African Plant Pathology (Agri/Plant Science)

Multilevel Regression Analysis to Evaluate Efficiency Gains in Rwanda's Community Health Centre Systems,

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Abstract

Rwanda's community health centre systems have been a focal point for healthcare reform in recent years, aiming to improve access and efficiency. A longitudinal dataset covering - was analysed, employing multilevel regression models with robust standard errors to account for nested data structures (centers within districts). Efficiency gains were notably higher in urban centers compared to rural ones, suggesting a need for targeted interventions. Multilevel regression analysis provided nuanced insights into the factors affecting efficiency gains, highlighting the importance of regional context and resource allocation strategies. Strategic investments should focus on enhancing infrastructure and training programmes tailored to specific urban settings to maximise efficiency improvements. multilevel regression, community health centers, Rwanda, healthcare reform, efficiency analysis Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwanda, Community Health Centres, Multilevel Models, Hierarchical Regression, Efficiency Metrics, Healthcare Reform, Efficacy Analysis*

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