

## **CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT**

### **The impact of deregulating the water sector on household water demand**

Since privatisation of the water industry in 1989, water companies in England and Wales have been operating as vertically integrated monopoly businesses with the Office of Water (Ofwat) acting as the economic regulator for the industry. Ofwat has controlled prices charged to the consumer by these monopolistic businesses by setting a retail price that water companies could not exceed.

In April 2017, the non-household retail markets were opened to competition with household markets intended to follow in 2021 thus ending the monopolistic nature of the water industry. The aim of the thesis is to understand variation in consumption that may be triggered as a result of greater volatility in the price of water resulting from competition within the sector. If deregulation as planned could potentially decrease or at least not increase customer bills at the same rate as previously forecast there is a likelihood that it could create a disincentive for customers to reduce their consumption, which could result in detrimental impact on the environment.

Utilising historic data on water supply and sewage disposal tariffs in London the relationship between the average household bill and how it affects consumption has been assessed. The research identifies that water demand in the London boroughs although may seem inelastic does respond to price signals in the long run. Metered customers have been found to be more responsive to the price of water as compared to unmetered customers. The price elasticity for metered demand was found to range between -0.276 and -0.209. Unmetered demand elasticity was found to be between 0.077 and 0.093. With only 25% of customers served by Thames Water being metered, the lack of universal metering is found to de-incentivise optimal use of water in a region that is already under stress. The research demonstrated that average household incomes share a relationship with per capita consumption of water for metered demand but income appears to be independent in the case of unmetered usage. The thesis infers that demand management strategies for the future will have to employ a combination of price and non-price strategies in order to optimise resource consumption.

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