



Methodological Assessment of Community Health Centre Systems in Kenya Through Panel Data Analysis for Risk Reduction Measurement

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Abstract

Community health centres (CHCs) play a critical role in healthcare delivery in Kenya, particularly for underserved populations. A mixed-methods approach combining quantitative panel-data estimation with qualitative insights was employed to analyse CHC performance and identify areas needing improvement. Panel-data analysis revealed a significant reduction in healthcare access time by 20% among CHC users compared to non-users, indicating improved service delivery efficiency. The study underscores the importance of continuous data monitoring for risk reduction strategies within CHCs and highlights the need for further research to enhance service quality. Enhanced training programmes for CHC staff and increased investment in infrastructure are recommended to improve healthcare services. Community Health Centres, Panel Data Analysis, Risk Reduction, Healthcare Access Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: African geography, community health systems, panel data analysis, risk assessment, mixed-methods, econometrics, healthcare delivery

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