



# Revisiting Municipal Water Systems in Uganda: Methodological Validation of Clinical Outcomes Measurements

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## Abstract

This Replication Study revisits municipal water systems in Uganda to validate methodological approaches used for assessing clinical outcomes. A randomized field trial was conducted across various municipalities in Uganda. Water quality parameters were measured at multiple sites using state-of-the-art equipment, with data collected over a period of six months for analysis. The mean water quality index (WQI) scores showed significant improvement from baseline to post-intervention phases ( $p < 0.05$ ), indicating enhanced system functionality and reduced contamination levels. The replication study confirms the validity of the initial findings, validating the methodological approaches used for measuring clinical outcomes in municipal water systems. Future studies should consider expanding the sample size to include more municipalities and incorporate additional environmental variables to enhance model generalizability. The empirical specification follows  $Y = \beta_{0+\beta}^{-} p X + varepsilon$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** Uganda, Water Supply Systems, Methodology, Randomized Controlled Trials, Public Health, Epidemiology, Sampling Techniques

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