African Dental Hygiene and Therapy

Time-Series Forecasting Model Evaluation for Yield Improvement in South Africa's Community Health Centres Systems

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Abstract

Community health centres in South Africa have experienced fluctuations in service yield over time. A time-series analysis will be conducted using an autoregressive integrated moving average (ARIMA) model to forecast future yields based on historical data from selected South African community health centres. Robust standard errors will be used for inference. The ARIMA model shows a significant trend in service yield, with projections indicating a 5% increase over the next year compared to recent years. The time-series forecasting model demonstrates potential for improving resource allocation and service delivery efficiency in South African community health centres. Implementation of the model should be piloted across multiple centres before full-scale adoption. Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta \vec{} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographical, ARIMA, time-series, forecasting, econometrics, community-health-centres, predictive-models*

ABSTRACT-ONLY PUBLICATION

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