



Methodological Evaluation of Quasi-Experimental Water Treatment Systems in Ghana

Kofi Gyamfi¹, Abena Asare^{1,2}

¹ Ghana Institute of Management and Public Administration (GIMPA)

² University of Ghana, Legon

Published: 21 June 2001 | **Received:** 08 March 2001 | **Accepted:** 29 May 2001

Correspondence: kgyamfi@outlook.com

DOI: [10.5281/zenodo.18731447](https://doi.org/10.5281/zenodo.18731447)

Author notes

Kofi Gyamfi is affiliated with Ghana Institute of Management and Public Administration (GIMPA) and focuses on Engineering research in Africa.

Abena Asare is affiliated with University of Ghana, Legon and focuses on Engineering research in Africa.

Abstract

Quasi-experimental designs are increasingly used in water treatment systems research to evaluate cost-effectiveness without random assignment. A mixed-method approach combining quantitative data analysis with qualitative insights was employed. The study utilised a hierarchical linear regression model to estimate cost-effectiveness ratios (CERs). The hierarchical linear regression model revealed significant differences in CERs across different water treatment facility types, indicating the need for tailored interventions. The findings suggest that specific design features and operational conditions significantly impact the cost-effectiveness of water treatment systems in Ghana. Further research should focus on evaluating the long-term sustainability and community acceptance of these facilities. water treatment, quasi-experimental design, hierarchical linear regression, cost-effectiveness 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: *Sub-Saharan, African, SpatialStatistics, CausalInference, DataSynchronization, QualitativeAnalysis, RandomizedControlledTrial*

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