African Weed Science (Agri/Plant Science)

Methodological Assessment and Adoption Rates in Municipal Water Systems in Kenya Using Difference-in-Differences Models

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Abstract

Municipal water systems in Kenya face challenges in adoption of new technologies and methods to improve service delivery. A scoping review was conducted, analysing existing literature from to present. Studies were included if they utilised DID models or similar econometric techniques to assess adoption of new technologies within municipal water systems in Kenya. The analysis revealed that while the DID model showed significant improvements in service delivery, there is a need for further empirical validation due to methodological limitations and varying data quality across studies. Despite methodological challenges, the DID model demonstrated promise as an analytical tool for assessing adoption rates in municipal water systems. Future research should aim at improving data reliability and validity. Researchers are encouraged to adopt robust DID models with transparent reporting of assumptions and methods to enhance the generalizability and credibility of their findings. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Kenya, Agricultural Economics, Methodology, Water Supply Systems, Randomized Controlled Trials, Geographic Information Systems, Econometrics*

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