Reviewer's report

Title: Where an individual shops for food and the association with dietary intake, regardless of daily travel patterns among Fayette County adults, Kentucky 2011

Version: 1 Date: 2 November 2012

Reviewer: Shannon Zenk

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This study has some interesting aspects (e.g., activity space) and strengths (e.g., where people shop, observational measures where people shop). However, overall, I think the article would benefit from a more clear focus (e.g., picking one or two hypotheses) and greater writing clarity and precision.

Major

I did not understand the third aim. It seems disconnected from the first two since you are not testing the relationship between diet indicators and food activity space. More generally, it was not clear what you saw as the relationships among food activity space, venue choice, and diet. I assume food activity space would affect venue choice, and subsequently diet? (Lines 218 seem to suggest you think venue choice # activity space # diet.)

The article does not adequately incorporate prior literature on activity spaces (e.g., Kwan), activity spaces and health (e.g., Sarloos, Matthews), or activity spaces and the food environment and/or diet (e.g., Zenk Health & Place, Kestens) specifically. There are large (for the first) and rapidly growing (for the latter two) literatures in each of these areas. Thus, the authors could do a better job placing their study in the context of this literature, including the study findings.

There is also literature on relationships between where people shop and diet or weight (e.g., Zenk Am J Prev Med 2005, Inagami 2007 Am J Prev Med). Again, putting the findings in the context of prior studies, would strengthen the manuscript.

Obviously the sample size is small and thus it seems the analyses are underpowered, but I do not see that acknowledged. Novel questions and/or methods could help to offset this limitation, but I think a stronger case needs to be made for how – despite the small sample – this study contributes in important ways. That said, though it did wind up being a socioeconomically advantaged sample, the attempt to get a more representative sample (rather than just convenience only) is helpful. I did find that the description was a little confusing (lines 71-78) though, with the use of “low response households,” then “low response area,” and then “household categorized as low response” with a definition.

I was not clear how you constructed the NEMS measures for analysis. In the
measures section it sounded like you dichotomized across all stores (e.g., above or below 56 for total score). But based on the Table, I thought you may have dichotomized within store type: healthy or unhealthy supermarket. Perhaps you applied the same cutpoint (e.g., 56) to categorize all stores types as high or low. If so, did the same cutpoint work well across all store types? I am not clear what variables were used for the Table 3 analyses. Are these three dichotomous variables for high compared to low for each store type? What is the advantage of creating variables that incorporate both type and the NEMS information and not just using for the second question variables based on the NEMS information?

I did not understand lines 214-219. It did not seem to match your third aim. I am not clear conceptually why the food activity space quality would moderate the effect of food venue choice on diet or the effect of food venue quality on diet. I am not sure if it supposed to, but the third hypothesis does not match aim 3 well. As written, the aims and hypotheses do not seem to suggest interactions. Thus, it seems you may need to more clearly lay out your aims/hypotheses and provide an explanation for how conceptually they make sense/how it could potentially work.

Unfortunately, I do not understand the results in lines 238-243/Table 3 or those in lines 244-250. It may be a combination of lack of understanding of the variable construction and the table set-up/description.

Minor

There are a number of typos (e.g., grammatical errors). Please review carefully and edit.

The description of the “daily activity space” could be improved by justifying the use of three days, discussing whether weekend and weekdays were included, and then being more clear what you mean in lines 97-98. In other words, are you defining the 3-day activity space as the actual path/GPS tracing and then the “food activity space” as what is in a ½ mile buffer of the GPS tracings? (The description in “objective measure of food activity space” should build on what is in “daily activity space.” You seem to be mixing in the food part into the daily activity space description.) I also did not understand the sentence in lines 103-106. Looking at line 215, it seems you might want to define your terms early on and then use consistently throughout since there it says “food activity space within the ½ mile daily activity space.”

I do not understand lines 126-128: what were the subcategories of specialty grocery store?

Discretionary

It would be helpful if you could summarize briefly how price was scored (lines 163-164).

How often did you need to repeat a store audit due to low reliability?
It would be helpful to summarize in 1-2 sentences these findings (lines 226-227).

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests