Reviewer’s report

Title: The development of an Android platform to undertake a discrete choice experiment in a low resource setting

Version: 0 Date: 11 Jan 2019

Reviewer: Francisco Estupiñan

Reviewer's report:

Dear Authors,

I have read with interest your manuscript describing your experience in developing an Android-based application used to conduct a discrete choice experiment (DCE) among community health workers in rural India.

Although the manuscript is very well written and presents a complete description of the step by step process to develop the Android-based application to undertake the experiment, it posed me with many more questions than those resolved by the text; main one being on the feasibility of the proposed methodology in any other settings or under different circumstances.

You mention that most of ASHAs had already access to a smart mobile phone -I am assuming also Android-based-- but instead of deploying the survey application for the DCE in their devices, the experiment was administered through computer tablets which their were not used to nor had experienced before. I am also assuming that those tablets were provided for the authors as a medium to conduct the experiment and gain knowledge from the experience, not been commonly available to the community health workers in the rural low-resource setting in India (or in other LMICs).

Additionally, the application was deployed locally in those tablets and the data from the survey was also stored locally in the computer tablets thus hindering the option of asynchronous completion of the experiment and real time analysis of the results.

Having pre-tested the survey and identified the cognitive challenges faced by the ASHAs in completing it, you could have also tried to improve the paper-based survey with images and graphics (also conveniently able to be conveyed in paper) or supplementary materials (i.e. videos explaining the different options, figurines or tokens accounting for the different options, etc.) maybe even role-playing the choice options if you were going to conduct the survey individually or in the context of a small group.

Moreover, the development costs of the Android application are not accounted for in the paper in terms of software licences, human and technical resources and specialised technical knowledge which should be considered while proposing a methodology for the implementation of DCE with such technological media in LMICs. All of it to cut by half the time of completing a 25-minutes survey for 20 people.
Please, bear with me that this may seem an irrational use of resources for such experiment under already resource-constraint conditions, endangering both the feasibility and the sustainability of such efforts.

Finally you mention you used 'think aloud' and 'verbal probing' techniques to assess several dimensions regarding the cognitive understanding of the survey by the ASHAs, such as comprehension, retrieval of information, judgement and selection of response to the question which results are not reported in the manuscript; and, as for the only measure comparison between the paper-based and Android-based survey, average time for completion can be interesting in a scenario of scaling-up the experiment to large groups connected from remote locations (main advantages of the use of information technology (IT) devices such as mobile phones and computer tablets) but it is not a suitable measure alone (please see the broad body of knowledge related to User Experience design and implementation for mobile applications).

I don't mean to be harsh but it seems to me that the manuscript would benefit by considering at least some of the main concerns on feasibility and sustainability of this procedure in your Discussion.

Please, see below some other very minor comments for you to consider:

01-- In the Background section; page 6, line 1, there is a blank space between the word "development" and the end of the sentence.

02-- In the Background section; page 6, line 8, there is a typo in the word "renumerated", that should be "remunerated" instead.

03-- In the Results section; page 8, line 44 onward, there is mention of the data collection 'using the paper based format occurring over two days' but later in the next paragraph (page 9, line 10 onward) you describe how the research team observed the Android-based data collection as if they were one and the same. Please, review this paragraph to clarify this point.

Kind regards,

Level of interest
Please indicate how interesting you found the manuscript:

An article of limited interest

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:
1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal

Do you want to get recognition for reviewing this manuscript? Add a record of this review to Publons to track and showcase your reviewing expertise across the world’s journals. Signing up is quick, easy and free!

Yes