



Methodological Evaluation of District Hospitals Systems in South Africa: Panel Data Estimation for Adoption Rates

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Abstract

District hospitals in South Africa play a critical role in healthcare delivery, particularly for underserved populations. However, their effectiveness and efficiency vary significantly across different regions. This meta-analysis employs econometric methods to integrate studies from multiple sources. Specifically, we use a fixed effects model to estimate adoption rates over time and across different districts. Our analysis reveals that the fixed effects approach effectively captures within-district variation in hospital system effectiveness, with some districts showing significantly higher adoption rates than others ($p < 0.05$). The findings underscore the importance of adopting robust statistical methods to accurately measure and compare district hospital systems. Health policymakers should consider utilising panel data estimation techniques for future evaluations of healthcare system effectiveness in South Africa. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, econometrics, randomized, stratified, regression, multilevel, spatial

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