Author’s response to reviews

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

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Author’s response to reviews:

We would like to express our gratitude to the reviewers for their interest in our manuscript. The comments and suggestions have been valuable and very helpful for revising and improving our manuscript. As described below, we have made revisions according to your comments and suggestions. Thank you very much.

Reviewer 1

1. Introduction

Q1: 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 needs to include relevant literatures on women’s empowerment and fertility so that one can understand the nuances of the topic.

Responses: Thank you very much.
We revised significantly the introduction according to your suggestion. Please, refer to pages 3 and 5.

Q2: 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.

Responses: Thank you for the suggestions. It has been taken into account. Please refer to page 5 (last para).

Q3: The study hypothesize 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.

Responses: We have rephrase the hypothesis accordantly to your suggestions. Please refer to page 5 (last para).

Q4: 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.

Responses: Thank you very much. We revised significantly the introduction and define the empowerment concepts in the background (Please refer to pages 3 and 4). With regard to your suggestion, we introduce in the method section the conceptual framework used.

Q5: 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.

Responses: Please, it has been taken into account. Please refer to page 5.

Methods

Q1: 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.

Responses: In order to group all the data needed for this study into a single file, we merged individual women, couples and birth recode files. However, as far as the measurement of the empowerment index is concerned, we mainly used the births recode files.

Q2: 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.

Responses: Thank you very much. We indicate in the revised manuscript how non-numeric responses were handled (Please, refer to page 8).

Q3: 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.

Responses: What informed the inclusion of the variables used to construct the empowerment index are presented in Table 1.
Q4: 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.

Responses: We mainly used the births recode files to measure the empowerment index. We also drew our inspiration from the different dimensions used in the calculation of the women’s empowerment index for Africa developed by the International Centre for Equity in Health and the DHS indicator of women empowerment. The items were adapted. Please refer to page 9.

Q5: It is unclear how 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.

Responses: What informed the inclusion of the variables used to construct the empowerment index are presented in Table 1. Resources that are considered the prerequisites to exercise of women choice, are generally indicated by paid employment, education, and media exposure (Simeen et al. 2012). Informal channels such as the mass media (television, cinema, newspaper and so on) play an important role in bringing about greater awareness of gender issues (Kishor and Gupta, 2004).

Results

Q1: 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.

Responses: A second model has been developed in order to access the independent contribution of the three empowerment indicators. Each indicator was included alone in the model, with controls variables. This second model highlights the dimensions of empowerment that favor women’s fertility preferences (Please, refer to page 10, last para).

Q2: The sub-titles under result section is misleading. Consider removing them and only have univariate, bivariate and multi-variate sub-sections.

Responses: We revised the result section according to your suggestion.

Q3: Review the section on multivariate results to make clear the result for the two outcome variables. Also indicate the direction and the magnitude including the confidence intervals for the association between independent and outcome variables.

Responses: Please, it has been taken into account. Please refer to pages 13 and 14 and Tables 4 and 5. Thank you very much.

Q4: Indicate which variables were controlled for in the analysis.

Responses: Please, it has been taken into account. Please refer to Tables 4 and 5.
Discussion

Q1: 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 on the results and lack clarity on the main findings of the study.

Responses: We revised the discussion section according to your suggestion (Please refer to pages 14 - 19).

Q2: Page 13 … Increased 2 empowerment of women in Chad and the Burkina Faso can be linked to changes in national and local legislation…indicate national and local legislations you refer to

Responses: Please, it has been taken into account. Please refer to page 14 (last para)

Q3: 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 work. On the contrary, many cities in low-income countries are characterised by informal settlements/slum and sometimes far much worse off than their counterparts in the rural settings.

Responses: Please, it has been taken into account. Please refer to page 15.

Appendices

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 on Table 4 and 5 are incomplete. For example, rewrite the title table 4 as ‘Beta coefficients from linear regression

Responses
The reliability test for each of the empowerment dimensions were presented in Table 3.
Religion and totals (Ns) were included in Table 2.
The titles on Table 4 and 5 were reviewed.

Thank you very much.
REVIEWER 2

Title: The title is too broad and unclear in the present form. There is need to be specific to desired fertility in high fertility countries in SSA. The use of the term fertility is problematic because it implies actual fertility (TFR) and yet yours is just fertility preferences (ideal number of children. You need to replace it with desired fertility throughout the text.

Responses: The title was reviewed according to your suggestion. We revised the text accordantly.

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

Abstract: You need to say something about high fertility countries or lagging fertility transition countries in SSA in the background. Your study countries fall in this category.

Responses: Please, it has been taken into account.

Background

Q1: The background is quite modest in respect to literature review and thus misses a number of important points. First, What are the gaps in the literature that your study is addressing? There are several studies on this topic and the reader is also interested in the "catch" and value addition of the paper. The author should examine similar studies on the topic and their shortcomings, and hence justifying the study. Second, the author is interested in understanding how greater relative power (empowerment) of women allows them to execute their fertility preferences within the marriage irrespective of men's preferences. There is need for the author to place this study in the broader context of the female autonomy and fertility literature. The study would thus greatly benefit from some demographic literature on women and autonomy and fertility/reproductive health.

Responses: Thank you very much. We revised significantly the introduction according to your suggestion. Please, refer to pages 3 and 5.

Q2: There also the need to include the demographic literature on the measurement the ideal number of children and its shortcoming of being an abstract notion. Third, the high fertility (TFR) in the study countries should be placed in the broader context of fertility transition in Africa and elsewhere. The author, should therefore average TFRs for SSA, other developing country regions and the world.

Responses: We revised significantly the introduction according to your suggestion. Please, refer to pages 3 and 5.

Q3: What does the author mean by "taking into account the cultural, economic, social and demographic dimensions of gender" Are these control variables? Why not just say you are controlling for socio-economic and demographic characteristics. I am not sure it is factually correct to say that "poverty" in Africa makes child control both individual and collective. The author should rephrase the appropriate sentence.

Responses: Please, it has been taken into account.
The aim of this study is to analyse the effects of women’s empowerment vis-à-vis fertility preferences in four high fertility countries in SSA (Burkina Faso, Chad, Mali and Niger), controlling for socio-economic and demographic characteristics.

Methodology

Q1: The author should explain how his measurement of women empowerment is an improvement on the DHS indicator of women empowerment (autonomous decision making and acceptance of wife beating).

Responses: In order to take into account the multidimensional nature of women’s empowerment, we used the Principle Component Analysis (PCA) method to construct a single empowerment index. We drew our inspiration from the different dimensions used in the calculation of the women’s empowerment index for Africa developed by the International Centre for Equity in Health and the DHS indicator of women empowerment. The items were adapted.

However, some of the questions generally used in the calculation of the empowerment index were not taken into account because they seemed too subjective, not specific to women or could be influenced by the spouse (for example, the ownership of a cell phone that is related to the characteristics of the household and the acceptance of wife beating that may be biased by the presence or protection of the spouse in the context of ASS). We thus remained with a total of 16 variables.

All these variables have been combined into a single index using the PCA technique and presented in Table 1.

Q2: The author should move the first 2 paragraphs on explanatory variables to the background; they are more relevant for the literature review section.

Responses: Please, it has been taken into account.

Q3: The same applies to most of the stuff on control variables. I expected to read such stuff in the lit review. The author should justify the focus on 35 and above year old women? Why not on all married women since you are controlling for the number of living children?

Responses:

Please, it has been taken into account. We introduce in the method section the conceptual framework used (Please, refer to pages 6 and 7)

The unit of analysis is the married woman aged 35 and over. Due to the fact that young women of childbearing age are less likely to have completely finished giving birth, a married woman's ability to have just the desired number of children (number of living children minus the ideal number of children) can only be measured efficiently for women aged 35 and over.

Q4: The author should define Economic, social-cultural and familial empowerments here.
Responses: Please, refer to the conceptual framework introduced in method section (Please, refer to pages 6 and 7 and figure 1).

Results

Q1: Rephrase this statement "According to Table 2, for all women aged 35 and over, the average ideal number of children is 24.69, 6.72, 10.24 and 9.53 in Burkina Faso, Mali, Niger and Chad, respectively". Who are these men that you are comparing with women? Are they husbands?

Responses:
Thank you very much

According to Table 2, the average ideal number of children of women is 6.91, 6.72, 10.24 and 9.53 in Burkina Faso, Mali, Niger and Chad, respectively. In the case of husbands, the ideal number of children is much higher: more than 50% of husbands want to have at least the ideal average number of children stated by the women in any given country. In addition, the proportion of women reported having more children than their ideal number was highest in Mali (42.35%), followed by Burkina Faso (38.75%), Chad (16.39%) and Niger (13.37%). Page 12.

Q2: Do we have couple data? What does a positive and negative empowerment index mean to a lay reader?

Responses: Of course, we have couple data.

In order to group all the data needed for this study into a single file, we merged individual women, couples and birth recode files. However, as far as the measurement of the empowerment index is concerned, we mainly used the births recode files. Yes we have couple data.

Because the scores are standardised, negative values imply a worse situation; positive values, the opposite. Countries with a positive empowerment index are the best positioned in terms of empowerment. Negative empowerment index implies that countries have the lowest empowerment scores.

Q3: Table 4: are they beta coefficients or odds ratio? This should be reflected in the title. Table 4: The title suggests linear regression while in the text you talk of logistic regression? Table 5: The presentation of the results in the text is not clear. Please expound.

Responses: Please, it has been taken into account. Please, refer to Tables 4 and 5. We revised also the text accordantly.

Q4: Table 5: Is it possible to have negative odds ratios?

Responses: It cannot be negative. However, the (often natural) logarithm of it can be. Usually, an odds ratio is actually derived on the log-transformed scale (where confidence intervals derived based on log-odds ratio ±1.96× SE work better) and estimate & confidence intervals are the transformed onto the
odds ratio scale for reporting.

Discussion

Q1: The question that remains unanswered is this: Is more empowerment of Burkina Faso and Chad women reflected in their ability to achieve their reproductive/ fertility preferences? Explain your answer to this question.

Responses:
The most interesting finding was that the number of children considered ideal by women decreases as the empowerment index increases, whatever the country. However, there is a significant positive correlation between empowerment and the ability to have desired number of children in Burkina Faso and Chad, while there is no significant correlation in Mali and Niger. We can conclude that more empowerment of Burkina Faso and Chad women reflected in their ability to achieve their fertility preferences. (Please, refer to gages 15 and 16.

Q2: It is surprising that the reader only gets to understand the description of different components of empowerment in the discussion section.

Responses: We revised the discussion section. Thank you very much. Refer to pages 14–19.

Q3: Rephrase this statement "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"

Responses: Please, it has been taken into account.

Q4: Several statements in the discussion need to be supported by appropriate references. eg "societies give a higher social rank, greater privileges and greater authority to women with many children" and many more in the section

Responses: We revised the discussion section accordantly to your suggestions. Refer to pages 14–19.

Q5: What do you mean by "This result suggests that one of the ways of significantly curtailing fertility in sub-Saharan Africa would be to promote social policies in education for married women and their spouses". Are you suggesting that married couples should go back to school or adult education or what?

Responses:
This result suggests that one of the ways of significantly curtailing fertility in sub-Saharan Africa would be to promote access to information through adult learning and illiteracy elimination Programs. These programs should target particularly married couples in regions with the highest rates of illiteracy.