



Methodological Evaluation of Municipal Infrastructure Assets Systems in Uganda Using Difference-in-Differences Approach

Mwesiggah Joseph Mbonye^{1,2}, Kigwanigo Geoffrey Onyango^{1,3}

¹ Uganda Christian University, Mukono

² Department of Mechanical Engineering, Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit

³ Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit

Published: 14 November 2010 | **Received:** 11 August 2010 | **Accepted:** 30 October 2010

Correspondence: mmbonye@hotmail.com

DOI: [10.5281/zenodo.18907341](https://doi.org/10.5281/zenodo.18907341)

Author notes

Mwesiggah Joseph Mbonye is affiliated with Uganda Christian University, Mukono and focuses on Engineering research in Africa.

Kigwanigo Geoffrey Onyango is affiliated with Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit and focuses on Engineering research in Africa.

Abstract

Uganda's municipal infrastructure assets systems are underutilized, leading to inefficiencies in service delivery and maintenance. A Difference-In-Differences analysis was employed to measure changes in municipal infrastructure asset performance over time, comparing pre- and post-intervention periods. The DiD model revealed an average efficiency gain of 15% in municipal infrastructure maintenance processes after the intervention period. The difference-in-differences method effectively demonstrated improvements in municipal infrastructure management. Implementing standardised asset tracking systems and regular performance audits can further enhance efficiency gains. The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \varepsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Uganda, Municipal Infrastructure, Asset Management, Difference-in-Differences, Econometrics, Sustainability, Metrics*

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