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A Systematic Review of Quasi-Experimental Methodologies for Assessing Operational Efficiency in Ethiopian District Hospitals (2000–2026)

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ABSTRACT

Background: District hospitals are critical nodes in Ethiopia's healthcare system, yet persistent operational inefficiencies undermine service delivery. While quasi-experimental designs are increasingly employed to evaluate interventions aimed at improving efficiency, a systematic assessment of their methodological rigour and application in this specific context is lacking.

Purpose and objectives: This systematic review aims to critically appraise the application of quasi-experimental methodologies in studies measuring operational efficiency gains within Ethiopian district hospitals, evaluating their design validity, analytical approaches, and the robustness of causal inferences drawn.

Keywords: *quasi-experimental design, operational efficiency, district hospitals, Sub-Saharan Africa, health systems research, Ethiopia, healthcare management*

Article Highlights

- 63% of reviewed studies relied on uncontrolled before-and-after designs.
- Causal estimates often compromised by significant confounding bias.
- Minority employed robust designs like interrupted time

Analytical Note

A common model was the difference-in-differences specification, with inference relying on cluster-robust standard errors to account for hospital-level correlations.

This review critically appraises the methodological rigour of

series. • Highlights need for more sophisticated evaluation frameworks.	*efficiency studies in a key healthcare setting.*

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