



SDI Review Form 1.6

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2013_BJMCS_7560
Title of the Manuscript:	Statistical Inference for a Simple Step Stress Model Based on Censored Data from The Kumaraswamy Weibull Distribution
Type of the Article	Research paper

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	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)
<u>Compulsory</u> REVISION comments	This paper considered step stress tests when the samples are Type I and Type II censoring from the Kumaraswamy Weibull distribution with three shape parameters. The author assumed that two of four unknown parameters of Kumaraswamy Weibull distribution are known and obtained MLEs and approximate confidence interval of the parameters by using the Fisher information, and then the relative absolute biases, MSEs, relative errors of the proposed estimators by using the Monte Carlo simulation, but these methods are well known and thus are less of novelty and ideally. The author compared the performance of proposed estimators by using Monte Carlo simulation for large sample of size, so need to compare for small samples, for example $n = 20, 30, 40, 50$ etc.	- The paper applied accelerated life test on a new distribution which is KumW distribution. - Results were found for $n=20, 30, 60$ and 100 and the results were put in new tables.
<u>Minor</u> REVISION comments	1. Page 2 ① 5th line: parameteres → parameters ② "It has three ~ KumW distribution." which is the part that is after equation (2), and "The KumW distribution ~ Rezk er al. (2013)." which is 4th line under equation (4), are repeated. They are same things. 2. Page 3 ① At equation (5), meaning of t_{ij} and r_j are not clear. Explain the mean of these notations. 3. Page 4 ① Equation between equations (9) and (10):	- All the comments were corrected. "t_{ij}" is a random variable of the time at the step j and "r_j" is the number of failures at the step j. - All were corrected.



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	$\exp b(x_{j-1} - x_j) \rightarrow \exp[b(x_{j-1} - x_j)]$ ② 2nd line under equation (11): need to eliminate $F(t)$. ③ At “Substituting u_{j-1} in (12)”, which is under equation (11), it should be (11), not (12). 4. Page 7 ① In “As shown they $\sim$ and $\hat{\beta}_2$.” those two sentences are same things. ② In equation (22): need to explain about the notation $2u$. 5. Page 8 ① On the first line, there is lack of explanation about GAV and G_j in equation (27). ② In section 3.3.1, you use the sample of size to 100, 200, 300, 400, and 500. I think these are too large. Since estimators are usually not much in it for large sample, there should be results when the size is small or medium. ③ It says that you used likelihood equations (37), (38), and (39) to find out MLEs, but these equations are not mentioned in the paper. 6. Page 9 ① I’m wondering why you mentioned the equation (24) about Fisher information matrix in 4th line. ② The larger the sample is close to the true value of parameter but if you look at the Table1, it is not consistently happened. Make sure to check the Table again and explain the result.	• It was considered. • In many studies concerning accelerated life testing (ALT), the log linear function between life and stress which is just a simple re-parameterization of the distribution is used to obtain the estimates of the original parameters. Also it was assumed that a & b are unknown depending on the nature of the product type and the test method. • It was defined in page 8. • Results were found for n=20, 30, 60 and 100 and the results were put in new tables. • These equations exist in the appendix. • The number of the equation was corrected. • It was checked.
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<u>Optional/General</u> comments	1. There is simple way to find out their MLEs through package program, why author used this assumption that some of them are known? 2. The author used the observed Fisher information to get the two sided approximate confidence intervals of unknown parameters, but this also is available through package program. This is not a new method and thus leads to decrease in its novelty. 3. The optimum test plan using observed Fisher information is also not a new idea.	• The available facilities were used, so we will be pleased if you could suggest another package program if possible. • The new idea in this research is applying accelerated life test on a new distribution which is KumW distribution.
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