

REVIEWER'S REPORT

Manuscript No.: **IJAR-54430**

Date: 21/10/2025

Title: *Spatial Analysis of Transport Mode Choice and Travel Behaviour in Indo-Burman Border: A Case Study of Aizawl City, Mizoram*

Recommendation:

Accept as it is

✓Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

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

Reviewer Name: **Dr. Touseef Malik**

Date: 22/10/2025

Reviewer's Comment for Publication:

The manuscript presents a rigorous spatial–statistical investigation of transport mode choice in Aizawl, a hill city characterized by steep topography and a linear urban form. Using **Multinomial Logistic Regression (MNL)** with primary household survey data (n=691) integrated into **ArcGIS-derived** spatial variables (elevation, slope, road density, traffic congestion, distance to bus/taxi stands, CBD), the study demonstrates how terrain and built-environment factors condition modal probabilities (public bus, private car/two-wheeler, two-wheeler taxi, walking). Results highlight proximity to bus stands, slope bands (28–42°), elevation ranges, and road density as key determinants, with clear implications for terrain-sensitive mobility planning. Overall, the paper is original, methodologically sound, and policy-relevant for hilly cities. Minor editorial and reporting refinements are advised.

Recommendation: Accept after minor revision

Detailed Reviewer's Report

STRENGTHS

- Strong problem–context fit:** Terrain-constrained urban form is convincingly linked to observed modal behaviour.
- Data design and scale:** Substantial household sample with spatial covariates derived and standardized for meaningful model estimation.
- Appropriate modeling strategy:** Multinomial logistic regression aligns with multi-category mode choice; model structure and variable selection are sensible.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

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4. **Actionable insights:** Distances to transit, slope/elevation thresholds, and network density emerge as clear levers for terrain-sensitive mobility planning.
5. **Policy relevance:** Results translate into practical directives for improving transit access and non-motorized connectivity in elevated/peripheral wards.

WEAKNESSES

1. **Model reporting gaps:** Include a compact table with key fit indices (e.g., McFadden's R^2 , LR χ^2 , AIC/BIC) and classification accuracy.
2. **Controls beyond space:** Limited socio-economic controls reduce behavioural interpretability; acknowledge scope or add a brief robustness check if available.
3. **Diagnostic transparency:** Summarize assumption checks (influential observations, independence, multicollinearity beyond VIF).
4. **Figure/table polish:** Coefficient tables and maps need clearer labeling, decimal consistency, unified symbology, legible legends/scales, and tighter cross-referencing.
5. **Language and style:** Standardize hyphenation, units, and APA 7 formatting; correct minor typos and harmonize table captions.