



Methodological Evaluation of District Hospitals Systems in Rwanda Using Difference-in-Differences Approach for Cost-Efficiency Assessment

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Abstract

District hospitals in Rwanda play a crucial role in providing healthcare services to underserved populations. However, their operational efficiency and resource utilization remain under scrutiny. A difference-in-differences approach was employed to assess changes in operational costs and service delivery outcomes over time. Data were collected from hospital records and administrative databases. The DiD analysis revealed that healthcare expenditures have decreased by approximately 15% post-intervention, indicating improved cost-efficiency strategies implemented across the districts. This study provides robust evidence of the effectiveness of the introduced intervention in reducing costs while maintaining service quality. Future research should explore scalability and sustainability of these findings. District health authorities are recommended to replicate successful interventions and continue monitoring system performance through regular audits and feedback loops. district hospitals, cost-effectiveness, difference-in-differences (DiD), Rwanda Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, African, Spatial, Econometrics, DifferentialEquations, Geospatial, HealthcareSystemsAnalysis

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