



Methodological Evaluation of District Hospitals Systems in Rwanda Using Panel Data for Adoption Rate Measurement

Ernest Rutayisire^{1,2}, Victoire Umugiraneza², Kizito Mukinzi^{2,3}, Nadine Nkuba^{2,4}

¹ Department of Internal Medicine, Rwanda Environment Management Authority (REMA)

² African Leadership University (ALU), Kigali

³ University of Rwanda

⁴ Rwanda Environment Management Authority (REMA)

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Correspondence: erutayisire@hotmail.com

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Author notes

Ernest Rutayisire is affiliated with Department of Internal Medicine, Rwanda Environment Management Authority (REMA) and focuses on Medicine research in Africa.

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

Kizito Mukinzi is affiliated with University of Rwanda and focuses on Medicine research in Africa.

Nadine Nkuba is affiliated with Rwanda Environment Management Authority (REMA) and focuses on Medicine research in Africa.

Abstract

Rwanda is implementing a national health programme to enhance access to healthcare services across its districts. District hospitals play a crucial role in this programme but require systematic evaluation of their adoption rates. A panel-data approach was employed to analyse data from multiple districts over time. The study utilised logistic regression models with robust standard errors to estimate adoption rates. The analysis revealed a significant variation in adoption rates across different regions, with some hospitals demonstrating higher uptake of new technologies compared to others (e.g., adoption rate for electronic health records was 75% in one district). Panel data estimation successfully identified patterns and disparities in the adoption of healthcare innovations among Rwandan districts. Based on findings, targeted interventions are recommended to improve adoption rates in lagging areas, such as providing additional training for staff or improving infrastructure. Rwanda, district hospitals, panel data, logistic regression, adoption rate Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *District hospitals, Health systems reform, Panel data, Econometrics, Access indicators, Service delivery, Geographic information systems*

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