



Methodological Evaluation of Maternal Care Facilities Systems in Ghana Using Panel Data for Clinical Outcome Assessment

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Abstract

Maternal care facilities in Ghana are crucial for the health of newborns, yet their effectiveness is not well understood. Panel-data estimation techniques were employed to measure clinical outcomes such as neonatal mortality rates across multiple years in Ghana. This study utilised a mixed effects logistic regression model with robust standard errors to account for potential biases and variations. Neonatal mortality rates showed a significant reduction from 38% to 25% over the study period, indicating improvements in care delivery. The panel-data approach provided insights into system effectiveness but also highlighted areas needing further improvement. Further research should focus on understanding and enhancing specific aspects of maternal care systems identified as contributing to outcomes. 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: *Geographic, maternal health, panel data, outcome assessment, facility evaluation, econometrics, developmental economics*

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