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Methodological Evaluation of Rural Clinics in Kenya

A Panel-Data Protocol for Assessing Clinical Outcomes and Health Systems Performance

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ABSTRACT

Background: Rural clinics in sub-Saharan Africa are critical for primary healthcare delivery, yet systematic, longitudinal evidence on their performance and impact on clinical outcomes remains scarce. Existing evaluations often rely on cross-sectional data, limiting causal inference and the ability to track changes over time within facilities.

Purpose and objectives: This protocol details a methodological approach to generate robust panel-data estimates of rural clinic performance in Kenya. The primary objective is to establish a framework for analysing the relationship between health systems inputs, operational processes, and a core set of clinical outcomes over multiple time periods.

Keywords: *Primary healthcare, Sub-Saharan Africa, Health systems performance, Panel data, Clinical outcomes, Rural health services, Kenya*

Article Highlights

- Proposes a novel panel-data protocol for longitudinal clinic evaluation in rural Kenya.
- Employs two-way fixed effects regression to isolate within-clinic performance changes.
- Integrates health systems data with clinical outcomes across multiple time periods.
- Designed to generate evidence for targeted health policy and resource allocation.

Core Analytical Model

Two-way fixed effects panel regression: $Y_{it} = \beta_0 + \beta_1 X_{it} + \mu_i + \lambda_t + \varepsilon_{it}$, with cluster-robust standard errors for inference on clinic performance over time.

This article details a methodological protocol; empirical results from its application are forthcoming.