



# Methodological Evaluation of District Hospitals Systems in Senegal Using Difference-in-Differences Models for Cost-Efficiency Assessment

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## Abstract

District hospitals in Senegal play a crucial role in healthcare delivery, yet their systems are complex and multifaceted. Understanding these systems is essential for improving service quality and cost-effectiveness. This study employs rigorous methodology to identify and analyse relevant studies. The search strategy includes databases such as PubMed and Scopus, covering publications from the present. Studies are screened based on inclusion criteria related to district hospitals in Senegal and use of difference-in-differences models for cost-effectiveness analysis. A notable finding is that some studies have used a difference-in-differences model with robust standard errors, providing insights into variations in hospital performance over time. The review highlights the need for consistent methodological approaches to ensure comparability and reliability of results across different studies. Future research should focus on replicating findings using similar models and validating methods through additional data sources. Policy recommendations can be drawn from these insights, particularly regarding resource allocation and performance improvement strategies in district hospitals. 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, district hospitals, cost-effectiveness, difference-in-differences, econometrics, healthcare delivery, resource allocation*

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