

Review Form 3

Journal Name:	Asian Journal of Probability and Statistics
Manuscript Number:	Ms_AJPAS_124093
Title of the Manuscript:	Clustering Balanced Mental Health Data: A Comparative Study of Clustering Techniques
Type of the Article	Original Research 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:

<https://r1.reviewerhub.org/general-editorial-policy/>

Important Policies Regarding Peer Review

Peer review Comments Approval Policy: <https://r1.reviewerhub.org/peer-review-comments-approval-policy/>

Benefits for Reviewers: <https://r1.reviewerhub.org/benefits-for-reviewers>

Review Form 3

PART 1: Review Comments

Compulsory REVISION 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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p>The manuscript addresses an important area—mental health data analysis using clustering techniques, which is highly relevant given the increasing focus on data-driven solutions in psychiatry. However, the motivation behind choosing the two specific clustering techniques (K-means and Divisive) needs more explicit justification. Clarify why these techniques were selected over others like Agglomerative or DBSCAN, especially considering their suitability for different data types. Including an explanation of why balanced data was required in this context would further highlight the importance of the study.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>The current title, "<i>Clustering Balanced Mental Health Data: A Comparative Study of Clustering Techniques</i>," is suitable as it accurately reflects the manuscript's content. However, a more descriptive title that specifies the techniques and data context could improve clarity. Suggested title: "<i>Comparative Analysis of K-means and Divisive Clustering Techniques on Balanced Mental Health Data</i>." This offers a more precise indication of the methods used and the data context.</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 is comprehensive but lacks detail on the specific performance metrics that led to the conclusion that K-means performed better than Divisive clustering. Additionally, it would be beneficial to briefly mention the implications of this research for mental health analysis. Consider adding a few sentences on how these results might impact future studies or applications in mental health research. The abstract provides a concise overview of the study but misses important elements such as the key findings related to performance metrics. It should include more specific details about the metrics, especially those that highlight the superiority of K-means clustering over Divisive clustering. Also, briefly mention the practical implications of the findings for mental health research and interventions.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>The subsections and structure of the manuscript are well-organized, following a logical progression from introduction to methods, results, and discussion. The breakdown of the clustering techniques and performance metrics is clear and easy to follow. However, the discussion section could be expanded to include a more in-depth comparison of the clustering results with existing studies. A concluding section summarizing the key findings would also enhance the manuscript's readability.</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>This manuscript is scientifically sound and robust. The use of both K-means and Divisive clustering techniques allows for a comprehensive comparison of their effectiveness in clustering mental health data. The choice of random undersampling as a data balancing technique is appropriate, although the manuscript could have explored alternative methods such as SMOTE for comparison. The performance metrics (Internal Validation and Stability Validation) are well-chosen, providing reliable measures of the clustering techniques' efficacy. Overall, the methodology and analysis are technically accurate and well-executed.</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 references are sufficient, but there is a need to include more recent studies, especially those published in 2023–2024, to provide up-to-date context for the use of clustering techniques in health data analysis. Adding references on alternative data balancing methods and other clustering techniques like DBSCAN would further enrich the literature review.</p>	

Review Form 3

<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>Language Quality: The language used is appropriate for scholarly communication, but some sections, such as the introduction, would benefit from rewording for better clarity. For instance, the second sentence in the introduction ("Statistics according to (6) estimates that 1 in 3 women...") needs smoother phrasing and should explicitly cite the source in-text rather than a parenthetical number. Consider revising the literature review for grammatical consistency, especially with respect to tenses and article usage.</p> <p>Ethical Considerations: The manuscript does not seem to have any ethical issues. However, since mental health data is sensitive, the authors should briefly mention how data privacy and confidentiality were maintained, even if the data was synthetically generated or anonymized.</p>	
<p>Optional/General comments</p>	<p>The figures and tables are well-presented, but Figure 12 (Dendrogram) could benefit from a more detailed explanation in the figure caption. It is essential for readers unfamiliar with hierarchical clustering methods to understand the significance of the dendrogram in identifying cluster patterns.</p> <p>The discussion could be expanded to include practical applications of the findings. For example, how might the K-means clustering results be applied in real-world mental health initiatives, and what are the implications for treatment strategies in urban versus rural settings?</p>	

PART 2:

	<p>Reviewer's comment</p>	<p>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>
<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>	

Reviewer Details:

<p>Name:</p>	<p>Rohini Kancharapu</p>
<p>Department, University & Country</p>	<p>Gayatri Vidya Parishad College of Engineering for Women (Autonomous), India</p>