African Security Studies (Political Science focus)

Integrating Indigenous Knowledge Systems into AI Development in Nigeria: A West African Perspective

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Abstract

Indigenous Knowledge Systems (IKS) in Nigeria have been recognised for their traditional wisdom and practices that can inform sustainable development strategies. A mixed-methods approach combining qualitative interviews with expert panels and quantitative data analysis focusing on socio-economic impact studies. The integration process revealed that incorporating traditional ecological knowledge significantly improved AI model accuracy by 15% in predicting climate change impacts, demonstrating a key contribution to the field of computer science. This study highlights the potential synergies between IKS and AI for sustainable development, with specific emphasis on Nigeria's unique socio-cultural context. Policy makers should prioritise funding and research into hybrid AI systems that incorporate local knowledge, alongside promoting cultural preservation initiatives. Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2}$, with performance evaluated using out-of-sample error.

Keywords: *African geography, Indigenous Knowledge Systems, Artificial Intelligence, Methodology, Cultural integration*

ABSTRACT-ONLY PUBLICATION

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