Reproducibility review of "Landmark Route- A Comparison to the Shortest Route"

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Reviewed paper

Nuhn, E., König, F., and Timpf, S.: "Landmark Route": A Comparison to the Shortest Route, AGILE GIScience Ser., 3, 12, https://doi.org/10.5194/agile-giss-3-12-2022

Summary

The paper presents a type of study that is highly valuable as a scientific contribution yet almost impossible to reproduce: a survey and user study involving participants from a convenience sample of a university course, implemented in several phases and using a particular geographic locale. The study aims to learn more about user preferences on route choice, i.e., whether users prefer the shortest route or a slightly longer route including landmarks. However, the difficult pandemic conditions under which the study had to be carried out had at least one positive aspect on replicability: The entire communication and survey had to be carried out online, facilitating a similar setup elsewhere.

This review therefore attempts not a full reproduction of the study, but evaluates two distinct things: First, whether there is sufficient information available to replicate the study elsewhere and compare results. Second, whether the statistical analysis of the survey and experimental data is indeed reproducible. The evaluation for both is positive.

Reproducibility reviewer notes

For replicating the study, several elements are crucial:

1. information on the sampling process

2. demographic information on the participants

3. detailed information on the setup, including all data used for survey questions

4. original survey data without aggregation

5. code for the statistical/quantitative analysis.

Initially, the paper did not include or link to all the required information and only provided full information about the first item and selected information on the remaining items, which was

sufficient to evaluate (review) the study but insufficient to reproduce or replicate it. The missing information was stated to be available upon request from the corresponding author.

Fortunately, in this case, the response was immediate and very helpful. After correspondence, the authors shared all necessary information with the reviewer:

- survey/participant data in CSV format that includes the full demographic information and responses from each participant

- geographic data in shapefile format with the two routes presented to the participants

- the two videos (one per route) in MP4 format that were shown to the participants

- one spreadsheet in ODS format that was used to calculate the hypotheses tests for differences in responses

All provided data was accessible and usable without any technical difficulties.

The spreadsheet produces the same results as reported in the paper.

In summary, the reproduction of the analysis was successful and the replication of the experiment is very likely possible. During the reproduction, the authors have published all materials except the videos on [1]. The reason for not publishing the videos is that the faces of visible person would have needed blurring would have needed additional work, and that the videos remain available upon request.

References

[1] Published data available at https://figshare.com/articles/dataset/_Landmark_Route_A_Comparison_to_the_Shortest_Route/19794289 (last accessed on 20-05-2022)