



Methodological Evaluation of District Hospitals Systems in Senegal Using Difference-in-Differences Model to Assess System Reliability

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Abstract

District hospitals in Senegal play a crucial role in healthcare delivery, particularly in underserved regions. However, their effectiveness and reliability are subject to scrutiny. The DiD model was applied to assess changes in service delivery metrics before and after implementing quality improvement interventions. Data were collected from routine operations records over a two-year period. A notable increase of 15% in patient consultation rates was observed post-intervention, with robust standard errors indicating the reliability of these findings. The DiD model successfully quantified system improvements and offered insights into enhancing healthcare delivery across Senegal's district hospitals. Further research should explore scalability of interventions identified to other regions in Senegal. District Hospitals, Difference-in-Differences (DiD), Quality Improvement, Healthcare Delivery, Senegal 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: *Sub-Saharan, healthcare delivery, randomized controlled trials, econometric methods, impact evaluation, longitudinal studies, spatial analysis*

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