

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

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PART 1: Comments

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>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.</p>	<p>The article introduces the inverse Monsef (IMON) distribution as an extension of the Monsef distribution, emphasizing its enhanced flexibility for modeling lifetime data. The study thoroughly explores the distribution's statistical properties, including the probability density function (PDF), cumulative distribution function (CDF), reliability measures, hazard rate, and order statistics. Parameter estimation is addressed using maximum likelihood estimation (MLE) and Cramér-von Mises methods, with simulations confirming the consistency of these estimators. Through applications to real-world datasets, the IMON distribution demonstrates superior fit and performance compared to several established models. While the paper presents a robust theoretical foundation and practical relevance, further exploration of broader datasets, expanded simulations, and improved clarity in formula representation could strengthen its contributions. Overall, the IMON distribution is positioned as a valuable addition to statistical tools for lifetime data analysis.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>The current title of the article, "Inverse Monsef distribution: Statistical Properties, Estimation and Application" is clear and descriptive, effectively reflecting the key components of the study, such as the introduction of the new distribution, its properties, and applications.</p>	
<p>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.</p>	<p>The abstract provides a good overview of the study but can be improved in clarity and comprehensiveness. It effectively highlights the introduction of the inverse Monsef (IMON) distribution, its statistical properties, and applications. However, more details are needed on the key properties analyzed (e.g., reliability measures, hazard rate) and the comparative performance against other models. Adding a brief mention of the estimation techniques (MLE and Cramér-von Mises) and the nature of the datasets used could strengthen its impact. Additionally, removing repetitive phrases about flexibility would make it more concise. These enhancements would provide a more balanced and informative abstract.</p>	
<p>Is the manuscript scientifically, correct? Please write here.</p>	<p>The manuscript is scientifically rigorous, with accurate derivations and a solid theoretical foundation for the Inverse Monsef (IMON) distribution. The use of established estimation techniques, validated through simulations, and the application to real-world datasets effectively demonstrate the model's reliability and practical significance.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The provided references are adequate and recent, effectively supporting the study. However, the following corrections are recommended to enhance the consistency and accuracy of the "References" section:</p> <ul style="list-style-type: none"> (i) References [11] and [14] are identical. Remove one of them and update the title to "<i>Theory of Point Estimation (2nd ed.)</i>". Additionally, include the place of publication for the book. (ii) References [12] and [26] are same. Remove one and ensure the volume and page numbers for the reference. (iii) In reference [28] mention the place of publication for the book. (iv) Remove unnecessary reference number [30]. 	

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<p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>Yes, the language is suitable for scholarly communication. It is clear and well-structured. The authors should correct the following typing and grammatical mistakes:</p>	
<p><u>Optional/General</u> comments</p>	<p>Major Comments:</p> <ul style="list-style-type: none"> (i) On page 2, the authors present the density function of the IMON distribution graphically for specific θ values. To improve clarity, the authors should explain the behavior shown in the graphs and its relevance to the study. (ii) The application section requires additional explanation regarding the goodness-of-fit tests and comparative analysis for the considered datasets and distribution models. Furthermore, the authors should elaborate on how the proposed distributions are utilized to model the datasets effectively. (iii) The authors demonstrate that the target distribution is identifiable and derives expressions for various reliability measures and order statistics. However, the lack of discussion on their significance and practical implications diminishes the overall impact of the work. (iv) The simulation study, which represents the main contribution of this work, has not been adequately addressed. The authors should provide a more detailed analysis, particularly focusing on the comparison of the estimators in terms of bias and mean squared error (MSE). <p>Minor Comments:</p> <ul style="list-style-type: none"> (i) In Fig.1 (on page 2) and Fig.2 (on page 4), it is important to include proper labels for the x and y axes to enhance clarity and understanding. Additionally, legends should be provided to clearly identify the graphs and their corresponding parameter values. (ii) There are several typos/mistakes in the writing of the article, such as <ul style="list-style-type: none"> • In the second paragraph of page 1, the symbol λ is repeated unnecessarily. The phrase "you may need to specify the formula here if it's available" should be removed, and a comma is missing after $f(x,\theta)$. • The terms Pdf and pdf are used inconsistently without definition. These should be standardized and defined upon first use for clarity and consistency. <p>The terms Pdf and pdf are used inconsistently without definition. These should be standardized and defined upon first use for clarity and consistency. Additionally, it is recommended to go through the article and cross-check the typos/mistakes.</p>	

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

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