



# Methodological Evaluation of Community Health Centre Systems in Ethiopia Using Difference-in-Differences for Clinical Outcomes Measurement

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## Abstract

Community health centers in Ethiopia have been established to improve healthcare access in rural areas. However, their effectiveness and operational efficiency are not well understood. A DiD model was employed to analyse pre- and post-intervention data from randomly selected clusters, with baseline characteristics balanced through matching techniques. The analysis revealed a statistically significant improvement in patient recovery rates ( $p < 0.05$ ) after the implementation of community health centre services compared to non-comparable areas. This study confirms the utility of DiD for evaluating clinical outcomes in resource-limited settings, providing evidence-based insights for future policy development. Future research should consider expanding DiD applications and exploring other intervention metrics such as cost-effectiveness ratios. Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Ethiopia, Geographic Terms, Health Services Research, Difference-in-Differences, Outcome Measurement, Public Health Systems, Interventions

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