

Does Marketing Make a Difference? The Influence of Marketing, Education and Outreach Initiatives on Consumer Knowledge and Energy Saving Actions

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ABSTRACT

The State of California, with Senate Bill 350 recently signed by Governor Brown, is now committed to reducing energy consumption by 50 percent by 2030 as part of an effort for sweeping reductions in greenhouse gas emissions.¹ As this will depend on the actions of millions of Californians, the state has made a significant investment in statewide marketing, education and outreach (SW ME&O) efforts through the Energy Upgrade California brand and marketing campaign. The objective of this paper is to describe the approach taken to assess the effectiveness of these efforts, including strategies to improve the validity of the findings.

The methodology employed for this assessment was designed to assess the causal effects of SW ME&O activities on key indicators, and included a number of new approaches to assessing ME&O effectiveness. The paper will discuss targeted survey efforts with Californians exposed to SW ME&O through both a (1) web-based survey to explore self-reported attribution of knowledge and action, and (2) a two-wave (pre/post) survey with consumers participating in retail, community and mobile events. The triangulation of the results represent an expanded analytical approach.

This paper comes at an important time for program administrators throughout the country, who are increasingly looking for ways to activate consumers to take meaningful energy saving action. Providing information on ME&O efforts, as well as strategies for their assessment, is therefore critical.

Introduction

In 2012, the California Public Utilities Commission (CPUC) established Energy Upgrade California as the umbrella brand for Statewide Marketing, Education, and Outreach (SW ME&O) activities to increase ratepayer awareness of energy efficiency, demand response, and distributed generation, and to offer ways for consumers to better manage their energy use.

The overarching goal of the SW ME&O program is to educate, motivate, and activate consumers to manage their energy use and to provide them with a path for doing so. To that end, the 2014–2015 program began with efforts (1) to raise consumer awareness and understanding of the value of energy efficiency, demand response, and distributed generation; and (2) to connect the concept of energy management to the Energy Upgrade California brand, as well as to

¹ Senate Bill 350 increases the percentage of renewable energy required in the state and mandates a doubling of energy efficiency in existing buildings.

enhance energy management efficacy, a sense among target audiences that energy management is worthwhile and that their energy actions will make a difference.

The SW ME&O program employs a social marketing approach that draws on a wide range of marketing channels to engage residential consumers including paid and earned media, community based outreach and events, mobile educational displays, social media and the Energy Upgrade California website. Despite the wide range of channels used, over the course of the three-year period, the implementer, the Center for Sustainable Energy (CSE), shifted its emphasis from paid media efforts administered through mass media channels (television, radio, and print) to one-on-one, direct interactions with consumers using community outreach strategies. This shift in approach was driven by a desire by the CPUC's Energy Division to move away from solely raising awareness of the brand across the general residential population and towards high-quality engagements (i.e., direct interactions) with consumers that might motivate them to take action.

Research Approach

The authors used a multi-study research design as a way to address the multiple causal pathways that may arise given the comprehensive nature of SW ME&O activities. Moreover, since the research methods used to assess the effectiveness of marketing campaigns have different strengths and weaknesses, we believed that the most sensible approach was to use multiple methodologies to produce a balanced assessment. In particular, we used the following approaches to assess the effectiveness of one-on-one direct marketing activities:

- The authors leveraged a multi-wave survey design where they administered intercept surveys to ME&O event attendees immediately after their event participation and again in approximately one month. This design was used to assess the impact of retail and event marketing activities on customers' abilities to recall the Energy Upgrade California brand and document any changes in their energy management knowledge and/or actions taken.
- A second strategy for determining the causal effects of ME&O was to assess Energy Upgrade California campaign attribution through customer self-report surveys. As part of Energy Upgrade California's marketing and outreach efforts, program staff collected consumer email addresses. These consumers were sent updates on events, energy saving tips, and information about utility rebate programs in their area. The authors used this data to administer a self-report survey to assess changes in customer knowledge and understanding of energy management topics and any actions taken since customers first signed up for Energy Upgrade California updates. This survey asked customers specifically about the influence of the Energy Upgrade California marketing materials that they were exposed to and whether such information increased their energy management knowledge, understanding, or actions taken.

The next section outlines the specific methodology employed.

Methodology

There are inherent trade-offs between external and internal validity and between wide and narrow coverage of the SW ME&O marketing tactics for each evaluation methodology. With different strengths and weaknesses with respect to the ability to isolate causal effects and make generalizable inferences, we felt the use of multiple studies offered a unique assessment of Energy Upgrade California effectiveness. This approach thus allowed us to ultimately provide a more comprehensive overall assessment of SW ME&O activities.

Attribution Survey

In order to assess the impact of the campaign on customers that we know were exposed as opposed to the general population, the authors completed an internet survey with 865 Californians that interacted with the Energy Upgrade Campaign through a retail or Community Based Organization (CBO) event or visited the Energy Upgrade California website. The target population for this survey included anyone attending a retail event between October 2014 and May 2015, a CBO event between April 2015 and May 2015, or visited the Energy Upgrade California website between October 2014 and August 2015. While attending these events or visiting the website, consumers could provide their email address and receive information from Energy Upgrade California. Our sample frame is the 14,225 individuals who provided email addresses.² We fielded the survey between October 13 and November 9, 2015.

Table 1 shows the population, sample frame, and completed surveys by marketing channel. Across the three channels, only 3% of consumers that interacted with the campaign provided email addresses, which is likely to result in coverage bias. Just 2% of website visitors provided an email address compared to 8% of retail and 18% of CBO event attendees.

Table 1. Self-Report Attribution Survey Sample

Marketing Channel	Population	Sample Frame (% of population)	Completed Surveys
Retail	14,438	1,166 (8%)	20
Community Outreach	23,623	4,138 (18%)	89
Web	426,879 ^a	8,921 (2%)	756
Total	464,940	14,225 (3%)	865

^a The population for the website is the total number of unique visitors from California.

We attempted a census with all consumers in the attribution survey sample frame (Table 1) and ultimately reached 865 consumers. The authors sent an initial invitation to complete the survey to each email address, as well as three reminders sent a week apart. To encourage survey participation, respondents who completed the survey were entered into a drawing to win \$100.

² In preparing the sample frame, the authors removed an additional 314 email addresses associated with the program implementer (i.e., CSE employees or associated organizations).

Event Follow-Up Surveys

The objective of the event follow-up survey is similar to the attribution survey. We used the survey to assess the impact of the campaign on customers that interacted with the campaign at retail or CBO events. We had more information about the time and content of the campaign interaction for the event follow-up survey respondents. We were able to interview customers approximately one month after the event and could ask some directed questions about the interaction. Otherwise, many questions were the same across the two surveys.

The authors completed a follow-up internet survey with 146 Californians. The target population for this survey was anyone who interacted with the campaign at these events between June 18 and September 21, 2015. While attending these events, consumers could complete a short survey and provide their email address to receive information from Energy Upgrade California. We fielded the survey on a rolling basis between September 14 and November 11, 2015.

Table 2 shows the population, sample frame, and completed surveys by marketing channel for the event follow-up survey. We received email address for 12% of retail and 1% of CBO event attendees. As noted in our discussion of the attribution survey, the exclusion of such a large percentage of attendees will likely result in coverage bias.

Table 2. Event Follow-Up Survey Summary

Marketing channel	Population	Sample frame (% of population)	Completed surveys
Retail	6,850	811 (12%)	92
CBO	25,027	329 (1%)	54
Total	31,877	1,140 (4%)	146

We attempted a census with all consumers in the event follow-up survey sample frame (Table 2) and completed interviews with 146 consumers. As part of administering the survey, we sent each attendee an invitation to complete the survey, as well as three reminders four to five days apart. The team also offered a \$10 incentive for completing the survey. The authors were able to offer a \$10 incentive to survey respondents as opposed to entry into a sweepstakes due to changes in the program's implementation and a partnership between the implementation and evaluation teams.

Study Findings on Energy Saving Behaviors and Actions

The following sections outline the SW ME&O program's ability to catalyze energy-saving actions and generate energy savings in the long term among those known to have engaged with Energy Upgrade California outreach. As described in the methodology section, we spoke with consumers who interacted with Energy Upgrade California representatives at CBO events and presentations, in retail settings, and at mobile displays to understand what they learned and whether the interaction influenced them to take energy-saving action.

Knowledge of Promoted Topics

The SW ME&O program communicated with residential consumers about a wide range of topics during the 2014–2015 period. We asked respondents who interacted with retail or CBO events whether they were aware of the specific topic that was the focus of their interaction. As shown in Figure 1, between approximately one-half and three-quarters of respondents had heard of each topic. However, a much smaller percentage reported learning about that topic specifically through their interaction with the SW ME&O program.³ The largest percentage of respondents (51%) recalled hearing about ways to save water during their interaction with the event.

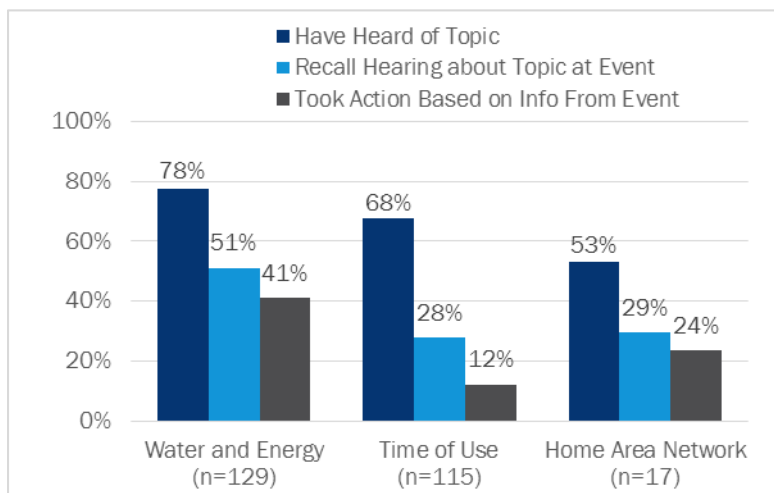


Figure 1. Recall of Topics Promoted through CBO and Retail Engagements: Aided
Source: Event Follow-Up Survey, Fall 2015.

The following sections provide detailed information on the actions taken by respondents.

Information-Sharing Behaviors

As a precursor to taking actions that generate energy savings, such as purchasing and installing new energy-efficient equipment in the home, consumers may look for additional information. The authors asked respondents who had been exposed to the campaign through CBO, retail or mobile events whether they had searched for energy information since interacting with the campaign. Retail events appear to have had the greatest impact on information seeking behavior (see Figure 2). Slightly under two-thirds (60%) of consumers who were exposed to the campaign through retail events searched for energy information and just under half (47%) said their interaction was highly influential in their decision to search for information. On the other hand, consumers who interacted with CBO events were less likely to search for information (39%) but among those that did, they were more likely (57%) than consumers exposed through retail events (47%) to say their campaign interaction influenced that search (note that this

³ We asked all respondents if they were aware of the topic, regardless of whether they could recall their interaction with the campaign. We asked respondents only whether they learned about the topic from the campaign or took action if they could recall their interaction. However, the bases for the percentages include all respondents surveyed, so they reflect the influence of the campaign on every respondent touched, regardless of whether the respondent recalled the interaction.

difference, while large, is not statistically significant due to the small sample sizes). Fewer than half (44%) of consumers who interacted with the campaign’s mobile displays searched for information, but just over one-third said their campaign interaction influenced that search (37%).

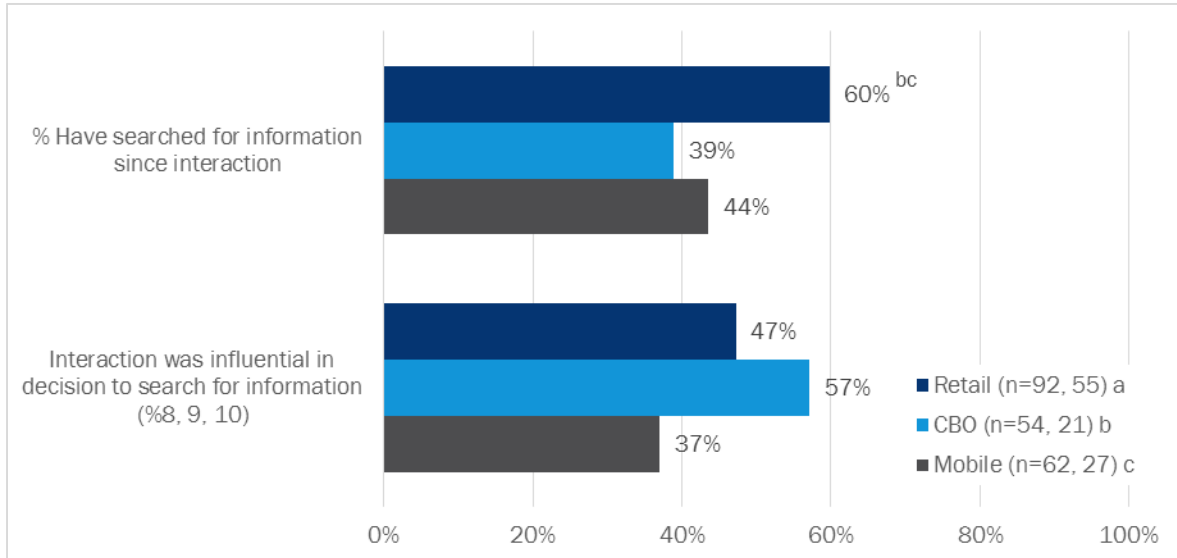


Figure 2. Information Seeking Following Campaign Interactions. Source: Event Follow-Up and Mobile Surveys, Fall 2015.

Note: Letters are assigned to each marketing channel. Letters next to percentage indicate the percentage is significantly different from the indicated marketing channel at the 90% level. Additionally, the first number in legend refers to the number of survey respondents answering "% Have searched for information since interaction", and the second number refers to the number answering "Interaction was influential in decision to search for information".

Those who searched for more information were most likely to consult internet search engines like Google or Bing. Utility websites were also a common source of information (see Table 3). Between one-third and one-fifth of consumers, depending on the channel, consulted the Energy Upgrade California website.

Table 3. Where Consumers Searched for Information

Where did you search for this information?	Retail (n=55)	CBO (n=21)	Mobile (n=27)
Search engine	56%	52%	74%
Utility website	40%	52%	44%
Energy Upgrade California website	33%	29%	19%
Talking to a friend or neighbor	9%	0%	19%
Home improvement retailer website	35%	19%	15%
Energy Star website	13%	29%	11%
Retail store representative	13%	5%	4%
Other	0%	0%	0%

Note: Sums to more than 100% because some respondents gave multiple responses. Includes only respondents who reported searching for information after their interaction.

Source: Event Follow-Up and Mobile Surveys, Fall 2015.

Information-Sharing Behaviors

A goal of the Energy Upgrade California campaign is to provide consumers with information that they will share with others in their families and communities. Between two-thirds and three-quarters of consumers interviewed through the event follow-up surveys discussed or shared energy information since their interaction with the campaign (see Figure 3). Information sharing is generally high across all marketing channels.

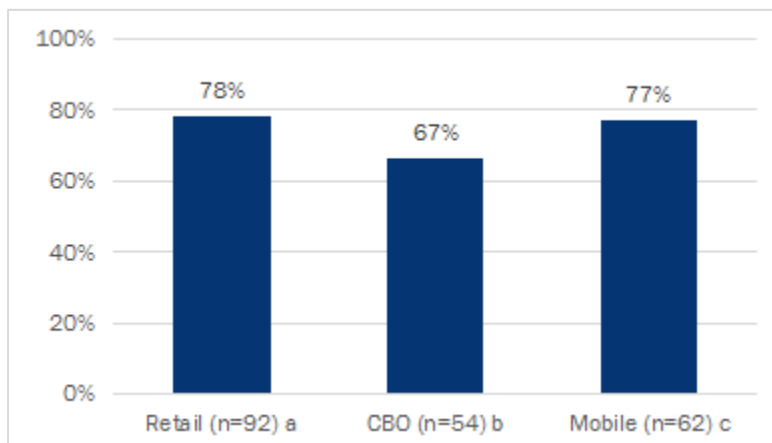


Figure 3. Information Sharing after Campaign Interactions

Note: Letters are assigned to each marketing channel. Letters next to percentage indicate the percentage is significantly different from the indicated marketing channel at the 90% level.

Source: Event Follow-Up and Mobile Surveys, Fall 2015.

Household members followed by friends, neighbors, and colleagues were the most discussion partners (see

Table 4). Social media, which has the potential to reach a larger number of people than one-on-one discussions, is less popular. Those who interacted with mobile displays were most likely to share information via social media, which is not surprising given that consumers create digital artifacts to share via social media at the display.

Table 4. Information Sharing/Discussion Partners

With whom have you discussed or shared ideas about energy in general or how energy affects your everyday life?	Retail (n=72) ^a	CBO (n=36) ^b	Mobile (n=48) ^c
Other people in your household	89%	83%	88%
Your friends, neighbors or colleagues	68%	64%	63%
Your social media networks	8%	11%	23% ^a

Note: Letters are assigned to each marketing channel. Letters next to percentage indicate the percentage is significantly different from the indicated marketing channel at the 90% level.

Source: Event Follow-Up and Mobile Surveys, Fall 2015.

Energy-Savings Actions

Consumers who interacted with the Energy Upgrade California campaign went beyond searching for and sharing information -- between 11% and 55% took energy saving actions. It was more common for consumers to change their daily routines than to make home improvements (see Figure 4). Approximately half of retail (47%) and mobile attendees (55%) and one-quarter of CBO attendees (28%) made changes to their daily routine. Approximately half as many made home improvements.

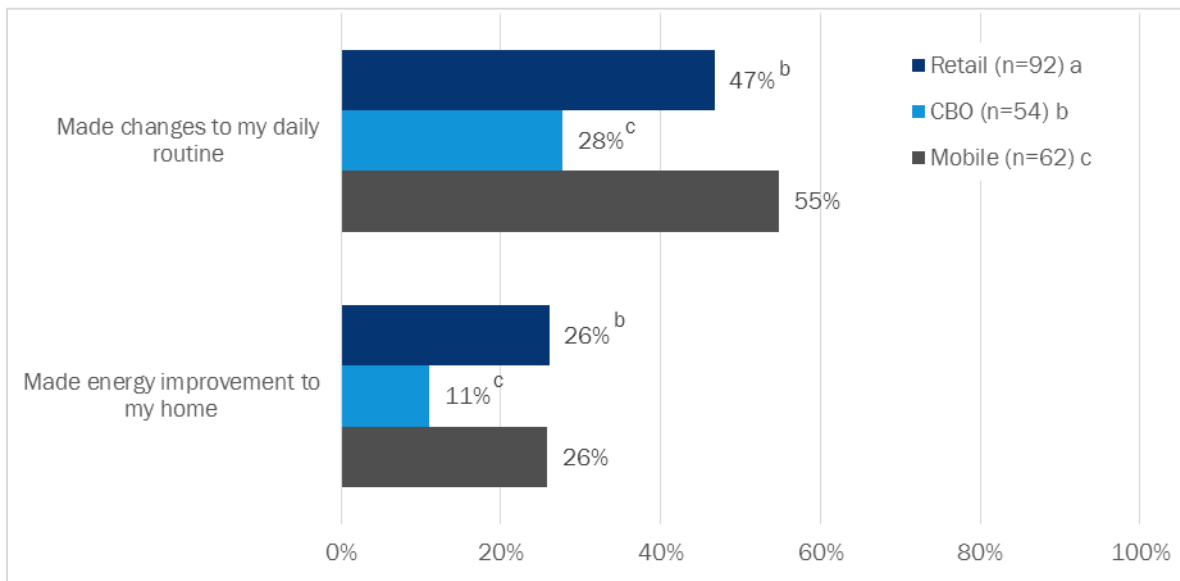


Figure 4. Actions Taken as a Result of Campaign Interaction

Note: Letters are assigned to each marketing channel. Letters next to percentage indicate the percentage is significantly different from the indicated marketing channel at the 90% level.

Source: Event Follow-Up and Mobile Surveys, Fall 2015.

We asked mobile survey respondents to identify the types of changes they made to their daily routines as a result of their interaction with the mobile display.⁴ Half or close to half now turn the lights off when not in a room, use full loads when doing their laundry, or have made adjustments to their thermostats to limit their heating and cooling use (see Table 5).

Table 5. Changes to Daily Routine as a Result of Mobile Display

“Did you make any of the following changes to your daily routine?”	Percentage of Respondents (n=62)
Turn off lights when not in the room	53%
Use full loads for laundry	50%
Set my thermostats to ensure that my heating/cooling system is used only when necessary	40%
Unplug appliances and electronic equipment when not using them	35%
Wash laundry using cold water	34%
Other change to daily routine	2%

Note: Percentages sum to more than 100% because many respondents took multiple actions

Source: Mobile Survey, Fall 2015.

We asked consumers who interacted with retail, CBO, and mobile displays whether they took specific energy saving actions in the past 60 days.⁵ When assessing these responses, we only wanted to consider respondents who had the potential to take the action either because they had not previously completed the action or, for some measures, were not renters. Based on this approach, all respondents were eligible actors for at least one of the actions investigated. To be able to attribute the actions taken to the campaign, we asked respondents who had taken actions to rate the influence of the campaign on their action, as well as the likelihood of taking the same action if they had not interacted with the campaign.⁶ While not all of the actions that the survey asked about were directly promoted by the SW ME&O program, the provision of information on energy management more generally may lead to this type of action taking.

Consumers were most likely to install energy efficient light bulbs, low-flow toilets, or low-flow showerheads as a result of their Energy Upgrade California campaign interaction (see

⁴ We did not ask this question of respondents to the retail and CBO event follow-up survey due to survey length.

⁵ We invited event attendees to complete the survey 30 days after their interaction. Respondents could take up to 3 weeks to complete the survey. For this survey question, we needed to pick a time frame that was not so long that it would include time before their interaction with the campaign, but not so short that it would exclude actions taken immediately after their interaction.

⁶ Respondents who provided a rating of five or greater on a scale from 0 to 10 where 0 is “Not at all influential” and “10=”Very influential were asked about their likelihood of taking the same action in the absence of the campaign.

Figure 5). The general patterns are similar across marketing channels.⁷ Consistent with the results in Figure 4, consumers who interacted with CBOs events were less likely to report taking specific actions as a result of the campaign.

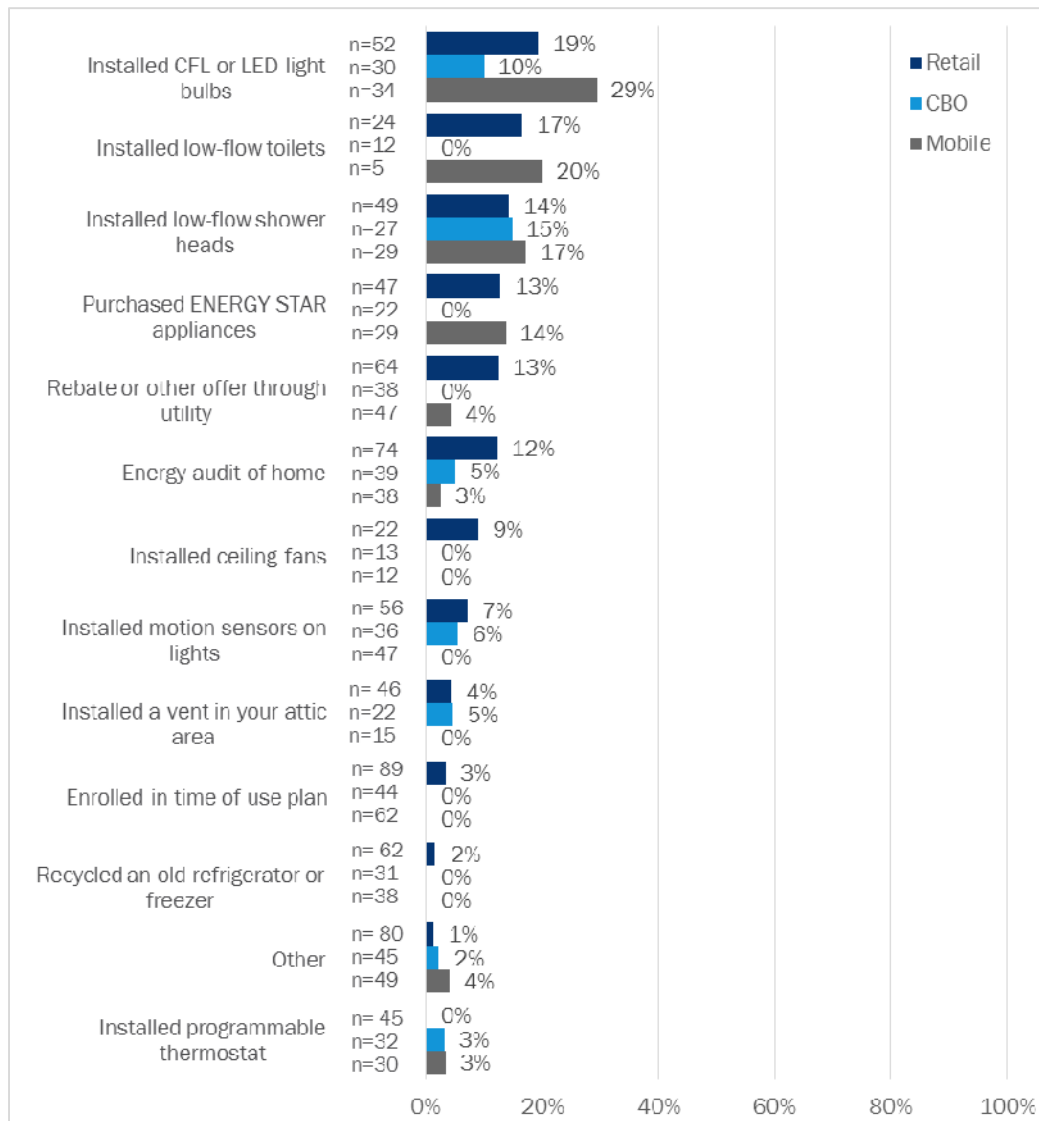


Figure 5. Actions Taken as a Result of Campaign Interactions (Past 60 Days) – Aided

Note: The number of cases are the number of survey respondents who had not already completed the action prior to the interaction and, for applicable measures, respondents who own their home (i.e., installed solar panels, installed ceiling fans, installed attic vent, and installed low-flow toilets).

Source: Event Follow-Up and Mobile Surveys, Fall 2015.

It is also possible that consumers that interacted with the campaign did not have time to complete an action before they participated in the survey, but planned to do so in the future. To

⁷ We did not test for statistically significant differences between marketing channels due to the small and varied sample sizes across actions. The small sample sizes also make it impossible to tie actions taken to the topic of the campaign interaction.

capture these intentions, we asked respondents whether they planned to take certain actions in their home in the next 12 months. Please note, we consider certain actions (e.g., enrollment in time of use programs, installation of low-flow toilets) to be one-time actions that they are not likely to repeat. Therefore, we did not ask respondents who told us previously that they had taken the action about these actions.

A majority of respondents planned to take at least one action in the next 12 months (see Figure 6). As with actions already taken, installing energy efficient light bulbs are the most common action planned. However, more expensive or time-intensive measures, such as buying new ENERGY STAR® certified appliances, signing up for a rebate or other offer through a utility, or recycling an old refrigerator or freezer, were commonly planned actions as well. Of course, stated intentions to act in the future do not guarantee an action will be actually be taken. Many overstate their intention to act due to a desire to appear more socially responsible (i.e. social desirability bias) (Paulhus 1991).

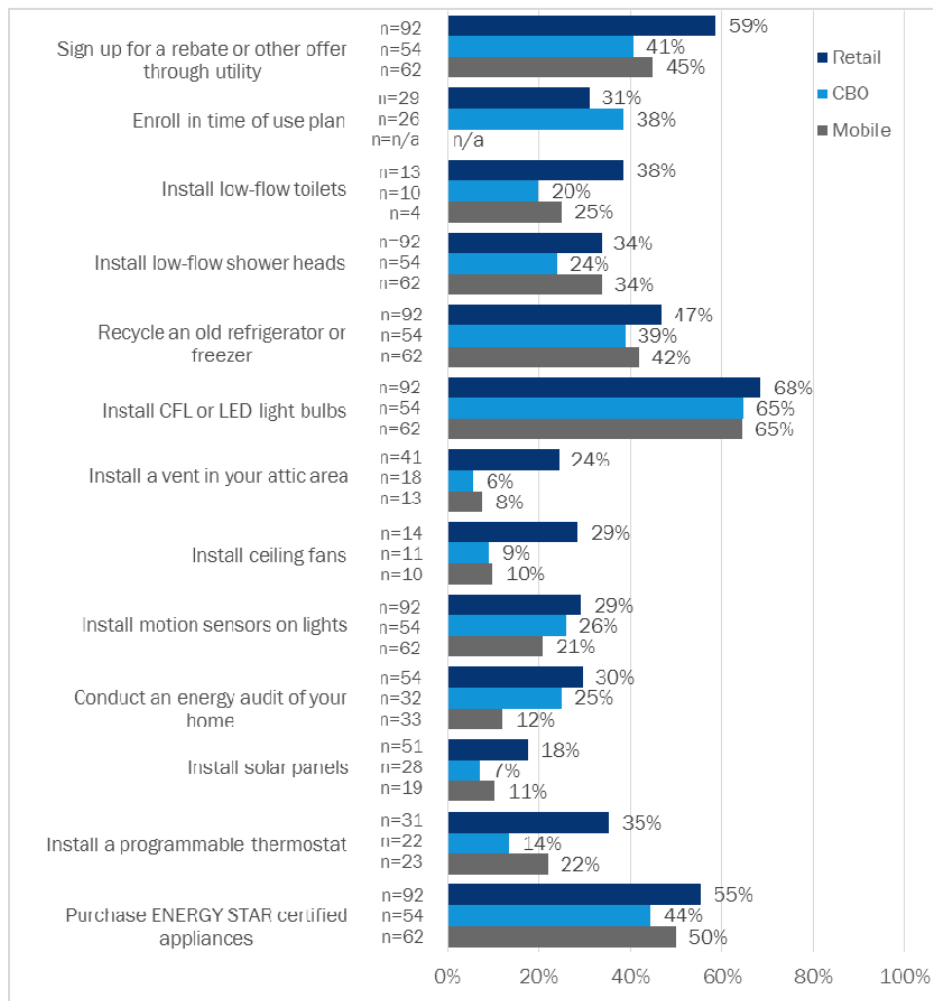


Figure 6. Actions Planned in Next 12 Months

Note: The number of cases are based on the number of survey respondents who had not completed the action prior to the interaction and, for applicable measures, respondents who own their home (i.e., installed solar panels, installed ceiling fans, installed attic vent, and installed low-flow toilets).

Conclusions and Implications

The authors' analysis of consumer engagement with and actions taken due to the SW ME&O program suggests that its effects on knowledge and behavior are mixed. In particular, the team assessed the performance of different community outreach channels (i.e., CBO, retail, and mobile outreach) at the center of CSE's move towards direct, one-on-one in-person engagements. Through surveys with consumers who attended events and agreed to complete a follow-up survey, we found that there was significant variation across the one-on-one outreach channels of retail, CBO, and mobile displays. Overall, we found that consumers had greater recall of retail and mobile events compared with CBO events and took a greater number of actions as a result of those engagements than those who engaged with CBOs.

These findings suggest that the retail and mobile channels have been more effective than CBOs. In particular, mobile and retail events are creating experiences that are more memorable for consumers than those at CBO events. While all three community outreach channels (i.e., CBOs, retail, and mobile) offer one-on-one, customized experiences for consumers, CBOs have the added challenge of communicating SW ME&O program messaging at events that may have a very different focus. In these cases, consumers may not see the campaign as aligned with their interests and therefore may be less inclined to interact with program representatives. The fact that CBOs collected a greater number of email addresses at events than retail or mobile representatives but have the lowest levels of event recall is one indication that consumers are not interacting with CBOs in the same way that they are in retail and mobile display settings.

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