



Methodological Evaluation and Time-Series Forecasting of Community Health Centre Systems in Rwanda: An Assessment of Adoption Rates

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Abstract

Community health centre systems in Rwanda have been implemented to improve healthcare access and service delivery. However, their effectiveness varies across regions. The study employed a systematic review approach to identify relevant studies on community health centres. A meta-regression model was used to analyse the data, incorporating robust standard errors to account for heterogeneity across studies. A total of 50 studies were included in the analysis, with an average adoption rate of 62% over a five-year period. The time-series forecasting model indicated an increase in adoption rates by 10% annually. The findings suggest that community health centres are widely adopted but require further support to maintain and improve their effectiveness. Investment strategies should focus on enhancing the quality of services, increasing financial resources, and improving infrastructure within these facilities. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^* p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, spatial analysis, meta-analysis, intervention studies, cluster randomized trials, geographic information systems, econometrics*

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