



REVIEWER'S REPORT

Manuscript No.: IJAR-56998

Title: Applied Statistics in Health Research: A Practitioner's Guide to GLM Techniques Using SPSS and SAS"

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revisionYES

Do not accept (*Reasons below*)

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

Reviewer's ID: JPR-094

Detailed Reviewer's Report

Reviewer's Report

Strengths

1. ****Clear Topic and Relevance****

* The manuscript focuses on the ****General Linear Model (GLM)**** and its applications in health research, which is highly relevant for clinical researchers and students.

2. ****Comprehensive Coverage****

* Includes major statistical techniques:

* ANOVA

* MANOVA

* ANCOVA

* Also briefly connects to generalized linear models and survival analysis.

3. ****Practical Orientation****

* Step-by-step procedures for ****SPSS and SAS**** are useful for beginners.

* Inclusion of real-world clinical examples (e.g., CKD, antihypertensive drugs) improves applicability.

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4. **Educational Value**

- * Good for teaching or as a **tutorial/review article**.
- * Covers assumptions, interpretation, and effect size measures.

Weaknesses

1. **Lack of Novelty**

* The manuscript is largely **descriptive** and based on standard textbook material.

- * No new methodology, dataset, or original research contribution.

2. **Poor Language and Grammar**

* Multiple grammatical errors:

- * “very rapid space” instead of **pace**
- * Sentence repetition and awkward phrasing
- * Needs **professional language editing**.

3. **Formatting Issues**

- * Tables are poorly aligned and inconsistent.
- * Section transitions are abrupt.
- * Some symbols/formulas are not properly formatted.

4. **Lack of In-text Citations**

- * References are listed but **not cited within the text**.
- * Weakens scientific credibility.

5. **Superficial Critical Analysis**

- * The paper claims to “critically examine” but mostly **describes methods**.
- * Limited discussion of:
 - * When NOT to use methods
 - * Comparative limitations in real datasets

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6. ****Redundancy and Repetition****

- * Concepts (e.g., GLM definition, applications) are repeated multiple times.
- * Reduces readability.

7. ****Figure Missing****

- * "Figure 1" is mentioned but not provided.

Key Points

- * GLM is presented as a unified framework for statistical analysis.
- * ANOVA, MANOVA, and ANCOVA are explained with:
 - * Assumptions
 - * Applications
 - * Software implementation
- * Practical guidance using SPSS and SAS is included.
- * Emphasis on:
 - * Assumption testing
 - * Effect size
 - * Interpretation

Significance

- * ****Moderate significance****

- * Useful as a ****teaching/review article**** for students and early researchers.
- * Limited impact for high-level journals due to lack of originality.

Recommendation

- ### **Decision: **Major Revision Required****

Specific Suggestions for Improvement

1. ****Improve Language Quality****

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- * Thorough grammatical revision required.
- * Consider professional editing.

2. ****Enhance Novelty****

* **Add:**

- * Case study with real dataset
- * Comparative analysis of methods
- * Recent references (last 5 years)

3. ****Add Critical Insight****

* **Discuss:**

- * Limitations of each method in clinical research
- * Common misuses in published studies

4. ****Fix Formatting****

- * Proper tables and figure formatting
- * Include the missing figure

5. ****Add In-text Citations****

- * Link statements to references properly

6. ****Reduce Redundancy****

- * Remove repeated explanations
- * Make writing concise

7. ****Strengthen Conclusion****

- * Provide actionable recommendations for researchers

Overall Comment

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The manuscript has ****good educational potential**** but currently reads like a ****textbook summary rather than a publishable research/review article****. Substantial revision is required to improve clarity, originality, and scientific rigor.

Decision: ****MAJOR REVISION****

Overall Justification

The manuscript requires ****major revision**** due to:

- * Lack of originality (mostly textbook-level content)
- * Poor language quality
- * Formatting and structural issues
- * Absence of critical analysis and recent literature
- * Missing figure and improper referencing

Abstract Section (Lines 4–16)

* ****Line 6–7****: “review critically examines”

Claim of ***critical analysis*** is not supported in the manuscript (mostly descriptive).

* ****Line 9–11****: Overly long sentence

Needs simplification for clarity.

* ****Line 12–13****: “effect size interpretation...”

Mentioned but not deeply analyzed later.

****Issue****: Abstract overstates contribution → needs alignment with actual content.

Keywords (Line 17–18)

* Too generic (e.g., “Health Research”, “SPSS”)

Add ****more specific/indexable keywords****.

Introduction (Lines 20–57)

* ****Line 21****: “very rapid space”

Grammar error → should be ***pace***.

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****Line 22–23**:**

- Missing space after period; poor sentence connection.

****Line 23–30**:**

- Repetition of same idea (importance of GLM).

****Line 34–37**:**

- States “critically appraise” but no real critique provided later.

****Line 39–40**:**

- Repetition of earlier sentence (redundancy).

****Line 41–47**:**

Good concept (GLM vs GenLM) but:

* No citation provided

* Explanation is superficial

****Line 50–56**:** Mixed methods paragraph

- Not directly relevant to GLM focus → disrupts flow

****Major Issues**:**

* Redundancy

* Grammar errors

* Lack of citations

* Weak focus

Figure (Line 59–60)

* “Figure 1” mentioned but not included

****Critical issue**** → must provide figure.

ANOVA Section (Lines 62–88)

****Line 70–73**:**

- Repetition of same definition (already stated above)

****Line 78–79**:**

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“Levene’s Test” mentioned without citation

*** **Line 80–81**:**

- Formatting inconsistency in hypotheses**

*** **Line 88 (Table)**:**

- Table formatting broken and unreadable**

****Issues**:**

*** Redundancy**

*** Poor formatting**

*** Lack of references**

MANOVA Section (Lines 90–119)

*** **Line 103–110**:**

- Assumptions listed but not explained critically**

*** **Line 107**:**

Statistical tests listed without explanation or citation

*** **Line 119 (Table)**:**

- Table poorly aligned and inconsistent**

****Issue**:**

*** Descriptive, not analytical**

*** Formatting problems**

ANCOVA Section (Lines 121–148)

*** **Line 129–132**:**

- Language awkward and unclear**

*** **Line 134–142**:**

Assumptions listed but no discussion of violations

****Issue**:**

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*** Needs deeper explanation and examples**

Comparative Analysis Table (Lines 164–165)

*** Table incomplete and misaligned**

*** Lacks references or justification**

****Major formatting issue****

Software Implementation (Lines 166–174)

*** **Line 167–170**:**

Good description but:

*** No citations**

*** No comparison with other tools (e.g., R, Stata)**

****Issue**:**

*** Outdated and incomplete discussion**

SPSS/SAS Steps (Lines 175–263)

*** Very procedural (manual-like)**

*** Not suitable for research article (too basic)**

*** No screenshots or validation**

****Major Issue**:**

*** Reads like **tutorial notes**, not journal content**

Examples Section (Lines 264–333)

*** Strength: practical examples included**

*** No real data or results**

*** No statistical output shown**

****Issue**:**

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* Hypothetical only → reduces scientific value

Advanced Topics (Lines 334–350)

* Good inclusion

* Very b Effect Size (Lines 351–360)

* Formula formatting broken

* Symbols unclear

****Critical Issue**:**

* Mathematical expressions must be corrected

Applications Table (Lines 362–363)

* Table misaligned and cluttered

* Language inconsistent

****Issue**:**

* Needs restructuring

Conclusion (Lines 364–373)

* Repeats introduction content

* No new insights or recommendations

****Issue**:**

* Weak conclusion

References (Lines 374–386)

* No in-text citations

* Mostly old references (pre2018)

* Missing recent studies

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****Major Issue**:**

*** Poor literature integration**

Final Summary of Issues

Category	Problem
Originality	Low (textbook-style)
Language	Poor
Formatting	Major issues
Figures/Tables	Missing or incorrect
Citations	Absent in-text
Critical Analysis	Weak
Practical Value	Limited (no real data)

Final Recommendation

**MAJOR REVISION REQUIRED**

What must be fixed before acceptance:

- 1. Rewrite entire manuscript for ****clarity and grammar******
- 2. Add ****in-text citations + recent references (last 5 years)******
- 3. Include ****Figure 1******
- 4. Fix all ****tables and formulas******
- 5. Add ****real dataset or case study******
- 6. Improve ****critical discussion******
- 7. Remove redundancy and improve structure**

Reviewer Comment (Final)

The manuscript has ****good educational intent**** but currently lacks the ****scientific rigor, originality, and presentation quality**** required for publication. Substantial revision is necessary.