



Designing User Interfaces for Literate Barriers in Senegal's Low-Literacy Populations

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Abstract

User interfaces are critical for improving access to digital services in Senegal's diverse literacy landscape. We employed a mixed-methods approach involving surveys, focus groups, and usability testing among Senegalese adults with varying levels of literacy to identify common barriers and preferences. Our analysis revealed that approximately 30% of the surveyed population encountered significant difficulties in understanding digital content without assistance, which influenced our design decisions. The findings highlight the necessity for inclusive design principles in Senegalese user interface development to ensure equitable access and utilization of technology. We recommend prioritising user-centred design processes that incorporate diverse literacy levels into future projects to enhance digital inclusion. User Interface Design, Digital Literacy, Inclusive Design, Senegal Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda lVert\theta rVert^2$, with performance evaluated using out-of-sample error.

Keywords: *African Geography, User Experience Design, Literacy Studies, Anthropology, Cognitive Psychology, Human-Computer Interaction, Participatory Design*

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