African Medical & Bio-Engineering Research

Panel Data Estimation for Measuring Adoption Rates in South African District Hospital Systems,

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Published: 14 June 2007 | **Received:** 22 March 2007 | **Accepted:** 21 April 2007

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DOI: 10.5281/zenodo.18842722

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Abstract

This study aims to evaluate the adoption rates of new medical technologies in South African district hospitals over a period from to . Panel data analysis was employed using a Generalized Linear Mixed Model (GLMM) with robust standard errors to account for the hierarchical structure of the data. The GLMM revealed that the rate of adoption varied significantly across different districts, with a proportion exceeding 50% in urban areas compared to rural settings. This study underscores the importance of considering district-specific factors when assessing healthcare technology adoption. District health authorities should tailor their strategies to address specific challenges and foster greater adoption rates among hospitals. Treatment effect was estimated with $text{ logit }(\pi)=beta 0+\vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Hospital, Systems, Ethiopia, Panel, Analysis, Regression*

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