



Methodological Evaluation of Community Health Centre Systems in Ethiopia Using Difference-in-Differences Modelling

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Abstract

Community health centers in Ethiopia have been established to improve access to healthcare services for underserved populations. However, their effectiveness and reliability need rigorous evaluation. A DiD approach was employed to assess changes in service delivery outcomes before and after the introduction of community health centers. The study utilised pre- and post-intervention data from randomly selected clusters representing different regions in Ethiopia. The analysis revealed a positive improvement in healthcare access, with an estimated increase of 20% in patient consultations per month following the implementation of community health centre systems. The DiD model demonstrated significant reliability and effectiveness in measuring system performance improvements in Ethiopian community health centers. Future studies should consider expanding coverage to other regions and incorporating additional outcomes such as health indicators and cost-effectiveness analyses. Community Health Centers, Difference-in-Differences Model, Healthcare Access, Ethiopia Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health systems, difference-in-differences, evaluation methods, healthcare access, longitudinal analysis, randomized controlled trials*

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