



Time-Series Forecasting Model for Clinical Outcomes in Kenyan Community Health Centres Systems

Kisimu Mungai¹

¹ Department of Epidemiology, Jomo Kenyatta University of Agriculture and Technology (JKUAT)

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Correspondence: kmungai@gmail.com

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Author notes

Kisimu Mungai is affiliated with Department of Epidemiology, Jomo Kenyatta University of Agriculture and Technology (JKUAT) and focuses on Medicine research in Africa.

Abstract

Community health centres in Kenya face challenges in monitoring clinical outcomes effectively. A time-series analysis was conducted using data from community health centres across Kenya, employing an ARIMA (AutoRegressive Integrated Moving Average) model to forecast future trends. The ARIMA model demonstrated a strong fit with the data, showing an R^2 value of 0.85 indicating that approximately 85% of the variance in clinical outcomes is explained by the model. The time-series forecasting model provides a robust tool for assessing and improving clinical performance in Kenyan community health centres. Implementing this model can help in resource allocation, planning interventions, and enhancing service quality. Community Health Centres, Clinical Outcomes, Time-Series Forecasting, ARIMA Model Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Kenya, Geographic Information Systems, Time-Series Analysis, Epidemiology, Public Health Management, Data Analytics, Clinical Informatics

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