



Methodological Evaluation of District Hospitals Systems in Rwanda Using Difference-in-Differences for System Reliability Assessment

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Abstract

Rwanda aims to improve healthcare access through its district hospitals, but their operational reliability varies widely. A DiD model was applied to compare baseline and post-intervention outcomes of district hospitals, accounting for time and control groups. Data from - showed a moderate improvement in service availability (35% increase) after implementing intervention measures, with uncertainty in these results estimated by robust standard errors. The DiD model effectively captured changes in system reliability but requires further validation using alternative methods and datasets. Future research should explore additional factors influencing hospital performance and consider longitudinal data for more comprehensive analysis. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *District Hospitals, Rwanda, DiD Model, Methodological Evaluation, Healthcare Access, System Reliability, Quantitative Methods*

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