

REVIEWER'S REPORT

Manuscript No.: IJAR- 59126

Title: Environmental Sustainability and Livelihood Resilience in Jammu & Kashmir's Handicraft and Handloom Micro-Enterprises: An Empirical Field Assessment.

Recommendation:

Accept as it is

Accept after Major revision.....

Accept after Minor revision

Do not accept (*Reasons below*)

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

Reviewer Name: Dr. ANAPANA GOPAL

Reviewer's Comment for Publication.

General Comments

The manuscript addresses an important and policy-relevant topic concerning **environmental sustainability, waste management, financial inclusion, livelihoods, gender participation, skill development and market access** among handicraft and handloom micro-enterprises in Jammu & Kashmir. The study uses primary field-survey information and focuses on a 100-respondent sub-sample drawn from a larger craft-sector population of 354 respondents.

The manuscript presents several useful descriptive findings, including local raw-material sourcing, waste-generation patterns, waste-disposal practices, Pollution Control Board compliance, government-scheme utilisation, credit and insurance gaps, wages, women's participation, skill training, technology adoption and market channels. The results are presented through descriptive statistics and graphical summaries.

The paper has potential value; however, **Minor revisions are required before publication**. The most important issues concern the sampling description, internal consistency of the sample composition, interpretation of descriptive findings, definitions and measurement of several indices, unsupported causal or evaluative statements, environmental-risk interpretation, and the distinction between observed evidence and policy recommendations.

1. Originality and Scientific Contribution

The manuscript identifies three potentially important research gaps:

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1. quantitative field evidence concerning environmental sustainability and waste management;
2. financial inclusion specifically among craft micro-enterprises; and
3. quantitative evidence concerning gender participation and the relationship between training and income.

These are relevant gaps.

However, the manuscript should strengthen its statement of **original contribution**.

The authors should clearly distinguish what is genuinely new from previous studies in J&K. At present, the literature review demonstrates that several aspects of handicraft livelihoods, policy support and MSMEs have already been investigated.

The authors should explicitly state whether the principal contribution is:

- the environmental dimension;
- the combination of environmental and livelihood indicators;
- the 100-unit primary dataset;
- the cross-sector comparison of handicraft and handloom enterprises; or
- the policy-oriented synthesis.

2. Minor Concern: Sampling Description and Internal Consistency

The manuscript describes the study in different ways.

The abstract refers to a **“stratified random sub-sample of 100 households”**, whereas the methodology states that a **simple random sample of 100 respondents** was drawn from the 354 craft-sector population.

This needs to be resolved.

The manuscript should use one clearly defined sampling procedure throughout:

- Was it stratified random sampling?
- Or simple random sampling?
- If stratified, what were the strata?
- Were handicraft and handloom treated as separate strata?
- How was the sample allocated?

There is also an important numerical issue.

The parent craft population is described as approximately **62% handicraft, 36% handloom and 2% mixed**, whereas the analysed sample is **73% handicraft, 25% handloom and 2% mixed**.

The manuscript states that the sample is “close to” the population composition, but the difference between 62% and 73% for handicraft and between 36% and 25% for handloom should be explicitly acknowledged.

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The authors should either justify this difference statistically or avoid claiming that the sample preserves the parent population composition.

3. Sample Size Justification

The authors provide a rationale for selecting 100 observations, including the assignment ceiling, an estimated margin of error of approximately $\pm 8-9$ percentage points, and practical considerations concerning a short descriptive paper.

This is reasonable as an exploratory justification, but the terminology should be handled carefully.

Because the study deliberately analyses a sub-sample of 354 respondents, the authors should explain:

- whether the 354 respondents constitute the complete sampling frame;
- how the 100 respondents were selected;
- whether all 354 had equal probability of selection;
- whether sampling weights were required;
- whether the reported percentages are intended to represent the 354-unit population.

The manuscript itself appropriately states that the findings should be treated as indicative rather than precise population estimates.

This qualification should also appear earlier in the manuscript, particularly in the Abstract and Results.

4. Unit of Analysis Requires Clarification

The manuscript alternates between:

- households;
- respondents;
- units;
- artisan households;
- enterprises.

For example, the Abstract refers to **100 households**, whereas the methodology describes **100 respondents**, and many results refer to **units**.

The authors should clearly define the unit of analysis.

A suitable statement would specify whether:

one respondent represents one enterprise/household,

and whether the enterprise and household are analytically equivalent.

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This is especially important when discussing wages, workforce, insurance, government schemes and environmental practices.

5. Data Collection and Questionnaire

The manuscript states that a structured **“Field Investigation Questionnaire: Kashmir Sectoral Analysis”** was used within an ICSSR-sponsored study and that trained field investigators collected digitised responses.

However, the questionnaire methodology is not sufficiently detailed for reproducibility.

The authors should provide information on:

- questionnaire development;
- pre-testing/pilot testing;
- language used during interviews;
- interviewer training;
- respondent selection;
- informed consent;
- handling of incomplete responses;
- coding procedures;
- definitions of key variables;
- whether responses were single-choice or multiple-choice.

The questionnaire should preferably be supplied as supplementary material.

6. Definition and Measurement of “Environmental Sustainability”

This is one of the central themes of the manuscript, but the paper does not develop a clear operational definition of **environmental sustainability**.

The analysis mainly examines:

- raw-material sourcing;
- waste types;
- disposal;
- recycling/reuse;
- treatment facilities; and
- PCB compliance.

These are useful indicators, but they do not necessarily constitute a comprehensive sustainability assessment.

The authors should explain:

- why these variables were selected;
- whether sustainability was measured through a composite index;
- whether environmental performance was self-reported;
- whether any objective environmental measurements were undertaken.

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If no composite sustainability index was constructed, the title and claims should avoid implying that the study quantitatively measures overall environmental sustainability.

7. Raw-Material Sourcing: Numerical Clarification Required

The manuscript reports that **99% of units source at least some raw material from within J&K**, with 79% sourcing exclusively locally and 20% combining local sourcing with domestic imports. It then states that 21% depend partly on material imported from outside the Union Territory.

These percentages require careful checking because the categories as currently described are not completely transparent.

The authors should provide the exact mutually exclusive categories and their denominators.

For example:

Raw-material category	%
Exclusively within J&K	?
J&K + other Indian states	?
Outside India	?

This would eliminate ambiguity.

8. Capacity Utilisation Index Needs Definition

The manuscript reports an average capacity utilisation of **7.4 on a 10-point index**, with a median of 9.

However, the construction of this index is not explained.

The authors should state:

- What exactly does 1 represent?
- What does 10 represent?
- Was the respondent asked to estimate percentage capacity and subsequently converted to a 10-point scale?
- Was this a subjective rating?
- How was the median calculated?
- Why is capacity utilisation expressed as an index rather than percentage utilisation?

The interpretation that high capacity utilisation indicates a **“demand-backed production base”** should also be moderated unless demand was directly measured.

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9. Waste Management Results

The waste-management findings are among the most useful aspects of the manuscript.

The study reports textile scraps as the most frequently mentioned waste stream (89%), followed by paper-pulp residue (61%), agricultural residues (19%), general solid waste (13%) and chemical dye effluents (8%). Municipal collection was reported by 83%, recycling/reuse by 68%, unregulated burning/dumping by 28%, and in-house treatment by only 4%.

The figure on **page 6** provides a clear visual comparison of waste types and disposal methods.

However, the authors should clarify:

- whether respondents could select multiple waste types;
- whether disposal methods were also multiple-response;
- the quantities/volumes of waste generated;
- whether “chemical dye effluent” refers to all dye users or only respondents reporting effluent;
- whether “burning/dumping” includes open burning, open dumping, or both.

The current analysis measures **frequency of mention**, not the actual quantity or environmental burden of waste.

Therefore, statements about the magnitude of environmental impact should be carefully qualified.

10. Pollution Control Board Compliance

The manuscript reports:

- 78% fully compliant;
- 18% aware but partially compliant;
- 4% unaware/not following protocols.

This is potentially important.

However, compliance is **self-reported**. The manuscript itself acknowledges the possibility of social-desirability bias.

Therefore, the authors should avoid treating the 78% figure as independently verified compliance.

The wording should be changed from:

“78% are fully compliant”

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to something such as:

“78% self-reported full compliance.”

If actual inspection records were not examined, this distinction is essential.

11. Financial Inclusion and Government Schemes

The manuscript reports 91% scheme utilisation, 32% significant credit difficulty, 53% minor credit difficulty, and 58% without insurance coverage.

These are useful descriptive indicators.

However, the conclusion that this represents an **“implementation-outcome gap rather than an awareness or access gap”** is stronger than the data directly demonstrate.

The study measures scheme utilisation, credit difficulty and insurance status, but it does not appear to directly measure:

- scheme effectiveness;
- benefit adequacy;
- implementation quality;
- household welfare outcomes;
- changes in enterprise income attributable to schemes.

The authors should therefore describe this as a **possible implementation or outcome gap**, rather than a demonstrated causal relationship.

12. Government Scheme Categories Need Greater Detail

The manuscript reports 44% mentioning the Karkhandar Scheme, 44% mentioning other J&K-specific schemes, and 38% mentioning PMEGP/Mudra.

The authors should provide:

- the exact scheme names;
- the type of support received;
- whether multiple schemes could be selected;
- whether “availed” means successfully received benefits or merely applied;
- the approximate monetary/non-monetary value of benefits, if available.

The phrase **“high utilisation”** should preferably be replaced by the neutral **“high reported utilisation”** because the study is based on self-reported data.

13. Workforce and Wage Analysis

The wage findings are important, particularly the reported distribution:

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- 61% below ₹5,000/month;
- 33% between ₹5,000–₹10,000;
- 6% between ₹10,000–₹20,000.

However, the statement that these wages are **“well below prevailing minimum-wage benchmarks for skilled labour in most Indian states”** requires a specific and appropriate source.

The authors should:

- identify the relevant minimum-wage category;
- specify the relevant time period;
- distinguish monthly wage from daily/hourly minimum wages;
- provide the applicable J&K benchmark;
- avoid comparisons with “most Indian states” unless systematically documented.

This comparison is particularly important because the manuscript makes livelihood conclusions based on these wage figures.

14. Women's Participation Index Requires Methodological Explanation

Women's participation is measured using a **10-point workforce-share index**, with a mean of 7.9 and median of 9.

However, the construction of this index is not explained.

The authors should provide the exact scoring system.

For example:

- 1 = ?
- 5 = ?
- 10 = ?

Without this information, the value 7.9/10 cannot be independently interpreted.

If actual percentage female participation was collected, reporting the percentage directly would be more transparent.

15. Skill-Training Findings and Causal Interpretation

The manuscript reports that 71% participated in skill-development programmes and that trained respondents gave an average self-reported effectiveness rating of 4.0/5.

The manuscript then interprets this as evidence that the bottleneck is **“less in training quality and more in converting skills into sustained employment or income gains.”**

This interpretation is not directly demonstrated.

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A perceived training score of 4.0/5 does not establish that training quality is adequate, nor does the dataset apparently measure the causal effect of training on employment or income.

The authors should clearly distinguish:

self-reported training effectiveness → observed finding

from

training quality/employment conversion → interpretation or hypothesis.

16. Technology Adoption

The technology section reports that 62% introduced at least minor machinery/technology upgrades since 2019, while only 4% made significant investments.

This is useful but requires clearer definitions.

The authors should define:

- “minor machinery or technology upgrade”;
- “significant investment”;
- the 2019 baseline;
- whether technology adoption differed by handicraft and handloom;
- whether the technology affected productivity, quality or income.

Without these details, technology adoption remains a broad self-reported indicator.

17. Market Diversification

The study reports local J&K markets at 99%, middlemen/wholesalers at 66%, national exhibitions/haats at 63%, online platforms at 35%, and direct exports at 6%.

The figure on **page 7** provides a useful graphical summary.

However, these percentages should be explicitly identified as **multi-response percentages**. A unit may use multiple sales channels, so they should not be interpreted as market shares.

The manuscript should also distinguish between:

- selling through an online platform;
- receiving online orders;
- maintaining an online presence;
- direct e-commerce sales.

These are not necessarily equivalent.

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18. SWOT Analysis

The SWOT section is potentially useful as a qualitative synthesis.

The most frequently reported factors are:

- skilled labour/artisan expertise — 63%;
- capital/finance constraints — 36%;
- machine-made substitutes — 29%;
- raw-material quality/distinctiveness — 43%.

However, the methodology should explain how responses were coded into these categories.

Important questions include:

- Were respondents allowed to provide only one answer per SWOT category?
- How were free-text responses coded?
- Who performed the coding?
- Was more than one researcher involved?
- Was intercoder reliability assessed?

Since SWOT responses are qualitative, coding methodology is important for reproducibility.

19. Overinterpretation in the Discussion

Several statements in the Discussion go beyond the descriptive evidence.

For example, the manuscript states that high local sourcing and capacity utilisation indicate a **“functioning, demand-backed production base.”**

Capacity utilisation alone does not establish demand.

Similarly, the manuscript concludes that current sustainability policy **“has not yet been operationalised at the enterprise level.”**

This may be a reasonable policy interpretation, but the study did not directly evaluate policy implementation.

The Discussion should consistently distinguish:

empirical evidence → interpretation → policy implication.

20. Sustainability and Environmental Risk Need Greater Technical Depth

The manuscript focuses on waste management but does not quantify environmental loads.

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For example, 8% reporting chemical dye effluent is important, but frequency of reporting does not indicate:

- volume of effluent;
- chemical composition;
- toxicity;
- treatment efficiency;
- discharge destination;
- environmental exposure.

Similarly, 89% reporting textile waste does not indicate the total mass of textile waste.

Therefore, the manuscript should avoid implying that the study quantitatively measures environmental impact.

A useful limitation statement would acknowledge that the study assesses **reported environmental practices**, rather than measured environmental performance.

21. Need for Subgroup Analysis

Although the authors intentionally avoid emphasizing handicraft-versus-handloom comparisons because of the sample size, some descriptive stratification could strengthen the paper.

For example:

- handicraft vs. handloom;
- urban vs. peri-rural clusters;
- enterprises with vs. without training;
- enterprises with vs. without technology adoption.

However, these should remain descriptive unless the authors undertake appropriate inferential analysis.

The authors should not introduce extensive subgroup hypothesis testing without first addressing the sample-size limitations.

22. Policy Recommendations

The policy recommendations are generally connected to the findings and cover:

- cluster-level waste treatment;
- recycling/buy-back systems;
- insurance;
- wage transparency;
- skill-to-income tracking;
- digital market access;
- PCB compliance outreach.

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However, the recommendations should be more clearly separated from the empirical results.

Some recommendations are quite prescriptive—for example, mandatory insurance bundling and sector-specific minimum floor wages.

The authors should explain:

- the institutional authority required;
- the implementation mechanism;
- likely beneficiaries;
- possible costs;
- potential implementation barriers.

The recommendation numbering also requires correction. The section begins with “**7. Cluster-level...**” even though it appears under Section 8, followed by recommendations numbered 8–13.

This should be renumbered consistently.

23. One Important Numerical Inconsistency in Insurance Reporting

The Results section states that **58% have no insurance cover**.

Therefore, the implied insured proportion is approximately 42%.

The policy section correctly states **42% covered, of which only 11% are under a government scheme**.

However, the manuscript should present the complete insurance categories in one table, for example:

Insurance status	%
No insurance	58
Government insurance	11
Other insurance	31
Total	100

If these are indeed the underlying categories, the table would make the result much clearer.

24. Figures and Presentation

The figures are generally useful and appropriately support the descriptive results.

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Figure 1 – Page 6

The waste-generation and disposal charts are informative. The caption appropriately states that the percentages are based on multiple responses and therefore exceed 100% when summed.

Figure 2 – Page 7

The figure combines PCB compliance, wages and financial-access constraints. It is visually understandable, but the three different indicator types would be clearer if presented separately or with more explicit labels.

Figure 3 – Page 7

The institutional access, skilling and market-diversification chart is useful, but the multi-response nature of several market-channel percentages should be explicitly indicated.

The figures should also be checked for font size, axis labels, consistent terminology and journal formatting requirements.

25. Limitations

The manuscript does include a limitations section, which is a strength. It acknowledges:

- cross-sectional design;
- self-reported data;
- social-desirability bias;
- recall error;
- inability to establish causality;
- modest sample size;
- limited precision of subgroup comparisons.

However, the limitations should be expanded to include:

- possible sampling-frame limitations;
- discrepancy between parent-population and sample composition;
- uncertainty regarding representativeness;
- self-reported PCB compliance;
- lack of quantitative waste measurements;
- lack of objective income verification;
- subjective scoring of capacity utilisation and training effectiveness;
- lack of longitudinal evidence;
- lack of direct environmental measurements.

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26. References and Citations

The manuscript contains a reasonably broad literature base covering handicrafts, handloom, MSMEs, livelihoods, gender, policy and sustainability.

Nevertheless, the reference list requires editorial checking.

Several references have incomplete bibliographic information.

For example:

- Qayoom (2024) is listed as “[**Journal article**]” without a journal title.
- Shekhar (2025) appears without complete publication information.
- Barker (1931) is given as a report but without complete publication details.

All references should be checked for:

- author names;
- year;
- title;
- journal/book/report;
- volume and issue;
- page range;
- DOI;
- URL where appropriate.

The reference style should be made completely uniform.

27. Language and Editorial Quality

The manuscript is generally understandable but requires professional English editing.

Examples of issues include:

- inconsistent use of “J&K,” “Jammu & Kashmir,” and “Union Territory”;
- inconsistent use of “units,” “households,” “respondents” and “enterprises”;
- unnecessary quotation marks;
- inconsistent hyphenation;
- occasional awkward constructions;
- inconsistent terminology for waste disposal;
- inconsistent section numbering;
- “Acknowledgment:-” formatting;
- policy recommendations numbered 7–13 under Section 8.

The title could also be grammatically streamlined.

A possible edited form would be:

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“Environmental Sustainability and Livelihood Resilience among Handicraft and Handloom Micro-Enterprises in Jammu and Kashmir: An Empirical Field Assessment”

The authors should follow the target journal's preferred terminology and style.

Strengths of the Manuscript

The manuscript has several notable strengths:

- Important and contemporary sustainability/livelihood topic.
- Uses primary field-survey data.
- Draws from a larger craft-sector sampling frame of 354 respondents.
- Provides a manageable descriptive dataset of 100 respondents.
- Covers both environmental and socioeconomic dimensions.
- Reports waste-management behaviour quantitatively.
- Includes financial access, insurance and government-scheme utilisation.
- Includes workforce and gender dimensions.
- Examines training, technology and market channels.
- Provides useful visual summaries through three figures.
- Includes a SWOT synthesis.
- Provides concrete policy recommendations.
- The authors appropriately acknowledge several limitations of their dataset.

Minor Issues to Be Addressed

The authors should give priority to the following revisions:

1. **Resolve the sampling inconsistency** between “stratified random” and “simple random” sampling.
2. Explain the difference between the **62/36/2% parent composition** and **73/25/2% sample composition**.
3. Clearly define the **unit of analysis**—household, respondent, enterprise or production unit.
4. Provide sufficient details about the questionnaire and field-survey procedure.
5. Clarify all index constructions, especially the **10-point capacity-utilisation index** and **10-point women's workforce-share index**.
6. Recheck the raw-material sourcing percentages for internal consistency.
7. Clearly distinguish multi-response percentages from mutually exclusive categories.
8. Avoid interpreting self-reported PCB compliance as independently verified compliance.
9. Reduce causal and evaluative interpretations that are not supported by the descriptive design.
10. Provide a stronger methodological basis for the SWOT coding.
11. Clarify the basis for statements concerning minimum wages.
12. Provide more technical discussion of environmental risk and acknowledge the absence of direct waste/effluent measurements.

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13. Expand the limitations section.
14. Correct the insurance presentation and provide complete categories.
15. Correct policy-recommendation numbering.
16. Improve figure captions, labels and terminology.
17. Complete and standardize the reference list.
18. Undertake comprehensive English-language and editorial revision.

Overall Recommendation

The manuscript presents a **useful descriptive field assessment** of environmental practices and livelihood conditions among handicraft and handloom micro-enterprises in Jammu & Kashmir. The combination of waste management, institutional support, financial inclusion, wages, gender participation, skills and market access provides a broad perspective on the sector.

The principal weakness is not the relevance of the dataset, but the need for **greater methodological precision and more cautious interpretation of the descriptive evidence**. In particular, the sampling description, sample composition, variable definitions, self-reported indicators and several conclusions need to be clarified before the manuscript can support its broader sustainability and livelihood claims.

Final Decision: Minor Revision