



Time-Series Forecasting Model for Evaluating Clinical Outcomes in Rural Clinics Systems of Tanzania,

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Abstract

Rural clinics in Tanzania face challenges in consistently delivering high-quality healthcare services due to limited resources and infrastructure. A time-series forecasting model was developed using historical data from to . The model incorporates ARIMA (AutoRegressive Integrated Moving Average) methodology for trend analysis. The forecasted outcomes indicated a need for increased investment in training staff and upgrading facilities to maintain or improve clinical performance. The time-series forecasting model provided insights into potential improvements, but further empirical validation is required before implementation. Investment strategies should focus on enhancing human resources and infrastructure to support rural clinics' ongoing operations. Rural Clinics, Tanzania, Forecasting Model, Clinical Outcomes, Time-Series Analysis Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rural health services, Time-series analysis, Forecasting models, Clinical outcomes, Resource allocation, Epidemiology, Public health systems*

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