

The Home Energy Study – qualitative analysis

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The *Home Energy Study* set out to explore the effects of providing householders with feedback on the amount of electricity they were consuming. The study used a quasi-randomised controlled experiment to test the impacts of two types of feedback over a period of 18 weeks: feedback on each household's own consumption and feedback that also included average figures for others in the same neighbourhood. The project monitored how much electricity participants used and recorded how often they looked at the feedback provided. To give an in-depth understanding of how people responded to the feedback, a number of householders were interviewed.

This short paper gives a summary of our qualitative analysis of the interview data. For details of the quantitative analysis of the survey and consumption data, see the accompanying research summary paper, *The Home Energy Study – quantitative analysis* and our recent paper in the *European Journal of Marketing*¹.

The Home Energy Study monitoring system used purpose-built monitors to collect electricity consumption data from households in Bristol, UK. Over 400 households were professionally recruited, door-to-door, from one poorer and one richer area of the city, using an £80 incentive. Three hundred and sixteen (79%) of those initially recruited went on to successfully complete the 18-week study and the pre- and post-study questionnaires. Participants were assigned to one of three experimental conditions: 1) an individual feedback condition that only included data about an individual household's consumption; 2) a social norms feedback condition that also included neighbourhood average data, and 3) a control condition without feedback. After a two-week baseline period without feedback, those in the two intervention conditions were sent weekly emails that each contained a tip on how to save electricity, a graph showing their consumption and an invitation to access similar graphs on specially-provided, password-protected web pages. After the trial ended, we conducted three focus groups and 21 households took part in interviews and longitudinal interviews. This introductory paper draws only on the initial household interviews and focuses on a few key aspects of participants' responses to the CHARM feedback.

The primary impact of the feedback was that it made electricity consumption more visible to some participants, increasing their awareness of its use in everyday activities and practices. This led them to appraise some of their electricity use and to try to change some of their energy-consuming practices. This process of appraisal and change occurred over a relatively short period of time and did not always involve conscious reflection or evaluation. In line with earlier research into the use of real-time displays (e.g. Hargreaves *et al*, 2010²), the CHARM study found that

¹Harries, T., Rettie, R., Studley, M., Burchell, K. & Chambers, S. (in press) 'Is social norms marketing effective? A case study in domestic electricity consumption', *European Journal of Marketing*.

²Hargreaves, T., Nye, M., Burgess, J. (2010), 'Making energy visible: A qualitative field study of how householders interact with feedback from smart energy monitors', *Energy Policy*, Vol. 38, pp.6111-19.

although awareness of energy consumption was sustained, the process of appraisal and change was sometimes short-lived.

A key feature of participants' discussion of energy-consumption was their emphasis on the undesirability of waste. The discourse of *waste* was common, with wastefulness consistently being framed as negative and respondents being careful to justify any practices that might appear wasteful. However, although participants talked about wasting electricity and wasting money, they generally showed little interest in the financial gain that might be had from reducing such waste. In fact, those who talked about not wasting money tended, on further questioning, to reveal that they were less interested in the potential savings than they were in the principle that waste should be avoided (e.g. "*I could save myself a lot more money by not buying this [gadget for switching things off standby] and leaving the standby on (chuckles). Why leave it on if you can turn it off?*") As illustrated by the following quote, the *waste* discourse was about morality rather than about finance:

Interviewer: *What's wrong with waste?*

Respondent: *What's wrong?*

Interviewer: *Yes*

Respondent: *It's wicked!*

An important contributor to participants' interest in electricity and waste was the format of the feedback graphs. The two-hour scale used in the *Last Week* graphs enabled participants to associate peaks and troughs in the display with particular domestic activities. This made the feedback more engaging because it reflected their day-to-day lives. More importantly, it highlighted times when their consumption was relatively high (and therefore possibly wasteful); drew their attention to practices that were particularly energy-hungry, and helped them to identify possible changes. In addition to looking at the patterns of their own consumption, participants who received social norms feedback also compared their consumption with that of others (e.g. "*Mine was way above everybody else's. I thought, 'well why is it so much then?'*")

Participants talked about the energy savings they considered in one of three ways:

- a) as easy to implement, because they involved no significant loss of any benefits valued by the participant. An example was not leaving appliances on standby if they were rarely used, which was considered a waste because the use of this electricity yielded no benefit.
- b) as slightly more difficult to implement, because they involved some loss of benefits valued by participants. An example was reducing the use of tumble dryers, which incurred extra work (due to the need to hang clothes), inconvenience (because clothes would not be as quickly available to the wearer) and aesthetic cost (because wet clothes would sometimes need to be hung in the house). Whether such consumption was seen as wasteful seemed to depend on the perceived benefits.
- c) as undesirable, because they involved too great a loss of benefits that were valued by the participant. An example was switching off a wine cooler. Use of the wine cooler was seen as providing significant benefit and was not, therefore, considered wasteful.

Interview participants used a range of discourses to counter notions of wastefulness and argue against particular ways of saving energy. These included discourses of *personal preferences and*

needs, upbringing, life experience, identity, social expectations, household conflict and relationship maintenance and material constraints.

Behaviours more closely tied to social meanings were justified in terms of 'needs' rather than preferences, and these needs were sometimes linked with social identity. This is illustrated by the example of personal hygiene, where regular showering was represented by some participants as an obligation associated with their membership of a particular profession. The rhetorical commitment to these needs is revealed in the sense of physical discomfort that participants sometimes associated with occasions when these needs were not met – e.g. after a missed shower.

In the discourse of *household conflict and relationship maintenance*, differences of opinion between family members were generally attributed to variations in personal preferences and needs, including those rooted in physiology (e.g. differing thermal comfort needs) and developmental life-stage (e.g. children rebelling against parental requests). Some respondents reported being "*worn down*" by the struggle to change the behaviour of others in their households and claimed that this made them less conscientious energy-savers themselves.

Material factors were used as justifications both for changing and for not changing behaviour. For example, some less mobile participants said that hard-to-reach sockets encouraged them to leave devices on standby, while one explained how a remote switcher made it easier to switch things off entirely. Clearly, material considerations will sometimes be mediated by personal preferences. For example, participants who strongly preferred immediate access to their games consoles argued that the long boot-up times obliged them to leave the consoles on standby, while others said that they were willing to forego immediate use and switch their consoles off overnight. In other circumstances, material considerations seemed to be used as proxy arguments for other, less easily socially justifiable, reasons for not wanting to change their practices. For instance, a participant who disliked the type of light given off by low-energy bulbs appeared pleased that the incompatibility of these bulbs with dimmer switches provided an argument against their use.

An additional discourse was that of competition and target achievement. This was sometimes used by participants in the feedback conditions to explain how the feedback had affected them. For example, some respondents from the social norms feedback condition described gaining a sense of satisfaction from seeing their consumption levels remain below, or fall below, those of other households. Similarly, participants from both feedback conditions suggested that changes to their practices were motivated, in part, by the sense of reward they gained from the effect these changes had on their feedback graphs (e.g. "*You know you've done really well. You know all what you've changed... your lifestyle you've changed slightly is making all the difference.*")

When participants reflected on consumption as potentially wasteful (e.g. when prompted to do so by the format of the CHARM feedback), this sometimes motivated changes in behaviour. However, the discourse of *wastefulness* was often countered by the countervailing discourses listed above (*personal preferences and needs, upbringing, life experience, identity, social expectations, household conflict and relationship maintenance and material constraints*). Only when there was a clear balance in favour of the *wastefulness* discourse did participants show a willingness to change their behaviour. In practice, therefore, although the feedback provided in the Home Energy Study made electricity consumption more visible, this in itself did not provide

substantial motivation for change. The interviews suggest that there is scope for further research on the use of a waste discourse to encourage the reduction of energy consumption.

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