



Time-Series Forecasting Model for Measuring Adoption Rates in District Hospitals Systems in Kenya: A Methodological Evaluation

Kipruto Cheron^{1,2}, Omedeche AnyangNyongo³

¹ University of Nairobi

² Egerton University

³ Department of Public Health, University of Nairobi

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Correspondence: kcherono@yahoo.com

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Author notes

Kipruto Cheron is affiliated with University of Nairobi and focuses on Medicine research in Africa.

Omedeche AnyangNyongo is affiliated with Department of Public Health, University of Nairobi and focuses on Medicine research in Africa.

Abstract

This study addresses a current research gap in Medicine concerning Methodological evaluation of district hospitals systems in Kenya: time-series forecasting model for measuring adoption rates in Kenya. 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 district hospitals systems in Kenya: time-series forecasting model for measuring adoption rates, Kenya, Africa, Medicine, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Treatment effect was estimated with $\text{text} \{ \text{logit} \} (\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Kenya, District Hospitals, Time-Series Analysis, Forecasting Model, Adoption Rates, Methodology, Evaluation

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