



# Methodological Assessment and Efficiency Gains in District Hospitals Systems within Senegal,

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## Abstract

This study focuses on methodological evaluation of district hospitals within Senegal, aiming to enhance healthcare efficiency. A panel-data estimation method was employed, utilising data from multiple hospitals across different regions of Senegal over two years. Robust standard errors were applied to account for potential heterogeneity between districts. Efficiency gains varied significantly among districts, with one district showing a 15% increase in operational efficiency after implementing new resource allocation strategies. The study confirms the efficacy of panel-data estimation methods in evaluating healthcare system performance and highlights the need for targeted interventions to enhance efficiency across Senegalese district hospitals. District health authorities should prioritise implementation of evidence-based resource allocation models, with a particular focus on areas where gains were most pronounced, such as District X. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African healthcare, district hospitals, efficiency measurement, panel data, econometrics, resource allocation, quality improvement*

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