African Sport Psychology (Clinical/Applied)

Methodological Evaluation of District Hospitals Systems in Kenya: Multilevel Regression Analysis for Yield Improvement

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Abstract

District hospitals in Kenya are crucial for healthcare delivery, yet their performance varies significantly. Current systems often struggle with resource allocation and operational efficiency. We employed multilevel regression analysis to assess yield improvement, considering both individual hospital performance and contextual factors at the district level. Data were collected from administrative records of 10 districts over two years. Our analyses revealed that resource allocation at the district level significantly influenced hospital output ($\beta = 0.75$, $p < 0.05$). There was also a moderate effect of district-specific healthcare policies on operational efficiency ($\beta = 0.23$, 95% CI [0.10, 0.36]). The multilevel regression model provided insights into the complex interplay between resource allocation and policy implementation at different levels. District health authorities should prioritise targeted interventions to enhance resource utilization and implement district-specific healthcare policies for improved operational efficiency. district hospitals, Kenya, yield improvement, multilevel regression analysis Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Kenya, District Hospitals, Multilevel Analysis, Regression Models, Resource Allocation, Performance Metrics, Hierarchical Data*

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