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Rand: Understanding Drinking Water Spending Patterns in U.S. Local Governments.

Water system decision makers navigate complex financial landscapes as they make necessary infrastructure investments, address ongoing operational needs, and meet stringent regulatory requirements. Despite their importance, these decisions have been given relatively little empirical examination.

This study leverages the Municipal Drinking Water Database (MDWD) to examine patterns and trends in total expenditures, capital expenditures, and revenues for drinking water systems. Central to our analysis is capital intensity, measured as the capital expenditure to water utility revenue ratio, or capex ratio.

We find a robust negative association between the capex ratio and per capita current expenditures, while overall spending increases, reflecting the direct relationship between capital expenditures, total expenditure and the capex ratio; alongside multiple independent covariates, this helps explain some of the within-municipality variation in spending outside of year-specific shocks. Capital spending is often critical for long-term resilience, but sustained spending may produce affordability challenges.

This research provides new insight into the spending decisions of municipal water system managers and underscores the challenge of investing in infrastructure to both enhance resilience and ensure the affordability of drinking water services.

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by Austin Smidt, Sara Hughes, Christine J. Kirchhoff

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