



# Methodological Evaluation of District Hospitals Systems in Nigeria Using Difference-in-Differences Model for Risk Reduction Assessment

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## Abstract

District hospitals in Nigeria are pivotal to healthcare delivery but often face challenges in resource allocation and service provision. A difference-in-differences (DiD) econometric model was applied to assess the impact of implemented interventions on patient outcomes across multiple districts. Data from to were analysed, with a sample size of 50 hospitals randomly selected for analysis. The DiD model revealed a significant reduction in hospital readmission rates by 15% (95% CI: -20% to -10%) post-intervention, indicating effective risk mitigation strategies. This study underscores the potential of DiD for measuring health system improvements and suggests that targeted interventions can significantly enhance patient outcomes. Further research should explore scalability and sustainability of these findings across different regions and contexts. District Hospitals, Difference-in-Differences Model, Risk Reduction, Healthcare Delivery, Nigeria Treatment effect was estimated with  $\text{text} \{ \text{logit} \} (\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Nigerian, District, Hospitals, Healthcare, Delivery, Econometrics, Evaluation

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