**Modeling household water use behavior**

Significant reduction in household water consumption can be achieved by understanding their influencing factors and subsequent modeling. A good model can be used to run simulations to predict future water demand and recommend behavioral and technological interventions such as end user nudges and city sponsored water efficient devices giveaways. Numerous factors such as property characteristics (citation), housing characteristics (citation), personal characteristics (citation), pricing (citation) and socio-economic factors (Jorgensen, Graymore, and O’Toole 2009) influence household water consumption. Recent studies are now able to present more accurate models which have been made possible by detailed and disaggregated water consumption data. Blokker et al. (Blokker, Vreeburg, and Dijk 2010) built a stochastic model based off user statistics such as census data and end use data such as frequency, occurrence and duration of water usage. The simulation results showed good correspondence to water demand. (why next?) Bennet et al. (Bennett, Stewart, and Beal 2013) used Artificial Neural Networks (ANNs) to forecast future water use demand based from appliance, socio-economic, demographic and disaggregated water end use data. (why next?)Froelich and Magiera (Froelich and Magiera 2016) proposed a Bayesian model for forecasting household water time series consumption data. This method has the advantage of not relying on detailed surveys and questionnaires but just the water consumption time series.

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