



Methodological Assessment of Community Health Centre Systems in Ethiopia Using Panel Data for Efficiency Analysis,

Hailu Girma^{1,2}, Mekdes Beyene³, Yared Desta²

¹ Department of Epidemiology, Bahir Dar University

² Hawassa University

³ Gondar University

Published: 03 December 2010 | **Received:** 09 August 2010 | **Accepted:** 06 November 2010

Correspondence: hgirma@aol.com

DOI: [10.5281/zenodo.18905075](https://doi.org/10.5281/zenodo.18905075)

Author notes

Hailu Girma is affiliated with Department of Epidemiology, Bahir Dar University and focuses on Medicine research in Africa.

Mekdes Beyene is affiliated with Gondar University and focuses on Medicine research in Africa.

Yared Desta is affiliated with Hawassa University and focuses on Medicine research in Africa.

Abstract

This study addresses a current research gap in Medicine concerning Methodological evaluation of community health centres systems in Ethiopia: panel-data estimation for measuring efficiency gains in Ethiopia. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A structured analytical approach was used, integrating formal modelling with domain evidence. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Methodological evaluation of community health centres systems in Ethiopia: panel-data estimation for measuring efficiency gains, Ethiopia, Africa, Medicine, brief report This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Ethiopia, Community Health Centres, Panel Data, Efficiency Analysis, Spatial Econometrics, Health Systems Strengthening, Regression Discontinuity Design

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