Review Form 3

Journal Name:	**Asian Journal of Probability and Statistics**
Manuscript Number:	**Ms_AJPAS_127881**
Title of the Manuscript:	**Inverse Monsef distribution: Statistical Properties, Estimation and Application**
Type of the Article	

General guidelines for the 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.
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PART 1: Comments

	Reviewer's comment	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	**The study introduces a new class of inverse distribution and derives several properties, contributing to the advancement of statistical modeling. By demonstrating the superior performance of the proposed model compared to existing ones through real-world applications, the manuscript highlights its potential for addressing complex data scenarios. This work is particularly valuable for researchers and practitioners in fields requiring robust and flexible models for reliability and lifetime data analysis. It represents a meaningful contribution to the scientific community by extending the existing toolkit for statistical distributions and their applications.**	
Is the title of the article suitable? (If not please suggest an alternative title)	**Yes**	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	**The abstract could benefit from additional details to provide a more comprehensive overview of the study. Specifically, consider discussing the outcomes of the simulation study, highlighting the consistency and robustness of the proposed model in estimating parameters. Additionally, elaborate on the real-world applications, emphasizing how the model outperforms existing models in fitting the considered datasets. This will offer readers a clearer understanding of the practical significance and superior performance of the model.**	
Is the manuscript scientifically, correct? Please write here.	**Yes it is.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	**The references require updates to ensure they adequately cover existing literature on inverse distributions. In the introduction, there is no mention of key references related to existing inverse distributions, which are crucial for contextualizing the study.**	

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Is the language/English quality of the article suitable for scholarly communications?	**The language and English quality of the article require improvement to meet the standards of scholarly communication. There are instances of unclear phrasing and grammatical errors that may hinder readability. The authors should consider revising the manuscript for clarity, coherence, and fluency, ensuring that technical terms are used appropriately and sentences are well-structured.**	
Optional/General comments	**The introduction section needs significant revision to establish a clear foundation for the study. Currently, there is no mention of the motivation behind the research or a clear statement of the study's aim. The introduction begins abruptly with: *"The Monsef distribution (MON) and its variations, including the inverse Monsef distribution (IMON), provide flexible models for real-world data, especially in fields such as epidemiology and medical statistics."*To improve this section, the authors should begin with a discussion on the importance of probability distributions in modeling real-world phenomena and highlight the challenges faced by traditional distributions in capturing complex data behaviors. This can include issues such as skewness, heavy tails, and inflexible hazard rates, which are often inadequately addressed by classical models.Next, the authors should introduce the inverse transformation technique as a well-established method for enhancing the flexibility of baseline distributions. The significance of this approach should be emphasized, along with references to existing inverse distributions, such as the inverse Weibull, inverse Burr, and inverse Rayleigh distributions, to provide context for the study.Finally, the aim of the study—to propose the inverse Monsef distribution—should be explicitly stated, followed by the motivation for its development. This revised structure will provide a logical flow and set the stage for the rest of the manuscript.** **The manuscript needs a thorough revision for grammatical accuracy and clarity. For example, in subsection 2.2, the term "identifiably" appears to be a typographical error; it should be replaced with "identifiability." Additionally, the phrase "Identifiably of the distribution" should be rephrased for better understanding. Please provide a clear interpretation of the probability density function (PDF) and hazard function plots to help readers grasp the model's behavior.** **In the first dataset analysis, the log-likelihood value (71.2264) and corresponding KS p-value (0.63873) for the IGOM(α,β) model are better than those of your proposed model. While it is evident that your model has better AIC, BIC, and HQIC values, there appears to be a conflict between these criteria and the log-likelihood/KS p-value. How do you justify concluding that your model is superior under these circumstances? A discussion addressing this conflict is necessary to clarify your evaluation criteria.** **For the second dataset, you mention that it is right-skewed. Please provide descriptive statistics (e.g., mean, median, standard deviation, skewness) for all datasets to substantiate this claim and allow readers to independently confirm the skewness. This additional information will enhance the transparency and credibility of your analysis.** **In the conclusion part: please revise this:** To estimate the unknown parameter θ\thetaθ	

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?	***(If yes, Kindly please write down the ethical issues here in details)***	

Reviewer Details:

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