

Methodological Evaluation of District Hospitals Systems in Tanzania Using Multilevel Regression Analysis to Measure Yield Improvements,

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Abstract

This study examines the operational efficiency of district hospitals in Tanzania by evaluating their systems. A multilevel regression model was employed to analyse data collected at both hospital and district levels, accounting for hierarchical structures within the healthcare system. The regression analysis revealed that patient case volumes increased by 15% from baseline, with robust standard errors indicating a marginally significant effect. The multilevel regression model successfully captured yield improvements in hospital systems, providing insights into operational efficiency enhancements. Further studies are recommended to explore additional factors influencing yield within the healthcare sector. district hospitals, Tanzania, yield improvement, multilevel regression analysis

Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, healthcare systems, multilevel analysis, regression models, yield measurement, district hospitals, African contexts*

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