



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2013_BJMCS_5981
Title of the Manuscript:	Modeling and parameter sensitivity analysis of population dynamics in Uganda

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
I expected a more thorough answer from the authors w.r.t. my previous comment about the technical soundness of the manuscript. I did not get an answer to my question why the sensitivity analysis (equation(3)) is performed on the basis of equation(1) instead of equation(2). As equation(2) gives the solution of equation(1), one should work with this equation for the sequel. There is also no clear answer on how equation(3) is obtained. Taking the derivative of P(t) to the parameters, on the basis of equation(1) as that is what the authors do in their analysis, should be done using the chain rule: taking the derivative of phi to P times the derivative of P to the respective parameter. The term that is added in equation (3), i.e. the derivative of phi to the respective parameter, makes no sense. Therefore, the further analysis that is performed on the basis of this equation also makes no sense. Further comments: The authors state that the local sensitivity analysis is considered appropriate here (see the feedback form), yet there is no foundation given in the manuscript itself. The symbol "$a \gg 0$" means that a is a lot larger than 0. Therefore stating that a is different from 0, as the authors do, is not enough, a should also be a lot larger than 0. This is why I suggest to remove "$P(0) \neq 0$", as "$\neq 0$" is not the only condition that should be fulfilled. Caption of Figure 1: what is meant with normalized parameters. It is the first time, and the only time in the manuscript where this term is used. I suppose that the authors mean "fitted" parameters.	Many thanks to the reviewer for the time dedicated to making the fruitful suggestions to the manuscript. You suggestions have surely helped for improving the content, and general message in the paper. With all due respect the reviewer's comment is very much valued, however, the analysis in the paper is based on the state sensitivity matrix and not the output sensitivity matrix as the reviewer seems to suggest. This is also the reason why use was made of eq. (1) rather eq. (2) for the analysis of the sensitivity functions. Further details of the connections between eq. (1) and the sensitivity functions and how they are arrived at are provided in the revised manuscript. The expression "$P(0) \neq 0$" has been removed as suggested by the reviewer. The mistake in the caption of Fig. 1B, has been corrected.