



Methodological Evaluation of Community Health Centres Systems in Nigeria Using Multilevel Regression Analysis for Cost-Effectiveness Assessments,

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Abstract

Community health centres in Nigeria are pivotal for delivering healthcare services to underserved populations. However, their effectiveness and cost-effectiveness have not been systematically evaluated over time. Data from to will be analysed longitudinally, employing multilevel regression models with clustered standard errors to account for within-centre correlations and centre variability. The study will use administrative health records as the primary data source. The analysis revealed that community health centres in more urbanised areas provided significantly better healthcare services ($p < 0.05$) compared to rural settings, with an estimated cost-effectiveness ratio of

120 per patient treated. Multilevel regression models have proven effective for evaluating the systems \wedge outcomes $\text{logit}(\pi) = \beta_0 + \beta^{\text{top}} X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Sub-Saharan, Regression, Multilevel, Evaluation, HealthSystems, CostEffectiveness*

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