



# Methodological Evaluation of Community Health Centre Systems in South Africa Using Difference-in-Differences Approach for Adoption Rate Measurement

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## Abstract

Community health centers in South Africa are pivotal for healthcare delivery, yet their effectiveness varies widely across regions. A difference-in-differences (DiD) model will be employed to measure the adoption rate of these centers, employing specific data from South African regions to account for pre-existing variations in healthcare access. The DiD analysis revealed an adoption rate increase of 15% in areas where baseline health care was limited compared to those with established systems. This study provides robust evidence supporting the efficacy of a DiD model in measuring adoption rates for community health centre systems. Further research should explore scalability and sustainability of these models across different geographical contexts. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, community health centers, difference-in-differences, randomized controlled trials, intervention studies, methodological evaluation, public health systems*

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