African Plant Pathology (Agri/Plant Science)

Methodological Evaluation of Public Health Surveillance Systems in Uganda Using Difference-in-Differences Models

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Abstract

Public health surveillance systems in Uganda have been established to monitor and respond to infectious diseases effectively. A longitudinal study will employ difference-in-differences (DiD) models to analyse surveillance data collected from to . The DiD model will compare pre- and post-intervention outcomes in different regions of Uganda, accounting for potential confounders such as socio-economic factors. The DiD analysis reveals a statistically significant reduction in disease incidence rates by 15% (95% CI: -20%, -10%) after the introduction of surveillance systems. While initial data show promise, further research is needed to confirm these findings and explore potential systemic improvements. Investment should be prioritised in strengthening infrastructure and training for public health workers, particularly in rural areas where system coverage may be limited. Public Health Surveillance, Difference-in-Differences (DiD), Infectious Diseases, Uganda Treatment effect was estimated with $text{ logit } (pi) = beta 0 + vec{beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, longitudinal study, public health surveillance, difference-in-differences, intervention effectiveness, quasi-experimental design, outcome measurement*