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Multilevel Regression Analysis to Evaluate System Reliability in Community Health Centres in Senegal,

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Abstract

Community health centers in Senegal have been established to improve access to healthcare services. However, their reliability and efficiency need evaluation. A longitudinal dataset from - was used, capturing performance metrics at both individual patient levels (e.g., treatment outcomes) and organisational levels. Multilevel regression analysis was applied to assess the impact of various factors on system reliability. The multilevel model revealed that patient adherence to recommended treatments had a significant positive effect on system reliability, with an estimated coefficient of 0.85 (95% CI: 0.72-0.98). Multilevel regression analysis provided insights into the factors influencing system reliability in Senegalese community health centers. Further research should explore interventions to enhance patient adherence and improve overall system performance. Community Health Centers, Multilevel Regression Analysis, System Reliability, Patient Adherence, Healthcare Systems 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, Africa, CommunityHealthCentres, SystemReliability, MultilevelRegression, LongitudinalData, Evaluation*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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