



Cost-Effectiveness Analysis of District Hospital Systems in Uganda Using Panel Data-Methods

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Abstract

District hospitals in Uganda play a critical role in providing healthcare services to rural populations. However, their efficiency and cost-effectiveness are under scrutiny due to resource constraints. This study employed econometric techniques, specifically the fixed effects model (FE) within a panel dataset comprising multiple districts over several years. The FE model was used to control for unobserved heterogeneity in hospital performance across different regions. The analysis revealed significant variations in cost-effectiveness among districts, with some showing substantial inefficiencies that could be mitigated through targeted interventions such as improved supply chain management and staff training programmes. Our findings suggest that district hospitals can be made more efficient and effective by implementing evidence-based strategies to enhance service delivery and resource utilization. Health policymakers should prioritise investments in infrastructure, human resources, and information technology to optimise the performance of district hospitals. Additionally, continuous monitoring and evaluation are essential for sustaining improvements. District Hospitals, Cost-Effectiveness Analysis, Panel Data Methods, Uganda Healthcare Systems Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *District Hospitals, Panel Data, Cost-Effectiveness, Health Economics, Methodology, Sub-Saharan Africa, Resource Allocation*

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