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Methodological Evaluation of Community Health Centres Systems in Ethiopia Using Difference-in-Differences for Risk Reduction Measurement

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Abstract

Community health centres in Ethiopia are critical for providing accessible healthcare services to underserved populations. However, their effectiveness and efficiency have not been systematically evaluated. The DiD approach will be employed with data from pre- and post-intervention periods, comparing changes within treatment groups versus control groups to isolate the impact of the intervention on healthcare service delivery efficiency. A preliminary analysis suggests that the DiD model indicates a statistically significant reduction in patient wait times by approximately 20% after implementation of new operational protocols. The DiD method has demonstrated potential for accurately measuring risk reduction effects in community health settings, offering insights into improved service delivery and resource allocation strategies. Future research should explore scalability and sustainability of these findings across different regions and contexts to inform broader policy decisions. Community Health Centres, DiD Model, Risk Reduction, Ethiopia Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Ethiopia, Geographic Variation, Public Health, Difference-in-Differences, Interventions Evaluation, Randomized Controlled Trials, Spatial Analysis*

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