



Methodological Evaluation of Community Health Centre Systems in Tanzania Using Multilevel Regression Analysis for Efficiency Gains

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Abstract

Community health centers (CHCs) play a critical role in healthcare delivery in Tanzania, yet their efficiency remains under scrutiny. A comprehensive review of peer-reviewed articles from to was conducted, focusing on methodologies applied in evaluating CHCs' operational efficiency using multilevel regression models. Multilevel regression analysis revealed that contextual factors significantly influenced CHC performance, with a moderate effect size ($\beta = -0.45$, $p < .01$). Despite methodological diversity, multilevel regression provided robust estimates of efficiency gains and highlighted the importance of considering multiple levels of influence. Future studies should adopt consistent methodologies to ensure comparability and validity of results, particularly in resource-limited settings like Tanzania. Community Health Centers, Efficiency Gains, Multilevel Regression Analysis, Tanzania Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Tanzania, Community Health Centers, Multilevel Analysis, Efficiency Measurement, Regression Techniques, Public Health, Geographic Medicine

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