



Panel Data Estimation for Measuring Adoption Rates in Rwanda's District Hospital Systems: A Methodological Evaluation

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Abstract

This study focuses on assessing adoption rates in Rwanda's district hospital systems through panel data estimation methods. Panel data analysis was employed to examine adoption rates in Rwanda's district hospitals. The study utilised cross-sectional surveys conducted over two years to capture changes within the same units (districts) at multiple time points. The panel data revealed that technology adoption varied significantly between districts, with some showing high rates of uptake while others maintained low levels. Panel data estimation successfully highlighted differences in healthcare technology adoption across Rwanda's district hospitals, providing insights into factors affecting these decisions. Future studies should consider incorporating longitudinal surveys to better understand the long-term impacts and sustainability of adopted technologies. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwanda, Panel Data, District Hospitals, Adoption Rates, Methodology, Econometric Analysis, Time Series Analysis*

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