

Walking the Aisles: Designing Research to Understand CFL Purchase Motivations at the Time of Sale

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ABSTRACT

There has been a great deal of research on the topic of compact fluorescent lamps (CFLs) ranging from assessments of customer satisfaction, exploration of upstream market barriers, and quantification of household penetration rates. The research suggests that, over time, satisfaction has improved, barriers have been reduced, and penetration levels have increased dramatically. Most of this research, however, has been conducted via telephone one to two years after a purchase decision was made or considered. To design the most effective next generation of lighting programs, we need to know why consumers are purchasing CFLs today, and to do that, we need to know what motivated them *at the time of purchase*.

This paper will present the process – including benefits and challenges – of conducting time of purchase intercept interviews with consumers who have just purchased CFLs. As part of a process evaluation of Pacific Gas & Electric Company's (PG&E) 2006-2008 Mass Markets Program, these interviews are being conducted in a variety of retail store types, including big box retailers, large home improvement stores, discount stores, small hardware stores, drug stores, and grocery stores. Consumers who have selected CFLs to purchase are recruited to participate in brief in-aisle surveys to assess the influence of various factors (e.g., discounted price, packaging, placement, signage, advertising, prior CFL awareness/usage, etc.) on decision-making. This paper discusses the context in which this research is being conducted, implementation considerations and challenges that need to be addressed, and, finally, lessons learned for researchers interested in conducting this type of in-store intercept research in other areas. Ultimately, the results of this study will help program planners and policy makers design the most effective promotional strategies for each of the different retail settings.

Introduction

Since the early 1980s, California's investor-owned utilities (IOUs) have been promoting energy-efficient lighting and implementing various types of programs designed to increase consumer acceptance, influence market actor behavior, and encourage greater saturation of a variety of CFL products. Like many utilities throughout the U.S., California's three electric IOUs – PG&E, Southern California Edison, and San Diego Gas & Electric – have designed and implemented a wide range of CFL programs, including giveaway and exchange events, turn-key and door-to-door direct install initiatives, and various forms of prescriptive (\$/CFL) incentive programs. In the mid-1990s, the IOUs began transitioning from traditional downstream mail-in and coupon rebate program strategies to an upstream approach designed to more cost-effectively influence the price, availability, and volume of CFLs sold in California (XENERGY, 2002).

This upstream approach initially involved providing incentives to a select number of manufacturers that effectively bought down the price of CFLs paid by consumers. Over time, the utilities expanded the reach of the program, increasing from less than a dozen participating manufacturers and retailers in 1999 to more than 4 times as many in 2007 (XENERGY, 2002;

CPUC EEGA, 2008). Not only did these efforts dramatically increase the availability of CFLs across the full range of manufacturers and retailers active in California's lighting markets, but these efforts also had a cumulative impact on expanding the diversity of CFL products available to consumers through these channels.

Most significantly, however, the upstream efforts have resulted in a dramatic shift in the price paid by consumers and the volume of CFLs sold in California. By the late 1990s, the typical California consumer was still facing prices of over \$10 per CFL (even after utility discounts), whereas, by 2007, the average consumer experienced a price of about \$1 per bulb for comparable CFL products (XENERGY, 2002; CPUC EEGA, 2008).

Earlier efforts to deliver upstream incentives resulted in annual CFL sales volumes in the hundreds of thousands statewide. By 2001, however, the IOUs had reached a peak volume of over seven million CFLs sold through their upstream lighting program alone (XENERGY, 2002). This undoubtedly was influenced by the 2001 California energy crisis, but credit has also been given to the IOUs' earlier efforts to foster this significant "order of magnitude" market transformation shift (KEMA-XENERGY and Quantum Consulting, 2003; Itron and KEMA, 2007). The influence of these earlier efforts continues to be felt in the market today - in 2006-2007, the California IOUs have provided upstream incentives that have resulted in the distribution of over 50 million CFLs (CPUC EEGA, 2008).

With such widespread availability, low prices, and high volume, it is more challenging than ever to identify the key factors that will influence the market for CFLs moving forward. Program planners and policy makers are now faced with the difficult task of understanding consumer motivations to purchase CFLs today so that they can design the most effective programs and policies for the future.

Research Context

Given the upstream nature of California's CFL programs, new research methods are needed to more fully explore the factors that are influencing consumers to purchase CFLs. Unlike downstream rebate programs, which typically involve active decisions by consumers to participate (i.e., obtaining an application form, filling it out, sending it to the utility, and getting a rebate check in the mail), the administrative process involved in upstream lighting programs is virtually invisible to the consumer. Whereas downstream programs typically maintain databases of rebate recipients, which can later be used by evaluators to identify program participants for follow-up research, no such database of participants exists for upstream lighting programs because the incentives are provided directly to CFL manufacturers. These factors pose significant challenges to researchers interested in understanding how upstream efforts have influenced consumer decision-making downstream.

Prior evaluations of the California IOUs' upstream lighting programs have had to rely on telephone surveys of the general population to identify CFL purchasers within a given time period (usually two or more years) and then make assumptions about the likelihood that those specific purchases were discounted through the upstream effort (KEMA-XENERGY and Quantum Consulting, 2003; Itron and KEMA, 2007). These assumptions were based on responses to questions such as "Were you aware of any utility-sponsored discount when you purchased CFLs?," which is a fairly leading question and, in many cases, the utility sponsorship was not very prominent on the in-store displays leading to very low awareness rates after the

fact. Other questions such as “In what store did you purchase the CFLs? In what city? How much did you pay for each CFL?” were also asked, but given the challenges in remembering details for recent, specific CFL purchases – not to mention purchases that were made several months or years ago – these questions produced similarly unreliable results. Not only were these methods less than successful in accurately identifying actual purchasers of IOU-discounted CFLs, they were unable to provide useful insight on the actual occasion and conditions that may have influenced consumers’ CFL purchase decisions.

Research conducted at the point of sale can overcome many of these challenges (SDG&E, 1994; RLW, 2006). First, it allows for an accurate identification of ‘program participants’ (i.e., purchasers of IOU-discounted CFLs). This in turn provides a rare opportunity for exploring how important the discount (and IOU sponsorship) was in influencing the specific purchase decision. In-store research also provides for the most meaningful exploration of the various other factors that may influence a consumer’s specific CFL purchase decisions, as well as their decisions to not purchase CFLs, such as prior awareness and experience, in-store displays and other promotional materials, product placement and accessibility, and so on. Finally, conducting research in the actual stores that are participating in the program (i.e., selling discounted CFLs) allows for examination of how the influences on purchasing decisions vary by retail channel. These types of accurate and timely insights into consumer decision-making will aid program planners and policy makers in designing the next generation of cost-effective upstream lighting programs.

Research Objectives

Overview

In a study currently being undertaken as part of the process evaluation of PG&E’s 2006-2008 Mass Markets Program,¹ the in-store consumer intercept survey approach was selected as the primary research method through which to capture these valuable insights. The study has been designed such that trained researchers would “intercept” consumers after they had made a lighting purchase decision and recruit them to participate in a brief, in-aisle survey. Ideally, consumers are recruited immediately following their decision to purchase a particular light bulb (i.e., after they have placed it in their shopping cart or basket). This positioning and timing enables the researcher to discuss the range of available light bulbs in a particular store with a consumer who has just selected from among those products.²

Consumers who have been recruited to take part in the intercept survey are asked a series of questions covering the following topics:

- Shopping intention (to discern consumers who intended to purchase a light bulb before entering the store from “impulse buyers”);
- Awareness of the PG&E discount;

¹ PG&E is currently conducting a process evaluation of its 2006-2008 Mass Markets Program, which is an umbrella program that includes the upstream lighting program component. The research described in this paper is currently underway and should be complete by August 2008.

² Similar research within the state of California is limited; see RLW, 2006 and SDG&E, 1994.

- Factors influencing the purchasing decision (including discounted price, product packaging, placement, signage, advertising, prior CFL awareness/usage, etc.); and
- For non-CFL purchasers, factors that influenced their decision not to purchase CFLs (such as prior awareness/use of CFLs, price, and so on).

The survey itself lasts only two to four minutes, and consumers are recruited to participate with the offer of a gift card of nominal value (e.g., \$5 or \$10, depending on the store) to the store in which they are shopping. The incentive ensures a high response rate, thus improving the overall efficiency of the data collection effort.

Survey Design

The study includes two different yet similar intercept survey instruments. The first is referred to as a “revealed preference” survey and is administered to consumers who have selected a light bulb to purchase and asks about specific purchase decision-making criteria. The second involves asking consumers (who were not planning to purchase lighting products that day) to conduct a “stated preference” survey. The two instruments are very similar in the specific issues they address, but the stated preference version elicits consumer preferences based on a hypothetical, rather than actual, purchase scenario.

Stated preference surveys are needed because, in some store types, the volume of shoppers is so low that researchers may encounter very few (or zero) light bulb purchasers during the time they are in the stores conducting the research. Under these circumstances, the researchers administer stated preference surveys (as well as revealed preference, if possible). The researcher asks consumers to imagine that they are shopping to replace a light bulb installed in a typical fixture in their homes and to select a CFL or incandescent lamp for that purpose. Once they have selected the light bulb (or multi-pack of bulbs) they would choose, a limited version of the revealed preference survey is administered. This enables researchers to capture a simulated purchasing decision with real consumers in actual stores in which various types of lighting products may (or may not) be offered.

Two additional research issues that are being addressed in both the revealed preference and stated preference survey instruments are (1) whether or not the respondent is a customer of one of California’s three electric IOUs and (2) whether the respondent is purchasing (or hypothetically shopping for) light bulbs for their home or business. The first issue is a key consideration in California in that some of the retail locations overlap with non-regulated utility service territories, and it is important to understand the extent of any product ‘leakage’ (i.e., sales of IOU-discounted products to ratepayers from other jurisdictions). The second issue is also relevant because of the very different factors that influence lighting purchase decisions in residential versus nonresidential settings. Lighting usage patterns also vary significantly across residential and nonresidential segments, so it is important to determine where consumers plan to install the products so that estimates of energy savings can be forecast more accurately by program planners and policymakers.

Finally, researchers are also conducting a modified lighting shelf survey³ as part of their in-store data collection activities. Because one of the key research objectives is to obtain

³ Typically, lighting shelf surveys attempt to collect detailed information on the full range of lighting products available for sale in the store. Shelf surveys are also often designed to collect information on the total number of

information about how consumers make decisions about which light bulb to purchase in a particular store, it is important to capture an accurate representation of the sales conditions observed in each store. Such conditions vary significantly by retail channel. Large home improvement stores may offer a full range of light bulbs, while grocery and drug stores may only offer a limited range of products. The purpose of the shelf survey, therefore, is to capture the options consumers are presented at the time of purchase to better understand how these conditions may have influenced their decisions. The shelf survey gathers a detailed inventory of comparable medium screw-base incandescent lamps and CFLs available to the consumer, including available product types, packaging styles (i.e., number of lamps per package), lamp styles, wattages, and price points. The shelf survey also allows the researcher to record details on other factors that might influence the purchasing decisions, such as information on the position of discounted CFLs within the store and whether or not the store has point-of-purchase (POP) signage, displays, or other materials.

Implementation Considerations

There are a number of important survey implementation considerations that need to be carefully planned and executed to minimize bias and ensure representativeness across the full range of both consumer and retail segments. These considerations are discussed below.

Survey Timing

There are several issues related to survey timing that are important to consider. First, how long can the study afford to have researchers in any one store conducting surveys? For some high-traffic stores, researchers will meet their survey quotas within a very reasonable timeframe and in others, where foot-traffic is low, researchers may not achieve their targets even after spending several hours in the store. This study was designed to set a limit of four hours in any one store. Researchers are instructed to attempt to meet their target of revealed preference surveys in the first three hours and, if they are unable to meet that target, they are to spend the last hour conducting stated preference surveys.

Another important issue to consider is the actual times of day and days of the week in which the research is conducted. For some stores, foot-traffic is highest on the weekends. For others, especially home improvement and hardware stores, foot-traffic can be high in the early weekday mornings. Just like telephone survey research, it is important to conduct in-store intercept research at various times of day and days of the week in order to ensure that no particular segment of shoppers is being systematically excluded.⁴

products being displayed, as well as the percent or actual amount of shelf space devoted to lighting products. This study does not attempt to collect this more comprehensive information because there is a parallel research effort already underway in California to provide this type of data.

⁴ In addition, this study includes an extra step when the researcher encounters contractors who are purchasing IOU discounted CFLs to install in their clients' businesses or homes. In these cases, the researcher attempts to collect contact information (e.g., business card) so that researchers can contact the contractor to conduct a brief follow-up telephone survey. The purpose of this survey is more over-arching and not necessarily tied to the contractor's specific CFL purchases that day. The follow-up survey is designed to understand the volume of contractor purchases of IOU-discounted CFLs and the influence of the discount on the volume purchased in a given time period (i.e., annually), as well as contractor estimates as to where (business versus residential) the bulbs are ultimately being installed.

Surveys should also be fairly well-timed to coincide with periods during which the IOU's discounted product is being promoted and sold with sufficient volume. We also attempted to place researchers in stores where the discounted CFLs were not being sold (or only sold in very low volume). In the early study phases, this was provided an important opportunity to gain insight into how well the survey questions were working. Additionally, the absence of discounted CFLs in stores reduces the overall likelihood that researchers will meet their minimum targets for revealed preference surveys. Non-discounted CFLs are still fairly expensive relative to the discounted CFLs and not sold as frequently in large multi-packs. As such, observed purchase patterns are very different when the product is discounted, making it very important to ensure that the stores are selling the product prior to placing researchers in the store.

Language

Any research conducted in California must be able to include respondents for whom English is not their first or native language. This study has capabilities in both Spanish and Chinese (Mandarin and Cantonese). Not only is there potential bias in the data collected if surveys are not conducted in consumers' preferred language, but it makes recruitment far more difficult, especially given the other challenges associated with low foot-traffic and in-store "interference" (discussed below).

Eligible Product Types

As mentioned above, the modified lighting shelf survey included in the study design is limited to comparable medium screw-base incandescent lamps and CFLs. It is important to set these limits throughout the study in order to focus the researcher (as well as the data collection) on a specific and narrow set of factors that could be influencing consumer purchasing decisions. As such, in this study the researcher is required to conduct revealed preference surveys only with purchasers of medium screw-base CFLs or equivalent incandescent lamps. Stated preference surveys are administered after consumers make a hypothetical purchase decision between a screw-base CFL and a comparable incandescent lamp.

Introducing other types of lighting product purchases into the research would present many challenges, not least of which would have been the need to expand the survey questions to cover the technical applicability considerations of these products. Products such as linear fluorescent tubes, candelabra-based CFLs, halogens, LEDs, and lighting fixtures are excluded from the research design because they have very different applicability considerations than the more universal screw-base light bulb. Specialty CFLs, such as reflectors, dimmable and three-way CFLs, are not explicitly excluded but are also not very likely to be present in many of the retail stores in which researchers are placed (particularly discount and grocery stores). Therefore, data collected on these types of specialty lamp purchases would be fairly unreliable and have limited value in this study given the likely very low incidence of researchers encountering purchasers of these products in any given store, as well as the relatively low volume of actual purchases of these types of products in the current retail market.⁵

⁵ As a follow-up to this research, focus groups are planned to explore consumer decision-making factors that are influencing the next generation of efficient lighting products. In this more controlled environment, researchers can conduct a more thoughtful and probing exploration of consumer reactions these emerging products.

Sample Design

A critical consideration in the implementation of the in-store intercept research involves the sample design. Obviously, it was important to design a sample that could adequately represent the broad ranges of retail stores that are actually participating in the upstream lighting program and selling discounted CFLs to consumers in the IOU's service territory. It is also equally important to consider the geographic distribution of these participating stores across the IOU's service territory. Consumer purchase decisions related to lighting products are influenced not only by the sales conditions they face once they enter a particular store, but also by the options they have when considering which store to go to when they need to make lighting purchases. Some consumers have many options because they live in relatively urban environments, but certain mass merchandisers and big box retailers may not be as easily accessible to the urban consumer. Consumers who live in suburbs may have the most diverse range of options, whereas rural consumers must often consider purchase location more carefully since their options are the most limited.

In this study, therefore, the sample design needed to account for these very different urban/suburban/rural retail setting realities and it needed to adequately represent more than 42 participating retail chains and dozens of independent stores (representing more than a thousand unique storefronts⁶) throughout the utility's 70,000 square mile service territory (PG&E, n.d.). To satisfy these requirements, a stratified sample design was employed, specifying three geographic regions and six retail channels. The three distinct geographic regions were selected to control study costs and to represent three distinct demographic and socioeconomic segments within PG&E's service territory. The three geographic regions consist of: (1) San Francisco Bay Area, (2) Central Coast (Santa Cruz area), and (3) Central Valley (Fresno area). The six retail channels were selected because they represent the types of retail stores that have distributed the greatest volume of discounted product during 2006-2007.⁷ These six channels include:

- Discount stores, such as 99 Cents Only and Dollar Tree;
- Drug stores, such as Longs Drugs, Rite Aid, and Walgreen's;
- Grocery stores, such as Safeway, Grocery Outlet, and 99 Ranch Market;
- Large home improvement stores, such as Home Depot;
- Mass merchandise stores, such as Sam's Club and Wal-Mart; and
- Small hardware stores, such as Ace, Cole Hardware, and True Value.

A target of 10 completed revealed preference surveys and 10 completed stated preference surveys was set for each retail channel within each region. The sample design ensures that researchers will visit at least two different, individual stores per store type/region combination for a minimum of 36 individual stores. Because foot-traffic is lower in discount, drug, grocery, and small hardware stores than in large home improvement stores and mass merchandise stores,

⁶ Based on November 2007 program tracking data from PG&E; see footnote 7.

⁷ The researchers worked with PG&E to ensure that these retail channels also represent the types of stores through which they plan to distribute discounted CFLs in 2008. With a few exceptions at the individual storefront level, these same six broad retail channels will represent the vast majority of CFLs distributed through PG&E's program in 2008.

the former may require a greater number of store visits per region than the latter; in other words, it is likely that data will be obtained from more than 36 stores at the study's completion.

Implementation Challenges

Researchers interested in replicating this study should be aware of the many additional implementation challenges posed by this type of in-store intercept research. These challenges can be broadly classified into two groups: those encountered before researchers are actually placed in stores, and those that arise in the stores after the researchers have been deployed. Additional analytic challenges are likely to be identified after the data has been collected, but since this study is currently being fielded and has yet to enter the analysis phase, the discussion below centers only on the specific implementation challenges we have experienced to date.

Before the Research Begins

Obtaining permission for entry into stores. The first challenge posed by the in-store intercept research is obtaining permission to enter the stores. This challenge cannot be underestimated because the overall success of the study is very much contingent upon obtaining permission from the full range of participating retailers. If one major retail chain refuses or otherwise introduces conditions that cannot be accommodated within the study design, the overall applicability and ultimate reliability of the study results can be called into question.

In some cases, a retail chain may have an internal policy forbidding in-store research; in other cases, a retail chain may insist on using their own staff to carry out the intercept research. While there is little one can do to overcome the first barrier if there truly is a corporate policy in effect, often times a call from the program manager and/or the manufacturer supplying the discounted product to the stores can help open up the lines of communication such that stores that might have initially refused to support the study eventually agree to participate.

In the cases where a chain insists on using its own personnel to conduct the surveys, one has to consider the potential bias and other logistical challenges that this approach might introduce. Staff who work for the chain (or for a research firm hired by the chain) will not approach the research with the same degree of independence as an independent research firm not hired by the retail chain. This raises some concerns about at least the perception of bias and also suggests that results from other stores may not be completely comparable to this chain. Additionally, there are logistical challenges that will inevitably arise if a retail chain insists on using its own staff: additional and potentially different training requirements, less control over the survey implementation process, more emphasis needed on quality control and verification, and so on. These concerns are heightened even further if the chain is a major player in the retail market.

Further, obtaining permission is a fairly sensitive and time consuming process that begins with identifying the appropriate individual or individuals with whom to have the initial discussions about the study sponsor and scope. For this study, the PG&E program manager sent emails to their key contacts at each of the participating manufacturers and large retail chains. As mentioned above, manufacturers were often crucial to opening the appropriate doors at the retail level. Researchers followed-up with in-person meetings, telephone calls and emails to the corporate-level contact at each individual retail chain. For the largest chains, this process varied from roughly two weeks to two months. For smaller chains and independent stores, store-level

contacts (such as the store owner or manager) were responsible for granting permission for their own storefronts. As such, the process of obtaining permission was much more straight-forward for smaller chains and independent stores, ranging from a single telephone call or email to about a week or so of back-and-forth.

Another challenge faced in this study is that retailers often grant different forms of permission. For example, some indicated that researchers could “show up at any time” without advance notice to the individual store manager or regional representative. In many of these cases, the corporate contact sent emails or letters to the individual store managers alerting them to the purpose of the study and asking them to allow researchers to enter the stores at any time to conduct the research. Initially, this was viewed as a significant advantage as it provided the greatest scheduling flexibility (as one such store could easily be substituted for another if needed). However, this approach often resulted in a number of “turn-aways” – situations in which a researcher would arrive at a store to find that no one was aware of the study and the researcher was not permitted to conduct the surveys. Other retail chains wanted to know the specific day and time researchers would be placed in their store, which generally provided greater assurance that the researcher would be permitted to conduct the surveys, but also required more upfront coordination.

Scheduling. Because the study focused on CFLs that were discounted by PG&E’s upstream lighting program, it was important to time the research to coincide with the promotion. Therefore, as discussed above, it was important to know in advance which stores would be selling discounted product during what timeframes so as to ensure researchers were placed in stores when the discounted CFLs were being sold in sufficient volume. This proved challenging, as a number of manufacturers supply the various chains involved in the promotion, and product shipment schedules varied by manufacturer and chain. Although PG&E program staff provided detailed information on the timing of shipments from manufacturers to retailers, it was not always a good predictor of when the discounted product would be physically available on the retail sales floor. Not being able to reliably predict product availability presented another challenge in planning and coordinating field activities.

Additional scheduling challenges involved having to deal with last-minute changes in planned shipments and/or cancellations. In a few cases, scheduled store visits had to be canceled or postponed because a shipment of promotional CFLs was delayed. In another case, a store manager cancelled the store visit so as not to interfere with other promotions that were taking place during the scheduled weekend. While these types of logistical challenges are not necessarily unique to this study, last minute changes or cancellations can prove difficult if not impossible to handle once the researchers have been deployed. This is primarily because of the need to obtain permission in advance and to schedule store visits on specific days and times. In addition, because of the need to select stores within reasonable proximity to one another to control study costs, finding replacement stores to fit the scheduled locations was rarely a straightforward process.

Similarly, as described above, researchers were also occasionally turned away when they arrived at a particular store to conduct the surveys. In many of these cases, the local store staff had not received the advance notice of the study as promised by the corporate-level contacts. In other cases, the store manager had received notice but was simply uncomfortable with allowing a non-employee of the store out on the sales floor. In some cases, back-up stores were available for

these situations (e.g., a store for which permission had been granted to visit the store at any time), but in other cases, the researcher had no backup store available.

Sample management. Because of variations in when permission was granted to enter a specific chain and when each chain received its allocation of promotional CFLs, store “availability” for visits was contingent not only on permission to enter the stores but also on product availability. Because of these variations, the number of individual storefronts available to researchers changed over time, resulting in a constantly-evolving sample design. Researchers thus needed to reassess the sampling strategy frequently and make adjustments based on store recruitment efforts and product availability.

Training. Before entering the stores, researchers were trained on how to administer the revealed preference, stated preference, and shelf surveys and also on how to interact with store staff and consumers. Researchers also participated in at least one day of in-store training, led by the study manager and other experienced team members. Because conditions in the stores are always difficult to predict, it was necessary to conduct ongoing training and “debriefings” throughout the course of the study. Researchers gathered together for these debriefing meetings within one week of the field activities and discussed their experiences and sought advice from the study team regarding how to deal with different situations that arose in the field.

In-store Challenges

Finding the appropriate contact. As described above, the study faced challenges related to identifying the appropriate corporate-level contact within a retail chain to grant permission for the study. Once researchers were placed in stores, a similar challenge presented itself but on somewhat of a different level. Researchers were often instructed to make contact with the store manager, who was identified by the corporate-level contact as the individual who would grant local access to conduct the study. However, these individuals were not always available when the researchers arrived at the stores, so often obtaining permission at the local store level was often a separate, delicate and time-consuming process.

Positioning in the stores. Once permission was granted at the local level to enter the store and administer the surveys, researchers were then faced with the challenge of determining the best position in which to conduct the research in the store. Ideally, researchers were to stand in the aisle in which discounted CFLs were positioned, or at least close enough to be able to observe and recruit purchasers. However, researchers quickly reported variations in how lighting products are merchandised from store to store – in many stores, all of the light bulbs are positioned in the same aisle, but in other stores (particularly larger home improvement stores), light bulbs may be displayed in several different locations throughout the store. In one home improvement store, the researcher found promotional CFLs in seven different locations including aisles, end-caps, and stand-alone floor displays. In such situations, researchers must determine the best position in which to maximize their view of the available light bulbs and shoppers. Not only do multiple locations make it difficult to recruit purchasers to conduct the survey, but these variations present challenges in interpreting the actual range of choices consumers considered before making (or not making) a particular purchase.

Limited time to conduct intercept. As mentioned above, the in-store intercept approach limits the amount of time a researcher can engage a respondent in the survey process. In this study, most surveys were completed within two to four minutes. During telephone surveys, respondents

can typically “multi-task” and, as a result, may be more willing to complete a lengthier survey. Face-to-face interviews, however, require the respondent’s full attention – participants must stop what they are doing to take part in the study. To keep the survey length within acceptable limits, a carefully planned, focused, and tightly scripted survey instrument is essential.

Managing “help” from store staff. At the store level, researchers typically encountered very helpful and friendly store staff. Such staff helped facilitate the research process by showing the researcher all of the different locations in which light bulbs were displayed in the store and providing advice as to the best place to stand to maximize the view of these products. In some cases, however, store staff were a little *too* helpful – for example, “helping” the researcher get a high number of completed surveys by informing shoppers that they could obtain gift cards if they purchased light bulbs. Training researchers on how to gently refuse such “assistance” without alienating the store staff helped to avoid these situations.

Offering incentives. As mentioned above, the study was designed to offer consumers a \$5 or \$10 gift card or gift certificate to the store in which the survey took place as an enticement to and reward for participating in the research. The gift cards also proved to be an added enticement to retailers who were initially somewhat hesitant in agreeing to support the research. However, some stores (such as local hardware stores) do not offer gift cards (or gift certificates) for their specific stores. In these cases, researchers needed to purchase gift cards from other local stores (e.g., coffee shops), which were ultimately less effective and met with mixed reviews from consumers. In other cases, store staff had problems “activating” the gift cards, which resulted in time-consuming delays in initiating research in a particular store.

Even if stores had their own gift cards available and store staff were able to activate them successfully, it was difficult to predict the precise number of gift cards that would be needed in a particular store. Because of substantial variations in the volume of shoppers from store to store and a concern about over-purchasing unneeded gift cards, researchers often under-estimated the number of cards they needed and had to go back to the counter and purchase additional cards. In some cases, the researchers over-estimated and purchased more gift cards than they needed. In many cases, the stores offered refunds for unused gift cards. In those cases where stores would not provide refunds, the study was left to absorb the cost of these extra gift cards unless researchers were planning to visit the same store in another region.

Introducing bias. Because the research takes place at the time of purchase, the in-store intercept approach raises some concerns relating to the possible introduction of bias in consumer purchase decisions (e.g., researchers influencing consumers’ decisions). Proper and ongoing training of researchers is critical to minimizing this potential bias. For example, researchers must be trained to wait until *after* customers make their purchasing decisions to approach them to take part in the survey. Waiting for the consumer to make the actual purchase (i.e., approaching them at the front of the store after they have shopped, or near the cash register) is the most effective means through which to reduce this bias. However, this positioning diminishes the ability of customers to view the other product choices when describing their decision-making process.

Researchers must be also trained to understand that they cannot offer their own opinions regarding a particular lighting product or provide suggestions regarding particular products to purchase. While it is tempting to engage the consumer in this type of discussion, it is important that the researcher remain neutral throughout the process to avoid introducing any bias.

In addition, it is important to understand that even when the researcher follows these protocols and remains as neutral as possible, bias could still be introduced as a result of the attention the researcher is attracting – standing in the lighting aisle, offering gift cards, asking questions about CFLs, and so on. In one case, there was a line of consumers waiting to conduct the survey because they wanted free gift cards. Researchers took quick action to “close down” the survey effort, but not before a few consumers had participated who clearly made a decision to purchase a CFL because they thought it was the only way to get the free gift card.

Keys to Success

The implementation considerations and challenges described above highlight the most critical “lessons learned” from conducting this research effort. Anyone interested in implementing similar in-store consumer intercept surveys should keep the following in mind:

Start planning early. Because the process of obtaining permission may require several weeks’ to months’ worth of lead-time, it is beneficial to initiate the process far in advance of when the store visits are planned. This approach will provide researchers with a full slate of retail chains from which to select when scheduling store visits and lessen the number of changes to the sample frame that occur after the study is underway.

Leverage existing relationships. The study’s overall success is contingent upon obtaining permission from retail chains participating in the promotion. One particularly successful method for obtaining permission involved leveraging relationships between the program manager and/or CFL manufacturers with corporate-level decision-makers within the retail chains. When the program manager or manufacturer was able to establish initial contact with the chain’s decision-makers and introduce them to the researchers, the researchers achieved far greater cooperation from the retailers than when attempts were made without such introductions.

Enable store-level staff to verify permission. To lessen the obstacles potentially faced by field staff when they arrive to conduct surveys at a store, researchers should attempt to obtain letters of permission from the retail chains. Researchers found that when they were able to present such a letter to store staff, the process of gaining entry into the stores was greatly simplified. Wherever possible, these letters should be signed by someone within the chain who is well-known to store managers (e.g., a regional manager). In one particular chain, researchers had the name and cellular telephone number of a corporate merchandising assistant whom the store managers could call to verify that permission for the study had been granted at the corporate level.

Be flexible. Because of the challenges associated with scheduling the surveys (e.g., knowing when the promotion was active in a particular store, dealing with CFL shipment delays, *et al.*), plans to visit specific chains or individual stores must be flexible. In some cases, it may be possible for researchers to visit a different store than the one scheduled (e.g., a store for which permission had been granted to visit the store at any time), but in other cases, the research may need to be postponed until a later date. Because some delays of this nature are unavoidable, the study schedule should reflect this reality.

In addition, field staff should be flexible in their interactions with retail staff in the stores, particularly with regard to their positioning in the stores. As described, the ideal position for the researcher is in the lighting aisle, but in some stores (e.g., small hardware and drug stores), the

aisles are too narrow to permit such positioning. Because researchers must not get in the way of the shoppers or the store staff, they must be flexible in terms of their positioning.

The study's incentives also required flexibility. At the study's outset, the researchers planned to offer a \$5 gift card to each shopper who completed the customer intercept survey for the store in which they were shopping. As explained above, some chains offered gift cards starting at \$10, some did not offer gift cards at all, and other chains offered gift cards that their staff could not activate (and could thus not be used as incentives). Instead of implementing a uniform incentive policy across all chains in the study, the researchers dealt with incentives on a store-by-store basis.

Limit bias. Bias may be introduced into an in-store study at several different levels, thus efforts to avoid or limit bias must be undertaken on several fronts. First of all, the survey should be conducted in multiple languages that reflect the languages spoken by the target population to enable individuals with diverse backgrounds to participate.

Bias can also be controlled through the sample design process. The sample design should also include multiple regions and store types to represent shoppers with different socio-demographics and access to particular retail channels. It should also incorporate multiple retail channels and several chains within any given channel, again to represent the broad range of shoppers in the target population. Additionally, store visits should be planned on different days of the week at different times of the day to capture different categories of shoppers (e.g., those who work during the day versus those who work during the evening). Incorporating in day-of-week and time-of-day variations into the sample design may also enable researchers to intercept shoppers purchasing light bulbs for residential and nonresidential applications as well as contractors shopping for light bulbs to install in their customers' homes or businesses.

Finally, researchers should be trained on the importance of avoiding any influence on consumers' purchasing decisions by waiting until after customers make their purchasing decisions to approach them to take part in the survey. Despite the possible temptation to assist customers, researchers must remain neutral.

Conduct ongoing field staff training. Ongoing training with field staff is critical to ensure accurate data collection and reporting. Although training can (and should) take place before the study begins, field staff will frequently encounter situations that could not have been predicted. Discussions between field staff and other members of the research team are extremely beneficial for both groups in understanding how to manage unforeseen circumstances (such as the unwanted "assistance" from store staff described above). Ongoing training also enables researchers to continually underscore the importance of sound data collection practices.

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