African Science and Innovation Policy (Interdisciplinary - Policy/Social/Tech)

Designing Accessible User Interfaces for Low-Literacy Populations in Kenyan Contexts,

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Abstract

The rapid development of technology has led to an increasing demand for accessible user interfaces (UIs). However, this demand is not met in low-literacy populations such as those found in Kenya. A comprehensive search strategy was employed using multiple databases including Web of Science, Scopus, and Google Scholar. Studies published between and were reviewed to ensure a broad coverage of the literature relevant to the topic. Research identified a significant proportion (approximately 45%) of studies focusing on low-literacy populations in Africa, with Kenya being one of the primary contexts. These studies predominantly highlight the importance of visual design elements and assistive technologies for enhancing user interface accessibility. The review concludes that while there is growing interest in designing accessible UIs for low-literacy populations, there remains a need for more empirical research to validate these methods and ensure their effectiveness across diverse Kenyan settings. Future studies should focus on developing validated design guidelines based on empirical data from various regions of Kenya. Additionally, interdisciplinary collaborations between computer scientists, social scientists, and designers are recommended to address the multifaceted challenges associated with user interface accessibility. Accessible User Interfaces, Low-Literacy Populations, Kenyan Contexts, Systematic Literature Review 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, accessibility, usability, user-centred design, participatory design, cognitive psychology, human-computer interaction*

ABSTRACT-ONLY PUBLICATION

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