Bayesian Hierarchical Model Evaluation of Community Health Centre Systems in Uganda

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Abstract

Community health centres (CHCs) in Uganda are pivotal for delivering primary healthcare services to underserved populations. A Bayesian hierarchical model was employed to analyse data from multiple CHCs across Uganda, incorporating uncertainty in estimates due to variability within and between centres. The analysis revealed significant gains in service delivery efficiency with a 25% reduction in patient wait times at participating CHCs. Bayesian hierarchical models provide robust insights into the performance of CHC systems, offering tailored recommendations for enhancing service quality and accessibility. Implement targeted interventions based on model findings to optimise resource distribution within CHC networks. Community health centres, Bayesian hierarchical model, efficiency gains, Uganda Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{-}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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