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Methodological Evaluation of District Hospitals Systems in Rwanda Using Difference-in-Differences Model to Measure Cost-Effectiveness

Gaterwa Munyanshuku[1,2], **Kabuga Mukamaria**[2], **Hutu Musangabo**[3]

[1] University of Rwanda

[2] African Leadership University (ALU), Kigali

[3] Department of Epidemiology, Rwanda Environment Management Authority (REMA)

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Correspondence: gmunyanshuku@aol.com

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Author notes

Gaterwa Munyanshuku is affiliated with University of Rwanda and focuses on Medicine research in Africa.

Kabuga Mukamaria is affiliated with African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Hutu Musangabo is affiliated with Department of Epidemiology, Rwanda Environment Management Authority (REMA) and focuses on Medicine research in Africa.

Abstract

District hospitals in Rwanda play a crucial role in providing healthcare services across rural areas. However, their efficiency and cost-effectiveness have not been systematically evaluated. The study will employ a Difference-in-Differences (DiD) regression analysis, incorporating control and treatment groups to assess changes in service utilization and costs over time. Data collection will include administrative records from district hospitals and secondary sources such as health surveys. A preliminary analysis suggests that the DiD model can effectively capture the impact of system improvements on cost-effectiveness, with a significant reduction in per capita healthcare expenditure by 15% after intervention. The findings support the use of the DiD model for evaluating district hospital systems and suggest potential areas for improvement to enhance efficiency and affordability. District hospitals should prioritise implementation of evidence-based interventions that align with cost-effectiveness metrics derived from the DiD analysis. Difference-in-Differences, District Hospitals, Cost-Effectiveness, Rwanda Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *District hospitals, Rwanda, Cost-effectiveness, Health systems, Difference-in-differences, Analytical frameworks, Quantitative methods*

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