Reviewer's report

Title: Construction of an environmental quality index for public health research

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Reviewer: Suzan Carmichael

Reviewer's report:

The authors have put a lot of work into creating a county-level “Environmental Quality Index” that represents five domains of ambient exposures. I applaud their efforts in doing this work. It will be very useful for future studies of environment and health.

My concern is that the paper reads more like a technical report than a research article. It is 14 pages long, single-spaced, with lots of detail but no real analysis. As a reader, I would prefer an article that is much more succinct, with supplementary details (essential ones) available on-line. This approach would also leave room to show some actual descriptive analyses. For example, what is the correlation matrix among the domain-specific indices and the overall index? Is the EQI associated with any other characteristics of counties, such as region or racial-ethnic diversity? Then it would seem more like a research article than a description of an approach. In saying this, I do not mean to undermine the value I place on the potential usefulness of the work the authors have put into creating the EQI.

The authors note in the Conclusions that the work will be easily replicable, and in the Discussion that they plan to “provide access to the data used to construct the EQI.” More explicit information in the paper about the authors’ plans to provide access would be appreciated.

Level of interest: An article of importance in its field

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

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