Bayesian Hierarchical Model Assessment of Community Health Centres in Rwanda,

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Abstract

This study focuses on evaluating the performance of community health centers in Rwanda from to . Bayesian hierarchical models were employed to analyse the data collected from community health centers in Rwanda. The models account for variability at different levels of the hierarchy (e.g., individual patient outcomes within clusters of clinics). The analysis revealed a significant improvement in yield measurements, with an estimated increase of 15% in service effectiveness across all clinics. Bayesian hierarchical models provided robust estimates for evaluating health centre performance and identified specific areas needing further attention to enhance service delivery. Based on the findings, recommendations include targeted training programmes for clinic staff and improvements in infrastructure to sustain yield gains observed. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta\check{}\ p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwandan, Hierarchical, Bayesian, Regression, Evaluation, Quantitative, Models*

ABSTRACT-ONLY PUBLICATION

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