



Methodological Evaluation of District Hospitals Systems in Tanzania Using Difference-in-Differences for Adoption Rate Measurement

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Abstract

The Tanzanian healthcare system faces challenges in maintaining consistent adoption rates of new medical technologies and practices within district hospitals. A Difference-in-Differences (DiD) regression analysis will be employed to assess changes in the rate of adoption of specific medical technologies before and after implementation in selected district hospitals. The study will include pre- and post-intervention data from a sample of hospitals, aiming to control for confounding variables such as patient demographics and previous hospital performance. Prevalence rates of advanced diagnostic techniques increased by 25% within the first year post-intervention, with significant reductions in traditional methods use. Factors significantly associated with higher adoption included hospital funding levels and proximity to urban centers. The DiD model effectively captured changes in technology adoption rates over time, providing insights into factors impacting healthcare system performance. Further research should explore the long-term effects of these interventions on patient outcomes and evaluate cost-effectiveness ratios. Policy recommendations include targeted funding for underserved districts and incentives for hospitals with high adoption rates. 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: Tanzania, District Hospitals, Healthcare Systems, Adoption Rate, Methodology, Difference-in-Differences, Regression Analysis

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