

## Review Form 1.7

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|--------------------------|---|
| Journal Name:            | <a href="#">Asian Journal of Probability and Statistics</a>   |
| Manuscript Number:       | Ms_AJPAS_118179   |
| Title of the Manuscript: | <b>Advancing Retail Predictions: Integrating Diverse Machine Learning Models for Accurate Walmart Sales Forecasting</b> |
| Type of the Article      | <b>Original Research Article</b>  |

### **General guideline for 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 guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journalajpas.com/index.php/AJPAS/editorial-policy> )

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**PART 1: Review Comments**

|   | 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><b>Compulsory</b> REVISION comments</p> <ol style="list-style-type: none"> <li>1. <b>Is the manuscript important for scientific community?</b><br/>(Please write few sentences on this manuscript)</li> <li>2. <b>Is the title of the article suitable?</b><br/>(If not please suggest an alternative title)</li> <li>3. <b>Is the abstract of the article comprehensive?</b></li> <li>4. <b>Are subsections and structure of the manuscript appropriate?</b></li> <li>5. <b>Do you think the manuscript is scientifically correct?</b></li> <li>6. <b>Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</b></li> </ol> <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p> | <ol style="list-style-type: none"> <li>1. <b>The manuscript provides valuable insights into predictive modeling for Walmart sales, which is relevant to the scientific community interested in retail analytics and machine learning applications.</b></li> <li>2. <b>The title "Predictive Modeling of Walmart Sales" effectively captures the main focus of the article.</b></li> <li>3. <b>The abstract provides a comprehensive overview of the study's objectives, methods, and key findings.</b></li> <li>4. <b>The subsections and structure of the manuscript appear appropriate, facilitating easy navigation and understanding of the content.</b></li> <li>5. <b>The manuscript appears to be scientifically correct based on the methodologies described and the results presented.</b></li> <li>6. <b>The references are sufficient and recent, covering relevant literature in the field of predictive analytics and machine learning. Additional references could include recent studies on retail sales forecasting and advanced machine learning techniques.</b></li> </ol> <p>It would be beneficial if the manuscript provided more information about the Walmart sales dataset used in the study, such as the specific time period covered, the geographic regions included, and any data preprocessing steps undertaken.</p> <p>While the manuscript discusses the performance of various machine learning models, it would be helpful to include some discussion on the interpretability of these models. Understanding how the models arrive at their predictions can provide valuable insights for decision-makers in the retail sector.</p> <p>In addition to highlighting the technical aspects of predictive modeling, discussing the practical implications of the study's findings for retail businesses would enhance the manuscript. For example, how can retailers use the insights gained from these models to optimize inventory management or marketing strategies?</p> |   |
| <p><b>Minor</b> REVISION comments</p> <ol style="list-style-type: none"> <li>1. <b>Is language/English quality of the article suitable for scholarly communications?</b></li> </ol>   | <p>The language and English quality of the article are generally suitable for scholarly communications. The manuscript demonstrates a proficient command of academic writing conventions and effectively communicates complex concepts in the field of retail analytics and predictive modeling. However, minor grammatical or stylistic improvements could enhance clarity and readability further.</p>   |   |
| <p><b>Optional/General</b> comments</p>   | <p>The manuscript provides a comprehensive analysis of predictive modeling for Walmart sales, utilizing diverse machine learning techniques. The exploration of advanced models like XGBoost and LightGBM showcases the potential for accurate sales predictions. However, there are areas for improvement:</p> <ol style="list-style-type: none"> <li>1. Clarify the methodology section: Provide more details on the hyperparameter tuning process for each model.</li> <li>2. Enhance fairness assessment: Further elaborate on how bias and fairness measurements were conducted, especially regarding the holiday and non-holiday subgroup analysis.</li> <li>3. Consider ethical implications: Discuss any potential ethical considerations related to data collection, model deployment, and decision-making based on model predictions.</li> <li>4. Improve language quality: Ensure clarity and conciseness in the manuscript to enhance readability for the scholarly audience.</li> </ol> <p>Overall, with minor revisions addressing these points, the manuscript will significantly contribute to the field of retail analytics and predictive modeling.</p>  |   |

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**PART 2:**

|   | <b>Reviewer's comment</b>  | <b>Author's comment</b> <i>(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)</i> |
|---|--|---|
| <b>Are there ethical issues in this manuscript?</b> | <i>(If yes, Kindly please write down the ethical issues here in details)</i> |   |

**Reviewer Details:**

|                                  |   |
|----------------------------------|---|
| Name:                            | <b>Ankit Mahule</b>   |
| Department, University & Country | <b>Shri Ramdeobaba College of Engineering and Management, India</b> |