Completed: 2024-01-04 04:37 PM

Recommendation: Revisions Required

Reviewer Conflicts / Disclosures *

If you have any actual or potentially relevant competing interests from a professional, personal, or financial perspective, these competing interests may not disqualify your review but should be stated so that your review can be taken into context. If you do not have any relevant conflicts or disclosures, please state that as well.

I do not have any relevant conflicts of interest.

Relevance *

Rate the relevance of the paper to paramedicine.

- 1 - Not relevant to paramedicine
- 2
- 3
- 4
- 5 - Highly relevant to paramedicine

Relevance Comments

Enter any comments or suggestions related to the relevance of the article

Title *

Rate the appropriateness of the title.

- 1 = Title not appropriate for the paper
- 2
- 3
- 4
- 5 = Title is very appropriate for the paper

Title Comments

Enter any comments or suggestions related to the title

The title is borderline OK. Ideally it should contain information to the type of study. A suggestion could be something like
"Examining the Link Between EMS System Design and Patient Outcomes: A Comprehensive Analysis of Major U.S. Metropolitan Areas"

Abstract *

Rate the quality of the abstract

- 1 = Abstract poorly summarizes the paper
- 2
- 3
- 4
- 5 = Abstract is an excellent summary of the paper
- Not applicable

Abstract Comments

Enter comments or suggestions related to the abstract

Overall, the abstract is well-structured and effectively conveys the main elements of the research. It provides a good foundation for readers to understand the study's purpose, methods, and key findings.

Aims, Objectives or Hypotheses

Rate how well the aims, objectives or hypotheses were described

- 1 = Aims, objectives, or hypotheses were poorly described
- 2
- 3
- 4
- 5 = Aims, objective or hypotheses were very well described
- Not applicable

Aims, Objectives, Hypotheses Comments

Enter comments or suggestions related to the aims, objectives or hypotheses

The aims, objectives, or hypotheses of the study are well described in the document. The study's primary objective is to explore the association between various EMS system characteristics and patient outcomes. It seeks to fill a research gap by conducting a broad outcome-based analysis of the impacts of overall EMS system design. The methods involve obtaining data from 30 US EMS systems and using exploratory factor analysis and partial least squares path modelling to identify relationships between variables.

Here are some suggestions to improve the clarity and precision of the information:
Aims and Objectives:
Consider explicitly stating the aims and objectives at the beginning of the document. While they are implicit in the content, a clear, concise statement at the outset would enhance readability.
Hypotheses:
It would be beneficial to explicitly state any hypotheses tested in the study. While the document discusses associations and relationships, explicitly mentioning hypotheses can provide a clearer framework for readers.

Materials and Methods *

Rate how well the materials and methods of the study fit the study question(s)

- 1 - Materials and methods did not fit the study question(s) well
- 2
- 3
- 4
- 5 - Materials and methods were very appropriate for the study question(s)
- Not applicable

Materials and Methods Comments

Enter comments or suggestions realted to the materials and methods

Partial Least Squares Path Modeling (PLS-PM):
Current Description:
While PLS-PM is mentioned (and a few citations given), the reasons for choosing this method over other structural equation modeling (SEM) techniques are not explicitly discussed.
Potential Improvement:
The researchers could further justify the use of PLS-PM. They could explain that PLS-PM is well-suited for situations where the sample size is relatively small, where the data may not strictly meet the assumptions of traditional covariance-based SEM, and where latent variable models are employed. Emphasize that, in the context of this study with a potentially limited sample size (30 EMS systems), PLS-PM is preferred for its ability to handle such conditions effectively. Additionally, it might be beneficial to briefly acknowledge the specific advantages of PLS-PM in dealing with complex models or when the emphasis is on prediction rather than hypothesis testing.

Integration into the Study:
Transparency:
Improve clarity in the methods section for why EFA and PLS-PM were chosen, and how these methods align with the research question. This enhances transparency, allowing readers to understand the logic behind the methodological choices.
Alignment with Study Objectives:
Explicitly connect the features of EFA and PLS-PM with the study's objectives. For instance, highlight how these methods help in exploring the relationships between EMS system characteristics and patient outcomes in a holistic manner.

Sampling:
Was this random? How was stratified sampling applied (if so)?
According to the US bureau of statistics, there are only 10 cities with a population above 1,000000.
This needs some further explanation.
Total population of US is 331,449,281.
The combined population value of the top 30 cities equates to 38,922,559 (with a variance of 557,045 to 7,613466).
This is about 12% covered if using this method.

Analysis *

Rate the quality of the analyses performed on the data that was collected

- 1 - Analyses were very problematic
- 2
- 3
- 4
- 5 - Analyses were very well done
- Not applicable

Analysis Comments

Enter comments and suggestions related to the analyses

The analysis in the study has several strengths, including the use of exploratory factor analysis (EFA) and partial least squares path modeling (PLS-PM) to explore relationships between EMS system characteristics and patient outcomes. However, there are areas where the analysis could be strengthened, these are suggested below:

Clarity in Reporting:
The study provides a comprehensive overview of the methods, including statistical tests used, multicollinearity assessment, and model validation. However, there is room for improvement in terms of clarity. Consider simplifying complex statistical concepts for readers who may not be experts in the field or providing additional context. You have further room to move with word count yet.

Interpretability of Results:
While the study reports significant relationships between certain variables, there could be more emphasis on the practical implications of these findings. Clearly articulate how the identified relationships contribute to the understanding of EMS system design and its impact on patient outcomes.

Comparison with Previous Research:
The study mentions the lack of outcome-based research in EMS and the emphasis on cardiac arrest metrics. To strengthen the analysis, provide a more detailed discussion comparing the current findings with existing literature. Discuss how the study builds upon or challenges prior research.

Addressing Data Gaps:
The incomplete cardiac arrest data is acknowledged, but the study does not elaborate on the potential impact of this data gap on the overall analysis. Consider discussing the implications of missing data and how it might influence the interpretation of results.

Sensitivity Analysis:
Conduct sensitivity analyses to assess the robustness of the results. Explore how variations in model specifications or the inclusion/exclusion of certain variables may impact the outcomes. This enhances the credibility of the findings.

External Validity:
Discuss the generalizability of the findings beyond the studied metropolitan areas. Consider the potential variations in EMS systems across different regions and how this might affect the applicability of the results to other settings.

Discussion of Model Fit:
The study discusses path coefficients and statistical significance but does not explicitly mention measures of model fit. Including indices of model fit (if applicable for PLS-PM) would provide additional information about how well the model represents the data.

Results *

Rate the presentation of results

- 5 - Results are presented in a clear comprehensive manner
- 4 -
- 3 -
- 2 -
- 1 - Results are poorly presented; Incomplete

Results Comments

Comments on the Results section

I have provided this feedback incorporated into analysis above.

Discussion *

Rate the discussion section

- 1 - Discussion was missing or poorly utilized
- 2 -
- 3 -
- 4 -
- 5 - Discussion was excellent

Discussion Comments

Enter comments and suggestions related to the discussion section

The discussion section of the article is generally well-constructed and provides an insightful interpretation of the study findings. However, there are a few areas where the discussion could be enhanced:

Interpretation of Practical Significance:
The discussion could benefit from a more detailed exploration of the practical significance of the findings. While statistical significance is highlighted, it would be valuable to discuss the real-world implications of the identified relationships on EMS system design and patient outcomes.

Comparisons with Existing Literature:
While the study mentions the lack of outcome-based research in EMS and the overemphasis on cardiac arrest metrics, a more comprehensive discussion comparing the current findings with existing literature would strengthen the argument. Discuss how the study contributes to or challenges prior research in the field.

Conclusions / Recommendations *

Rate the conclusions or recommendations

- 1 - Conclusions / recommendations are poorly supported by the information provided
- 2
- 3
- 4
- 5 - Conclusions / recommendations are well-supported by the information provided

Conclusions / Recommendations Comments

Enter comments on the conclusions / recommendations

The conclusion section of the article effectively summarizes the key findings and implications of the study. However, there are a few areas where the conclusion could be enhanced:

Reiteration of Main Findings:
While the main findings are mentioned, consider reiterating the key results more explicitly to reinforce their significance. This can help readers easily grasp the main takeaways from the study.

Linkage to Research Questions and Objectives:
Explicitly tie the conclusions back to the research questions and objectives outlined in the introduction. Remind readers how the study addressed the identified gaps in the literature and whether the objectives were met.

Practical Implications:
Expand on the practical implications of the findings for EMS system design and patient outcomes. Discuss how the results can inform decision-making, policy development, or practice within EMS systems.

References *

Rate the references

- 1 - The manuscript is poorly referenced
- 2
- 3
- 4
- 5 - The manuscript is very well referenced

References Comments

Enter comments related to the references. Are any other particular references suggested?

The reference list provided appears well-constructed and generally follows proper citation practices. However, there are a couple of points to consider for further improvement:

Inclusion of US Census Bureau:
The inclusion of "US Census Bureau. (2020). 2020 Community Data. https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2020/" seems to be a bit unconventional for a reference list. Normally, official reports or publications from government agencies like the Census Bureau are cited in the text or footnotes rather than included in the reference list. It might be more appropriate to reference this information directly in the text where it is relevant. I note the journal editors may regulate this.

Format for Handbook:
For the handbook ("Vinzi, E., Trinchera, L., & Amato, S. (2010). Handbook of partial least squares. Springer-Verlag."), ensure that the citation includes the specific editors if applicable, and page numbers or chapter information if you are referencing a particular section within the handbook.

Graphics and Video

Rate the quality / appropriateness of the graphics - graphs, photographs, video clips, etc.

- 1 - Graphics were of poor quality; a poor fit to the manuscript
- 2
- 3
- 4
- 5 - Graphics were of excellent quality; a great fit to the manuscript
- not applicable

Graphics and Video Comments

Enter comments or suggestions related to the graphics. Should other graphics or a video clip be added?

Novelty / Confirmation *

Rate the novelty or confirmation value of the manuscript. Does it contribute anything new to the literature or does it offer useful confirmation or dispute of prior work?

- 1 - The manuscript does not add anything new to the literature; It does not provide useful confirmation or dispute of prior work.
- 2
- 3
- 4
- 5 - The manuscript is a novel addition to the literature; It provides useful confirmation or dispute of prior work.

Novelty / Confirmation Comments

Enter comments related to the novelty of manuscript or its confirmation or dispute of prior work

Writing Quality *

Rate the quality of the writing. Is it clear, concise, well organized?

- 1 - Poorly written
- 2
- 3
- 4
- 5 - Very well written

Writing Quality Comments

Enter comments on the quality of the writing

Legnth *

Rate the legnth of the manuscript relative to the suggested word count limits for the submission category

- 1 - It is much longer than the word count guidelines for the submission category
- 2
- 3
- 4
- 5 - It is well within the suggested word count guidelines for the submission category

Legnth Comments

Enter comments related to the length of the manuscript relative to the submission category. If you think the length is appropriate despite the submission guidelines, please feel free to comment accordingly.

The length of the manuscript is well within normal limits, I do think that there is further opportunities to improves clarity and add to the discussion section. These have been mentioned above.

Ethics Review *

Rate the statements made relative to ethics review or clearances

- 1 - Ethics review was poorly documented or absent
- 2
- 3
- 4
- 5 - Ethics review was clearly documented
- Not applicable

Ethics Review Comments

Enter comments related to the documentation or need for review by an ethics review panel or obtaining waivers

In the provided study, it is mentioned that an institutional review board determined that the use of datasets was not human subjects research. This suggests that the study may have been deemed exempt from ethical review for several reasons. This requires more information.
Which review board and provide further details. In your data analysis you mention looking at many types of patient data, how is this OK to do without ethical approval?

Conflicts / Disclosures *

Rate the documentation of relevant conflicts of interest / disclosures or their absence

- 1 - Relevant conflicts / disclosures are not addressed
- 2
- 3
- 4
- 5 - Relevant conflicts / disclosures are clearly stated or clearly stated not to exist

Conflicts / Disclosures Comments

Enter comments relative to conflicts of interest / disclosures or the lack thereof

General Comments to Authors

Enter any general comments or suggestions to authors not addressed elsewhere in this review

Specific feedback for each section has been provided. Overall, this article represents a comprehensive exploration into the association between EMS system characteristics and patient outcomes in major US metropolitan areas. The study employs a rigorous methodology, combining primary and secondary data sources to analyze 29 indicators across 30 EMS systems. The statistical analyses, including exploratory factor analysis and partial least squares path modeling, contribute to the robustness of the research.

The article effectively addresses the critical gap in outcome-based research within the EMS domain, emphasizing the need for a broader understanding of system design impacts on patient care. The findings, particularly the practical significance of variables related to socioeconomic and public health factors, challenge prevailing assumptions about the direct relationship between certain EMS characteristics and decreased patient mortality.

However, as an editor, it is essential to consider opportunities for improvement. The word count is currently below the journal's limit, providing leeway for further elaboration in key sections. Additionally, the discussion could benefit from a more in-depth exploration of the external factors influencing EMS efficacy, as well as a consideration of the links to other literature.

The article's strengths lie in its methodological rigor, insightful analysis, and contribution to bridging the research gap in EMS. The editor encourages the authors to utilize the available word limit to enhance the article's depth and ensure a thorough and nuanced discussion of the implications of the study.

General Comments to the Editorial Team

Enter any comments for the editorial team only - not to be shared with the authors

Overall Recommendation Comments

Enter any comments to help clarify the recommendations, if needed

Reviewer Files