



Methodological Assessment of Quasi-Experimental Design in Evaluating Water Treatment Facility Adoption in Kenya

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Published: 25 February 2006 | **Received:** 08 October 2005 | **Accepted:** 28 December 2005

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DOI: [10.5281/zenodo.18827386](https://doi.org/10.5281/zenodo.18827386)

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Abstract

Water treatment facilities are crucial for improving water quality in communities across Kenya. However, understanding adoption rates of these systems is complex and requires rigorous research methods. A quasi-experimental design was employed to assess the adoption of water treatment facilities. Data on community participation, facility usage, and socio-economic factors were collected through surveys and interviews. The study found a significant proportion (35%) of households adopted water treatment facilities post-implementation, with notable variation in adoption rates across different socio-economic groups. Quasi-experimental designs provided robust estimates of adoption rates but highlighted the importance of considering contextual factors for accurate measurement. Future research should incorporate more detailed analysis of community engagement strategies to enhance facility use and sustainability. 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, Socioeconomic, factors, Ethnicity, Qualitative, Nature-Methods*

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