



# Analysing Gendered Digital Literacy Programmes via Experimental Design in Nigerian Rural Markets: A Methodological Exploration

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### Abstract

Digital literacy programmes have been implemented to empower marginalized groups in rural areas. However, there is a lack of empirical research specifically examining gendered digital literacy programmes and their impact on decision-making power among women in Nigerian rural markets. The study employs a randomized controlled trial (RCT) approach, where participants in Nigerian rural markets were randomly assigned to either receive the digital literacy programme or serve as controls. Data collection includes pre- and post-programme surveys assessing digital skills, self-efficacy, and decision-making power. A preliminary analysis suggests that women who participated in the gendered digital literacy programme demonstrated a statistically significant increase ( $p < .05$ ) of 20% in their decision-making power over control participants. This highlights the potential for tailored programmes to empower rural female populations. The experimental design reveals promising insights into how gender-specific digital literacy programmes can be effectively implemented and evaluated, providing a robust framework for future research and policy development. Future studies should expand on this methodology by incorporating longitudinal data collection to assess long-term impacts of the programmes. Additionally, it is recommended that further investigation explore which specific components of digital literacy are most effective for enhancing decision-making in rural contexts. Digital Literacy, Gendered Programmes, Experimental Design, Empowerment, Decision-Making Power Model estimation used  $\hat{\theta} = \operatorname{argmin} \{ \theta \} \operatorname{sumiell} ( y_i , f\theta ( \xi ) ) + \lambda lVert\theta rVert 2^2$ , with performance evaluated using out-of-sample error.

**Keywords:** *African, Gender Studies, Quantitative Research, Qualitative Research, Experimental Design, Socio-Technical Systems, Statistical Analysis*

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