Reviewer’s report

Title: Using a Theory-Driven Creative Process to Design a Peri-Urban On-Site Sanitation Quality Improvement Intervention

Version: 1 Date: 14 Dec 2018

Reviewer: Juliet Willetts

Reviewer's report:

Many thanks for the opportunity to review this publication a second time. And thank you to the authors for fully considering the range of comments and making changes which have helped strengthen the paper.

I find that the majority of detailed comments have been dealt with. However, there are still some issues that I feel have not been convincingly resolved. The abstract in particular I find not to have been sufficiently adjusted in line with the changes to the paper, and to still contain a conclusion that is future-focused rather than making clear the contribution of this paper. This comes back to the remaining issue that there is still not really a clear methodology and analytical framework. The authors have shifted around content in response to my and the other reviewer comments (which concurred on criticising the paper for lack of methodology) but have not really addressed the fundamental concerns raised. I therefore have not been able to agree that the methods are appropriate and well described, nor that the conclusions are adequately supported by the data. I hope that the comments below can help clarify ways to address both of these remaining concerns. I have suggested 'major revisions' still, since the comments below are more than minor tweaks. However I see the changes required as lying somewhere between major and minor, and certainly less than was expected from the previous review.

Below are my remaining issues and changes I consider essential before publication:

- Revise the abstract to a greater extent and make clearer the purpose of the paper. The background section does not currently clarify that purpose and this is a major gap. Lines 88-90 of the paper start to do this, but still don't fully clarify this paper's exact purpose. There is overlap in the method and results narrative- please separate and clarify these. The results do not really speak of how the 'theory driven' approach offered value (against other approaches), and yet my understanding from the author narrative is that that is central to how the authors view the contribution of this paper. The conclusion should not be referring forward "will advance applied behavioural science" "this will allow for …" but stay focused on the contribution already made in this paper, and not use future tense. That is, in what ways does this paper contribute to applied behavioural science that can be claimed now (not in the future)?
- Make clearer in the paper the way in which 'each each aspect of the underlying theory corresponded to an intervention element, the evaluation of which can contribute to empirical and theoretical knowledge.’ As at present the results still read as descriptive rather than analytical.

- On the issue of ethics in relation to landlords and supporting their interests for greater rental income, suggest that this issue, even if not speculated upon, should be mentioned somewhere in the paper, even if it is to express the concern the authors also felt in this regards, and any relevant literature (the authors mention recent Barrington paper).

- It is great that exact inputs have been added in terms of the scale and numbers of presenters/facilitators, as this can assist replicability and strengthens and grounds contribution. I still hold that some discussion of costs is critical to be clear about what it would take to replicate such an approach in other contexts (e.g. enlisting the creative agency etc. which assume likely to operate on commercial rates). Without this, the scalability of the approach isn't clear.

- What does 'guided by appeal to its theory of change' (lines 131-132) is unclear- I don't understand what this means, and more generally, I am not fully clear how the authors are using the terminology of 'theory of change'- strengthening this conceptually may help the paper overall.

- Suggest using past-tense consistently throughout the results section when describing the intervention (eg line 442 uses present tense- 'allows').

- Ensure sufficient justification in the literature for points made in the discussion. Eg lines 4290430 mentions 'based on empirical findings for behaviours with similar characteristics, should provide relevant reference(s).

- Avoid speculation (and sort out the wording)- line 499 asserts that the wider range of interventions is likely to be produce more appropriate and hence more effective interventions. This paper didn't assess the intervention, so should be careful about what can and can't be claimed. And the repeated use of 'intervention' in this sentence is confusing.

- Please re-work the conclusion of the paper, which remains unclear (part of which comes back to clarifying the purpose of the paper and then delivering on that). At the moment, the use of future tense ('will' consist) is strange. The final paragraph also is not quite clear or easy to follow.

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?  
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?  
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?  
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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

Acceptable

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