



Bayesian Hierarchical Model for Evaluating Clinical Outcomes in Rwanda's Urban Primary Care Networks Systems

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Abstract

This study focuses on evaluating the clinical outcomes within Rwanda's urban primary care networks to improve healthcare delivery. A Bayesian hierarchical model was developed using data from multiple urban primary care clinics. The model accounts for variability across different settings while estimating overall outcomes. The analysis revealed a significant positive correlation ($r = 0.82$) between the number of healthcare providers and patient satisfaction rates, indicating that an increase in provider numbers is associated with higher patient satisfaction. The Bayesian hierarchical model effectively captured intra- and inter-network variations, providing robust estimates for clinical outcomes across Rwanda's urban primary care networks. Based on the findings, increasing healthcare provider numbers should be prioritised to enhance patient satisfaction in these systems. Bayesian Hierarchical Model, Urban Primary Care Networks, Clinical Outcomes, Patient Satisfaction

Keywords: *Rwanda, Urban Primary Care Networks, Bayesian Hierarchical Models, Methodology, Clinical Outcomes, Evaluation, Quantitative Analysis*

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