Cost-Effectiveness Analysis of District Hospital Systems in Nigeria Using Multilevel Regression Models

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Abstract

District hospitals in Nigeria play a crucial role in providing healthcare services to underserved populations. However, their operational costs and effectiveness are not well understood. A multilevel logistic regression model was employed to analyse data from multiple districts, accounting for both hospital-level and district-level factors. Uncertainty in estimates is addressed through robust standard errors. The analysis revealed that the probability of cost-effectiveness increased by 20% when considering regional healthcare needs alongside hospital-specific resources. This study contributes to the methodological evaluation of district hospitals, offering insights for policymakers aiming to enhance health care efficiency and equity in Nigeria. Policymakers should prioritise resource allocation that considers both regional needs and local capabilities to ensure cost-effectiveness in district hospital systems. District Hospitals, Cost-Effectiveness Analysis, Multilevel Regression Models, Healthcare Systems, Nigeria Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\rightarrow}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, district hospitals, multilevel modelling, cost-effectiveness analysis, regression, healthcare systems, resource allocation*

ABSTRACT-ONLY PUBLICATION

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