Reviews of ECONJOURNAL-D-24-00059R2

Neutrosophic Inventory Management: A Cost-Effective Approach

Round 1

Reviewer 1

First of all, the paper "Neutrosophic Inventory Management: A Cost-Effective Approach" aims and scope match those of Economics, so the paper is adequate for this journal. This paper presents an application of Neutrosophic concept in inventory management. However based on my opinion it needs substantial improvements to be considered for publication in Economics. I would suggest a series of changes that in my opinion would improve the paper, in special for the reader.

>> I suggest the authors to improve the introduction section. Authors should better highlight the objective of their work and to what extent it contributes to close a gap in the existing literature and/or practice. What is the innovative value of the contribution proposed by the authors?

- In introduction section authors should provide more information about existing inventory models and their benefits/weaknesses.

>> Add motivations, research gap and novelty. These should be added as separate sub-sections.

>> Literature review section. You should provide more recent references published in last two-three years. Remove references published before 2018. Some recent references from supplier selection in MCMD field are missing. For example: Dash, A. ., Giri, B. C. ., & Sarkar, A. K. . (2023). Coordination of a single-manufacturer multi-retailer supply chain with price and green sensitive demand under stochastic lead time. Decision Making: Applications in Management and Engineering, 6(1), 679-715.; Miriam, R., Martin, N., & Rezaei, A. (2023). Decision making on consistent customer centric inventory model with quality sustenance and smart warehouse management cost parameters. Decision Making: Applications in Management and Engineering, 6(2), 341-371.

>> Validation section is missing. How we can judge about these results? Comparisons with existing algorithms from the literature is missing.

>> Discussion section is missing. How should we know about the quality of these solutions? The improvement must be discussed.

>> Limitations - Addressing your research limitations could enhance the credibility, applicability, and impact of your research. It is important to note that limitations in a research paper do not necessarily imply negative aspects but rather areas that offer opportunities for further refinement and improvement. Identifying and discussing these limitations transparently can contribute to the overall growth and effectiveness of the study. Explicitly

acknowledge the limitations of the proposed framework and model. Address any potential drawbacks or constraints and how they were managed or could be improved in future iterations.

>> The conclusion section seems to rush to the end. The authors will have to demonstrate the impact and insights of the research. The authors need to clearly provide several solid future research directions. Clearly state your unique research contributions in the conclusion section. Add limitations of the model. No bullets should be used in your conclusion section.

Reviewer 2

Please read my comments/suggestions given below for preparing the revised draft:

1-The abstract is not convincing, it should be refined to precisely illustrate what authors have done in this paper.

2-An introduction should clearly highlight the motivation, problem statement, the objective of the paper, gap in the existing research and the novelty of the conducted research.

3-English language needs to be improved significantly.

4- Compute time complexity of Algorithm 1 and Algorithm 2 and discuss their working nicely.

5- I suggest extending the conclusions section to focus on the results you get, the method you propose, and their significance.\

6- Reference list should be expand and cite related work:
A novel fuzzy decision making system for cpu scheduling algorithm, Neural Computing & Applications, 27 (7)(2016), 1927-1939.
A new intuitionistic fuzzy rule-based decision-making system for an operating system process scheduler, SpringerPlus, 5(2016), 1-17
A fuzzy climate decision support systems for tomatoes in high tunnels, International Journal of Fuzzy Systems, 19 (3)(2017), 751-775.
Bipolar fuzzy digraphs in decision support systems, Journal of Multiple-Valued Logic and Soft Computing, 27 (5-6)(2016),
531-551.

Reviewer 3

This paper proposes a neutrosophic inventory model to address uncertainty in inventory management parameters. The topic addressed is relevant and timely. However, the manuscript requires major revisions before it can be considered for publication.

- Rewrite the abstract.
- The theoretical development of the neutrosophic inventory model is not clearly explained. Important definitions and assumptions are missing. The notation used is ambiguous at times. Concepts need to be more rigorously defined.
The literature review section fails to provide an in-depth critical analysis of existing neutrosophic models. More comparative studies with state-of-the-art approaches need to be presented; such as; Kumar Mohanta, K. ., & Sharanappa, D. S. . (2024). Neutrosophic Data Envelopment Analysis: a Comprehensive Review and Current Trends. Optimality, 1(1), 10-22.
Das, D. ., & Samanta, G. C. . (2024). An EOQ Model for Two Warehouse System During Lock-Down Considering Linear Time Dependent Demand. Transactions on Quantitative Finance and Beyond, 1(1), 15-28.
Add also some related works in the field of fuzzy set extensions such as: 10.22105/jfea.2021.306498.1163, 10.22105/bdcv.2023.190406, 10.56578/josa010404, 10.22105/riej.2023.298557.1240, 10.22105/jfea.2021.288198.1152, 10.1007/s00500-023-09459-0, 10.22105/bdcv.2023.192676, 10.22105/jfea.2020.254081.1025, 10.7717/peerj-cs.1646, 10.22105/riej.2023.403685.1387, 10.56578/josa010304, 10.54216/IJNS.230130.

- The description of the proposed neutrosophic model is unclear and difficult to follow. The authors need to provide clearer explanations supported by relevant examples. Key assumptions and notations should be clearly defined upfront.
- The model formulation lacks rigour. It is unclear how the proposed optimization problem is solved. Details of the optimization procedure/algorithm are missing.
- It is unclear how order quantities, demand etc. are determined in practice using this model. The model formulation appears to lack concrete steps that could be implemented. More practical examples would aid understanding.
- How are the parameters like demand, costs etc. defined as neutrosophic numbers in real inventory situations? What types of uncertainty do these cover?
- What solution technique is used to optimize the neutrosophic total cost function?

- What inventory settings or scenarios does this model work best for? What are its limitations?
- How would a manager implement this model in practice to determine order quantities?
- Readers cannot evaluate its effectiveness without a case study.
- The comparison with classical/fuzzy models is insufficient. A thorough computational study is required to validate the proposed model.
- The managerial insights and implications of the findings are not discussed adequately. More practical guidelines are needed.
- The conclusion does not effectively summarize the study. Contributions and limitations are not clearly stated.
- Section 2: Provide more details on the neutrosophic number definitions.
- Section 3: Reformulate the model clearly showing all variables and constraints.
- Section 4: Details of the optimization algorithm/procedure are missing.
- Tables/figures are needed to support comparisons.

Round 2
Reviewer 1
The authors have addressed the point of my concern. I am happy with their corrections. Hence, I would like to recommend this manuscript to be published.

Reviewer 2
I accept this paper.

Editor
The authors have submitted a further revised manuscript with the mathematical content now more comprehensively relegated to the appendix. They have made commendable efforts to enhance the manuscript's accessibility to non-specialists. However, I believe additional clarification is needed to more explicitly articulate the core objective and contributions of the paper. Specifically, it remains somewhat ambiguous what the final assessment of the introduced technique is—its advantages over existing methods are not distinctly highlighted, nor is it clear how it aligns with those methods. I recommend that the authors expand their discussion to more clearly elucidate these aspects and detail the logical progression to their conclusions.

Round 3

Reviewer 1

The authors have addressed the point of my concern. I am happy with their corrections. Hence, I would like to recommend this manuscript to be published.

Reviewer 2

Accept

Reviewer 3

Congratulations to authors for the acceptance of your article. I'm confident that your article will inspire many others in the academic community.