



Bayesian Hierarchical Model Assessment of Community Health Centres in Ethiopia, 2002

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Abstract

Community health centres (CHCs) in Ethiopia play a crucial role in healthcare delivery, especially in rural and remote areas where access to specialized medical services is limited. A Bayesian hierarchical model was employed to analyse data collected from CHCs across Ethiopia. The model accounts for spatial and temporal variations in health service provision and patient response. The analysis revealed a positive correlation between the number of trained healthcare providers and improved patient satisfaction, suggesting that adequate staff is essential for effective service delivery. Bayesian hierarchical modelling provided robust insights into the effectiveness of CHCs, highlighting the importance of provider training in enhancing service quality and utilization. Further research should explore interventions aimed at increasing provider training and improving healthcare infrastructure to maximise health outcomes in Ethiopia's rural areas. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Ethiopia, Bayesian hierarchical model, Geographic Markov process, Spatial analysis, Monte Carlo methods, Markov Chain Monte Carlo (MCMC), Evaluation metrics

ABSTRACT-ONLY PUBLICATION

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