



# Methodological Evaluation of District Hospitals Systems in Nigeria Using Time-Series Forecasting Models for Cost-Effectiveness Analysis,

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## Abstract

This study evaluates the operational efficiency of district hospitals in Nigeria by analysing historical cost data. A time-series forecasting model was employed to analyse the historical cost data from to . The ARIMA (Autoregressive Integrated Moving Average) model was used, with an estimated coefficient of determination ( $R^2=0.95$ ), indicating a strong fit. A notable trend observed in the data is a steady increase in hospital costs over the study period, which could be indicative of underlying systemic inefficiencies. The time-series forecasting models provided insights into potential cost-saving measures and areas for improvement within the Nigerian district hospital systems. Based on the findings, it is recommended that resource allocation strategies should consider future projections to ensure sustainability and efficiency in healthcare delivery.

**Keywords:** Nigerian, District Hospitals, Time-Series, Forecasting, Cost-Effectiveness, Evaluation, Analysis

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