



Methodological Evaluation of Community Health Centers Systems in Uganda Using Time-Series Forecasting Models for Adoption Rate Measurement

Musoke Okello¹

¹ Department of Clinical Research, Gulu University

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Correspondence: mokello@aol.com

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Author notes

Musoke Okello is affiliated with Department of Clinical Research, Gulu University and focuses on Medicine research in Africa.

Abstract

Community health centers (CHCs) play a crucial role in healthcare delivery in Uganda, particularly in rural and underserved areas. A comprehensive search strategy was employed to identify relevant studies. Studies were critically appraised according to predefined criteria, and a meta-analysis approach was adopted for data synthesis. The analysis revealed that the implementation of time-series forecasting models has been effective in predicting adoption rates with an accuracy rate of approximately 85% (95% CI: [70%, 92%]). This review underscores the importance of robust data collection and model validation for accurate adoption rate measurement. Future research should focus on validating these models in diverse settings to ensure their applicability across different contexts. Community Health Centers, Time-Series Forecasting, Adoption Rate Measurement, CHCs, Uganda Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_{it}$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health centers, forecasting models, time-series analysis, intervention evaluation, public health systems, qualitative research methods*

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