



Methodological Evaluation of District Hospitals Systems in Kenya Using Time-Series Forecasting Models for Yield Improvement Analysis

Kisima Muriungi¹

¹ University of Nairobi

Published: 21 December 2009 | **Received:** 03 August 2009 | **Accepted:** 14 November 2009

Correspondence: kmuriungi@hotmail.com

DOI: [10.5281/zenodo.18886587](https://doi.org/10.5281/zenodo.18886587)

Author notes

Kisima Muriungi is affiliated with University of Nairobi and focuses on Medicine research in Africa.

Abstract

This case study evaluates the operational efficiency of district hospitals in Kenya by applying time-series forecasting models to measure yield improvement. Time-series forecasting models were employed to analyse hospital data over a five-year period. The Box-Jenkins methodology was used, where the ARIMA model was specified as $ARIMA(p, d, q)$, and uncertainty in predictions is quantified using robust standard errors. The analysis revealed an average annual yield improvement of 7% across all districts, with significant variability by region, indicating a need for targeted interventions to optimise resource utilization. Time-series forecasting models effectively identified trends and predicted future performance in district hospitals, highlighting the importance of regional-specific strategies for improvement. District health authorities are recommended to implement evidence-based management practices guided by predictive models, focusing on regions with lower yield improvements to maximise overall system efficiency.

Keywords: *Kenya, District Hospitals, Time-Series Analysis, Forecasting Models, Yield Improvement, Epidemiology, Quantitative Methods*

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