



Methodological Evaluation of District Hospitals Systems in South Africa Using Difference-in-Differences for Efficiency Gains Analysis

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Abstract

District hospitals in South Africa face challenges in providing efficient healthcare services due to resource constraints and varying levels of infrastructure development. A DiD model was applied using data from South African district hospitals to assess changes in service delivery metrics over time. The analysis revealed an improvement of 15% in patient wait times after implementing new operational protocols. The DiD method effectively quantified the efficiency gains and highlighted areas needing further intervention. District hospitals should continue to refine their operational procedures based on these findings. Difference-in-Differences, South Africa, District Hospitals, Efficiency Gains Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, DiD, healthcare economics, evaluation methods, resource allocation, infrastructure, efficiency analysis

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