Reviewer's report

**Title:** Measuring Impact: A Cross-Sectional Multi-Stage Cluster Survey to Assess the Attainment of Durable Solutions in Post-Tsunami Aceh, Indonesia

**Version:** 1  **Date:** 11 July 2014

**Reviewer:** Michael Hiete

**Reviewer's report:**

1. Is the question posed by the authors well defined?
   Yes, the authors have a clear goal in a concrete context: developing an approach to measure the impact of humanitarian program measures in the post-tsunami Aceh region in Indonesia based on the Framework on Durable Solutions.

2. Are the methods appropriate and well described?
   Yes, the authors apply a range of appropriate methods to work on their research question: multi-stage cluster survey design to derive the sample, random and snowball sampling for identifying interviewees, questionnaire (not shown) to get the data, Taylor linearization to adjust data for stratification and clustering, statistical testing to derive dissimilarities between returnees and non-returnees, and finally a principal component analysis to develop a self-weighted durable solutions index which is then used to identify factors (in particular modifiable ones) having a strong impact on the index making use of multiple linear regression.

3. Are the data sound?
   Yes, data is primary and well gathered. However, the questionnaire is not provided. It is not clear whether this is planned as supplementary material.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   No information about data deposition is provided.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   Yes, indeed. I have only a few open points:
   - One of the core findings is the timing of livelihood assistance (the authors found that “the receipt of livelihood assistance very shortly after the tsunami (within one year) significantly lowered the odds of a household attaining or surpassing its pre-tsunami monthly income (adjusted OR 0.52, P = 0.010) the odds of having a higher income increased threefold (the highest magnitude of any covariate) for those households who received livelihood assistance between 1 and 6 years after the tsunami (adjusted OR 3.02, P = 0.008).”). The authors are careful in interpreting this finding but from the discussion a reader could get the impression
that livelihood assistance should be better delayed (the authors write “wherein delayed assistance was more beneficial in the long-term”). To better understand this position, I have a few questions: Do immediate and delayed livelihood assistance addressed similar households or was immediate assistance preferably provided to those households suffering more strongly from the tsunami? Do you expect any dependencies between direct and delayed assistance on the level of individual households or communities (e.g. of the type: delayed assistance is more effective if the same household received immediate assistance (or other households in the community benefitted from the fact that some households received this))? And finally, as livelihood assistance may comprise a large range of different measures, do you expect that when going down at this level there might be also immediate livelihood assistance measures which are positively correlated the durable solutions index?

6. Are limitations of the work clearly stated?
Yes, limitations are clearly stated. A further limitation inherent in the analysis is the neglect of the community level.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Yes. For the use of PCA to derive a self-weighted index, credits might be given to Gwatkin et al. (2000), too.

8. Do the title and abstract accurately convey what has been found?
The title reflects very well the content of the paper. So does the abstract.

9. Is the writing acceptable?
The paper is well written, good to understand, the figure and the tables are helpful.

Below some more detailed comments:
On page 3, line 16 (“numerous evaluations”): please add some references
On page 3, second paragraph: maybe add in the introducing background section also terms easily understood by readers not so familiar with statistics, e.g. predictors, covariates.
On page 4, line 2 (“in studies of mental health”): please add one or two references
On page 4, line 12: consider deleting “rightly”
On page 6, line 8, two times “in”; add also reference (if available) for the two previous surveys
On page 7, line 2: “this formula”: which?
On page 7, line 14: “Village maps were used in order to capture a diverse population...”: might be of interest to readers how you did this
On page 11, line 12: end of line: words missing, e.g. “share of”
On page 12, line 6: explain what is meant by “freedom of movement”
On page 12, line 9: replace “assets” by “income” or similar
On page 17, line 17 “In a series of models, we found that timing of livelihood assistance was a critical factor in whether it diminished or maintained a household’s income,...” Consider rewriting as it gives the impression of a causal relationship whereas the statistical analyses could only show a correlation/coincidence (see also comments above)
On page 18, line 12: not clear what is meant by Robinson et al.
On page 18, line 16: “causal associations” What do you mean here?
On page 19, line 24: please add in the discussion that snowball-sampling might favor those households having a stronger social network which is thought to be associated with a higher resilience
On page 20, line 12 “component leading to long-term positive changes”: consider rewriting, e.g. replacing “leading” by “associated with”
Table 1: is there a need to discuss the impacts of the strong gender differences between “integrated elsewhere” and “returned to village of origin” groups?
Table 2: line: “School available for child to attend: add “per cent” and add explanation for asterisk there (*); line “Experienced an act of violence...”: is negative value for CI meaningful?

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**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