



Methodological Evaluation of District Hospitals Systems in Ethiopia Using Difference-in-Differences Models for Efficiency Assessments

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Published: 17 May 2011 | **Received:** 18 November 2010 | **Accepted:** 18 March 2011

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DOI: [10.5281/zenodo.18932252](https://doi.org/10.5281/zenodo.18932252)

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Abstract

District hospitals in Ethiopia play a crucial role in healthcare delivery, yet their operational efficiency varies significantly across regions. A comprehensive search strategy was employed across major databases including PubMed, Scopus, and Web of Science. Studies were selected based on predefined inclusion criteria focusing on the application of DiD models in efficiency assessments within Ethiopian district hospitals. Methodological quality was assessed using standardised checklists. The analysis revealed that while some studies have successfully applied DiD models to measure efficiency gains, there is a notable gap in consistent reporting of model assumptions and robustness checks, which can affect the reliability of results. This review highlights the potential of DiD models for improving the understanding of district hospital operational efficiencies in Ethiopia. However, further research is needed to ensure methodological rigor and generalizability. Future studies should focus on strengthening model assumptions and robustness checks, as well as exploring alternative methodologies that might be more suitable for Ethiopian contexts. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Ethiopia, District Hospitals, Efficiency Measurement, Difference-in-Differences, Econometrics, Health Systems Research, Methodology

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