Reviewer's report

Title: Women’s empowerment and fertility preferences in high fertility countries in Sub-Saharan Africa

Version: 0 Date: 04 Jul 2018

Reviewer: George Odwe

Reviewer's report:

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Women's Empowerment and Fertility in Sub-Saharan Africa

General comments
The relationship between women empowerment and fertility is an important topic that has received attention in the recent past. I agree with the authors that fertility remains high in a number of SSA countries and that high fertility is evidently sustained by high demand for children which dents the prospect for fertility decline. The linkage between women empowerment and fertility is, therefore, important in understanding factors that sustains persistently high fertility in SSA region. This study tries to explore on the one hand the relationship between women's empowerment and ideal number of children and their ability to have only the number of children they want on the other hand. Using a multidimensional empowerment index, the study employs linear regression and logistic to model the effect of empowerment indicators on fertility variables. It is noteworthy that the relationship between women empowerment and fertility is bi-directional, that is, on the one hand, women's empowerment may cause changes in fertility outcome, and on the other hand, may affect changes in women empowerment. The study, therefore, has a limitation in using a cross-sectional data to establish the effect of women empowerment on fertility. Due to the cross-sectional nature of the data used, the study can only attempt to explore the relationship between women's empowerment (measured using empowerment proxies) and fertility outcome but cannot establish the causal effects.

The rationale for the study is still not clearly stated in the background section and the discussion section does not help in linking the results to other studies' findings as well as policy and program implications, save for a few references 21, 29-33.

I feel the paper may need to be revised before being considered for publication. The following specific comments should be addressed to improve on the manuscript:
Background (pages 3-5)

1) It is still not clear about what new knowledge the study is contributing. I find the background is lacking information on the current knowledge and gaps on the topic in the Sub-Saharan Africa settings and how the current study will fill this gap. A broad body of research exists on women's empowerment and reproductive outcomes (fertility, contraceptive use, etc.) in low-income countries. It is surprising that the authors completely ignored highlighting the current debates on this topic. The authors need to include relevant literature on women's empowerment and fertility so that one can understand the nuances of the topic.

2) Whereas decision-making power is just one aspect of women empowerment the study included other dimensions of women's empowerment—economic, socio-cultural, and familial/interpersonal. We don't see clear research questions/hypothesis.

3) The study hypothesizes that "the degree of women's decision-making power and choice compared to men's in matters of fertility varies inversely with the importance of women's socio-demographic characteristics and their position in the economic structure". However, testing this hypothesis will need comparative analysis between women and men. However, the analysis does not take this into account. There is need to rephrase the hypothesis to be consistent with the analysis.

4) The concept of women empowerment is varied depending on the context and may be challenging to measure. However, the authors should not assume that every reader understands the concept. Therefore, it would be important to define the concepts in the background so that readers can understand what the study is all about. Include a theoretical framework underpinning the study. There is also need to include a conceptual framework that may be helpful in showing the relationship between women empowerment, intermediate and the outcome variables.

5) In addition to fertility and contraceptive status, the authors should provide in the introduction a better understanding of the context in terms of social, economic, cultural differences in any.

I have some specific comment on the Methods

1) Data Sources: the study uses most recent DHS dataset for the respective countries, however, it is not clear which particular dataset was used i.e. whether individual women, couples or birth recode files.

2) The ideal number of children per married woman is treated as a continuous numerical variable in this study. However, such questions elicit both numeric and non-numeric responses. Thus, it is important for the authors to indicate how non-numeric responses were handled.

3) As already pointed out, it is rather challenging to measure the concept of women empowerment without taking into consideration the local context. In some context having many children may be preferred as a way of gaining recognition/status which may also be interpreted to mean empowerment. The authors need to indicate what informed the inclusion of the variables used to construct the empowerment index.

4) The DHS provides key domains such as decision-making powers, autonomy, and ownership of goods that are often used to measure empowerment. I would advise the authors to stick to available standardized measures of women's empowerment. It would be helpful if the authors cited in each measurement section where the items came from, so we know which came from the standard and which the authors created themselves.

5) It is unclear how the frequency of listening to radio or reading newspaper of hearing about family planning on TV/radio in the last few months is related to empowerment. Also, if the authors created the measure themselves, please justify. Or if the items were adapted, please explain how they were adapted and cite if this has been elsewhere.
Analysis/Result
1) It is not clear from the analysis why two models (I and II) were used. The authors need to provide a sentence or two explaining why the two models are used. This should also be clear in the results as well as in the discussion.
2) The sub-titles under result section is misleading. Consider removing them and only have univariate, bivariate and multi-variate sub-sections
3) Review the section on multivariate results to make clear the result of the two outcome variables. Also, indicate the direction and the magnitude including the confidence intervals for the association between independent and outcome variables
4) Indicate which variables were controlled for in the analysis

Discussion
The discussion should be clear, systematic and focused in line with the objectives of the study to allow readers to follow and understand the new knowledge the study is contributing. As currently written, the article discusses broad issues some of which cannot be implied by the results and lack clarity on the main findings of the study.

Specific comments
1) Provide examples of social traits on page 11 line 15
2) Page 13 … Increased 2 empowerment of women in Chad and Burkina Faso can be linked to changes in national and local legislation…indicate national and local legislation you refer to.
3) Women in the cities are more advantaged in terms of socio-economic diversification and the multiplication of services, facilities, and activities which make women more open to working. On the contrary, many cities in low-income countries are characterized by informal settlements/slum and sometimes far much worse off than their counterparts in the rural settings
4) Line 12 page 15- the sentence is not clear: While fertility is under control in some countries, it is a factor that influences women in other countries where high fertility is regarded as particularly valuable.

Appendices
1) Show the reliability test for each of the empowerment dimensions
2) Include religion in Table 2
3) Include totals (Ns) in table 2
4) The titles in Table 4 and 5 are incomplete. For example, rewrite the title table 4 as 'Beta coefficients from a linear regression of women empowerment on the ideal number of children'

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.

I am able to assess the statistics

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

Needs some language corrections before being published

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