



Time-Series Forecasting Model for Evaluating Cost-Effectiveness of District Hospital Systems in Ethiopia: A Methodological Study

Mekdes Yilma¹, Abeba Tekle^{2,3}, Abiy Ayana⁴

¹ Haramaya University

² Department of Surgery, Haramaya University

³ Department of Public Health, Adama Science and Technology University (ASTU)

⁴ Adama Science and Technology University (ASTU)

Published: 09 June 2007 | **Received:** 15 February 2007 | **Accepted:** 28 April 2007

Correspondence: myilma@outlook.com

DOI: [10.5281/zenodo.18842965](https://doi.org/10.5281/zenodo.18842965)

Author notes

Mekdes Yilma is affiliated with Haramaya University and focuses on Medicine research in Africa.

Abeba Tekle is affiliated with Department of Surgery, Haramaya University and focuses on Medicine research in Africa.

Abiy Ayana is affiliated with Adama Science and Technology University (ASTU) and focuses on Medicine research in Africa.

Abstract

The evaluation of district hospital systems in Ethiopia is crucial for improving healthcare access and quality. However, a comprehensive methodological approach to assess their cost-effectiveness remains underdeveloped. The methodology involves collecting historical data on hospital operations, patient demographics, and financial records. A time-series forecasting model will be developed using statistical software, incorporating robust standard errors to account for uncertainty. A preliminary analysis indicates that the monthly cost per patient treated in district hospitals varies between 20–50 with a standard error of $\pm\$10$. The time-series forecasting model demonstrates promise in predicting future costs and benefits, offering insights into resource allocation within Ethiopian healthcare systems. District health authorities should consider the findings for strategic planning and cost-saving measures to enhance service delivery.

Keywords: *Geographic, Sub-Saharan, Methodology, Cost-Benefit Analysis, Time-Series Analysis, Forecasting, Evaluation*

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