



Adoption Rates in Municipal Water Systems in Ethiopia: A Longitudinal Methodological Evaluation Through Randomized Field Trials

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Abstract

This study evaluates the adoption rates of municipal water systems in Ethiopia through randomized field trials conducted over a single year. A mixed-methods approach combining quantitative randomized field trials with qualitative interviews was employed to gather data from a diverse sample of 50 villages across Ethiopia's major regions. There is a significant variation in adoption rates (ranging from 20% to 70%) among the tested communities, influenced by socio-economic factors and local governance structures. The study identified key facilitators such as water quality monitoring programmes and community engagement initiatives. The randomized field trials provided robust evidence on the effectiveness of different interventions in promoting municipal water system adoption, offering insights into policy-making for sustainable water resource management in Ethiopia. Policy recommendations include integrating community-based approaches with targeted government support to enhance uptake and ensure equitable access to municipal water systems. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geographic, Sub-Saharan, Randomized Controlled Trial, Methodological Evaluation, Water Access, Sustainability, Community Participation*

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