Methodological Evaluation of Community Health Centre Systems in Tanzania Using Panel Data for System Reliability Assessment

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Abstract

Community health centers in Tanzania face challenges related to service delivery and sustainability. Panel data was collected from multiple community health centres over two years. A fixed effects model was employed to estimate the impact of various factors on service delivery effectiveness. The analysis revealed a significant improvement in patient follow-up rates by 15% after implementing new feedback mechanisms, indicating enhanced system reliability. The methodological approach demonstrated its efficacy in assessing community health centre systems' performance and stability. Further studies should consider longitudinal data collection to track long-term system improvements. community health centers, panel data, fixed effects model, system reliability Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\neg}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health centers, panel data analysis, fixed effects model, system reliability, econometrics, resource management*

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