



Methodological Evaluation of District Hospitals Systems in Tanzania Using Multilevel Regression Analysis for Cost-Effectiveness Studies

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Abstract

District hospitals in Tanzania face significant challenges in providing cost-effective healthcare services. A multilevel regression analysis was employed to assess the cost-effectiveness of district hospital systems in Tanzania. The study utilised data from a sample of hospitals across different districts. The analysis revealed that patient volume significantly impacts operational costs, with an average increase of 5% for every additional 100 patients admitted per month (95% CI: 3-7%). The multilevel regression model demonstrated the importance of considering district-specific factors in cost-effectiveness studies. District health authorities should prioritise strategies that enhance efficiency and reduce operational costs to improve service delivery. district hospitals, Tanzania, multilevel regression, cost-effectiveness, healthcare systems Treatment effect was estimated with $\text{text} \{ \text{logit} \} (\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Tanzania, District Hospitals, Multilevel Analysis, Cost-Effectiveness, Regression, Hierarchical Models, Epidemiology

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