



Forecasting Yield Improvement in Tanzania's Community Health Centres Using Time-Series Models

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Abstract

Community health centres in Tanzania face challenges in resource allocation and service delivery that impact their yield. A comprehensive assessment was conducted using a combination of historical data from community health centres across Tanzania. Time-series forecasting models were applied to predict future yield improvements based on current trends and patterns. The analysis revealed significant variability in service delivery, with some centres showing a 20% increase in patient consultations over the forecast period, indicating potential for improvement through targeted interventions. This study supports the use of time-series models as a robust tool for forecasting yield improvements in community health centers. Further research is recommended to validate these findings and explore practical applications. The implementation of evidence-based intervention strategies should be prioritised based on forecasted results, alongside continuous monitoring and evaluation of health centre performance. Community Health Centres, Tanzania, Time-Series Forecasting, Yield Improvement Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, yield improvement, time-series analysis, forecasting models, econometrics, community health systems, resource allocation*

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