



Designing User Interfaces for Illiterate Populations in African Contexts

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Abstract

Designing user interfaces for illiterate populations in African contexts is a critical yet understudied area of research. A comprehensive search strategy was employed across multiple databases, including Web of Science and Scopus, using specific keywords. Studies were screened according to predefined inclusion criteria based on relevance and quality assessment. The review identified a significant proportion (75%) of studies focusing on the development of text-to-speech systems for enhancing accessibility in UIs designed for illiterate populations. While existing research suggests that text-to-speech systems are effective, there is limited empirical data to support their impact on user satisfaction and usability. Further empirical studies should be conducted to validate the effectiveness of these systems and explore other potential UI design solutions for low-literacy populations in African contexts. Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n \ell(y_i, f_{\theta}(\xi)) + \lambda \|\theta\|_2^2 \}$, with performance evaluated using out-of-sample error.

Keywords: African, illiteracy, HCI, participatory design, ethnography

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