African Food Systems Research (Interdisciplinary - incl Agri/Env)

Multilevel Regression Analysis to Evaluate Public Health Surveillance System Adoption in Rwanda: A Methodological Assessment

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Abstract

Public health surveillance systems are crucial for monitoring infectious diseases and ensuring timely intervention. Rwanda's system faces challenges in adoption by healthcare providers. Multilevel logistic regression was employed to analyse data from a survey of 200 healthcare facilities. The model accounts for clustering effects within and between facility levels. The multilevel model revealed that the presence of adequate training resources (OR = 1.5, CI: [1.3, 1.8]) significantly increased adoption rates compared to facilities without such resources. This study provides insights into improving public health surveillance system adoption in Rwanda by targeting resource provision and capacity building. Facilities should be prioritised for training support based on the findings of this analysis, with a focus on enhancing infrastructure and personnel skills. Public Health Surveillance, Multilevel Regression Analysis, Healthcare Facilities, Rwanda

Keywords: *Rwandan, Public Health Surveillance, Multilevel Regression, Quantitative Methodology, Epidemiologic Monitoring, Healthcare Provider Adoption, Geographic Information Systems*

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