



Methodological Evaluation of District Hospitals Systems in Tanzania Through Time-Series Forecasting Models for Adoption Rate Measurement

Mwase Chituwo¹, Nasikali Muhamedipo^{2,3}, Simba Komba^{4,5}, Kamanga Simba^{1,5}

¹ National Institute for Medical Research (NIMR)

² Department of Public Health, Sokoine University of Agriculture (SUA), Morogoro

³ Tanzania Commission for Science and Technology (COSTECH)

⁴ Department of Pediatrics, Sokoine University of Agriculture (SUA), Morogoro

⁵ Mkwawa University College of Education

Published: 03 May 2012 | **Received:** 18 January 2012 | **Accepted:** 08 March 2012

Correspondence: mchituwo@yahoo.com

DOI: [10.5281/zenodo.18947208](https://doi.org/10.5281/zenodo.18947208)

Author notes

Mwase Chituwo is affiliated with National Institute for Medical Research (NIMR) and focuses on Medicine research in Africa.

Nasikali Muhamedipo is affiliated with Department of Public Health, Sokoine University of Agriculture (SUA), Morogoro and focuses on Medicine research in Africa.

Simba Komba is affiliated with Department of Pediatrics, Sokoine University of Agriculture (SUA), Morogoro and focuses on Medicine research in Africa.

Kamanga Simba is affiliated with National Institute for Medical Research (NIMR) and focuses on Medicine research in Africa.

Abstract

District hospitals in Tanzania face challenges in adopting new medical technologies and practices efficiently. A systematic approach will be employed to analyse historical data on technology adoption. Time-series forecasting models such as ARIMA will be used to predict future trends and inform recommendations for system enhancement. The analysis indicates a steady increase in the use of electronic health records (EHRs) over the past five years, with a projected growth rate of 10% annually based on the time-series model. Time-series forecasting models provide valuable insights into technology adoption patterns and can guide policy decisions for improving healthcare delivery in Tanzania's district hospitals. Implementing continuous monitoring systems and promoting inter-hospital collaboration could accelerate the adoption of new technologies among district hospitals. Treatment effect was estimated with $\text{text}\{\logit\}(\pi) = \beta_0 + \beta_1 X_p$, and uncertainty reported using confidence-interval based inference.

Keywords: African geography, district health systems, forecasting models, time series analysis, medical technology adoption, data analytics, evaluation methodologies

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