



# Quasi-Experimental Design Assessment of Municipal Infrastructure Assets Systems in Uganda: A Reliability Study

Mugenyi Okello<sup>1</sup>

<sup>1</sup> Mbarara University of Science and Technology

**Published:** 06 February 2007 | **Received:** 05 October 2006 | **Accepted:** 29 December 2006

**Correspondence:** [mokello@yahoo.com](mailto:mokello@yahoo.com)

**DOI:** [10.5281/zenodo.18850192](https://doi.org/10.5281/zenodo.18850192)

## Author notes

*Mugenyi Okello is affiliated with Mbarara University of Science and Technology and focuses on Engineering research in Africa.*

## Abstract

Municipal infrastructure assets systems in Uganda are crucial for sustainable development but face challenges related to reliability. A quasi-experimental design was employed to assess the reliability of municipal infrastructure assets in Uganda. Data were collected using surveys and field inspections. Significant variability in system reliability across municipalities was observed, with urban areas generally exhibiting higher reliability compared to rural settings (75% vs. 60%). The quasi-experimental design proved effective in measuring system reliability, highlighting the need for targeted interventions in underserved regions. Targeted investments and maintenance strategies should be prioritised in rural areas to improve municipal infrastructure asset systems' reliability. Municipal Infrastructure, Reliability Assessment, Quasi-Experimental Design, Uganda The maintenance outcome was modelled as  $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$ , with robustness checked using heteroskedasticity-consistent errors.

**Keywords:** *Uganda, Infrastructure Systems, Reliability Analysis, Quasi-Experimental Design, Methodology, Asset Management, Performance Measurement*

## 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](mailto: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](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge