



# **Methodological Evaluation of Municipal Water Systems in Kenya Using Panel Data for Clinical Outcomes Assessment**

**Kioni Njogu<sup>1</sup>, Mwĩmbiwa Muthomi<sup>2</sup>, Wakii Wanjohi<sup>2</sup>, Odhiambo Kinyua<sup>1</sup>**

<sup>1</sup> Pwani University

<sup>2</sup> African Population and Health Research Center (APHRC)

**Published:** 27 January 2002 | **Received:** 11 August 2001 | **Accepted:** 08 December 2001

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

**DOI:** [10.5281/zenodo.18748607](https://doi.org/10.5281/zenodo.18748607)

## **Author notes**

*Kioni Njogu is affiliated with Pwani University and focuses on Agriculture research in Africa.*

*Mwĩmbiwa Muthomi is affiliated with African Population and Health Research Center (APHRC) and focuses on Agriculture research in Africa.*

*Wakii Wanjohi is affiliated with African Population and Health Research Center (APHRC) and focuses on Agriculture research in Africa.*

*Odhiambo Kinyua is affiliated with Pwani University and focuses on Agriculture research in Africa.*

## **Abstract**

Recent studies have highlighted the critical role of municipal water systems in improving public health outcomes in urban settings, particularly in resource-limited countries like Kenya. However, there is a need for rigorous methodological evaluations to assess their efficacy and identify areas requiring improvement. The study employs a fixed effects model to analyse longitudinal data collected from various municipalities across Kenya. This approach accounts for potential unobserved heterogeneity that could affect the water system's performance over time. Initial analysis suggests a positive correlation between improved access to clean municipal water and reductions in certain agricultural diseases by approximately 20%. The findings indicate that enhanced municipal water systems can significantly improve public health, particularly in agriculture sectors. However, further research is needed to identify the specific mechanisms through which these improvements occur. Policy makers should prioritise investments in infrastructure and maintenance of municipal water systems to ensure equitable access for all communities, especially those in rural areas where coverage may be limited. The empirical specification follows  $Y = \beta_{0+\beta} \vec{p} X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *African, Panel, Econometric, Water, Sanitation, Health, Development*

## 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