Author’s response to reviews

Title: Evaluation of the Performance of Routine Information System Management Framework (PRISM): Evidence from Uganda

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Author's response to reviews: see over
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Dear editors,

Thank you for the comments we received on our revised paper. The comments were extremely useful in helping us clarify the presentation of our methods and the study results. Please see below point-by-point responses to the comments, which include references to the specific sections that have been changed. In addition, as requested, we have also highlighted all the changes we made to the manuscript.

We look forward to your response.

Best regards,

David Hotchkiss, PhD
Professor

Reviewer: Ping Yu

*Thanks to the authors for taking on board my comments and provide corresponding answers satisfactorily. I am satisfied with the majority of answers. There are several issues I would like to seek further clarification from the authors.*

*You may need to define the level of statistical significance in methodology section. Currently the message that p < 10% is treated as statistically significant only comes at the results section. You may also need to justify why you choose 10% as the cutting point, not the conventional 5%.*

In the revised manuscript, we have added a sentence in the methodology section (the second to the last sentence in this section) that defines the levels of statistical significance used in the analysis (1, 5 and 10 percent levels). The 10 percent level is typically used as the threshold for statistical significance in the econometrics field, the area of statistics in which the first author was trained, but we realize that the 5 percent threshold is used in other fields of statistics. We believe that by using the three different threshold levels, readers can judge for themselves whether our results are significant.

*The authors may need to present the information about the statistical packages used for data analysis in the methods section.*

The analysis was performed using Stata Statistical Software: Release 10. This is now mentioned on page 13.

*Possibly you should display p value in Table 2.*

As suggested, p-values have been added to Table 2.
If you use both OLS and probit model to conduct multivariate analysis, you need to discuss which method is best to interpret your data in the discussion section. In consideration that all of the dependent variables were dichotomous variables, you may need to justify the suitability of OLS modeling.

Thank you for these comments. In the OLS model, the dependent variable is not a dichotomous indicator, but rather a continuous indicator generated by applying Principal Components Analysis. In order to make this clearer in the manuscript, the description of how the dependent variable was constructed has been revised (page 12). Regarding the comment on which model is best, we are of the view that the OLS model, which is based on much richer data on the use of RHIS information available only in the 2007 survey, is more informative than the probit model, which is based on more restricted information common to both surveys. In the revised manuscript, we discuss this issue on page 27.

Table 5 and Table 6. I am not sure what Model 1, Model 2 and Model 3 exactly are. I guess that they point to use as 1) ability to perform calculations, 2) ability to interpret results, and 3) ability to use results. These terms need to be explicit to improve readability of the paper.

Table 5 and Table 6 present alternative model specifications of determinants of the use of RHIS information. Table 5 presents the 2007 OLS model results using the continuous composite indicator generated through PCA as the dependent variable, while Table 6 presents the Probit model results based on pooled data from 2004 and 2007 using the dichotomous indicator of RHIS data use as the dependent variable. In each table, models 1, 2 and 3 refer to alternative model specifications using as independent variables the mean self-efficacy, motivation, and culture of information indices, respectively, as well as a common set of other indicators. In the new version of the paper, we have revised the description of how we constructed the dependent variables on page 12, and the description of models 1-3 on pages 20-21. We hope these changes improve the readability of the paper.

Page 16. The paragraph on ‘Test-retest reliability and sensitivity’. The description of constructs should be in the same sequence as the order of presentation of the constructs in Table 2 to increase readability.

We have revised the description of the constructs so that the sequence matches Table 2 (page 16).

Page 19. Paragraph 3 tells the reader how RHIS tasks competence was measured. This information really should be placed in the methodology section, in page 11.

As suggested, we have moved this information to the methodology section (page 10).

Appendix Table 1. There are two ‘use of information scale’ presented. I am confused which scale was used by the authors in further data analysis. I would like to read the authors’ comments on pros and cons of these two scales comparatively.

We agree that the presentation of our approach to investigate ‘use of information’ was not clear. The results of our bivariate and multivariate analysis based on scale 1 and scale 2 are very similar. As a result, we have decided to present the results for only one of these scales – scale 1. In the new version of manuscript, we have revised Appendix 1 by dropping the description of scale 2. In addition, we have revised Table 4 by replacing the correlation coefficients based on scale 2 with those based on scale 1.
Figure 1 presents the hypothesized PRISM Evaluation Framework. Some of the relationships amongst the variables have been validated by the empirical results, some are not. I would recommend the authors to draw a final version of PRISM Framework that explicitly defines which relationships are validated and supported by the empirical evidence presented in this paper; which relationships are not.

We agree with the overall point made by the reviewer – that we should more clearly describe in the manuscript which relationships have been validated in the study and which have not. As mentioned in the manuscript, the study does provide evidence that suggests that behavioral, organizational and technical factors in Figure 1 are related to each other, and that these factors are related to the use of information, a key aspect of RHIS performance. However, a number of other relationships have not been validated, including those involving RHIS data accuracy (due to limited variation in this indicator), data completeness (due to problems in the administration of the survey), and data timeliness (which is assessed at the district level but not the facility level) as well as those involving health systems performance and health status (the investigation of which was beyond the objectives of the study). Rather than presenting another figure, we would prefer to discuss these issues in the text. In the new version of the manuscript, we have revised the discussion section to more clearly describe the relationships that were not validated by the study (see highlighted paragraphs on pages 24-27). In addition, we have also revised the results section to explain that we do not estimate models of the determinants of data accuracy due to the limited variation in the sample (see page 20) and the abstract (see abstract conclusion). Finally, we added the following reference:


Typos that should be changed in the text: Page 5, para 1, Line 8 ‘carry out’

This error has been corrected.

Page 6, Line 8. lack of word between ‘responsible’ and ‘support’

This error has been corrected, by revising the above to ‘responsible for the support’.

Page 10, The second line from the bottom ‘the total number items’ is not a conventional phrase.

We have replaced ‘items’ with ‘indicators’. We hope this is now clear.

I would be grateful if the authors could point to the specific section of the paper that the revision has been made to save me time searching for it.

In our responses above, we describe the specific sections of the paper that have been revised. We apologize to the reviewer for not being more specific in our previous set of responses.