African Occupational Therapy Review (Research focus)

Time-Series Forecasting Model for Evaluating Efficiency Gains in District Hospitals Systems,: A Longitudinal Study on Kenya's Healthcare Governance Context

Nyaga Njoro[1,2], **Kinyanjui Kivuiti**[3], **Otombe Otieno**[4], **Wambugu Wambora**[4,5]

[1] Department of Pediatrics, African Population and Health Research Center (APHRC)

[2] Egerton University

[3] Pwani University

[4] Maseno University

[5] African Population and Health Research Center (APHRC)

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Correspondence: nnjoro@gmail.com

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Author notes

Nyaga Njoro is affiliated with Department of Pediatrics, African Population and Health Research Center (APHRC) and focuses on Medicine research in Africa.

Kinyanjui Kivuiti is affiliated with Pwani University and focuses on Medicine research in Africa.

Otombe Otieno is affiliated with Maseno University and focuses on Medicine research in Africa.

Wambugu Wambora is affiliated with Maseno University and focuses on Medicine research in Africa.

Abstract

This study examines district hospitals in Kenya's healthcare system over a decade to evaluate efficiency gains. A longitudinal study employing a time-series forecasting model was conducted. The model incorporates ARIMA (AutoRegressive Integrated Moving Average) methodology to forecast hospital efficiency gains. The analysis revealed that the average efficiency gain over five years was between 5% and 7%, with significant variability across different districts, influenced by factors such as staffing levels and funding availability. The time-series model successfully identified patterns of efficiency change in district hospitals, providing a robust framework for future policy evaluations and resource allocation decisions. Based on the findings, policymakers should focus on enhancing human resources management and increasing financial stability to achieve sustained efficiency improvements in district hospitals. District Hospitals, Efficiency Gains, Time-Series Forecasting, ARIMA Model, Healthcare Governance Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, district hospitals, efficiency gains, longitudinal study, time-series analysis, forecasting model, healthcare governance*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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