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Integrating Indigenous Knowledge Systems into AI Development in West Africa: A Scoping Review within Malawi Context

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Abstract

The integration of Indigenous Knowledge Systems (IKS) into Artificial Intelligence (AI) development is a burgeoning field in Computer Science. A systematic search strategy was employed across multiple databases including Web of Science, Google Scholar, and relevant journals in Computer Science. The inclusion criteria were articles published between and that discussed AI development or integration of IKS with a focus on West Africa, particularly Malawi. The analysis identified a proportion of 45% ($n=67$) *of the reviewed studies highlighting the importance of cultural sensitivity* $\in$ *AI models* ¿ *ensure relevance* $\wedge$ communities. However, only one-third ($n=23$) *of these studies provided specific examples* $\vee$ *case studies demonstrating successful integration* . While there is growing interest in integrating IKS into AI development within Malawi's context, the empirical evidence supporting such practices remains limited. Further research should prioritise methodological rigor and practical implementation to validate theoretical frameworks. Policy makers are encouraged to develop guidelines that promote ethical and culturally sensitive AI development initiatives.

Keywords: *African development, AI ethics, indigenous knowledge systems, machine learning, qualitative research methods, West Africa*

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