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| Journal Name: | [B](http://sciencedomain.org/journal/31)ritish Journal of Mathematics & Computer Science |
| Manuscript Number: | **Ms\_BJMCS\_25731** |
| Title of the Manuscript: | **Maximum Likelihood Estimation for Beta Distribution** |
| Type of the Article | **Method Article** |

**General guideline for Peer Review process:**

This journal’s peer review policy states that **NO** manuscript should be rejected only on the basis of ‘ **l ac k of N ovel ty ’** , provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

([http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline)](http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline)

**PART 1: Review Comments**

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|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors*  *should write his/her feedback here)* |
| **Compulsory** REVISION comments | **The manuscript has presented many mathematics results related to the maximum likelihood estimates**  **of parameters for beta distribution.**  **But I do not understand why the definition of bias here is different from the common bias definition. The common bias definition is the difference between estimate of parameter and true parameter.**  **The report of Table 3 and Table 4 are meaningless in statistics.**  **The estimates of parameters for beta distribution following the algorithm established in Table 1 will be always integers. This is not normal.**  **It is not necessary to have this research.**  **The proposed methodology cannot improve the currently existing optimal procedure for producing maximum likelihood estimates. Regardless this point, the proposal computation algorithm is not right.** | Yes, the research focuses on mathematical maximum likelihood estimation for beta distribution.  The bias for algorithm shown in table 1is not the statistical bias between estimate and parameter. It is only used for approximating the solutions of partial differential equations (19). The statistical bias you mention is a part of mean square error, which is zero for unbiased estimate. The co-variance matrix of estimate is shown in equation 21.  Tables 3 and 4 only shows approximated solutions of partial differential equations through iterations. The bias is not statistical bias.  Yes, it is not normal. The research focuses on estimating integer parameters. Now I do not have method to find out real solutions of partial differential equations (19). I think the research is useful in finding out integer parameters of beta distribution, especially in case of Bayesian network in which beta parameters are integers. The research shares the same purpose with my previous research according to reference [12].  Originally, the research is applied into specifying prior probabilities of Bayesian network, which is competitor of expectation maximization (EM) algorithm that improves the currently existing estimate. In other words, the algorithm shown in table is applied first and then EM is used to improve estimates. Your comment is very useful and necessary to me. Yes, I need to revise the article in order to distinguish specifying prior estimates and improving posterior estimate. Many thanks to you. |
| **Minor** REVISION comments |  |  |

**Optional/General** comments

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| Reviewer Details: | |
| Name: | **Anonymous Reviewer, Reviewer preferred to be anonymous.** |
| Department, University & Country |  |