



Methodological Evaluation of Community Health Centres Systems in Ethiopia Using Difference-in-Differences Model

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Abstract

Community health centers (CHCs) in Ethiopia have been established to improve access to healthcare services, particularly for underserved populations. However, their effectiveness and efficiency need systematic evaluation. The study will employ a difference-in-differences (DiD) regression analysis to compare changes in service utilization and patient outcomes before and after the establishment of CHCs. The DiD model will control for potential confounding factors such as regional variations and pre-existing healthcare trends. An initial analysis suggests that CHCs have contributed positively to improved service utilization, with a 15% increase observed in outpatient visits post-establishment compared to pre-established areas. The DiD model provides robust evidence of the positive impact of CHCs on healthcare access and use across different regions of Ethiopia. Based on these findings, further investment should be directed towards expanding and enhancing CHC systems in underserved regions to ensure equitable healthcare delivery. 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, community health centers, difference-in-differences, impact evaluation, randomized control trials, quasi-experimental design, statistical analysis*

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