Designing User Interfaces for Low-Literacy Populations in African Contexts: A Cape Verde Case Study

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Abstract

Low-literacy populations in Cape Verde require tailored user interfaces to access health information effectively. A mixed-methods approach combining surveys, focus groups, and usability testing with a Bayesian hierarchical model for data analysis. The majority (85%) of participants preferred visual interfaces over text-based ones, indicating a clear preference in the user interface design for low-literacy populations. User preferences informed the development of an accessible digital platform that significantly improves healthcare access among Cape Verdean residents with limited literacy skills. Future research should explore longer-term usability and impact on health outcomes, including cost-effectiveness analysis. User Interface Design, Low-Literacy Populations, Digital Health, Bayesian Hierarchical Model 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: *Cape Verde, User Experience Design, Low Literacy, Participatory Design, Anthropology, Ethnography, Interface Accessibility*

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