

Evaluating Health System Reforms in Ethiopia

A Methodological Review of Difference-in-Differences Applications for District Hospital Adoption Rates (2000–2026)

Meklit Abebe¹, Tewodros Getachew²

Department of Epidemiology, Haramaya University | Haramaya University

Correspondence: mabebe@aol.com

Received: 15 April 2024 | Accepted: 25 May 2024 | Published: 18 July 2024 | DOI: [10.5281/zenodo.18947180](https://doi.org/10.5281/zenodo.18947180)

ABSTRACT

Background: Health system reforms in Ethiopia have focused on expanding district hospital coverage to improve access to care. Evaluating the impact of these policies requires robust quasi-experimental methods, with difference-in-differences (DiD) being a prominent analytical tool. However, the methodological rigour of its application in this context has not been systematically assessed.

Purpose and objectives: This review critically evaluates the application of DiD designs in studies measuring the adoption and performance of district hospitals following health system reforms. It aims to appraise model specifications, identification strategies, and the handling of key econometric assumptions.

Keywords: Health systems research, Sub-Saharan Africa, Difference-in-differences, District hospitals, Quasi-experimental design, Policy evaluation, Ethiopia

Article Highlights

- Systematic review critiques DiD applications in Ethiopian health reform evaluations.
- Identifies widespread omission of parallel trends testing and robustness checks.
- Calls for dynamic specifications and sensitivity analyses in future research.
- Highlights need for clustered inference at the woreda level to address bias.

Core Econometric Model

The canonical two-way fixed effects model: $Y_{it} = \alpha + \beta(\text{Treat}_i \times \text{Post}_t) + \gamma_i + \delta_t + \varepsilon_{it}$, where β represents the average treatment effect of reforms on district hospital outcomes.

This review assesses methodological rigor, not policy outcomes.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

REQUEST FULL PAPER

 **Email:** info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

**Are you a researcher in Africa? We
welcome your submissions!**

Join our community of African scholars and share
your groundbreaking work.

 **Submit at:** app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global
Knowledge