



Maternal Care Facility Systems Evaluation in Tanzania: A Multilevel Regression Analysis of Clinical Outcomes

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Abstract

Maternal care facilities in Tanzania face challenges that affect clinical outcomes for mothers and newborns. A multilevel regression analysis was conducted at both individual (clinical data) and system levels (facility management practices). Multilevel regression revealed significant associations between facility management practices and neonatal mortality rates, with a coefficient estimate of -0.35 for each unit increase in quality indicators. The multilevel approach highlighted the importance of integrated system-level improvements to enhance clinical outcomes. Facility managers should prioritise training programmes and policy reforms aimed at improving maternal health care delivery. 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, Geographic Disparities, Multilevel Modelling, Outcome Measures, Maternal Health, Neonatal Mortality, Regression Analysis

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