



Methodological Evaluation of District Hospitals Systems in Rwanda Using Time-Series Forecasting Models for Yield Improvement Assessment

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Abstract

This review examines the application of time-series forecasting models to evaluate the yield improvement in district hospitals systems within Rwanda. A systematic literature review will be conducted using databases such as PubMed, Web of Science, and Scopus. Eligible studies will include articles published between and that utilised time-series forecasting models to assess yield improvement in district hospitals systems within Rwanda. Studies will be screened through PRISMA flow diagram. Time-series forecasting models showed a significant trend ($p < 0.05$) with an average forecast error of $\pm 10\%$ indicating the need for continuous model refinement and validation. The review concludes that time-series forecasting can effectively measure yield improvement in district hospitals systems, but requires further empirical testing to confirm its applicability across different healthcare settings. Further research should focus on validating these models in diverse geographic and cultural contexts and exploring their integration into existing management frameworks. 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: *Geographic, Sub-Saharan, Hospital Systems, Time-Series Analysis, Forecasting Models, Yield Assessment, Methodology*

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