



Methodological Evaluation of Community Health Centres Systems in Kenya: Difference-in-Differences Model for Measuring Efficiency Gains

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Abstract

Community health centers (CHCs) play a crucial role in healthcare delivery in Kenya, yet their operational efficiency varies significantly across different regions and over time. A Difference-in-Differences (DiD) regression analysis was employed, utilising panel data from 100 randomly selected CHCs over three consecutive years. Propensity score matching and inverse probability weighting were applied to address potential selection bias and ensure comparability across groups. The DiD analysis revealed a statistically significant increase in efficiency gains among CHCs that implemented the policy reforms, with an estimated average improvement of 15% in service delivery time per patient visit. This study provides empirical evidence supporting the effectiveness of the policy interventions aimed at enhancing CHC operational efficiency in Kenya. The findings can inform future health sector development strategies and resource allocation decisions. Health policymakers should prioritise continuous monitoring and evaluation to sustain these gains, while also exploring further reforms that could lead to even greater improvements in service delivery time. Community Health Centers, Efficiency Gains, DiD Model, Policy Interventions Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Kenya, Community Health Centers, Efficiency Gains, Difference-in-Differences, Evaluation Metrics, Public Health Systems, Methodological Approaches

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