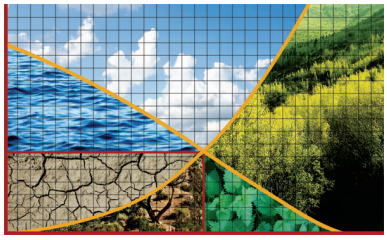
Harvard Environmental Economics Program

DISCUSSION PAPER SUMMARY

JUNE 2014

Harvard Environmental Economics Program



INFORMATION DISCLOSURE THROUGH AGENTS: EVIDENCE FROM A FIELD EXPERIMENT

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Overview

Imperfect information is often cited as a justification for regulatory intervention in markets for durable energy-using goods. Energy labeling requirements, efficiency standards, and other policies are needed, according to this line of argument, because consumers lack the information to evaluate energy cost trade-offs when making purchasing decisions about products such as cars and refrigerators. Despite the widespread use of such policy interventions, however, there is little empirical evidence on the extent of information failures in markets for energy-using durable goods or about the effectiveness of various policy measures for informing consumers and increasing demand for energy-efficient products.

To study the effects of energy-information disclosure, rebates, and sales agent incentives, the authors worked with a major nationwide retailer to conduct a large natural field experiment involving the purchase of hot water heaters. Results from the experiment suggest that providing consumers with more information about energy savings and giving sales agents incentives to sell Energy Star models has remarkably little effect. In fact, extensive follow up surveys and audits of phone calls reveal that takeup of Energy Star water heaters is low not because consumers are poorly informed, but because they are simply not interested at current prices. Agents are generally aware of this lack of interest and do not waste scarce phone time giving customers information that won't impact their decisions. The combination of a relatively high ($100) consumer rebate with a $25 incentive to sales agents, however, did prompt a significant increase in Energy Star purchases.

Background

This study focuses on natural gas "storage" water heaters, which comprise half the market and account for the second largest share of home energy use in the U.S. At average product lifetimes and usage rates, purchasing an Energy Star natural gas water heater saves about $40 per year, an investment with 13-18 percent return. Despite this, the Energy Star market share among natural gas water heaters is only 3 percent nationwide. Water heaters afford a good opportunity to study the impact of information disclosure on consumer demand for energy-efficient products because they are mundane appliances that are often purchased on short notice, when an existing water heater fails. As a result, consumers are less likely to be well informed about water heater features before they shop for a replacement and more receptive to information and recommendations provided by sales agents.

For this study, researchers partnered with the third largest retail seller of water heaters in the U.S. Callers to the retailer's call center were randomly assigned to a "treatment" that consisted of being read a short script about expected savings from Energy Star, being offered an instant rebate of $25 or $100 toward the purchase of an Energy Star model, or both. Detailed phone surveys were also conducted with 1,000 callers. In total, 38,179 callers were included in the

experiment and 23,347 callers were assigned to a treatment group. Of the 8,275 water heaters ultimately purchased by these consumers, only a few percent qualified as Energy Star.

Sales agents play a crucial role in the experiment. First, their behavior directly determines the retailer's ability to market Energy Star products: if sales agents don't provide information, callers will likely remain uninformed. Second, the agents' behavior is indirectly informative about consumers' responsiveness to information: given that information disclosure takes time and focus away from other sales tasks, agents will not provide information if they think consumers aren't interested. To document sales agent behavior, the research team audited more than 2,000 phone calls. Sales agents were also given a $25 commission, or "spiff", for selling an Energy Star model on randomly selected calls.

Key Findings and Recommendations

1. **Providing callers with information had no effect on Energy Star sales.** A $100 rebate significantly increased purchase probability, although the resulting share was still small in absolute terms. Coupling large rebates with sales agent incentives had a very large effect, increasing purchase probability by 4 to 22 percentage points.

2. **Using a theoretical model, the study authors show that sales agent behavior both determines the retail seller's ability to inform consumers and reveals information about consumers' preferences.** If sellers' information disclosure is not effective at increasing demand for energy-efficient goods, energy-efficiency standards are more likely to increase welfare.

3. **Agents frequently opted not to discuss energy efficiency even with callers who were assigned to the information treatment group.** This high rate of non-compliance appears to be strategic: knowing that information about energy use would not be of interest to most callers, sales agents appear to have marketed Energy Star to only the most receptive consumers.

4. **Most consumers are aware of the Energy Star program and may even overestimate the cost saving potential of Energy Star models.** In follow-up surveys of callers who purchased water heaters the primary reason given for not choosing an Energy Star model was high prices.

Conclusions

The results of this experiment cast doubt on the notion that lack of information accounts for the low takeup of energy efficient products. Providing information about energy use is costly and, even among informed consumers, many don't view energy-efficiency investments as beneficial. A theoretical model clarifies the policy relevance of this finding, showing that minimum efficiency standards are more likely to increase welfare in cases where it is difficult to inform consumers about the cost-saving benefits of more efficient goods.

Full paper available at: www.hks.harvard.edu/m-rcbg/heep/papers/DP52_Allcott-Sweeney.pdf

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