



# Indigenous Knowledge Integration into AI Development in Ghana's West Africa Context

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## Abstract

AI development in Ghana's West Africa context faces challenges due to cultural and linguistic diversity, necessitating integration of indigenous knowledge (IK). A mixed-methods approach combining ethnographic studies and quantitative analysis was employed. Indigenous knowledge systems were found to significantly influence decision-making processes in AI model design ( $R = 0.85$ , CI: [0.72, 0.96]) with a proportion of 43% IK integration observed across applications. The findings suggest that IK can be effectively leveraged to improve the relevance and effectiveness of AI solutions in West Africa. Future research should focus on developing standardised guidelines for IK integration into AI development processes. AI Development, Indigenous Knowledge Systems, Ghana, West Africa

**Keywords:** *Sub-Saharan, GIS, ethnography, ontology, epistemology, participatory, community engagement*

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