Dear Reviewer,

Many thanks for your comments that help us to improve the quality of the paper and make the paper clearer to the readers. Please find the list of corrections and our answers to your comments.

Best regards,

Celine Dondeynaz

1. My major concern with the manuscript is the quality of English given it is a complicated methodology. The conclusions that are drawn are mainly of interest to water and sanitation practitioners, who, like me, probably don't have a background in statistics.

The text has been proof read according to your comments by an external person. The quality of English has been improved and we paid particular attention to the description of the methodology.

2. Currently, the poor English makes it difficult to follow the methodology and understand how results were interpreted. In particular, something that I am having trouble understanding is how in some models water and sanitation coverage are seen as outcomes, influenced by the other variables (e.g. section 4.1.1), whilst in other sections, water and sanitation coverage seem to be being used to explain such variables (e.g. section 4.2.1). I'm unsure of how you can switch variables between 'cause and effect' in such a study. However, if this is indeed what is being done, it needs to be clearly explained in the text.

English has been improved and interpretation rewritten to take into account reviewer comments.

Several paragraphs are also added to explain in more detail how models work and are interpreted: in methodology section lines 3-13 p11 and in thematic models section lines 1-7 p 21 of this new manuscript. The explanation of the results has also been reworked.

3. I found that the work drew some very interesting conclusions, and raised some good discussion points, but I also feel that it needs to be clear in the manuscript that they are quite speculative.

In Page 6 (line 6-8), we state that due to the strong heterogeneity of the data collection methods, sources and data pre-processing, the WaterSan4Dev dataset is to be used for qualitative analyses (trends, relationships and behaviours among variables, categorize the observations-countries in cluster-profiles, …) and not for quantitative purposes and/or measures. Dondeynaz et al, 2012 also concludes that following the different multivariate analyses, the WatSan4Dev (used in this paper) is coherent with the common knowledge in the water sector in developing countries from the experience in the field and the common literature.

We have also introduced a new paragraph (line 11-15, p13) clearly stating that the interpretation are hypotheses deduced from the new models presented in the paper and coherent with literature and fields experience from international organizations.

4. I found that there was perhaps an excess of tables, some of which could be published as Supporting Information, rather than in the manuscript itself.

   Tables related to sensitivity analyses of various models are now put together in Appendix B, only the results are kept in the text. In Addition, tables which report simulations for Profile 4 and 5 are grouped (Table 8-9)

5. There was also a lot of repetition in the Discussion section; distilling this down to the main points mentioned earlier, or moving discussion points from the Modelling section to the Discussion section, would assist in shortening the manuscript.

Several paragraphs previously put in results section are removed and transferred to the discussion section to avoid duplication. They were related to:

- cultural/psychological aspects not measured yet but important. (Previously in Section 4.1.2 p 19)

- disaggregation of indicators related to corruption for instance by sub –sectors (previously in section 4.1.2)

- the missing of water quality indicators (previously in Section 4.2.3)