



Methodological Evaluation of Community Health Centre Systems in South Africa Using Difference-in-Differences Approach

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Abstract

Community health centres (CHCs) play a critical role in primary healthcare delivery in South Africa, yet their effectiveness remains a subject of debate. A difference-in-differences (DiD) model was employed to analyse pre- and post-intervention data from CHCs. This statistical method compares changes in outcomes between control and treatment groups. The DiD analysis revealed a significant increase of 15% in patient consultations per month, indicating improved service provision after the intervention period. The findings suggest that targeted interventions can enhance the operational efficiency and effectiveness of CHCs in South Africa. Further studies should explore sustainability and scalability of these results across different regions and populations. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health centres, difference-in-differences, impact evaluation, longitudinal studies, quasi-experimental design, statistical methods*

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