



Multilevel Regression Analysis to Evaluate District Hospital Systems in Nigeria: An Efficiency Gain Assessment

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Abstract

District hospitals in Nigeria play a crucial role in healthcare delivery, but their efficiency varies significantly across different districts. A multilevel regression model was employed to analyse data from 100 randomly selected district hospitals, accounting for both hospital-level and district-level variations. The model revealed that financial resources per patient ($R^2=0.75$, $p<0.001$) and healthcare personnel density (HRD) had a significant positive impact on efficiency gains, with HRD contributing up to 30% of the variance in efficiency. The multilevel regression approach offers valuable insights into improving district hospital operations by targeting specific resource allocations. District health authorities should prioritise increasing HRD and financial investment to enhance operational efficiency and service delivery. district hospitals, Nigeria, efficiency gains, multilevel regression analysis

Keywords: Nigerian, District, Hospitals, Multilevel, Regression, Evaluation, Efficiency

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