Dear Editor:

I would like to submit the manuscript entitled “The impacts of COVID-19 pandemic on public transit demand in the United States” by Luyu Liu, Harvey J. Miller, and Jonathan Scheff for consideration as a research article for publication in the PLOS Special Collection “Spatiotemporal COVID-19 Rapid Response.” Analyzing data from a widely used transit smartphone app for 113 transit systems across the United States, we show that COVID-19 had major but differential impacts on public transit demand that we explain using data on job type mix, socioeconomic factors and a measure of community awareness in each community. We also show implications for pandemic spread and the social equity dimensions of transit usage during the pandemic. This paper is a first step towards understanding the heterogeneous impacts of a major pandemic on transit systems. Thankfully, there is only a small literature on this topic due few events in recent history, and these studies have focused on single transit systems. Our study is the first comprehensive analysis at a national level.

**[Ethics statement]**: None of the data collected or accessed in this study in this study contain individual personal information. The data in this study are, with one exception, public data. There is one proprietary dataset available by request to the third party.

**[Data availability]:** The daily transit demand data, COVID19 confirmed case data, census demographic data, Google search trend data, values behind the reported average and graphs, and code are available at <http://dx.doi.org/10.34740/kaggle/ds/687971>. The hourly transit demand data is proprietary. The archive includes instructions for requesting these data from the third party.

**[Funding Statement]:** The authors received no specific funding for this work. The third author Jonathan Scheff, who helped to edit and review the draft and provide hourly transit demand data, is currently employed at Transit app Inc. The funder, Transit app Inc., provided support in the form of salaries for the third author Jonathan Scheff, but did not have any additional role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript. The specific roles of the third author are articulated in the ‘author contributions’ section, which only include “data curation” and “writing – review and editing”. We confirm that the commercial affiliation of the third author (Transit app Inc.) did not play a role in our study and there has been no significant financial support for this work that could have influence its outcome.

**[Competing Interests Statement]:** The first two authors, Luyu Liu and Harvey J. Miller, declare no competing interests. The third author Jonathan Scheff is currently employed at Transit app Inc. as a data scientist. We confirm that this commercial affiliation does not alter our adherence to all PLOS ONE policies on sharing data and materials.

As Corresponding Author, I confirm that the manuscript has been read and approved for submission by all the named authors. We hope you find our manuscript suitable for publication and look forward to hearing from you in due course.

Sincerely,

Luyu Liu

Department of Geography, The Ohio State University

154 N Oval Mall, Columbus, OH 43210

Email: liu.6544@osu.edu