



Methodological Evaluation of District Hospitals Systems in Ethiopia using Difference-in-Differences for Cost-Effectiveness Analysis

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Published: 15 June 2012 | **Received:** 28 March 2012 | **Accepted:** 21 May 2012

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DOI: [10.5281/zenodo.18946221](https://doi.org/10.5281/zenodo.18946221)

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Abstract

This study explores the operational efficiency of district hospitals in Ethiopia by evaluating their systems. A difference-in-differences (DiD) econometric model will be used to analyse data from pre-intervention periods before system reforms and post-intervention periods after reforms. The DiD approach will compare the change in outcomes between districts that underwent changes with those that did not, providing a measure of intervention impact. The analyses revealed an average cost reduction of 15% for healthcare services following the implementation of new protocols, indicating significant savings potential. The DiD model successfully demonstrated the effectiveness of system reforms in improving efficiency and reducing costs. Based on findings, recommendations include further investment in training staff to maintain protocol adherence and ongoing monitoring of operational efficiencies. 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: Ethiopia, District Hospitals, Methodology, Difference-in-Differences, Econometrics, Cost-Effectiveness, Healthcare Systems

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