



Methodological Evaluation of Urban Primary Care Networks in Rwanda Using Multilevel Regression Analysis for Clinical Outcomes Measurement

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Abstract

The evaluation of urban primary care networks in Rwanda aims to assess their effectiveness in delivering healthcare services. A systematic literature review was employed to analyse studies on urban primary care networks in Rwanda. Multilevel regression analysis was used to measure clinical outcomes across different levels of healthcare delivery. Findings indicate a significant improvement ($p < 0.05$) in patient satisfaction scores with the implementation of multilevel regression models, suggesting enhanced service quality and efficiency. The integration of multilevel regression analysis provided valuable insights into the operational effectiveness of primary care networks in Rwanda. Future studies should consider longitudinal data collection to further validate these findings and explore additional factors impacting clinical outcomes. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, primary care networks, multilevel modelling, regression analysis, outcome measurement, clinical effectiveness, geographic information systems*

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