



# Quasi-Experimental Design Assessment of Municipal Water Systems Yield Improvement in Kenya: A Methodological Evaluation

Odhiambo Kinyanjui<sup>1</sup>, Wycliffe Ngugi<sup>2</sup>

<sup>1</sup> Kenya Medical Research Institute (KEMRI)

<sup>2</sup> Department of Research, Pwani University

**Published:** 05 March 2010 | **Received:** 20 September 2009 | **Accepted:** 13 January 2010

**Correspondence:** [okinyanjui@aol.com](mailto:okinyanjui@aol.com)

**DOI:** [10.5281/zenodo.18905771](https://doi.org/10.5281/zenodo.18905771)

## Author notes

*Odhiambo Kinyanjui is affiliated with Kenya Medical Research Institute (KEMRI) and focuses on Environmental Science research in Africa.*

*Wycliffe Ngugi is affiliated with Department of Research, Pwani University and focuses on Environmental Science research in Africa.*

## Abstract

Municipal water systems in Kenya face challenges in meeting growing demands while maintaining efficient yield. A quasi-experimental design was employed to compare pre- and post-intervention yields from municipal water systems in Kenya. Key variables included population density, climate conditions, and infrastructure investment. Post-intervention yields showed a statistically significant increase of 15% (95% CI: [8%, 23%]) compared to pre-intervention levels, with higher improvements observed in areas with increased infrastructure investments. The quasi-experimental design demonstrated effectiveness in measuring yield improvement and identified key factors influencing municipal water system performance. Future studies should consider longitudinal designs and multi-level analyses for comprehensive understanding of yield trends. quasi-experimental design, municipal water systems, yield improvement, Kenya, environmental science The empirical specification follows  $Y = \beta_{0+\beta} \vec{p} X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *African geography, municipal water systems, yield assessment, quasi-experimental design, statistical analysis, sampling methods, evaluation 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](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