Indigenous Knowledge Systems Integration into AI Development in West Africa Contextualized for Kenya's Digital Transformation

Oxiraj Kinyanjui[1,2]**, Kamau Ngugi**[3]**, Kiplagat Ngugi**[4,5]**, Muriithi Gitonga**[4,6]

[1] Pwani University

[2] Department of Data Science, Kenya Medical Research Institute (KEMRI)

[3] Kenya Medical Research Institute (KEMRI)

[4] Department of Artificial Intelligence, Maseno University

[5] Department of Cybersecurity, Pwani University

[6] Jomo Kenyatta University of Agriculture and Technology (JKUAT)

Author notes

Oxiraj Kinyanjui is affiliated with Pwani University and focuses on Computer Science research in Africa.
Kamau Ngugi is affiliated with Kenya Medical Research Institute (KEMRI) and focuses on Computer Science research in Africa.
Kiplagat Ngugi is affiliated with Department of Artificial Intelligence, Maseno University and focuses on Computer Science research in Africa.
Muriithi Gitonga is affiliated with Jomo Kenyatta University of Agriculture and Technology (JKUAT) and focuses on Computer Science research in Africa.

Abstract

Indigenous Knowledge Systems (IKS) in West Africa are repositories of traditional wisdom and practices that have shaped agricultural techniques, medicine, and social structures for generations. The study employs a qualitative comparative analysis of existing AI projects that incorporate traditional knowledge systems from various West African countries. A preliminary survey revealed that over 40% of Kenyan AI developers have incorporated IKS into their models, particularly in healthcare applications where the proportion is as high as 55%. The integration of IKS into AI can lead to more culturally sensitive and sustainable technological solutions, though challenges related to data privacy and ethical considerations remain. Policy makers should encourage collaboration between traditional knowledge holders and tech developers to ensure equitable benefits from AI applications. Indigenous Knowledge Systems, Artificial Intelligence, Digital Transformation, Kenya Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *African geography, AI development, Indigenous knowledge systems, Methodology, Social structures, Technological integration, West Africa*

ABSTRACT-ONLY PUBLICATION

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