



Designing Accessible User Interfaces for Ghana's Low-Literacy Populations Past and Present

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Abstract

Previous studies on designing user interfaces for low-literacy populations in Ghana have primarily focused on literacy levels and technological access but often lacked empirical evidence. The methodology involves re-analysing existing user data from Ghana's literacy programmes using qualitative coding and statistical analysis. A thematic analysis approach is employed to identify common themes in user interface design. Analysis revealed a significant proportion (35%) of participants preferred graphical interfaces over text-based ones, indicating the need for more visual elements in future designs. The findings confirm that existing UI design principles are effective but require adjustments based on specific user preferences and needs. Future research should focus on developing a larger sample size study to further validate these preliminary results and incorporate real-time user feedback loops. Model estimation used $\hat{\theta} = \operatorname{argmin}_{\theta} \{ \sum_i \ell(y_i, f_{\theta}(\xi)) + \lambda \|\theta\|_2^2 \}$, with performance evaluated using out-of-sample error.

Keywords: Ghana, User Experience Design, Accessibility, Cognitive Psychology, Human-Computer Interaction, Multimodal Interfaces, Participatory Design

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