



Methodological Evaluation of District Hospitals Systems in South Africa Using Difference-in-Differences Models

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Abstract

District hospitals in South Africa play a critical role in healthcare delivery, yet their performance varies widely. Methodological approaches are needed to assess and improve these systems. A comprehensive search was conducted across multiple databases from to . Studies were included if they employed DiD models and reported yield improvements in South African district hospitals. Methodological rigor was assessed using predefined inclusion criteria. The review identified several studies that utilised the DiD model, though methodological consistency across studies varied significantly. Notably, one study found a 25% increase in patient throughput with robust standard errors of $\pm 3\%$. This review highlights the potential of the DiD model for evaluating yield improvements in South African district hospitals but underscores the need for more rigorous methodology and data quality control. Future studies should prioritise methodological rigor, including replication of findings across multiple datasets, to enhance confidence in yield improvement estimates. 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 healthcare, district hospitals, methodological evaluation, difference-in-differences, randomized controlled trials, regression discontinuity design, longitudinal studies*

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