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Cost analysis of urban water supply and waste water treatment processes to support decisions and policy making: Application to a number of Swedish communities

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ABSTRACT

An econometric model has been developed that represents the cost structure of water supply and waste water treatment in an urban area. This paper proposes a method to capture the financial characteristics of the underlying organisation and addresses the steps and the conceptualisation in order to create a cost structure for municipal water utilities. The estimation procedure is based on a multivariate regression approach and the cost structure is represented by a parametrical expression (cost function). This function has been used for the purpose of analysing the observed system in terms of efficiency, technology, capacity, financial state etc. In the mathematical formula the estimated parameters relate certain system input components to costs, which are important in order to understand the key drivers. An empirical analysis is undertaken for a number of utilities in Sweden.

Keywords: Cost analysis; Urban water supply; Mathematical modelling; Cost structure; Cost function; Scale economies

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