African Dietetics Practice

Methodological Evaluation of District Hospitals Systems in Kenya using Time-Series Forecasting Models

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Abstract

District hospitals in Kenya play a crucial role in healthcare delivery but often struggle with resource management and operational efficiency. A comprehensive review of existing studies was conducted, employing systematic criteria to select relevant articles. Time-series forecasting models were analysed using autoregressive integrated moving average (ARIMA) equations with robust standard errors. The analysis revealed a significant positive correlation between ARIMA model parameters and actual yield improvement rates in district hospitals, indicating the effectiveness of time-series forecasting for system evaluation. Time-series forecasting models can be effectively utilised to measure yield improvements in Kenya's district hospital systems. The ARIMA model provided reliable estimates with robust standard errors. District health managers should consider implementing ARIMA-based forecasts to optimise resource allocation and enhance operational efficiency. district hospitals, time-series forecasting, autoregressive integrated moving average (ARIMA), yield improvement Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\vec{\beta}\ p\ X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, district healthcare systems, meta-analysis, time-series analysis, forecasting models, resource management, operational efficiency*

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