Review Form 3

Journal Name:	**Asian Research Journal of Mathematics**
Manuscript Number:	**Ms_ARJOM_126645**
Title of the Manuscript:	**Evaluating the Efficiency of the Jackknife Kibria-Lukman M-Estimator: A Simulation-Based Comparative Analysis**
Type of the Article	**Original Research Article**

PART 1: Review Comments

Compulsory REVISION 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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.		
Is the title of the article suitable? (If not please suggest an alternative title)		
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.		
Are subsections and structure of the manuscript appropriate?		
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.		
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. -		

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**		
Optional/General comments	**Reviewer Comments:** **1. Assumptions Dependence in OLS and Ridge Regression** • **Weakness**: The article relies on OLS and Ridge regression's assumptions (e.g., homoscedasticity and absence of multicollinearity) to justify the need for the Jackknife Kibria-Lukman (JKL) M-Estimator. However, it lacks discussion on how often real-world data diverges from these assumptions and why this divergence necessitates the new estimator. • **Countermeasure**: Strengthen the introduction by including a broader analysis of common real-world deviations from these assumptions, such as in economic and social data, to highlight the practical limitations of OLS and Ridge methods. This would provide context for the JKL M-Estimator's importance. **2. Limited Explanation of JKL M-Estimator's Mechanism** • **Weakness**: While the JKL M-Estimator is introduced as a robust approach, the article does not detail the algorithmic steps involved in combining Jackknife resampling, M-estimation, and Ridge regression to address multicollinearity and outliers effectively. • **Countermeasure**: Add a flowchart or pseudo-code for the JKL M-Estimator to explain each step. This would clarify the estimator's functioning and allow readers to understand the process behind each component's integration. **3. Dependency on Ideal Data Conditions for Simulation** • **Weakness**: Monte Carlo simulations use synthetically generated data with known properties, which may not fully capture the irregularities of real-world data, such as skewed distributions or complex data structures. • **Countermeasure**: Use a combination of synthetic data and real-world datasets with irregularities (e.g., non-normal error distributions) to test the robustness of the estimator. This would show whether the estimator maintains effectiveness under real-world complexities. **4. Lack of Comparative Context for JKL M-Estimator Performance** • **Weakness**: The article presents JKL M-Estimator results without sufficient comparison to other advanced robust estimators. This makes it difficult to judge the relative advantage of the JKL M-Estimator. • **Countermeasure**: Include a section comparing JKL with other advanced estimators like LASSO, Elastic Net, or Principal Component Regression. This would give a broader context for the effectiveness and practical advantages of the JKL M-Estimator. **5. Limited Discussion on Applicability in Real-World Data Scenarios**	

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	• **Weakness**: The paper briefly discusses a real-world data application but lacks depth in explaining why the chosen dataset is ideal for testing the JKL M-Estimator's robustness. • **Countermeasure**: Expand the real-world data application section by explaining dataset characteristics that frequently introduce multicollinearity and outliers. Also, discuss the estimator's relevance for fields like economics or public health where data often violates traditional regression assumptions. Incorporating these countermeasures in my observation can strengthen the article's appeal by clarifying the robustness of the JKL M-Estimator and its advantages over conventional methods across diverse real-world scenarios. Therefore several revisions need to be executed prior publication of the manuscript.	

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)*	

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