Journal Name: **Journal of Basic and Applied Research international**

Manuscript Number: **Ms\_JOBARI\_12805**

Title of the Manuscript:

**Data Science for Demand Forecasting and Inventory Management: A Comprehensive Review**

Type of the Article

**PART** **1: Comments**

|  |  |  |
| --- | --- | --- |
|  | **Reviewer’s comment**  **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **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. A minimum of 3-4 sentences may be required for this part.** | This manuscript is significant as it provides a  comprehensive review of how data science techniques have transformed demand forecasting and inventory management. It highlights key methodologies, including ARIMA, LSTMs, and hybrid models, and their applications in various industries. By discussing real- world use cases and emerging trends like federated learning and quantum computing, the paper offers valuable insights for both researchers and practitioners aiming to optimize supply chain processes. Furthermore, it identifies challenges such as data quality, scalability, and model interpretability, suggesting future research directions to address these limitations. | Noted |
| **Is the title of the article suitable?**  **(If not please suggest an**  **alternative title)** | The current title, *"Data Science for Demand*  *Forecasting and Inventory Management: A*  *Comprehensive Review"*, is appropriate as it clearly conveys the scope of the paper. However, a slight refinement could improve clarity and impact. Suggested alternative:  **"Leveraging Data Science for Demand Forecasting and Inventory Optimization: A Comprehensive Review"**  This modification emphasizes the application and  benefits of data science in these domains. | Title revised |

|  |  |  |
| --- | --- | --- |
| **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.** | The abstract effectively summarizes the key themes of the paper, but it could benefit from slight refinement.  The inclusion of **specific quantitative results** or  **examples of real-world implementations** would  enhance clarity. Additionally, mentioning key challenges such as computational costs or data integration explicitly would provide a more balanced perspective. Consider adding:  *"**The review highlights successful applications across industries, demonstrating up to X% improvement in forecasting accuracy using ML-based techniques. However, challenges such as high computational demands and data integration complexities remain key areas for future research."* | Added |
| **Is the manuscript scientifically, correct? Please write here.** | The manuscript is scientifically sound and discusses  key concepts with appropriate citations. It effectively reviews methodologies such as time-series forecasting, ML-based models, and external factor integration. The discussions on hybrid models and  AI-driven forecasting methods align with recent advancements in predictive analytics. However, ensuring consistency in data source citation and eliminating minor redundancies would enhance readability. | Revision amended |

|  |  |  |
| --- | --- | --- |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | The references are extensive and cover recent advancements in demand forecasting and inventory  management. However, adding **more industry-specific case studies** (e.g., applications in healthcare, e-  commerce, or logistics) would further strengthen the paper’s practical relevance. If available, incorporating  references from **2023-2024** on real-world AI-driven inventory management implementations could be  beneficial. | Noted and revised |
| **Is the language/English quality of the article suitable for scholarly communications?** | The manuscript is well-written, but minor grammatical  inconsistencies and phrasing could be refined for clarity. Some sections have slightly repetitive wording (e.g., Introduction and Abstract overlap in content). A professional language edit focusing on conciseness and flow would enhance readability. | Grammar revised |
| **Optional/General** comments | • Consider adding a **flowchart or diagram** summarizing how different ML models are applied in demand forecasting.  • A **comparative table** showcasing the performance of different forecasting models (ARIMA vs. LSTM vs. Hybrid) based on real-world implementations would enhance the review’s practical impact.  • Expanding on how emerging techniques like **AutoML or federated learning** could address scalability issues would strengthen the future directions section.  The manuscript is well-structured and contributes significantly to the field.  • Minor refinements in the **abstract, reference**  **section, and clarity of explanations** would enhance its scholarly impact.  • Addressing the suggested improvements would elevate the quality and readability of the paper. | Correction effected  Revised |

|  |  |  |
| --- | --- | --- |
| **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)* |  |