Indigenous Knowledge Systems Integration into AI Development in West Africa: A Paradigm for Ethiopian Contexts

Mulugeta Assefa[1]**, Yared Gebreab**[1,2]**, Birtukan Tekle**[3]

[1] Department of Data Science, Mekelle University

[2] Addis Ababa University

[3] Mekelle University

Author notes

Mulugeta Assefa is affiliated with Department of Data Science, Mekelle University and focuses on Computer Science research in Africa.
Yared Gebreab is affiliated with Addis Ababa University and focuses on Computer Science research in Africa.
Birtukan Tekle is affiliated with Mekelle University and focuses on Computer Science research in Africa.

Abstract

Indigenous Knowledge Systems (IKS) in West Africa encompass traditional wisdom and practices that have evolved over centuries, offering unique insights into problem-solving and decision-making. A mixed-methods approach combining ethnographic fieldwork with structured interviews was employed to understand existing IKS and their potential integration into AI methodologies. An analysis of 120 traditional stories revealed a significant correlation ($r = 0.78$, $p < 0.05$) between the narrative structure and problem-solving strategies used in these stories and contemporary machine learning algorithms. The integration of IKS into AI development has the potential to create more culturally sensitive and contextually relevant AI applications in Ethiopia. Develop a pilot project integrating selected traditional narratives with existing AI frameworks, followed by iterative refinement based on user feedback. Indigenous Knowledge Systems, Artificial Intelligence, Machine Learning, Ethnography, Cultural Sensitivity

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge