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Methodological Evaluation of District Hospitals Systems in Ethiopia using Panel Data Estimation for Efficiency Gains

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Abstract

District hospitals in Ethiopia face challenges in service delivery efficiency due to resource constraints and varying operational environments. A mixed-method approach involving econometric analysis with fixed effects model estimates. Panel data from 20 districts over a five-year period will be used to assess system performance across key metrics such as patient throughput and resource utilization. Panel-data estimation revealed that district hospitals in Ethiopia exhibit moderate efficiency levels, with variability observed across different regions, influenced by factors like geographical remoteness and socio-economic disparities. The study's econometric analysis provides a robust framework for assessing healthcare system performance, highlighting the need for targeted interventions to enhance resource allocation and service delivery effectiveness. Policy recommendations include focused capacity building programmes in underserved areas, improved supply chain management, and enhanced telemedicine integration to improve overall operational efficiency. District Hospitals, Panel Data Estimation, Efficiency Gains, Ethiopia Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Ethiopia, District Hospitals, Panel Data, Econometrics, Efficiency Measurement, Resource Constraints, Service Delivery*