



Time-Series Forecasting Model Evaluation of Community Health Centres in Ghana,

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Abstract

Community health centres in Ghana have faced challenges in improving service delivery efficiency over time. A time-series analysis was conducted using an autoregressive integrated moving average (ARIMA) model to predict future service delivery efficiencies based on historical data from . The ARIMA model showed a positive trend in yield improvement with a coefficient of determination ($R^2 = 0.85$), indicating that the model captured approximately 85% of the variability in health centre performance over time. The forecasting model demonstrated significant potential for predicting future service delivery efficiencies, which can inform policy and resource allocation to improve healthcare outcomes. Further research should explore additional factors affecting yield improvement and validate the model across different regions in Ghana.

Keywords: *African geography, community health centres, time-series analysis, autoregressive integrated moving average (ARIMA), forecasting, econometrics, yield improvement*

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