



# Methodological Evaluation of Municipal Water Systems Adoption in South Africa: A Randomized Field Trial

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### Abstract

Municipal water systems in South Africa face challenges related to adoption rates among communities, necessitating methodological evaluation for effective policy and implementation. A randomized field trial was conducted across three municipalities in South Africa. Residents were randomly assigned to receive information about water system benefits or not. Data collection included surveys and direct observations over six months. Residents who received informational materials had a higher adoption rate of municipal water systems compared to those without such interventions, with an observed proportion of 45% for the informed group versus 28% for controls (95% CI: 0.16-0.37). The randomized field trial demonstrated that targeted informational interventions significantly increased adoption rates of municipal water systems. Implementing similar informational strategies in other municipalities could enhance the uptake of municipal water systems, thus improving water management outcomes. Municipal Water Systems, Adoption Rates, Randomized Field Trial, South Africa Model estimation used  $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta \operatorname{Vert}^2$ , with performance evaluated using out-of-sample error.

**Keywords:** *Geographic, Sub-Saharan, Randomization, Evaluation, Methodology, Adoption, Community Engagement*

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