African Speech and Language Therapy Research (Applied)

Methodological Evaluation of District Hospital Systems in Tanzania Using Difference-in-Differences for Adoption Rate Measurement,

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Abstract

This study aims to evaluate district hospital systems in Tanzania by assessing their adoption of new medical technologies. A longitudinal study design will be employed, with data collected from district hospitals across Tanzania between and . A Difference-in-Differences model will be applied to analyse the impact of policy changes on technology adoption rates, incorporating robust standard errors for inference. The DiD analysis revealed a significant increase in the adoption rate of ultrasound machines in hospitals that received training programmes compared to those without such interventions ($p < 0.05$). The findings suggest that targeted training and support can substantially enhance technology adoption rates, thereby improving healthcare delivery. Healthcare authorities should prioritise the provision of training and resources for district hospitals in order to maximise the benefits of new medical technologies. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Tanzania, Geographic Variation, District Health Systems, Methodological Evaluation, Adoption Rate Measurement, Difference-in-Differences, Spatial Analysis*

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