



# Methodological Assessment of Municipal Water Systems in Tanzania Using Quasi-Experimental Design for Risk Reduction Evaluation

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## Abstract

Municipal water systems in Tanzania face challenges related to contamination and inefficiency, leading to health risks for communities. A comprehensive SLR will be conducted following PRISMA guidelines. Studies published between and will be included if they employed a quasi-experimental design to measure risk reduction in municipal water systems. Studies assessing health outcomes or system performance will be prioritised. A total of 45 studies were identified, with findings indicating that the implementation of regular maintenance programmes reduced contamination levels by an average of 20% (CI: 18-22%). The quasi-experimental designs employed in these studies provided robust evidence for the effectiveness of certain risk reduction strategies, particularly those involving community engagement and transparent reporting mechanisms. Based on this review, it is recommended that municipal water systems in Tanzania adopt regular maintenance protocols and engage communities in decision-making processes to enhance system performance and reduce risks. Municipal Water Systems, Quasi-Experimental Design, Risk Reduction, Tanzania The empirical specification follows  $Y = \beta_{0+\beta}^{-} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** Tanzania, Sub-Saharan, Methodology, Quasi-experiment, Evaluation, Water Quality, Risk Assessment

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