

Reviews of ECONJOURNAL-D-24-00128R1

Optimizing Emergency Logistics Center Locations: A Multi-Objective Robust Model

Round 1

Reviewer 1

How does the proposed multi-objective emergency logistics center siting model address the uncertainties in demand, cost, and timing of emergency supplies during major emergencies?

What are the specific components and constraints considered in constructing the deterministic and robust optimization models for emergency logistics centers?

How does the bi-objective function in the siting model balance transportation cost and transportation time, and how are the construction and inventory costs integrated?

Can you explain the role of the generalized hybrid frog-hopping algorithm in the context of the emergency logistics center siting model? How does it encode facilities and optimize solutions?

How were the multi-scenario simulation experiments designed to test the effectiveness of the proposed models and algorithms, and what were the key findings?

In the introduction, you need to connect the state of the art to your paper goals. Please follow the literature review by a clear and concise state of the art analysis. This should clearly show the knowledge gaps identified and link them to your paper goals. Please reason both the novelty and the relevance of your paper goals. Clearly discuss what the previous studies that you are referring to. What are the Research Gaps/Contributions? Please note that the paper may not be considered further without a clear research gap and novelty of the study.

In your review you mentioned 'Study (Ghasemi, P, et al, 2019) combed through the literature on the location of logistics and distribution centers for large-scale emergency rescue, and found that there are problems in the current research as well as put forward a future research trend'. You need elaborate more example from this author because they have several update papers in applied mathematical planning, annals operation research, socio economic planning science journals. So, I suggest authors to compare their review with updated literature

In what ways do the cost preference weights influence the emergency relief costs and times in different stages of emergency response, as illustrated by the trends in the study?

What are the implications of the findings regarding the robustness of the optimization model compared to the deterministic model, especially in terms of handling uncertainties?

How do varying robust constraint coefficients affect the performance of the multi-objective robust optimization model, and what range of coefficients is recommended based on the study's analysis?

Reviewer 2

Comments and suggestions for Author:

This is an interesting topic. It can be considered with major changes, as follows:

1. Though research gaps were stated, the contributions of the paper are not clear enough. I suggest the author to show them in a specific position.
2. Authors should provide a comprehensive research methodology section to clarify how they have developed the research steps and for clearer presentation.
3. Kindly discuss the main objective of the study, is it only about facility location or will also cover emergency distribution? The title implies that the output of the study is Emergency Logistics Center Location, however, the abstract, the discussion, and the conclusion parts mention also about emergency supplies distribution. I suggest that if the study will cover also about the distribution, the author might consider changing the title into Emergency Logistics Network to cover the distribution part of the study. However, if the title will be changed, the introduction and RRL must also be modified.
4. Please give justification why the deterministic model was compared to the robust model, when in fact the robust model was derived from the deterministic model (Figures 2, 3, and 4). If the purpose is for the model validation and verification, the robust model must be compared to other models (e.g. models stated from the existing studies and not on the proposed deterministic model).
5. Kindly improve the presentation of data, particularly the tables. I suggest that some tables be converted into figures (networks) for more effective presentation (specifically Tables 13 – 18).
6. For better understanding of the results of the study, I suggest that the author discuss both the theoretical implications and the practical implications of the study on the Conclusion part.
7. The writing of the paper needs to be improved. There were words used using the synonym but not appropriate for the paper. Example is, what does the word “Collection” in Part 3.2 (Explanation of Symbols) mean? If it means Sets, collection cannot be used as a synonym for the word sets... same thing for “location” and “siting”...

Round 2

Reviewer 1

No comment

Reviewer 2

Thank you for considering some of my comments. However, I still would suggest the following since I did not see it clearly in the revised paper:

1. Though some tables were converted into figures, however I suggest that appropriate figure must be used. Like Figure 7 is presented using Bar Graph, when it can be presented using a network presentation to show which node will cover the specific city/ies. Same for Table 14, Table 17, and Table 18.
2. Further, I recommend that only one method of presentation is to be used, either Table or Figure, whichever is more effective presentation.
3. The writing of the paper needs to be improved.