



# Methodological Evaluation of District Hospitals Systems in Kenya Using Difference-in-Differences for Cost-Effectiveness Analysis

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## Abstract

District hospitals in Kenya are crucial for providing essential healthcare services to rural populations. However, their operational efficiency and cost-effectiveness remain under scrutiny. A Difference-in-Differences analysis will be employed to assess changes in healthcare costs and outcomes before and after implementing quality improvement interventions at selected district hospitals. The DiD approach will account for potential confounders using robust standard errors to ensure valid causal inference. The preliminary findings suggest a positive trend in reduced healthcare expenditure per patient consultation, despite initial challenges in resource allocation and staff training. This study provides evidence supporting the effectiveness of DiD models in evaluating cost-effectiveness of interventions in district hospital settings, offering insights for policymakers and healthcare administrators. Policymakers should consider implementing similar DiD analyses to inform future health system reforms and resource allocation strategies. District Hospitals, Cost-Effectiveness, Difference-in-Differences (DiD), Healthcare Quality 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, African, Spatial, Econometrics, DID, Healthcare, Systems Analysis

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