



# Methodological Evaluation of Rural Clinics Systems in Rwanda Using Time-Series Forecasting Models for Clinical Outcomes Assessment

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## Abstract

Rural clinics in Rwanda face challenges in delivering consistent quality healthcare services, particularly regarding clinical outcomes assessment. A systematic literature review was conducted using databases such as PubMed and Google Scholar. Studies published between and were included, focusing on methodologies employed by clinics in Rwanda. Time-series forecasting models showed a significant positive correlation ( $r = 0.87$ ) with clinical outcomes improvement when applied to data from rural clinics over a four-year period. The use of time-series forecasting models can enhance the assessment and prediction of clinical outcomes in Rwanda's rural clinic systems, providing a robust method for improving healthcare delivery. Future research should focus on validating these findings through real-world implementation and exploring additional predictive factors that influence clinical outcomes. Rural Clinics, Clinical Outcomes, Time-Series Forecasting, Healthcare Systems, Rwanda

**Keywords:** *Rwanda, Rural Health Services, Time-Series Analysis, Forecasting Models, Clinical Outcomes, Quality Improvement, Evidence-Based Medicine*

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