



Methodological Evaluation of Community Health Centre Systems in Rwanda Using Quasi-Experimental Design to Measure Efficiency Gains

Kizito Mukantanyi¹, Agnes Karekeziya^{2,3}

¹ Department of Pediatrics, University of Rwanda

² University of Rwanda

³ Department of Public Health, Rwanda Environment Management Authority (REMA)

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Correspondence: kmukantanyi@outlook.com

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Author notes

Kizito Mukantanyi is affiliated with Department of Pediatrics, University of Rwanda and focuses on Medicine research in Africa.

Agnes Karekeziya is affiliated with University of Rwanda and focuses on Medicine research in Africa.

Abstract

Community health centres in Rwanda have been established to improve healthcare accessibility and quality in rural areas. However, their efficiency remains a subject of interest for policymakers and researchers. A mixed-method approach combining quantitative data analysis with qualitative insights was employed. The study utilised an interrupted time series analysis (ITS) model for measuring efficiency gains over time. The ITS model showed significant improvements in service delivery metrics, particularly in the reduction of patient wait times by 25% within a year post-reform implementation. The quasi-experimental design proved effective in detecting efficiency gains without requiring additional resources or external funding. Based on the findings, recommendations include continuous monitoring and periodic re-evaluations to sustain improvements. community health centres, Rwanda, quasi-experimental design, efficiency gains, interrupted time series analysis Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Sub-Saharan, Health Systems Reform, Quasi-Experimental Design, Evaluation Metrics, Outcome Measures, Hierarchical Linear Modelling*

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