



Methodological Foundations for Assessing Municipal Water System Adoption in Senegal: A Randomized Field Trial Framework

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Abstract

The adoption of municipal water systems in Senegal has been a subject of interest due to its potential for improving public health and environmental sustainability. However, there is a need for robust methodological frameworks to evaluate the effectiveness and uptake of these systems. The study will employ a mixed-methods approach combining quantitative survey data with qualitative interviews to evaluate the effectiveness of municipal water systems. A random sample of households will be selected for intervention, and their adoption rates measured over time using statistical models. The randomized field trial framework provides a robust method for evaluating the adoption rates of municipal water systems in Senegal, offering valuable insights into system acceptance and utility. Future studies should consider extending this framework to other socio-economic contexts within Senegal and potentially across similar regions with varying levels of development. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, randomized controlled trial, sustainability, governance, intervention analysis, water resources, public health*

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