

REVIEWER'S REPORT

Manuscript No.: IJAR- 58011

Title: ECO-EFFICIENCY AND ENVIRONMENTAL IMPACT MEASUREMENT OF FLOUR-BASED PROCESSED CHICKEN PRODUCTION AT MSMEs IN JOMBOR, SUKOHARJO, INDONESIA.

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: **ANAPANA GOPAL**

Reviewer's Comment for Publication.

General Comments

This manuscript addresses an important topic by evaluating environmental impacts and eco-efficiency performance of flour-based chicken processing MSMEs using Life Cycle Assessment (LCA) and eco-efficiency indicators. The study is relevant to sustainable production, green supply chain management, and environmental performance assessment in small and medium-sized enterprises. The integration of LCA and eco-efficiency analysis is a notable strength. However, the manuscript requires substantial revisions concerning methodological transparency, data quality, statistical rigor, interpretation of results, language quality, and presentation before it can be considered for publication.

Content and Originality

Strengths

- The study focuses on MSMEs, a sector that is often underrepresented in environmental impact assessments.
- The application of cradle-to-grave LCA combined with eco-efficiency indicators provides practical value.
- The identification of production and packaging stages as environmental hotspots has policy and managerial relevance.
- The study contributes localized evidence from Indonesia regarding sustainability performance in food-processing MSMEs.

Concerns

1. The novelty claim is somewhat overstated. While studies on flour-based chicken processing MSMEs may be limited, LCA and eco-efficiency approaches have been extensively applied in food-processing industries.
2. The manuscript does not sufficiently explain how its findings advance current knowledge beyond previous LCA studies.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

3. The discussion focuses mainly on confirming expected results rather than generating new theoretical or managerial insights.
4. The contribution to Green Supply Chain Management literature should be articulated more clearly.

Technical Quality

Minor Revision Required

1. The methodology lacks critical information:
 - Selection criteria for the 10 MSMEs.
 - Justification of sample size.
 - Functional unit used in the LCA.
 - System boundaries and allocation procedures.
 - Data collection period and data quality assessment.
2. Inventory data are insufficiently reported:
 - Detailed input-output tables are missing.
 - Quantities of raw materials, electricity, LPG, water, and packaging materials should be presented.
3. The Life Cycle Assessment methodology requires greater transparency:
 - The specific ReCiPe 2016 impact categories selected should be justified.
 - Characterization, normalization, and weighting procedures are not adequately explained.
 - Sensitivity or uncertainty analysis is absent.
4. Eco-efficiency calculations require clarification:
 - Eco-cost determination procedures are not clearly described.
 - NPV calculations lack supporting assumptions.
 - Units of measurement for NPV and environmental indicators are not specified.
5. The manuscript relies primarily on descriptive comparisons:
 - No statistical analysis is conducted to determine whether differences among MSMEs are significant.
 - Variability and uncertainty are not reported.
6. Several conclusions appear stronger than supported by the data:
 - The designation of all MSMEs as "sustainable" may be premature without benchmark comparisons.
 - Environmental impacts are discussed without reference to industry standards or thresholds.

Language and Presentation

Minor Revision Required

The manuscript contains numerous grammatical, stylistic, and formatting issues that reduce readability.

Examples include:

- Incorrect subject-verb agreement.
- Missing articles.
- Inconsistent use of singular and plural nouns.
- Typographical errors and untranslated phrases.
- Frequent spacing and punctuation issues.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Examples:

- "This study use the Life Cycle Assessment" should be "This study uses the Life Cycle Assessment."
- "MSMEfall" should be "MSMEs fall."
- "The research results indicate" should be revised for consistency with academic style.

Additional concerns:

- Figure captions require standardization.
- Several figures are difficult to interpret because axis labels and legends are unclear.
- Mathematical equations need proper formatting and numbering.

Professional English-language editing is strongly recommended.

Structure and Organization

Strengths

- The manuscript follows a logical scientific structure.
- Objectives and study background are clearly presented.

Concerns

1. The literature review is excessively long and contains substantial material only loosely related to the study objectives.
2. Several sections contain repetition, particularly regarding environmental impacts and sustainability concepts.
3. Results and discussion are not sufficiently integrated.
4. Interpretation of findings remains superficial in some sections.
5. The manuscript lacks a dedicated limitations section.
6. Practical recommendations for MSMEs are too general and should be more specific and actionable.

References and Citations

Moderate Revision Required

Strengths

- The manuscript includes a large number of recent references.
- Relevant literature on LCA, eco-efficiency, sustainability, and green supply chain management is cited.

Concerns

1. Several references appear incomplete or inconsistently formatted.
2. Some citations contain formatting errors and duplicated titles.
3. Multiple references are listed as conference proceedings or preprints without sufficient bibliographic details.
4. Several references dated 2025–2026 should be carefully verified for publication status.
5. DOI formatting is inconsistent throughout the reference list.
6. The manuscript should include more foundational LCA methodological references (e.g., ISO 14040/14044 standards).

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Overall Recommendation

The manuscript addresses a relevant sustainability issue and demonstrates potential value for environmental management in food-processing MSMEs. The integration of Life Cycle Assessment and eco-efficiency analysis is appropriate and potentially useful for practitioners and policymakers. However, substantial improvements are necessary in methodological transparency, data reporting, statistical rigor, interpretation of results, language quality, and reference formatting.

Final Decision:

Minor Revision