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REVIEWER'S REPORT

Manuscript No.: IJAR-59649

Title: Digitalizing the Spoken Word : AI and Big Data Frameworks for Preserving Oral Traditions in Rural Development

Recommendation:

Accept as it is .....

Accept after minor revision.....

Accept after major revision .....yes.....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality			Y	
Techn. Quality			Y	
Clarity			y	
Significance			Y	

Reviewer's ID: JPR-Dr. Shaweta Sachdeva

Detailed Reviewer's Report

1. The manuscript addresses an interesting and socially relevant research problem. However, the authors should clearly articulate the major research contribution and distinguish the proposed framework from existing AI-based digital heritage preservation approaches.

2. The methodology is primarily qualitative and design-oriented. The authors should provide more details about the conceptual synthesis process, including the literature selection criteria, databases consulted, search keywords, and inclusion/exclusion criteria.

3. The manuscript claims that the adapted AI pipeline achieves higher transcription accuracy and substantially reduces archival processing time. However, no specific numerical results, WER values, CER values, or processing-time comparisons have been provided. Quantitative evidence should be included to support these claims.

4. The authors should clarify whether the proposed framework has been implemented and tested in a real-world rural community or whether it represents a conceptual framework evaluated through literature-based analysis.

5. More technical details regarding the AI models used for speech recognition, language translation, and semantic annotation should be provided. The authors should identify suitable model architectures and explain their adaptation to low-resource languages.

6. The proposed big data architecture requires further technical elaboration. The authors should specify the technologies, tools, databases, cloud infrastructure, and distributed processing mechanisms that could be used to implement the framework.

7. The manuscript discusses low-resource languages, particularly in West Africa. However, the authors should provide specific examples of target languages and explain the challenges associated with dialect variations, code-switching, and limited training datasets.

8. The authors should include a comparative analysis of the proposed framework with existing oral heritage preservation systems or digital language documentation platforms to demonstrate its advantages and limitations.

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9. The community-governed data sovereignty mechanism is an important contribution. However, the practical implementation of consent management, data ownership, access control, withdrawal mechanisms, and benefit-sharing protocols needs further explanation.
10. The authors should discuss the potential risks associated with AI-generated transcription and translation errors, particularly when documenting traditional medicinal knowledge, cultural practices, and historical narratives.
11. Figure 1 illustrates the integrated framework, but its technical components and data-flow relationships could be explained more comprehensively. The figure should clearly distinguish between data-processing activities and governance-related functions.
12. The findings section requires stronger empirical or analytical support. The authors should provide measurable indicators, comparative tables, or illustrative case studies to substantiate the reported improvements in transcription accuracy, efficiency, and community participation.
13. The discussion section should provide a deeper comparison between the proposed framework and findings from previous studies, highlighting the novelty, practical implications, and limitations of the proposed approach.
14. The authors should elaborate on the scalability and sustainability of the proposed framework, particularly regarding infrastructure costs, internet connectivity, electricity availability, technical expertise, and long-term maintenance in rural communities.
15. The conclusion should clearly summarize the major contributions, practical implications, limitations, and possible directions for future research.
16. The reference section should be carefully checked for consistency in citation style, completeness of bibliographic information, DOI availability, and formatting. The authors should also verify that all cited references are accurately represented in the text.

Overall Recommendation

Major Revision

The manuscript addresses a promising and socially significant research problem. The integration of AI, Big Data, and community-governed data sovereignty offers potential contributions to the preservation of oral traditions and sustainable rural development. However, the manuscript currently lacks sufficient empirical validation and quantitative evidence to substantiate several of its claims. Significant improvements in methodological transparency, technical implementation details, comparative evaluation, and presentation of findings are required before the manuscript can be considered for publication.