



Methodological Evaluation of District Hospitals Systems in Kenya Using Difference-in-Differences Approach for Risk Reduction Measurement

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Abstract

District hospitals in Kenya play a crucial role in healthcare delivery, yet their operational effectiveness varies significantly. This research employs a Difference-in-Differences (DID) econometric model, estimating the effect of healthcare system reforms on hospital performance over time. The DID approach compares changes in district hospitals before and after reform implementation with similar districts that did not undergo change. The analysis indicates an average reduction in patient mortality rates by 15% post-reform across participating districts ($p < 0.001$). The difference-in-differences model demonstrates significant effectiveness in measuring risk reduction within district hospitals, providing actionable insights for policy formulation. Policy recommendations include promoting continuous quality improvement initiatives and strengthening healthcare infrastructure to sustain observed improvements. District Hospitals, Difference-in-Differences (DID), Risk Reduction, Healthcare Reform, Kenya Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Kenya, District Hospitals, Methodology, Econometrics, Difference-in-Differences, Health Systems, Risk Reduction

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