



# Time-Series Forecasting Model for Evaluating Maternal Care Facilities in Nigeria: A Methodological Approach

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## Abstract

Maternal care facilities in Nigeria are critical for ensuring maternal health outcomes. However, there is a need to evaluate and forecast their performance over time. The study will employ an autoregressive integrated moving average (ARIMA) model for time-series analysis. Uncertainty in forecasts will be quantified using robust standard errors. Initial findings suggest a positive trend in maternal health indicators, with improvements observed over the past five years. The ARIMA model effectively predicts future clinical outcomes, providing actionable insights for facility managers and policymakers. Implementing the forecasting model can lead to more efficient resource distribution and better patient care outcomes. MATERNAL CARE, TIME-SERIES FORECASTING, ARIMA MODEL, CLINICAL OUTCOMES, NIGERIA Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Nigerian, Geographic, MaternalHealth, Forecasting, TimeSeries, Evaluation, Methodology

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