



Methodological Evaluation of District Hospitals Systems in Kenya: Difference-in-Differences Model for Cost-Effectiveness Analysis

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Abstract

The healthcare landscape in Kenya's district hospitals is complex, influenced by various socio-economic factors. Understanding these systems' effectiveness and cost-effectiveness is crucial for policymakers aiming to improve health outcomes. A Difference-in-Differences approach was employed to assess changes in healthcare service utilization and patient outcomes before and after implementing new health policies. Uncertainty estimates were calculated using robust standard errors. The DiD model revealed a significant increase ($p < 0.05$) in hospital bed occupancy rates post-policy implementation, suggesting an effective response to resource allocation challenges. This study provides empirical evidence supporting the use of DiD models for cost-effectiveness analysis in healthcare systems, offering insights into policy effectiveness and resource management. Policy recommendations include targeted investments in infrastructure and training programmes to enhance service delivery efficiency. 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: Kenya, District Hospitals, Cost-Effectiveness, Difference-in-Differences, Regression Discontinuity, Outcome Measures, Socioeconomic Factors, Public Health Systems

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