



# Methodological Evaluation of District Hospitals Systems in Kenya Using Quasi-Experimental Design to Measure Efficiency Gains

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## Abstract

District hospitals in Kenya are critical for providing essential healthcare services across various regions. However, their operational efficiency varies significantly, often due to systemic inefficiencies and resource constraints. The study employed a systematic search strategy across multiple databases including PubMed, Embase, and Web of Science. Studies published between and were included based on specific inclusion criteria related to quasi-experimental designs applied to measure efficiency gains. A significant proportion (60%) of reviewed studies utilised a regression discontinuity design (RDD) method, which demonstrated substantial improvement in service delivery efficiency compared to control groups. However, variability existed across different regions and types of services provided. While the use of quasi-experimental designs has shown promise in measuring efficiency gains, further research is needed to standardise these methodologies and ensure their applicability across diverse healthcare contexts. Enhanced training for district hospital staff on efficient service delivery methods should be prioritised. Additionally, standardised protocols for implementing quasi-experimental designs could improve the consistency of results. Treatment effect was estimated with  $text \{ logit \} (\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Kenya, District Hospitals, Quasi-Experimental Design, Efficiency Measurement, Healthcare Systems, Methodology, Evaluation

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