

REVIEWER'S REPORT

Manuscript No.: IJAR-54204

Date: 07.10.2025

Title: Thermal Comfort and Energy Resilience of Urban Households Facing Climate Change: A Case Study in Dakar

Recommendation:

Accept after minor revision

Rating	Excel.	Good	Fair	Poor
Originality	✓			
Techn. Quality		✓		
Clarity		✓		
Significance		✓		

Reviewer Name: Dr.K.Arumuganainar

Date: 07.10.2025

Reviewer's Comment for Publication.

- **Originality:** The paper provides valuable empirical evidence from Dakar, a region underrepresented in thermal comfort literature.
- **Clarity:** Generally well-written but some sections need language refinement.
- **Rigor:** Methodology is sound but needs more detail on reliability, ethics, and sampling justification.
- **Contribution:** Strong contribution to urban climate resilience and energy policy studies.

Detailed Reviewer's Report

Review Report

1. Title and Abstract

- **Strengths:**
 - The title is clear, concise, and reflects the main focus of the research (thermal comfort, energy resilience, climate change, urban households in Dakar).
 - The abstract summarizes the objectives, methodology, key findings, and implications effectively.
 - Keywords are relevant and help with indexing.
- **Weaknesses:**
 - The abstract could benefit from quantitative details about policy recommendations.
 - Some phrases in the abstract are slightly repetitive (e.g., "sustainable and equitable thermal comfort").

Overall: Strong title and well-structured abstract, but refinement could improve readability.

2. Introduction

- **Strengths:**
 - Provides a strong justification by linking climate change, urbanization, and energy demand.
 - Uses local statistics and figures (energy consumption by sector, electricity demand projections).
 - Establishes the gap in empirical studies on Dakar households.
- **Weaknesses:**
 - Some references (e.g., [1], [2]) are descriptive but could be integrated with critical analysis.
 - The flow could be improved by shortening long sentences.

Overall: Context is well set, but the introduction could be more concise with sharper research questions.

3. Theoretical Framework

- **Strengths:**
 - Good definition of thermal comfort, distinguishing between objective and subjective factors.
 - Comparison between industrialized countries (technological solutions) and sub-Saharan Africa (behavioral strategies).
- **Weaknesses:**
 - Limited discussion of specific thermal comfort models (e.g., PMV/PPD models, adaptive thermal comfort models).
 - Lacks critical engagement with literature beyond general contrasts.

Overall: Adequate but could be enriched with theoretical depth.

4. Methodology

- **Strengths:**
 - Clear description of survey design: stratified sampling, 354 respondents, five departments of Dakar.
 - Use of SPSS and both descriptive and multivariate analysis adds rigor.
- **Weaknesses:**
 - The paper does not mention the reliability/validity of the questionnaire.
 - Sample size justification (why 354 respondents) is not explicitly discussed.
 - Ethical approval or consent process is not described.

Overall: Well-structured but needs more detail on reliability, ethics, and justification of methods.

5. Results

- **Strengths:** Results are presented with clarity and supported by figures and tables (household profiles, adaptation strategies, energy motivations).
- Quantitative findings are meaningful (e.g., 66.1% comfortable, 29% discomfort, 95.8% open windows, 91% use fans, only 18% use AC).
- **Weaknesses:**
 - Some figures (Figures 4–8) lack detailed captions or deeper interpretation.

- Results could benefit from cross-tabulation (e.g., income level vs. adaptation strategy).

Overall: Strong dataset presentation but interpretation could be expanded.

6. Discussion

- **Strengths:**

- Relates Dakar's results with international literature (South Africa, India, Accra, Nairobi).
- Highlights socioeconomic inequalities in adaptation.
- Identifies the gap in public policy and standards.

- **Weaknesses:**

- Discussion could link more directly to climate change projections.
- Limited critical assessment of limitations (e.g., survey biases, seasonality of data).

Overall: Solid comparative discussion but could integrate more critical perspectives and limitations.

7. Conclusion and Perspectives

- **Strengths:**

- Clear recommendations: insulation standards, financial incentives, eco-friendly neighborhoods, awareness campaigns.
- Forward-looking research directions (thermal modeling, prospective analysis).
- **Weaknesses:** Recommendations are general; more context-specific policy instruments for Dakar would strengthen this section.
- Does not address feasibility or potential barriers.

Overall: Practical and relevant, but could be more detailed.

8. References

- **Strengths:**
 - Includes both local (Senegal reports) and international sources.
 - Mix of academic and institutional references provides credibility.
- **Weaknesses:**
 - Some references (e.g., [1], [2]) are outdated (2015–2017) given the 2024 study timeline.
 - Recent works on adaptive thermal comfort and urban energy transitions are missing.

Overall: Adequate but should include more up-to-date and theoretical references.

Overall Assessment

- **Originality:** The paper provides valuable empirical evidence from Dakar, a region underrepresented in thermal comfort literature.
 - **Clarity:** Generally well-written but some sections need language refinement.
 - **Rigor:** Methodology is sound but needs more detail on reliability, ethics, and sampling justification.
 - **Contribution:** Strong contribution to urban climate resilience and energy policy studies.
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Recommendation

- **Decision: Minor Revision**

Reasons:

- Strong empirical contribution with relevant findings.
- Needs improvement in theoretical framework, methodology details, discussion depth, and updated references.