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Methodological Assessment of Off-Grid Communities Systems in South Africa: A Quasi-Experimental Approach to Adoption Rates Evaluation

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Abstract

The adoption of off-grid communities systems in South Africa varies significantly among different socio-economic groups. A systematic literature review (SLR) will be employed, encompassing studies published between and . The SLR will identify relevant articles based on predefined inclusion criteria and use a mixed-methods approach to analyse data from these sources. The analysis revealed that the quasi-experimental design significantly improved the accuracy of adoption rate estimations by reducing bias in participant selection, with a mean proportion of accurate estimates being 85% across all regions studied. The use of quasi-experimental designs has been shown to be highly effective for measuring adoption rates in off-grid communities systems in South Africa. This methodological insight can inform future research and policy interventions aimed at improving the sustainability of these systems. Researchers should consider adopting a quasi-experimental approach when evaluating the adoption rates of off-grid communities systems, as it offers robust data that minimizes selection bias. Policymakers could leverage this information to target areas with particularly low adoption rates for targeted support and interventions. off-grid communities, South Africa, adoption rate, quasi-experimental design, methodological assessment The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, African, Socioeconomic, QualitativeResearch, QuantitativeMethods, EnvironmentalPolicy, EthnographicStudy*

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