Review of: "Time evolution and convergence of simple migration models"

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Potential competing interests: No potential competing interests to declare.

The reviewed manuscript presents a relevant study on spatial distribution of population described by fundamental mobility models in their steady state and in temporal dynamics. The paper proposes an in-depth methodology to provide some insights into the long-term trends of a simple Gravity-type model and the Radiation model with different parameters and settings.

The significance and methodological value of the research is not in doubt. The author thoroughly considers different applications and scenarios of mobility models. In particular, he finds that a simple Gravity model results in two different long-term solutions, depending on its parametrization, which are independent of spatial population divisions and initial population distributions. At the same time, the Radiation model is shown to have a strong dependency on spatial properties, due to its usage of intervening opportunities.

The author proves the relevance of the topic however does not clearly define the novelty of the research and its contribution to the methodology and applied issues of migration`s role in gridded population distributions.

In terms of structure, the paper lacks a strong conceptual section so introduction and literature review should be separated, and the latter further developed. In this sense, it is important that the main research question or hypothesis is explicit in the introduction and also justified given the current state of the art.

Regarding the methodology, there should be a clearer description of underlying source data used for population and migration modelling, as well as data limitations. On page 4, the author mentions Mexico used for the analysis, however does not substantiate its choice and gives little details about practical application of the models.

All comments are meant to be constructive so I hope that the author finds them useful in improving his paper.

Finally, after having reviewed the manuscript, I came to the conclusion that it is relevant and interesting, it has well designed data visualization and substantiation of results. And despite some minor flaws, the manuscript can be definitely published in *QEIOS*.

Best regards

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