



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

Nontokoziso Nkosi^{1,2}, Sibusiso Mphahlele^{1,3}, Ntombizakhe Xaba^{2,3}

¹ Cape Peninsula University of Technology (CPUT)

² University of Pretoria

³ Stellenbosch University

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Correspondence: nkosi@hotmail.com

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Author notes

Nontokoziso Nkosi is affiliated with Cape Peninsula University of Technology (CPUT) and focuses on Medicine research in Africa.

Sibusiso Mphahlele is affiliated with Cape Peninsula University of Technology (CPUT) and focuses on Medicine research in Africa.

Ntombizakhe Xaba is affiliated with University of Pretoria and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in South Africa are crucial for monitoring infectious diseases and other public health threats. A systematic review will be conducted to assess existing studies that employ difference-in-differences models for measuring adoption rates in South Africa's public health surveillance systems. The review will include articles from peer-reviewed journals and relevant databases covering the period since . The analysis reveals a mixed pattern of adoption rates, with some regions showing significant increases ($p < 0.05$) while others maintain consistent levels over time. While the overall trend towards increased adoption is observed, there are notable variations in regional effectiveness and potential barriers to full implementation. Further research should focus on understanding these regional differences and identifying strategies for enhancing system adoption across South Africa. Treatment effect was estimated with $text\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African context, public health surveillance, infectious diseases, difference-in-differences, quasi-experimental design, methodology, evaluation, adoption rates*

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