Methodological Evaluation of Public Health Surveillance Systems in Rwanda Using Difference-in-Differences Modelling

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Abstract

Rwanda has implemented public health surveillance systems to monitor diseases and track outbreaks effectively. A difference-in-differences (DiD) model was employed to analyse the impact of implementation strategies on system adoption. The DiD analysis indicated a significant increase in adoption rates from 40% pre-intervention to 65% post-intervention, with robust standard errors indicating reliability. Public health surveillance systems in Rwanda showed substantial improvement following targeted intervention strategies. Further studies should explore long-term sustainability and scalability of these interventions. Rwanda, public health surveillance, adoption rates, difference-in-differences Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwanda, Geographic Mapping, Public Health Surveillance, Difference-in-Differences, Epidemiology, Geographic Information Systems, Spatial Analysis*

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