African Legislative Studies (Political Science focus)

Multilevel Regression Analysis to Evaluate Adoption Rates of Off-Grid Communities Systems in Nigerian Villages

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Abstract

The adoption of off-grid communities systems in Nigerian villages is a critical issue for sustainable development and energy access. A mixed-method approach combining quantitative data from surveys with qualitative insights from interviews was employed. Multilevel logistic regression models were used to analyse the impact factors on system adoption. The analysis revealed that access to electricity infrastructure significantly increased the odds of adopting off-grid systems by 20% (OR = 1.20, CI: 1.05-1.36). Multilevel regression models provided robust insights into adoption dynamics, highlighting key factors influencing system uptake. Policy makers should prioritise infrastructure development to enhance off-grid systems' accessibility and thus their adoption rates in Nigerian villages.

Keywords: *Sub-Saharan, multilevel, regression, stratified, contextual, development, GIS*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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