



ICT Infrastructure Development and Internet Access Patterns in South African Informal Settlements: A Scholarly Examination

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Abstract

South African informal settlements are characterized by limited access to Information and Communication Technology (ICT) infrastructure, which affects their residents' internet usage patterns. Surveys were conducted using a mixed-method approach involving quantitative data collection through questionnaires and qualitative insights from interviews with community leaders. The study employed statistical analysis to interpret findings. In one informal settlement, the proportion of households with internet access increased by 25% after recent ICT infrastructure development projects. Mobile phone usage for accessing online services was significantly higher than broadband connections. The findings suggest that while there has been an improvement in internet availability, disparities remain regarding which residents can effectively utilise these resources. Further investment should prioritise expanding mobile internet options to bridge the digital divide and ensure equitable access across all socioeconomic groups within these communities. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta r \operatorname{Vert} 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, Informality, NetworkedIndividualism, Telecommunications, AccessibilityModels, CommunityNetworks, GeographicInformationSystems*

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