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System Reliability Assessment in Tanzania's Community Health Centres: A Panel Data Evaluation

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Abstract

Community health centres in Tanzania play a vital role in providing primary healthcare services to rural communities. A mixed-methods approach combining quantitative econometric techniques with qualitative field observations was employed. Panel data from 20 community health centres over five years were analysed using a fixed effects model to assess system reliability. The panel data revealed that the average annual service utilization rate across all health centres was 45%, indicating moderate patient engagement in healthcare services. However, there was significant variability in utilisation rates between different health centres. The findings suggest that while overall system performance is satisfactory, there are notable disparities and areas for improvement within the community health network. To enhance reliability, targeted interventions focusing on improving service quality and accessibility should be implemented. Additionally, ongoing monitoring and periodic assessments of healthcare centres' operational effectiveness are recommended. Treatment effect was estimated with $text\{logit\}(\pi)=beta 0+\beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Panel data, Econometrics, Health systems, Community health centres, Panel analysis, Reliability assessment, Africa*

ABSTRACT-ONLY PUBLICATION

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