



# Methodological Assessment of Municipal Water Systems Reliability in Tanzania Using Quasi-Experimental Design,

Mwanga Sserunkuma<sup>1</sup>

<sup>1</sup> Ardhi University, Dar es Salaam

Published: 09 February 2013 | Received: 08 October 2012 | Accepted: 26 December 2012

Correspondence: [msserunkuma@hotmail.com](mailto:msserunkuma@hotmail.com)

DOI: [10.5281/zenodo.18991160](https://doi.org/10.5281/zenodo.18991160)

## Author notes

Mwanga Sserunkuma is affiliated with Ardhi University, Dar es Salaam and focuses on Environmental Science research in Africa.

## Abstract

This study examines the reliability of municipal water systems in Tanzania by applying a quasi-experimental design to analyse data collected from to . A quasi-experimental design was employed, including regression discontinuity analysis (RD), to assess the impact of various interventions on water system reliability. Robust standard errors were used to account for potential confounders. Regression discontinuity analysis revealed that proximity to urban centers significantly influenced water supply reliability, with a statistically significant difference in reliability scores between areas within 1 km and more than 5 km from urban areas ( $p < 0.05$ ). The quasi-experimental design provided robust insights into the factors affecting municipal water system reliability. Interventions focusing on improving infrastructure in peri-urban regions are recommended to enhance overall system reliability. The empirical specification follows  $Y = \beta_{0+\beta} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** African geography, Methodological evaluation, Quasi-experimental design, Water systems reliability, Statistical analysis, Data collection methods, Geographic information systems

## 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