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Multilevel Regression Analysis to Evaluate Yield Improvement in Community Health Centre Systems in Nigeria

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Abstract

Community health centres in Nigeria are pivotal for delivering healthcare services to underserved populations. However, their effectiveness and efficiency vary across different regions. A multilevel regression model was employed to analyse data collected from multiple rounds of assessments at both the facility (level 1) and district (level 2) levels. The model accounted for nested structures within the healthcare system. The analysis revealed that improvements in patient satisfaction scores were significantly correlated with increased funding per health centre, indicating a positive impact on service delivery quality. This study underscores the importance of resource allocation in enhancing healthcare services at community health centres. The multilevel regression approach provides a robust framework for future evaluations. Future research should focus on scaling up successful interventions and exploring additional variables that could influence yield improvement, such as staff training programmes and technology adoption. Community Health Centres, Nigeria, Multilevel Regression Analysis, Yield Improvement Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Multilevel, Regression, Healthcare, Efficiency, Impact, Analytics, Community*

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