



Forecasting Risk Reduction in Tanzanian Community Health Centres Using Time-Series Models

Bwalya Simiyu¹, Kamasi Mwanzia^{1,2}, Sambo Kinyanjui^{3,4}, Simba Hanga^{5,6}

¹ National Institute for Medical Research (NIMR)

² Catholic University of Health and Allied Sciences (CUHAS)

³ Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam

⁴ Department of Clinical Research, National Institute for Medical Research (NIMR)

⁵ Department of Pediatrics, Catholic University of Health and Allied Sciences (CUHAS)

⁶ Mkwawa University College of Education

Published: 01 July 2008 | **Received:** 27 March 2008 | **Accepted:** 15 June 2008

Correspondence: bsimiyu@outlook.com

DOI: [10.5281/zenodo.18869952](https://doi.org/10.5281/zenodo.18869952)

Author notes

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

Kamasi Mwanzia is affiliated with Catholic University of Health and Allied Sciences (CUHAS) and focuses on Medicine research in Africa.

Sambo Kinyanjui is affiliated with Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam and focuses on Medicine research in Africa.

Simba Hanga is affiliated with Department of Pediatrics, Catholic University of Health and Allied Sciences (CUHAS) 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 Tanzania: time-series forecasting model for measuring risk reduction in Tanzania. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. 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 Tanzania: time-series forecasting model for measuring risk reduction, Tanzania, Africa, Medicine, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Tanzania, Geographic Medicine, Community Health Centers, Time-Series Analysis, Forecasting Models, Epidemiology, Public Health Systems*

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