

Review Form 1.6

Journal Name:	Asian Journal of Probability and Statistics
Manuscript Number:	Ms_AJPAS_84366
Title of the Manuscript:	Inverted Power Ishita Distribution and Its Application to Lifetime Data
Type of the Article	Original Research 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 '**lack of Novelty**', 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:

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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)
Compulsory REVISION comments	<p>Title: Inverted Power Ishita Distribution and Its Application to Lifetime Data</p> <p>In this paper, a new distribution, named 'the Inverted Power Ishita distribution', was introduced. It is an extension of the Ishita distribution and its capable of modelling real life data with upside down bathtub shape and heavy tails was introduced. Mathematical and statistical characteristics such as the quantile function, mode, moments and moment generating function, entropy measure, stochastic ordering and distribution of order statistics have been derived. Furthermore, reliability measures like survival function, hazard function and odds function have been derived. The method of maximum likelihood was used for estimating the parameters of the distribution. To demonstrate the applicability of the distribution, a numerical example was given.</p> <p>In my opinion,</p> <ol style="list-style-type: none">1. How can you say that this distribution is a better performer in comparison to other lifetime failure models? Justify.2. The literature section is not enough; add some latest papers.3. The motivation and novelty of the paper should be defined clearly in the introductory section.4. The author uses PDF and pdf both for probability density function. This is confusing.5. Just after equation (27), "Taking natural log of 27....", improve this sentence.6. The sentence, just after equation (4) is confusing, check.7. There are many estimation methods, why the author uses this particular method, justify.8. Section 6, is conclusion, not conclusions.9. What is real life use of this paper, explain.10. Which software is used here for computational purposes?11. The author should check the paper thoroughly because there are so many grammatical errors. <p>Additionally, I have not found any major problem in this paper, but a revision is needed.</p>	<p>Response to reviewer</p> <ol style="list-style-type: none">1. This work didn't say the distribution performed better than other lifetime failure models. Rather it states that it is better than other lifetime failure model that was used to compare it in this work, such as, the Ishita distribution, Inverse Ishita distribution, and the Sujatha distribution. and this conclusion is justified, as a result of the observed outputs of the best fit criterions , three criterion was used in this work, the Akaike information criterion, the Bayesian information criterion, and the corrected Akaike information criterion. The conclusion for best fit is that the distribution with the lowest value across each of the criterion can be said to be the best. From the result, one can say that the value of AIC, BIC, and AICc for the proposed distribution is lower than that of other distributions, that is, the Ishita distribution, Inverse Ishita distribution, and the Sujatha. Asides the Inverse power Rama distribution, whose values can be said to be approximately the same.2. Ok, this has been done see original paper.3. Done see revised paper.4. Corrected, the probability density function has been completely represented as pdf.5. Sentence has been improved, see revised paper.6. The sentence was not suppose to be there, and it has been removed.7. Maximum likelihood estimation provides a consistent approach to parameter estimation method than the other i know.8. This has been corrected, see original manuscript for correction.9. The paper provides a distribution that can model lifetime data from biomedical science and engineering, which have non-monotone hazard functions.10. The R statistical software package was used here for the computations.11. Paper has been checked, and every observed grammatical error has been corrected. <p>The major problem was stated in the introduction, and the problem is the some distribution has proven efficiency in modelling only lifetime data with monotone (increasing and non-increasing) hazard rates such the Ishita distribution, so an improvement, the inverse power ishita distribution has been introduced to properly fit lifetime data with non-monotone (bathtub or upside-down bathtub, or Unimodal) hazard rates.</p>
Minor REVISION comments		
Optional/General comments		

PART 2:

	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)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	