Issues of trust, fairness and efficacy: a qualitative study of information provision for newly metered households in England

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ABSTRACT

There is widespread agreement among agencies governing UK water management that more extensive domestic water metering combined with additional measures will deliver a more efficient domestic water usage. This paper argues that qualitative research is needed to select and hone additional measures. According to theory, cooperation to reduce water use is more likely if people: a) believe in the necessity to reduce use; b) feel costs are fairly shared; and c) believe their actions can affect the situation. The case study of Lydd, Kent, is presented. Lydd is the first location in which compulsory water metering has been imposed in the UK. Qualitative information was collected to inform the communication strategies being implemented by the water supply company. The investigation found that none of the three factors predicted by theory were completely present. The paper concludes by providing some recommendations for improving the water company’s communications strategy for encouraging a reduction in domestic water use. The key role of qualitative information in assisting in the targeting and design of water demand management programmes is highlighted.

Key words | domestic water meters, information provision, perceptions, qualitative, water consumption

INTRODUCTION

...public perceptions can not be ignored (Owens 2000).

There is widespread agreement among agencies governing UK water management that more extensive water metering will deliver greater water efficiency, especially if combined with additional measures such as education programmes (House of Lords Science and Technology Committee 2006; Sharp 2006). The installation of compulsory domestic water meters by Folkestone & Dover Water Services in the town of Lydd in 2007 provided an opportunity to explore people’s perceptions of water use and water meters. This paper demonstrates how qualitative data can yield insights into the incentives and barriers for water saving, and thus inform the development of a holistic approach to achieving water use reductions.

Water metering in the UK

The UK and Ireland are the only European countries that do not have compulsory domestic water metering. The rateable value system of fixed water charges, based on the pre-1990 value of a house, is criticized by many in the water industry for providing customers with little incentive to change their water-using behaviour or invest in water saving devices (Every 2006). In recent years an alternative charging system has gained ground; this involves charges based on domestic water metering, linking cost with consumption. Regulators, government and other involved bodies now agree that more metering is crucial to balancing future supply and demand (Water Saving Group 2006). Proposals for universal domestic metering, however, have
been resisted on the grounds of its social implications (Medd & Chappells 2007). It is often stated that metering alone is not enough to lead to significant reduction in demand and could be made more effective by having additional supporting circumstances.

Metering provides a way for people to understand the value, and accompanied by good publicity campaigns, can help to manage the supply balance effectively, (Environment Agency 2004).

As this article will demonstrate, qualitative research about people’s perceptions of water metering provides a potential route to inform such publicity campaigns. Currently about 30% of domestic properties in England and Wales are metered. Metering occurs on a voluntary basis, on change of address, and through ‘excessive discretionary use’, relating to swimming pools, automatic sprinkler systems, etc. (DETR 1999), and is compulsory in all new build housing. In areas where the water supply situation is judged to be particularly critical, companies can apply to the regulator for ‘water scarcity status’ which enables them to impose metered charging on all customers. Folkestone & Dover Water Services (FDWS) were the first company to be granted this status in March 2006, and began piloting their metering roll out in January 2007 in the town of Lydd on the Dungeness peninsula. Lydd’s consumers’ water consumption is being measured quarterly and annually. Over the course of the next 5 years a variety of approaches for encouraging reduced water use, such as enhanced personalised consumption information, rising block tariffs and water efficient technology, will be trialled.

Theoretical background

Water meters are assumed to reduce water use, on the premise that as it costs more to use more water people will be more efficient with their use. This follows a classical rational choice model of behaviour whereby the individual makes deliberative choices by weighing up the expected benefits and costs of an action (Jackson 2005). In order for an individual to make a rational choice they must have the information that allows them to make a decision—for example, about the costs of each water use to themselves and to the environment, and about how they could use less water.

Such linear models of behaviour change have been heavily criticised over the last fifty years for a variety of reasons. The ability to make a rational choice is constrained by the knowledge available, in terms of what knowledge is accessible or the uncertainty of costs to the individual now and in the future (Jackson 2005). There is also the presumption that, if such knowledge exists, on gaining that knowledge people will have the same value system and thus wish to act in the desired manner, (Gardner & Stern 1996), and will then act accordingly. Secondly, much research points to the lack of connection between pro-environmental values and individual action with the result that little action is ever taken (Ungar 1994; Owens 2000; Collins et al. 2005; Castro 2006). Thirdly, an individual must feel that they are able to take action and their action will make a difference (Uzzel 2000). Fourthly decisions may be made based on the heart rather than the head, or altruism rather than self-interest. Moreover not all actions are conscious deliberative decisions, with many carried out according to a general ‘rule of thumb’ or through habit (Jackson 2005). This is especially significant in water use as many of the associated practices are everyday routines implemented with little consideration (Shove 2005).

A further group of criticism is aimed at the ability to make choices. It is argued that people cannot always act as they would like due to structural constraints concerning infrastructure (e.g. the household plumbing), resources (e.g. money), and time (Southerton et al. 2004; Allon & Sofoulis 2006). People are also constrained by social norms whereby they behave in a manner thought to be ‘normal’ for any given situation (Cialdini in Jackson 2005). There are many different norms which can affect water use. Biel & Thogersen (2007) focus on the norm of cooperation in times of water shortage and suggest that the framing of the situation is important. If the situation is perceived to be fair then the cooperation norm (i.e. reduced water use) is more likely to be followed. An example of this could be seen in the Yorkshire drought in 1995. Yorkshire Water was unpopular due to sharp increases in prices, record profits and highly publicized leakage rates. When there was a period of low rainfall and the water company asked residents to reduce their use domestic consumption actually
increased (Haughton 1998). Like many examples from the literature, this case underlines the importance of history and local context in framing people’s reactions to water issues (Strang 2004; Medd & Chappells 2007).

A final set of critiques relate to issues of trust. If people do not believe in the information provided, such as a water scarcity issue, there is not the felt need to act on such information (Biel & Thogersen 2007). The extent to which people believe information told to them is fundamentally linked to the extent to which they trust the source of that information (Gardner & Stern 1996). It is often found that people nowadays are sceptical of science, governments, business and environmental organisations (Owens 2000; Hobson 2001; Collins et al. 2003; Macnaughten 2003). This lack of trust is attributed to the increased use of ‘spin’, public relations fiascos, and an increased awareness that science can be biased, subjective and may not have all the answers (Robson 2002; Collins et al. 2003). The levels of trust in information will vary in different situations, contexts, with time, and with information sources (Gardner & Stern 1996).

This discussion of behaviour change theory has underlined a set of factors which might impact on or impede the effectiveness of metered charging in reducing domestic water consumption. It has highlighted how people’s willingness to save water link to an inter-related set of issues including the extent to which they believe there is an issue with water supply which needs to be addressed, their trust in the water company, their belief that water is ‘fairly’ charged for, the extent to which saving water is an acceptable social norm, and the extent to which they believe they themselves able to save water. Finally, it is clear that these factors are not formed by individuals in a vacuum but are discursively constructed, through conversations and interactions with local and national media as well as communications from water companies (Sharp 2006).

METHODS

Working in conjunction with FDWS the University of Bradford undertook a qualitative study in May 2007 to explore the perceptions of residents of Lydd regarding water scarcity, water use and metering. The aims of the research overall were: 1) to evaluate the metering process in Lydd from a users perspective; 2) examine whether water meters influence Lydd residents’ perceived behaviour and intentions with respect to water use; 3) to explore what information would be useful to support the Lydd water user in achieving a greater reduction in water scarcity. Focusing on the latter, this paper aims not only to inform FDWS about the process of their ongoing transfer to metered charging, but also to raise broader questions about the sort of information needed to engage populations in water use reduction.

The context

The town of Lydd on the Denge peninsula was chosen as the test site by FDWS. According to the Environment Agency and FDWS the Denge groundwater source which supplies the town is very susceptible to climatic change and therefore is an area that could be strongly affected by water scarcity issues (FDWS 2007). The area supplied by this source has well defined boundaries with two dedicated mains, making it easy to monitor consumption. Lydd has around 1400 households of which approximately half were already metered. Installation of meters into the other 750 properties was finished by the end of April 2007. Information provided to these households consisted of two letters informing them of the metering process and an information pack containing a leaflet explaining the area’s water scarcity status, methods to save water and how to detect leaks. They also received a water displacement device for the toilet and a voucher for a discounted water butt. Forty-seven properties were unable to be metered. FDWS are using Lydd as a case study for trialling different approaches for encouraging water reduction over the next few years.

Interviews

Qualitative interviews were used to collect data as these provide rich contextual information about interviewees’ perceptions and opinions. Qualitative data collection methods have a significant strength over survey techniques in that they avoid presumptions about the preferences and interests of the research participants.
(Kitchen & Tate 2000; Flyvbjerg 2001). They are particularly suitable for areas in which the scientific understanding of a group’s perceptions has not been widely explored. The aim is not to gain an understanding of what a representative sample of the population think, but rather to examine the variety of perspectives that are possible. If representative information is required then insights from the qualitative investigation would feed into follow up quantitative studies.

Selection of the interviewees was restricted to the residents where compulsory water meter installation had taken place. Two methods of recruitment were used. First, random sampling was used based on the FDWS database, with letters sent to every 50th household, followed by a phone call. Second, snowball sampling was used whereby the researcher contacted the town council, local groups, community wardens and education centres and did talks explaining the research and asked for participants. Some of the latter group were also recruited through standing outside school gates and talking to parents.

Of the 42 people interviewed, 6 arose from the 50 randomly sampled households and the remaining 36 from the 150 or so people approached through snowball sampling. The higher response rate from the latter method is likely to have arisen because people are well-known to respond positively to face to face contact. While the final set of interviewees cannot be claimed to be representative of the population, there is no reason to think that they are unrepresentative.

The majority of interviewees had their water meters newly installed. There were also some who were already metered either because they opted to have one previously or had moved into houses with meters already installed. A couple of interviewees were in properties that could not go on water meters.

Two types of interview were carried out. Individual interviews were conducted with households, usually involving one or two people. This method was used to gain detailed information on water use, perceptions of the recent metering process and perceptions of the information provided. Group interviews were carried out with people from different households ranging in size from 3 to 6 people. The group method aimed to encourage people to spark ideas off each other, with more emphasis placed on what information would be useful to residents to help them adjust to being on a meter. In all interviews participants were asked about information provided by FDWS regarding the recent installation of meters.

A total of 42 people from 33 households were interviewed in May and June 2007. There were six group interviews, while other interviews were conducted with individuals or couples. All interviews were recorded, transcribed, coded and then analysed.

RESULTS
Introduction
The interviews provide the opportunity to discover some of Lydd residents’ perceptions of their local water situation, the metering programme and their personal water use. Their perspectives show to some degree how effective FDWS were in reaching their customers with the information they provided—though, as noted previously, people form opinions about water from a variety of sources. By gaining feedback on people’s perceptions it is possible to identify issues and think of methods for improving FDWS information provision in the future.

Perceptions of interviewees
Perceptions of the local water situation
The overwhelming majority of interviewees questioned FDWS’s water scarcity information, stating there was not a water scarcity issue for Lydd and the surrounding marsh area. On further questioning it appears most thought there may be a problem with water availability but this was thought to be due to mismanagement of the resource rather than an actual lack of availability. Reasons cited by the respondents included extensive building in the area leading to a larger population requiring more water, leakage, the flushing of dykes into the sea and diverting water away to Folkestone. Interviewees’ knowledge of housing development seemed to be linked to local television news. Leakage had frequently been covered at a national level by national news, even though FDWS has a good record for leak management. Knowledge of the dykes system is based on
visible signs in the landscape. People frequently said they looked to the lakes and dykes to get an idea of the local water levels.

I always think if the dykes are full then there’s plenty of water, (interview with Mr. V).

It seems that many interviewees did not understand that the water table in the area was high and therefore the lakes were a poor indicator of water availability. There was also the perception that the dyke water could be used for water supply whereas the water company thought this was not possible due to the high level of nitrates from farming. About half of the interviewees knew their water was from a local source and that the shingle geology resulted in water rapidly filtering away.

Perceptions of the metering installation programme

The majority of interviewees felt that the installation of the meters in Lydd had gone relatively smoothly and there were few complaints. However, many also felt that Lydd was being penalized by being the first town to be metered under the water scarcity status.

…at the moment around here we’re the only ones aren’t we? And …the rest of the country are getting away with it, (interview with Ms K).

Resentment was strong. Those who had previously been metered, however, were happier about the metering programme, as was a small minority of others.

… but now everybody’s on it and I do think it’s fairer, (interview with Ms W who was previously metered).

Not all interviewees understood that the rest of the Folkestone and Dover Water Services area would soon be metered. Likewise, many did not understand why some individuals in Lydd were not metered. No one interviewed knew why Lydd had been chosen to be the first town to have universal metering across the Folkestone and Dover area, (including members of the town council, despite a talk having been given here). On gaining an explanation interviewees seemed more placated.

Perceptions of the effects of metering

There was almost universal agreement that metering would encourage people to reduce their water use.

… now you’re paying for it you’re obviously not going to use it perhaps as freely as you would [have done previously], (interview with Ms G).

Even some unable to be metered said they had started reducing their usage. A couple of interviewees wondered if the metering effect would last in the long term as people got used to it and found water to be relatively cheap. Money was thought to be a stronger catalyst than environmental reasons. However it should be noted that the perception that only metering would effectively reduce water use appeared to contradict people’s described actions, as many said they had already reduced their water use the previous year (2006), before metering, due to the drought.

Perceptions of personal water use

Almost all interviewees felt they currently did not use or waste much water, and therefore could not lower their water use further without the situation becoming ‘uncomfortable’. A small group said they had changed their practices since being metered while more said they had made changes during the drought in 2006. All interviewees could cite methods of saving water and believed they practiced these in their homes. Almost every house had at least one water butt for use in the garden and there were many with two or more. Many people spoke of only using washing machine and dishwashers for full loads, turning the tap off when cleaning their teeth and taking showers rather than baths.

Perceptions of information provided by FDWS

Amongst the newly metered there was generally indifference about the information packs provided although everyone remembered receiving them. For those who were already metered and therefore did not receive a pack there was a much more positive response, with a feeling it would be useful. Everyone older than 40 complained they could
not visualize water consumption in litres and they preferred imperial measurements. Interviewees also felt they did not have any idea of costings for consumption relating to practices such as having a bath or using the hosepipe for a set number of minutes. Many people felt they wanted feedback on their personal water consumption, or for Lydd as a whole, to know how they were doing. In addition to feedback a few people said they wanted praise for what they were doing and incentives to save, such as free water butts or discounts related to achievements.

Perception of FDWS and other authority organisations

While there were mixed perceptions regarding FDWS the majority of interviewees viewed them and the recent water metering with suspicion. It was perceived that the company had vested interests to make profits rather than help customers or the environment. It was felt the reason given by FDWS for metering, (water scarcity), was untrue and metering was implemented to make higher profits at the customers expense. It was felt the water company did not lead by example in terms of reducing water use, as exemplified by leakages. Some also thought the water company were secretive in their workings.

With regards to other bodies, most interviewees indicated that the Government and associated bodies such as DEFRA and the Environment Agency were generally not trusted. A small handful of interviewees did not have such scepticism of bodies but these were in a significantly small minority. However, if there were local workers that people knew and saw on a regular basis it was felt that they were more reliable. The array of environmental organisations working on the Denge, an area of significant scientific interest, were also met with scepticism by some, as again it was cited they were working for vested interests rather than helping local people. Tradesmen (plumbers) and shops promoting water efficient equipment were viewed similarly. Local media fared better and the local television news was popular as a source of information.

DISCUSSION

The above perceptions are extremely important in understanding Lydd residents’ motivations and attempts to save water. In order to encourage people to save water to the best of their ability theory suggests that they are more likely to do this if, amongst other factors, they: a) believe in the situation; b) feel the situation is fair; and c). believe there is something they can do to affect the situation (Uzzel 2000; Biel & Thogersen 2007). However, in Lydd it was found that all of these factors were lacking to some extent. Many interviewees did not believe there was a natural water shortage, which Talarowski (1982, in Biel & Thogersen 2007) suggests could result in less effort to reduce usage. Many newly metered interviewees felt mismanagement of water was leading to shortages, Lydd residents were being penalized, and thus the system was unfair. While only two interviewees stated they were going to use as much water as they liked as they were paying for it, resentment over the ‘unfair’ treatment of Lydd could lead to a similar subconscious reaction in other residents. Conversely, those already on meters felt the system would be fairer if everyone was metered, so they may subconsciously respond well to the compulsory metering in terms of water use. It is not possible to say to what extent the above factors may affect calls to reduce water consumption but it is also not possible to rule them out. Moreover, most people felt they were already saving as much as they could, so they may not have responded to further calls to reduce water use. Steps to address these three factors should be taken if greater water efficiency is to be encouraged.

In addition to the three factors discussed above, further problems with the information provided by FDWS were highlighted. There were information gaps in that respondents did not understand that the water they observed locally was not of a quality that could supply their homes. There was also a lack of knowledge about water consumption and related costs, water efficient technology and efficiency rating systems. Merely providing more information is likely to be ineffective. Many interviewees in this study could not remember all the detail, and some did not believe all they read. The information needs to be provided in a manner that will engage with the community and present water metering and water efficiency in a positive light.

As discussed above, trust in the source of information is paramount (Gardner & Stern 1996). Interviewees in Lydd had no consensus over which organisations constituted
“trusted information sources”, with doubts being cast on water companies, government bodies and environmental organizations alike. Local television news was frequently watched and respected among many. Spreading information through this medium could be effective. Using local workers and providing opportunities for more face-to-face contact would also be useful in helping understand the issues. These findings suggest that schemes such as community water saving ‘champions’ could be an effective means of promoting water saving. Utilizing local community networks such as parent and toddler groups, business clubs, or community events as forums for questions and answers could help develop trust. This could also help in making the information more noticeable and memorable.

Amongst the newly metered residents there was a strong feeling of unfairness. Reducing the feeling of victimization is important. Publicizing why Lydd was chosen as the first metered town could help, along with the plans for rolling out metering. In this regard, along with cost savings in terms of economies of scale, having universal metering in the UK would remove feelings of unfairness whilst providing feedback on consumption for all households. It may also encourage the norm of water saving, which is still seen by some interviewees as being slightly ‘strange’ behaviour. Additionally the language used by FDWS seems to have produced some confusion over the extent of metering, possibly due to the use of the term ‘selective metering’ (to indicate compulsory metering) in information provided to residents, combined with the inability to meter all houses. As Gardener & Stern (1996) point out, information provided needs to be clear and understandable. Removal of any jargon is important both to increase understanding and to make it more likely someone will read or listen to it. For example the phrase ‘selective metering’ could be replaced with ‘universal metering’.

In order to increase efficacy water users need a baseline from which to work (Gardner & Stern 1996). FDWS are providing bills showing personal consumption over time so households can monitor their own consumption, along with an ‘average’ for a similar household. Some interviewees indicated the feedback mechanism may be removed by paying by direct debit as people just look at cost. Providing the visual graphs of water use on bills may help reduce this tendency. Additionally, providing figures for the town’s consumption, perhaps on billboards or through the local press, could also be an effective way to raise the salience of the savings, and enable Lydd residents to feel positive about their contribution to water savings, hence creating a social norm which encourages more savings. Celebrations of water, as seen at the annual Hampshire Water Festival, can also help raise the salience of water use. This is crucial in that people begin to think of their personal water-using practices so that some actions can become conscious decisions rather than habitual routines (Hobson 2001). People may then feel they can do something to reduce their water consumption further. Campaigns should consider what water saving options are acceptable to people on the whole. For example encouraging people to spend one minute less in the shower rather than not showering everyday is probably more acceptable.

Regarding information provision, interviewees have asked specifically for information on the amount of water consumed by different water-use practices. They believe this would help as the low costs of water may not provide incentives to change behaviour. However, as customers have asked for this, it is now being provided in Lydd. It is not yet known what the reaction in terms of consumption will be. However, responding to customers needs can increase the trust and improve the standing of the water company, which may improve general relations and therefore water savings in the future.

Further confusion was caused by units of measurements. Measurements could be provided in imperial and metric to aid understanding. Consistency in measurement units is necessary so people can compare information: providing billing in metres cubed and water efficiency information in litres proved to complicate understanding.

Metering needs to be seen as a positive benefit to individuals and society. Hence, emphasizing benefits of metering other than cost savings is important. This may include issues of fairness, better management of supply, detection of leakages and personal feedback on water use to allow greater personal choice and control.
achievements made in savings by praising people or giving small discounts could also help.

CONCLUSION

To once again quote Owens, “... public perspectives might help not only to identify or implement solutions but to define, or reframe, what the problems actually are,” (Owens 2000). Through the interviews it became apparent that Lydd residents were not ignorant of water saving methods, as reflected in the steps they took during the 2006 drought. Such actions show they responded to calls to reduce water use when they perceived there was a need. However, regarding metering other problems emerged: residents did not have the information they felt they needed, they did not trust their information sources and many felt the situation was unfair. The context is much more complex than one of just installing meters and providing water saving information. Communication strategies need to be constructed carefully for every step of an implementation, not just within a formal information campaign. Information provision is just one element in a more holistic approach to encourage water savings. Developing trust and creating fair systems as well as coordination in policy making, (e.g. between building regulations and water provision) and changing the infrastructure of provision (e.g plumbing systems to allow for reuse), are all crucial if there is to be progress in achieving water savings. Asking water users for their perceptions is vital to develop an understanding of the issues that need to be addressed.

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