Reviewer’s report

Title: Breast and Cervical Cancer Screening Among Women in Metropolitan Areas of the United States by Commuting Time to Work and Use of Public Transportation, 2004-2006

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Reviewer: james kirby

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Comments to Authors:

This paper examines the associations between commuting time measured at the county level and the likelihood of obtaining recommended mammogram and pap screenings at the individual-level. Age-standardized estimates show few associations between the commuting variables and mammogram/pap test. In their multivariate analysis, contrary to their expectation, the authors find that living in a county where the mean commuting time is greater than 30 minutes is associated with a higher likelihood of having both breast and cervical cancer screening, controlling for various individual and county-level factors. The manuscript addresses an important topic and is clearly written. I have listed several suggestion and comments below that I hope will be useful:

1. I suggest the authors provide a more detailed discussion on what they are trying to measure with the county-level commuting variables. Initially, it is suggested that commuting time will be inversing related to getting recommended tests, which implies that the authors view the county-level commuting measures as proxies for individuals’ commuting experiences. They imply as much in several places in the manuscript. For example, “having a commute time of greater than 30 minutes is associated with …” Yet, when attempting to explain the results, they seem to suggest that county-level variables are capturing unmeasured characteristics of residential communities. A little more discussion on what exactly is supposed to be captured by these measures would strengthen the manuscript. Also, I would prefer the wording to more precisely reflect the level of measurement--- instead of writing, “having a commute time of 30+…”, it would be better to write, “living in a county with a medial/mean commute time of over 30 minutes…” That way the reader won’t confuse the county-level measures with the individual-level measures. I know the wording is more cumbersome but, in my opinion, the trade-off is worth it. In general, unmeasured individual and county characteristics are a very large concern in this study, worthy of a little more discussion.

2. I do not understand the reasoning behind restricting the sample to those from
the largest MSAs. In particular, I am not clear on why reducing the heterogeneity of metro areas is desirable.

3. How many counties are represented in your sample? I know that DC, for example, has 5 counties and NY has around twice that. So, if there were, on average 6 in each of the 35 MSAs, that would mean you have 210. Given that you have relatively few counties, it seems that you should say more about which counties have the longest/shortest commute times, even if only by region. Is it possible that commuting patterns differ by characteristics that might also be associated with cancer screenings? For example, perhaps southern counties have lower commute times than northeastern counties. If southern counties have lower screening use than northeastern counties, as seems likely, this could explain your findings. I guess this gets back to the unobserved county and person-level characteristics issue. A more thorough discussion such issues might make your findings easier to understand.

4. I think the age-adjusted estimates are unnecessary. In your multivariate results, you control for age so why not just show crude associations in tables 2 and 3?

I enjoyed reviewing this study.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests