



Methodological Assessment and Clinical Outcomes Evaluation of Community Health Centres in Rwanda: A Panel Data Analysis

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Abstract

Rwanda's community health centres (CHCs) play a crucial role in primary healthcare delivery. However, their effectiveness and operational efficiency are not well understood. Panel data from 2005 to 2010 was analysed using a fixed effects regression model. Uncertainty is quantified with robust standard errors. CHCs achieved an average improvement rate of 5% in patient satisfaction scores over the study period, indicating potential improvements in service delivery. This methodological approach provides a robust framework for future evaluations of CHCs in Rwanda and other similar healthcare systems. Future research should consider longitudinal data collection to further validate these findings and explore causal relationships. community health centres, panel data analysis, clinical outcomes, fixed effects regression Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwandan, Community Health Centres, Panel Data, Hierarchical Linear Modelling, Outcome Evaluation, Geographic Information Systems, Spatial Analysis*

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