



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

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## Abstract

District hospitals in Ghana are pivotal to healthcare delivery but face challenges related to system inefficiencies and patient risk management. A systematic literature review was conducted using databases such as PubMed and Scopus. Studies were selected based on relevance to Ghanaian context, use of DiD models, and methodological rigor. The DiD model demonstrated a significant reduction in patient readmission rates ( $p < 0.05$ ) when applied consistently across hospitals, indicating its potential for risk assessment in district health systems. The DiD model showed promise as an analytical tool for measuring risk reduction in Ghanaian district hospital systems, warranting further empirical validation and application. Further research should explore the scalability of the DiD approach across different healthcare settings and incorporate additional control variables to enhance its predictive power. 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:** *Sub-Saharan, Ghanaian, district hospitals, healthcare systems, methodological evaluation, intervention effectiveness, econometrics*

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