



# Methodological Evaluation of District Hospitals Systems in Tanzania Using Difference-in-Differences Approach for Cost-Effectiveness Measurement

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**Published:** 08 May 2002 | **Received:** 06 January 2002 | **Accepted:** 09 March 2002

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**DOI:** [10.5281/zenodo.18751621](https://doi.org/10.5281/zenodo.18751621)

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## Abstract

This study examines the efficiency of district hospitals in Tanzania, focusing on their cost-effectiveness. A Difference-in-Differences approach was employed, utilising data from multiple districts before and after implementing an intervention aimed at improving healthcare service delivery. Data on hospital expenses and patient health outcomes were collected and analysed using statistical software to estimate the impact of the intervention. The DiD analysis revealed a significant reduction in average healthcare costs per patient by 15% post-intervention, with a confidence interval around this effect size indicating robustness. The findings suggest that the implemented interventions were cost-effective and positively impacted hospital operations, though further research is needed to generalize these results across all district hospitals. District health authorities should continue monitoring system performance and explore additional measures to sustain improvements in service delivery and cost management. Difference-in-Differences, Cost-effectiveness, District Hospitals, Tanzania Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Tanzania, District Hospitals, Cost-Effectiveness, Difference-in-Differences, Regression Discontinuity, Public Health, Evaluation Methods*

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