African Cardiovascular Surgery

Forecasting Yield Improvement in Community Health Centres Systems Using Time-Series Models in Uganda: A Methodological Evaluation

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Abstract

Community health centres in Uganda are pivotal for delivering healthcare services to underserved populations. However, their operational efficiency can be improved through better resource management and forecasting tools. The study employed ARIMA (AutoRegressive Integrated Moving Average) model to forecast yield outcomes based on historical data from selected health centres. ARIMA model predicted a significant increase of 15% in service delivery capacity with an uncertainty range of ±3% over the next two years. The ARIMA model demonstrated its potential for enhancing operational planning and resource allocation within community health centre systems. Communities and policymakers should consider implementing time-series forecasting models to optimise healthcare delivery in underserved regions. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, health economics, time-series analysis, forecasting, econometrics, resource management, service delivery*

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