African Security Studies (Political Science focus)

Methodological Evaluation of Municipal Water Systems Adoption Rates in Uganda Using Difference-in-Differences Analysis

Ssenongwa Okello[1,2], **Otombe Muhangusi**[3,4]

[1] Department of Data Science, National Agricultural Research Organisation (NARO)

[2] Department of Artificial Intelligence, Makerere University, Kampala

[3] National Agricultural Research Organisation (NARO)

[4] Makerere University, Kampala

Published: 18 December 2006 | **Received:** 24 June 2006 | **Accepted:** 21 October 2006

Correspondence: sokello@aol.com

DOI: 10.5281/zenodo.18834473

Author notes

Ssenongwa Okello is affiliated with Department of Data Science, National Agricultural Research Organisation (NARO) and focuses on Computer Science research in Africa.

Otombe Muhangusi is affiliated with National Agricultural Research Organisation (NARO) and focuses on Computer Science research in Africa.

Abstract

This replication study revisits existing data on municipal water systems adoption rates in Uganda to validate a methodological approach. A DID analysis will be applied using pre-post data from municipalities where water systems were implemented and compared with similar non-affected areas. Random assignment will serve as the control group to isolate the effect of the intervention. The results indicate a significant increase in municipal water system adoption rates among treatment municipalities, suggesting the effectiveness of the DID model in quantifying such effects. The replication confirms the reliability and validity of using the DID model for evaluating municipal water systems' impact in Uganda. Future research could explore additional factors influencing system adoption beyond those captured by this study's data. Municipal Water Systems, Adoption Rates, Difference-in-Differences, Random Assignment Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^2$, with performance evaluated using out-of-sample error.

Keywords: *Mali, Methodology, Difference-in-Differences, Quantitative Methods, Urbanization, Spatial Analysis, Econometrics*

ABSTRACT-ONLY PUBLICATION

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

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge