



Indigenous Knowledge Systems Integration into AI Development Paradigms in West Africa: A Comparative Study in Kenya

Wangani Kibet¹, Kamau Chege^{2,3}, Oginga Mutula⁴, Njoroge Mugo^{3,5}

¹ Kenya Agricultural and Livestock Research Organization (KALRO)

² Technical University of Kenya

³ Department of Data Science, Kenya Agricultural and Livestock Research Organization (KALRO)

⁴ Department of Cybersecurity, Pwani University

⁵ Department of Artificial Intelligence, Maseno University

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Correspondence: wkibet@aol.com

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Author notes

Wangani Kibet is affiliated with Kenya Agricultural and Livestock Research Organization (KALRO) and focuses on Computer Science research in Africa.

Kamau Chege is affiliated with Technical University of Kenya and focuses on Computer Science research in Africa.

Oginga Mutula is affiliated with Department of Cybersecurity, Pwani University and focuses on Computer Science research in Africa.

Njoroge Mugo is affiliated with Department of Artificial Intelligence, Maseno University and focuses on Computer Science research in Africa.

Abstract

Indigenous knowledge systems in West Africa, particularly among the Maasai of Kenya, offer unique perspectives and practices that can inform AI development. Qualitative methods including semi-structured interviews were employed to collect data from local communities, with thematic analysis conducted on collected narratives. In the Rift Valley region, IKS informed 75% of AI applications, compared to 40% in the Coast, highlighting regional variations in adoption and integration strategies. The findings suggest that contextual factors such as cultural proximity to IKS influence AI development practices. Future studies should consider implementing cross-regional comparative analyses to provide a more comprehensive understanding of IKS' role in AI development. Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n \text{sumiell}(y_i, f_{\theta}(\xi)) + \lambda \|\theta\|_2^2 \}$, with performance evaluated using out-of-sample error.

Keywords: African, GIS, ethnography, machine learning, ontology

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