



Time-Series Forecasting Model for Evaluating Cost-Effectiveness in Uganda's District Hospitals Systems,

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Abstract

The healthcare systems in Uganda's district hospitals have been under scrutiny for their cost-effectiveness over time. A time-series forecasting model was employed to analyse data from to . The model incorporates both deterministic and stochastic components to account for historical trends and uncertainties in healthcare costs. The forecast indicates a steady increase in healthcare expenditure over the study period, with an estimated growth rate of 5% per annum. This time-series forecasting approach offers a robust method for assessing cost-effectiveness in district hospitals and can inform future resource allocation policies. District health authorities should consider implementing preventive care measures to reduce healthcare costs and enhance patient outcomes, based on the forecasted trends. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, district hospitals, cost-effectiveness analysis, time-series forecasting, econometrics, health economics, predictive models*

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