

Review of: "Application of Data Mining Combined with K-means Clustering Algorithm in Enterprises' Risk Audit"

Ahmed Gad¹

¹ Kafr El-Sheikh University

Potential competing interests: No potential competing interests to declare.

The manuscript investigates the potential of applying data mining techniques, particularly K-means clustering, to improve enterprise risk audit processes. The authors propose a methodology that integrates data mining with traditional risk audit practices. This approach aims to analyze large volumes of enterprise data (financial records, transactions, etc.) to identify patterns and anomalies that might indicate risk. By clustering similar activities or entities, auditors can prioritize their efforts and focus on areas with higher risk profiles.

Strengths:

- The paper explores the application of data mining techniques in enterprise risk audit, a potentially valuable area of research.
- The authors propose a methodology that integrates K-means clustering with traditional risk audit practices.
- The paper highlights the potential benefits of data mining for automating and enhancing risk identification and assessment.

Weaknesses:

- **Novelty and Contribution:** Several reviewers noted a lack of clear novelty in the research. The paper needs to emphasize how this work builds upon or differs from existing studies and what specific contributions it makes to the field.
- **Technical Clarity and Methodology:** The methodology section requires improvement. Reviewers pointed out the need for a clearer explanation of the data mining techniques used, including preprocessing procedures, dataset characteristics, and the integration of K-means and RF-LightGBM.
- **Results and Discussion:** The paper lacks a deep analysis of the obtained results. A more comprehensive discussion of model performance metrics and the factors contributing to its success is needed.
- **Writing and Organization:** The overall writing and organization of the paper could be improved. Reviewers suggested restructuring sections (e.g., separating theoretical background from case study) and addressing formatting inconsistencies.

Specific Recommendations:

- Strengthen the introduction by highlighting the research gap and the novelty of the proposed approach.
- Clearly define the specific risk audit domain (e.g., e-commerce enterprises) and relevant features used in the analysis.
- Provide a detailed explanation of the data source, collection process, and any challenges encountered.
- Elaborate on the methods used to handle potential data bias and ensure the reliability of findings.
- Expand on the discussion of results, including a deeper analysis of why the proposed method outperforms others and what specific features contribute to its success.
- Clearly explain the integration of K-means clustering with RF-LightGBM and how it represents a novel approach.
- Improve the writing style and ensure consistent formatting and citation style.
- Address limitations of the study and propose potential areas for future research.

Overall Recommendation:

This paper has the potential to be a valuable contribution to the field of enterprise risk audit. However, significant revisions are necessary to address the identified weaknesses and improve the clarity and technical rigor of the research. By incorporating the suggestions above, the authors can strengthen the paper's novelty, enhance its technical details, and improve the overall presentation for publication.