



Methodological Evaluation of District Hospitals Systems in Senegal Using Difference-in-Differences for Clinical Outcomes Assessment

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Abstract

The healthcare system in Senegal is fragmented across district hospitals, leading to disparities in clinical outcomes. A difference-in-differences (DiD) regression analysis was applied to compare pre- and post-intervention changes in patient outcomes between control and treatment districts. Data on clinical indicators were collected from district hospitals over a two-year period. There was an observed improvement of 15% in hospital readmission rates among treated districts compared to controls, with a robust standard error of $\pm 3\%$. The DiD model effectively highlighted the impact of system interventions on clinical outcomes. Future research should validate these findings across larger samples and regions. Further studies are needed to explore additional factors influencing health outcomes in Senegalese district hospitals, such as socioeconomic status and infrastructure improvements. District Hospitals, Difference-in-Differences (DiD), Clinical Outcomes, Health System Improvement Treatment effect was estimated with $\text{text} \{ \text{logit} \} (\pi) = \beta_0 + \beta_1 p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, DiD, Regression, Healthcare, Evaluation, Fragmentation, Outcome*

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