Methodological Evaluation of District Hospitals Systems in Ethiopia Using Difference-in-Differences Model

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Abstract

District hospitals in Ethiopia play a critical role in healthcare delivery, yet their operational efficiency and impact on patient outcomes remain under-researched. The DiD model was selected for its ability to isolate treatment effects from time trends and control for unobserved heterogeneity. Studies were identified through comprehensive searches across multiple databases, including PubMed and Embase, with a focus on publications post- in English and Amharic. The review found that while the DiD model was widely applied in assessing hospital performance, methodological consistency and data quality varied significantly among studies. Some studies reported positive yields improvements, though these were not universally replicated across different regions or conditions. Despite varying methodologies, the DiD model offers a robust framework for evaluating district hospitals' impact on healthcare outcomes but requires more standardised application to enhance reliability and generalizability. Future research should prioritise harmonizing data collection protocols and methodological standards to facilitate comparative analysis across different settings in Ethiopia. Treatment effect was estimated with $text\{logit\}(\pi)=beta\,0+\beta^{\rightarrow}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Ethiopia, District Hospitals, Healthcare Delivery, Methodological Evaluation, Difference-in-Differences, Quantitative Methods, Spatial Analysis*

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