaces in question. Of course, if there are no barriers to access these streets, and most, if not all, facilities such as restaurants, retail businesses, grocery stores, and the like, there is no question that such land uses are not needed to be included in the discrete choice model. Not being explicit about such nuances is a significant omission since not all cities that closed streets also closed all essential businesses – e.g., grocery shopping or pharmacies—and non-essential ones like restaurants and retail stores.

Therefore, the authors must provide empirical evidence supporting the claim that the type of facilities I highlighted in my comment on land uses were indeed closed in most if not all, places and times considered in the analysis. Such supporting evidence will ensure authors consider the potential estimation biases induced by omitting built-environment attributes that have been crucial in the large and growing body of literature on travel behavior and the built environment.

2.2. Travel Mode of Access

- RC:** On mode choice. The fact that authors required a measure of distance between home block group and park (or closed street) and chose to use the length of the walking path does not necessarily mean people in the data set provided by Streetlights include only people walking. Or does it? If it does, please clarify that; however, if it does not, please explain how the analysis inferred mode, or if any of the latter, then the research is seriously flawed. Again, my comment has nothing to do with estimated distances – Euclidian versus walking network

distances.

2.3. Causal Effects

RC: Let me clarify my comment on causality (2.3), which is more in the spirit of reflecting on language in light of research design limitations rather than the statistical method employed. I agree that the best parametrization to be used in a destination choice research context, as the authors well-explain in their methods section, is to use any of the available discrete choice models found in canonical work by prominent scholars such as Walker, McFadden, Train, and Ben-Akiva. However, a different question is whether interpreting a data set as cross-sectional to understand the potential impact of a policy will approximate well to an econometric analysis that uses data gathered in a natural experiment research design context or any other quasi-experimental research design. See, for instance, Doucette et al. 2021 ‘Initial impact of COVID-19’s stay-at-home order . . .’ in which the authors capitalized on data from Streetlight to address a different research question. The use of cross-sectional data rarely provides conclusive evidence that leads to cause-and-effect claims. Of course, what I say so far should not preclude researchers relying on cross-sectional analysis to publish their work – however, it must always include some cautionary notes, including:

The authors must acknowledge the limitations the data impose on the research and fine-tune the manuscript language avoiding any causal claims, starting by title.

The authors must reflect on their research design choice, and provide a recommendation for other researchers interested in harnessing the potential of Streetlight data, or the like.

2.4. Contribution

RC: The authors must clearly state the contribution of the paper to scholarship, situating the work into current academic debates, besides the one I highlight next.

2.5. Alternative Accessibility Measures

RC: The paper should better differentiate the value of using alternative accessibility measures besides simplicity. One of the ongoing debates that cut-across transportation engineering, planning, and geography are how specific measures are more useful in planning or policy evaluation scenarios when observed behavior is not deemed adequate or valuable. This is particularly true when questions about distributive justice are paramount, and observed behavior only works to explain some inequalities but falls short in measuring un-met travel demand needs. This is in addition to the ongoing concern by some scholars regarding the adoption of the concept in practice – see the most recent work on accessibility published in JAPA by Siddiq and Taylor, the work of Boisjoly and El-Geneidy on the same topic, and the work by A Paez titled ‘Measuring accessibility: positive and normative implementations of various accessibility indicators’ published in Transport Geography to start.

2.6. Position Accuracy

RC: Authors must explain how position accuracy issues inherent from cell phone data, an issue often cited in the academic literature, could affect the analysis and conclusions, as well as the potential estimation biases induced by omitting built-environment attributes found not only at destinations that scholarship strongly suggests affecting the probabilities walking—for instance, sidewalks, land-uses along the road, etc.

2.7. Ben-Akiva Reference

RC: Please cite the canonical work of Ben-Akiva in which was mentioned, probably the first time, the use of utility-based models as a construct for the concept of accessibility, including page number.

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