



Quasi-Experimental Assessment of Municipal Water Systems Yield Improvement in Ethiopia: An Evaluation Study

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Abstract

Municipal water systems in Ethiopia have been identified as crucial for agricultural productivity due to their role in irrigation and household consumption. A mixed-method approach combining quantitative data analysis with qualitative observations was employed. The study utilised time-series data to assess system performance over two years. There was an observed 15% increase in water yield from the municipal systems, which aligns well with expected improvements due to system upgrades and maintenance. The quasi-experimental design demonstrated significant yield improvement, validating its effectiveness for monitoring such systems. Further research should focus on long-term sustainability and cost-effectiveness of these systems in different geographical contexts. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Ethiopia, Quasi-Experimental Design, Methodology, Irrigation Systems, Agricultural Productivity, Water Scarcity, Sustainable Agriculture*

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