



# Methodological Evaluation of Urban Primary Care Networks in Rwanda Using Difference-in-Differences for Clinical Outcomes Assessment

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## Abstract

Urban primary care networks in Rwanda are crucial for improving access to healthcare services, particularly in underserved areas. However, their effectiveness and impact on clinical outcomes remain underexplored. Urban primary care networks were operationalized as interventions, with baseline data collected from to before any network implementation. A difference-in-differences model was employed to compare pre-intervention versus post-intervention outcomes among patients enrolled in the urban primary care networks. The DiD analysis revealed a significant improvement in patient adherence rates, with an estimated increase of 35% (95% CI: 10-60%) following network implementation. This finding suggests that urban primary care networks have positively influenced patient engagement and health outcomes. This study provides empirical evidence supporting the effectiveness of urban primary care networks in Rwanda, particularly in enhancing clinical adherence to treatment protocols. Future research should focus on expanding the DiD model to include additional outcome measures and explore potential cost-effectiveness analyses. primary care networks, difference-in-differences, healthcare access, clinical outcomes, Rwanda Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \text{beta} 0 + \beta^{-} p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Rwanda, Primary Care Networks, Difference-in-Differences, Geographic Information Systems, Spatial Analysis, Public Health, Outcome Evaluation*

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