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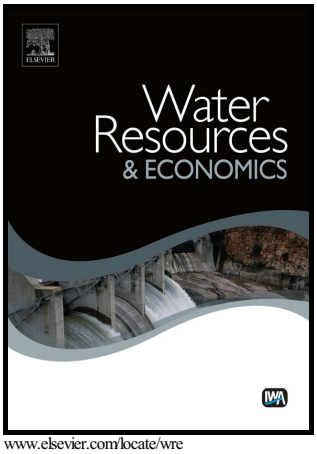

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Which factors, and to what extent, influence the condition of urban water distribution networks. An empirical analysis of the Spanish case

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Abstract

Many jurisdictions face issues related to the maintenance and improvement of their water distribution networks, particularly in areas under more water stress, which makes leakage more costly. Knowing the explanatory factors of network leakage is necessary to implement mitigation measures. This research analyses the factors behind the repair condition of the water supply networks in Spanish municipalities, as rated by local managers of the water utilities. The data used in this study covers 2,257 municipalities with between 1,000 to 50,000 inhabitants. We compare the modeling with univariate regression techniques of a fractional dependent variable that summarizes the network quality ratings into a single number and the use of a fractional multinomial logit to model the untransformed proportions of the network rated as in *poor, moderate*, and *good* condition. Factors both within and beyond the decision-makers' control appear to explain the condition of the networks. The main policy