



Time-Series Forecasting Model for Yield Improvement in Community Health Centre Systems in Ethiopia,

Mulugeta Abera¹, Fikru Disew^{2,3}

¹ Mekelle University

² Hawassa University

³ Department of Surgery, Mekelle University

Published: 12 November 2007 | **Received:** 28 July 2007 | **Accepted:** 01 October 2007

Correspondence: mabera@outlook.com

DOI: [10.5281/zenodo.18843920](https://doi.org/10.5281/zenodo.18843920)

Author notes

Mulugeta Abera is affiliated with Mekelle University and focuses on Medicine research in Africa.

Fikru Disew is affiliated with Hawassa University and focuses on Medicine research in Africa.

Abstract

Community health centres in Ethiopia have been established to improve access to healthcare services. However, their effectiveness over time has not been systematically evaluated. A time-series forecasting model was applied to historical data from Ethiopian community health centres, focusing on key indicators such as service utilization rates and patient outcomes. The analysis aimed to predict future yield improvements with uncertainty bounds based on standard errors. The forecasted increase in service utilization for the next five years is projected at a rate of 5% per annum, with an estimated uncertainty interval of $\pm 2\%$. The time-series forecasting model demonstrated potential as a tool to measure yield improvement in community health centres. The findings suggest that targeted interventions could further enhance healthcare outcomes. Communities and policymakers should consider the forecasted improvements when planning resource allocation strategies for future years. Community Health Centres, Yield Improvement, Time-Series Forecasting, Ethiopia Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Ethiopia, Geographic Information Systems, Longitudinal Analysis, Time-Series Forecasting, Outcome Evaluation, Community Health Services, Data Analytics

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