

There Is No Such Thing as a Free Lunch: Insights on Low Income Customers' Willingness to Participate in a "No Cost" Direct Install Program

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ABSTRACT

What does the public school's "free lunch" program have to do with low income energy efficiency programs intended to serve low income customers? As it turns out, more than you might think. This paper discusses recent research that challenged a long-held belief that upon being offered the opportunity to participate in a "free" program nearly everyone will participate. In addition, the paper illustrates why no financial cost is not synonymous with no cost for low income customers being offered direct install energy efficiency measures.

Understanding how many remaining eligible customers are willing to participate in California's Energy Savings Assistance (ESA) program is a critical piece of information for program and policy planning for both the utilities and the California Public Utilities Commission. This question was examined as part of a recently completed Low Income Needs Assessment Study conducted for the ESA and the California Alternate Rates for Energy (CARE)¹ programs offered through California's investor-owned utilities. The study utilized a variety of methods and data sources to understand who participates in ESA and enrolls in CARE and reasons eligible customers do not participate. The paper provides both quantitative and qualitative findings to offer insights into reasons for customers' willingness and/or barriers to participation in the ESA program. It further highlights several best practices in research design that facilitate a more valid and reliable estimate of how willing customers are to participate in the program. The implications of these findings are a critical piece in an active regulatory proceeding and informing policy decisions and program planning in California.

Introduction

Is it true that there is no such thing as a free lunch? What are the conditions associated with getting something for "free"? Will nearly everyone offered a "free" direct install energy efficiency program take advantage of the opportunity? Why? Or why not? As it turns out, this is a critical question to policy makers, program designers, and program implementers, not to mention the low income customers and all ratepayers and taxpayers who support these programs.

With oversight from the California Public Utilities Commission (CPUC), the state of California offers the Energy Savings Assistance (ESA) program for eligible low income customers through the state's four investor-owned utilities (IOUs): Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SCG). As is the case with other state or federally sponsored direct install programs offered to low income households, the program provides and installs various no-cost weatherization measures and services to eligible customers. In California, customers may receive such measures as attic insulation, energy efficient refrigerators, lighting, evaporative coolers, air conditioners,

¹ The CARE program provides a monthly discount on energy bills for income-qualified households and housing facilities.

power strips, furnaces, weather stripping, caulking, low-flow showerheads, water heater blankets, and door and building envelope repairs, as well as energy education. Specific measures available vary geographically, however.

Ultimately, these offerings are expected to help customers reduce their energy consumption and energy bills while increasing their health, comfort, and safety in the home. In addition, the program is expected to contribute towards the state's efforts to meet its greenhouse gas goals by helping customers who may not otherwise be able to afford to upgrade their homes and appliances. Although we often expect most people to take advantage of "free programs", the recent Low Income Needs Assessment study finds that only about one-half of the remaining eligible customers are interested in participating in the program. To that end, whether we are talking about eligible children rejecting the federal school meal programs or unknowing consumers taking advantage of legitimate free downloads in exchange for registration information, "free" is not necessarily synonymous with no cost. (Confessore 2014; Schwartz, 2003). The forthcoming discussion describes insights from both willing and unwilling eligible customers as to reasons and "costs" associated with program participation.

Study Overview and Objectives

A recently completed Low Income Needs Assessment (Evergreen Economics 2013) was conducted for the joint IOUs in collaboration with the Energy Division of the California Public Utilities Commission. The study encompassed numerous research objectives to inform our understanding of California's Energy Savings Assistance Program. This paper reports largely on study objectives concerning customers' willingness (and barriers) to participate in the program. The research capitalized on multiple sources of data to better understand the question of willingness and underscores the need to consider the complexity of this issue, not only in terms of delivering savings or increasing awareness of the programs and improving our marketing efforts, but understanding what "else" contributes to eligible customers' decision making when it comes to participating in the Energy Savings Assistance Program. Understanding customer responses regarding program participation given the anticipated or actual value, costs (including non-monetary), and tradeoffs for the potential participant offers additional context and insight on why people do and do not participate in the programs. This critical information informs program planning, targeting activities, and customer treatment goals for the utilities, as well as for policy makers and stakeholders.

Study Methods and Approach

To provide insight into these key research objectives, the study team used data and information sources described below. Ultimately the use of multiple methods allowed for triangulation of the data to inform the research questions. In particular, self-reported telephone survey data, conjoint analysis results, and in-home interviews were used to estimate eligible customers' willingness to participate. In addition, we obtained insights from program implementation staff and had conversations with contractors who interact with customers in the field. All data were collected and analyzed between May and September 2013.

- **Literature and Program Material Review** – Relevant reports and program information were reviewed to understand program expectations and requirements. In addition, program information regarding other low-income energy efficiency programs from different jurisdictions of the country were reviewed to identify ways other programs may reduce barriers and/or increase participation and/or customer benefits. This information provided

important background on the program relevant to the key study objectives. In addition, it assisted in framing interpretations of the data that were ultimately collected.

- **In-Depth Interviews with Program Implementation Staff and Contractors** – Interviews with program implementation staff from each IOU were conducted in conjunction with interviews with a small number of contractors who interact with customers in the field. These discussions included questions about what they understood and had learned from customers (or contractors attempting to enroll or install measures for customers) and helped frame some of the issues that have been reported anecdotally as to customer’s willingness to participate and reasons customers may or may not participate.
- **Secondary Data Analyses** – We gathered and analyzed secondary data from the U.S. Census and American Community Survey, IOU ESA and CARE program tracking data, IOU customer billing data, Athens Research estimates of CARE and ESA eligibility, geographic data for California IOU and climate zone boundaries, California Residential Appliance Saturation Survey data (KEMA, Inc. 2009), and California Lighting and Appliance Saturation Survey data (DNV GL 2012). These data were also used in the modeling noted below.
- **Customer Telephone Survey** – We surveyed 1,028 customers enrolled in CARE, stratifying CARE enrollees by their ESA participation status² and whether they were aware of the ESA program. The phone survey included a series of questions that were based, in part, on what was asked in a prior needs assessment (KEMA, Inc. 2007). This was done in order to maintain some continuity and assess changes in the market or customer opinions and attitudes. At the same time, the specific information and question used to ascertain “willingness” in the 2013 needs assessment provided respondents with more comprehensive details about the program and what program participation entails, including the various steps a customer would need to take and requirements they would have to meet in order to receive program services. The description reflected the relevant requirements that differ for homeowners and renters.³
- **ESA Modeling** – We developed statistical models to understand drivers of and barriers to enrollment in CARE and participation in ESA. We developed two models to take advantage of the available data—the first using population data (affording a large number of observations, but limited to available IOU and Census data) and the second based on the telephone survey data sample (providing self-reported motivations and behaviors for a smaller number of observations). Using these models allowed the team to provide a more dynamic representation of how these data interacted to understand the issues.
- **Conjoint Analysis** – A conjoint survey with a subset of low-income telephone survey respondents who had not been treated by the program was conducted to inform drivers of, and barriers to, ESA participation, as well as to determine the relative importance of several factors that affect willingness to participate. For the conjoint exercise, telephone survey respondents were recruited to complete a brief web-based survey which included the general description of the ESA program, followed by ranking eight possible ESA program options

² E.g., The home was treated by ESA since 2010, their home was treated by ESA between 2002-2009, or their home has not been treated by ESA

³ “If you sign up for Energy Savings Assistance, a contractor will visit your home and look at your income [owners only: and home ownership documents] and fill out an application with you. [Renters only: The contractor will also need to have papers signed by your landlord approving the work.] A different contractor will come on another day and look at your home to see what home improvements you may qualify for, such as energy efficient light bulbs, weather stripping around doors and windows and sometimes new appliances or equipment to replace old or broken ones. These home improvements would be installed by another contractor during another visit or two to your home.”

that had been defined as a combination of attributes including energy savings, number of home visits, income verification requirements, etc. The exercise required respondents to make choices about attributes related to participation based on a consistent metric—in this case, dollar savings. This approach essentially forced respondents to choose the one or two most important factors that would influence their decision to participate in the program.

- **In-Home Visits** – The Energy Center of Wisconsin (ECW) conducted 88 in-home interviews and site visits with low income customers who have not been treated by the program.⁴ These visits included a nearly hour-long discussion with the customers as well as an interactive walk-through to collect observational and physical information about the home. The visits were clustered geographically. English and Spanish-speaking customers we talked to had also completed a telephone survey. The primary purpose of these interviews and site visits was to better understand ESA non-participants who are likely income-eligible to provide insights about the ways they can best be reached and served by the ESA and CARE programs and their willingness to participate in the program.

Results and Findings

A. Phone Survey

The core quantitative findings were ascertained from the phone survey, providing the basis for the initial estimate of how many eligible, non-participating customers are interested in “the free lunch”. As noted above, the phone survey included a series of questions that were based, in part, on what was asked in a prior needs assessment (KEMA 2007) and described comprehensive details about the steps that program participation would entail.

As shown in Figure 1 below, after hearing a description of the program, just over a third said they would be very willing and another third would be somewhat willing to participate (for a total of 72% “willing”), and the remainder are identified as “not willing”.⁵

⁴ Customers were recruited from the CARE customer participation records. Note that to be enrolled in CARE, customers must self-certify their income. A sample of enrolled customers are required to verify their income. To participate in ESA, most customers must show documentation to prove their income. Thus, there may be some households in our sample that may not actually qualify for ESA due to lack of documentation or their income is too high. We relied on self-reported income and number of household members to confirm ESA eligibility from the phone survey for screening in-home visit participants.

⁵ The 2007 Low Income Needs Assessment estimated 95 percent of ESA (referred to as LIEE at that time) non-participants were very or somewhat willing to participate in ESA, but they did not include a detailed description of the program. The prior estimate was an upper bound estimate. Many more households have participated since the time of that study, leaving a harder to reach non-participant pool that may be less willing than the non-participant population in 2004, when the prior research was conducted.

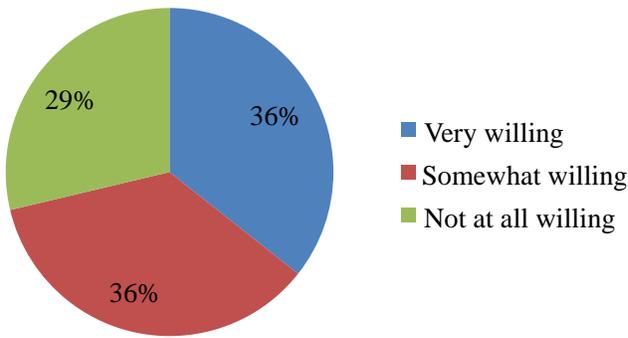


Figure 1. Non-Participant’s Willingness to Participate in the Energy Savings Assistance Program (n=400)

To establish a viable estimate of how many eligible non-participating customers would be willing participants, we also considered sample bias when interpreting this result. Given that a certain fraction of “unwilling” customers will not respond to a solicitation for a phone survey (estimated at about one-half for this survey based on the refusal rate), we estimate our survey sample represents roughly half the ESA non-participant population that lacks major outreach barriers (i.e., is willing and able to respond to a telephone survey sponsored by their IOU related to energy issues).⁶ It is plausible that the other half of the population that is not represented by our data reflects a much lower willingness to participate, and we lack the detailed data (e.g., follow up questions) as to their reasons for not being interested in participating in the ESA program.

We examined willingness to participate based on the respondent’s willingness to be in our recruitment pool for the in-home visit, which was recruited from the ESA non-participant respondents. This allowed us to better understand potential non-response bias that may contribute to our understanding of how many customers will not participate in the program if offered the opportunity. We found these results to be strongly correlated, as 34 percent that declined to be in the in-home pool are “very” or “somewhat willing” to participate in ESA, versus 87 percent of those who joined our recruitment pool.

If we assumed that the ESA non-participants that we could not reach by telephone had the similar willingness to participate as those respondents who declined to join our in-home pool, the percent who are willing to participate (summing the “very” and “somewhat”) drops from 72 percent to 52 percent. We do not really know whether the non-respondents are the same as those who declined to join the in-home pool, but lacking better data, this adjusted willingness estimate is a proxy for a population estimate.

In addition to what we learned via the customers’ overall “willingness” to participate in the program, both program participants and eligible customers who had not participated were asked what might (or did) make it difficult to participate. The results from the phone survey revealed that some of the main reasons non-participants are not interested in participating in ESA include: (a) needing their

⁶ Similar % was found in “willingness” to participate in the in home component of the study. Moreover, while not completely comparable, this issue is relevant as contractors report similar experiences to phone or other outreach efforts to solicit program participation.

landlord’s permission (particularly for multi-family residents in buildings with 11 or more units); (b) customers do not perceive a need for the program or feel their appliances are working well, or; (c) customers are distrusting or skeptical of the program. In addition, we asked both participants and non-participants what made (or would make) it *most* difficult to participate in the program. The results are shown below in Figure 2.

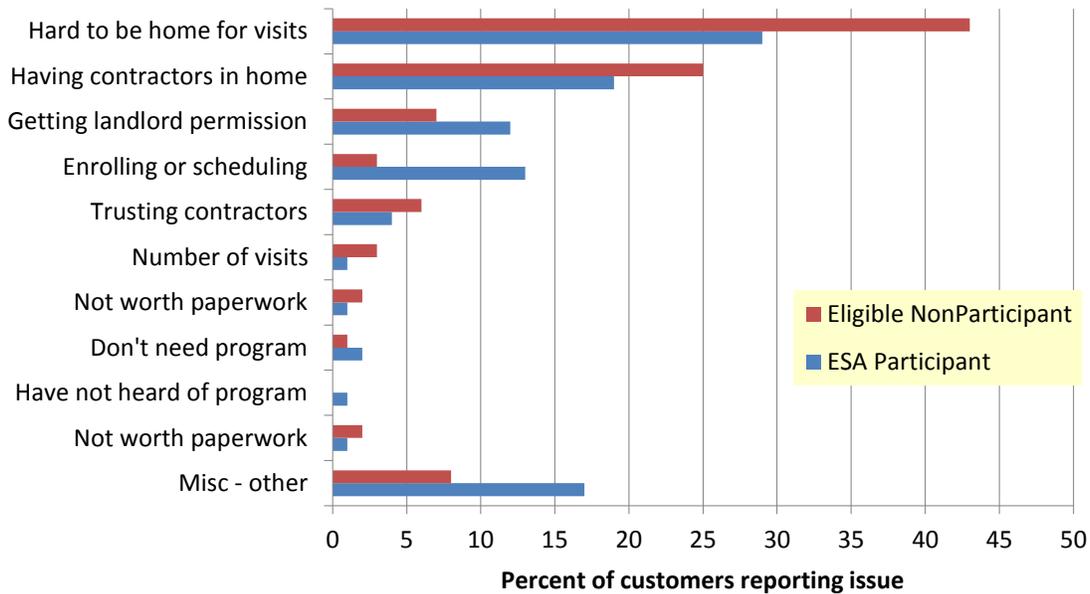


Figure 2. Most Significant Difficulty Related to Program Participation

These results suggest different types of interventions or actions may be undertaken to increase the number of willing customers. On the other hand, the results also point to some barriers that are not easily rectified by spending more money on targeting, outreach, and communications (e.g., helping people understand the benefits of participation and making it easy to participate). Some of the issues identified are logistical or personal choice and trust issues that may require significant policy changes,⁷ or may reflect barriers that are not easily overcome with a new approach or better communication, marketing, and outreach efforts.⁸ As noted below, these findings are corroborated by additional data and analyses conducted as part of this effort, as well as other research (i.e., HINER & Partners, Inc. 2011; HINER & Partners, Inc 2013; Research into Action 2011; Fowlie et al 2015).

B. Conjoint Analysis

The conjoint analysis results were also used to calculate the probability that a customer is willing to participate in the ESA program based on how the participation rate varies with changes in program characteristics. As noted above, respondents are asked to rank different options or variables related to

⁷ E.g., Three measure minimum rule requires that in order to treat a home, the IOUs must install at least three measures, but can install only one or two measures as long as the measures achieve energy savings of at least either 125 kWh/annually or 25 therms/annually.

⁸ E.g., Customers who chose to refuse the program or refuse a measure because they do not want it because they do not like how it looks, do not want “the government” in their business, and/or have other more ‘important’ priorities regarding their time than dealing with landlords or contractors on something they are not so interested in and see minimal value from.

program participation. These included the following:⁹

- Estimated monthly energy savings
- Income verification needed
- Number of home visits required
- Timing of home visits
- Duration of home visits
- Change in home comfort

Analyses of the conjoint data using a set of attributes that most closely matched the actual program revealed that a program offering \$10 of monthly bill savings,¹⁰ achieving a significant improvement in household comfort, and requiring one daytime home visit lasting one hour that includes income verification documentation should result in the enrollment of slightly more than 60 percent of current program eligible non-participants. The results are consistent with the willingness to participate estimate of 72 percent gathered via the telephone survey. Factoring in the non-response bias¹¹ discussed previously, a reasonable estimate for “willingness” was provided in terms of a range from 52 to 72 percent.

Consistent with the phone survey results and the in-home interviews, the conjoint analysis revealed that energy savings and increased comfort are the primary motivations that drive ESA participation. Providing income documents was *not* found to be a major barrier among this sample, which is consistent with the phone survey and ESA modeling results (though this could be a barrier among the survey non-respondents.)

C. Modeling

The first stage modeling results, which reflect the full eligible population, suggest that the ESA program has been successfully reaching many segments of customers likely to have greater needs and/or barriers including: seniors, single-parents, the very poor, non-English (Spanish) speakers, and African-Americans. With the exception of PG&E, rural households are less likely to participate. Since 73 percent of the state’s rural households reside in PG&E’s service territory, PG&E invariably has had more efforts devoted to reaching these customers than the other IOUs.

CARE participants who have recertified¹² are more likely to participate, which may reflect that such customers are more likely to be truly income-eligible. Customers with higher electricity usage are less likely to participate, which might reflect regional or housing stock variables or other things we were not able to include in the model.

These analyses also revealed that certain types of customers such as those residing in single-family homes, homes located in climate zones where cooling loads are greatest, inland households,

⁹ One relevant variable “missing” from the conjoint, however recognized via the phone survey data, in-home discussions with customers, as well as program staff interviews, discussions with contractors, is the “measure not needed/wanted” response.

¹⁰ This is about twice the savings that the average participant realized based on the 2013 ESA Impact Evaluation Study (Evergreen Economics, 2013).

¹¹ The final report and interpretation of the findings considered “non response” bias to frame the results as the study could only report reasons and variations on those reasons based on the sample of respondents participating in the study. It is likely that different (or more pronounced) barriers may exist for the cadre of “unwilling” non-participants who did not respond to the survey.

¹² The IOUs employ a “recertification” process which involves targeting a sample of CARE customers who have been on the rate for a while. These customers are asked to provide (current) proof of eligibility to remain on the rate. The process assists in ascertaining if and when non-eligible customers may be illegitimately receiving the discount rate.

households with both electricity and gas service from the (same) IOU(s), and households with electric IOU service (if a SoCalGas or PG&E customer) are more likely to participate. These results may reflect both targeting by the program where the need and/or energy-savings opportunity is perceived to be greater.

The second stage ESA modeling results incorporated additional primary survey data collected for this study. While this modeling included sample data that may have been less representative (than population data used to drive the first stage modeling), the inclusion of the additional data shed light on important variables that could not be obtained via the modeling using exclusively secondary data sources. These phone survey sample modeling results are reported in conjunction with the population modeling results to try to retain the advantages of both modeling approaches and mitigate the limitations of each one.

Customers provided information on relevant barriers to participation such as not trusting a contractor, difficulty being home for appointments, and providing income documents. The results, however, suggested that once those barriers are accounted for, there are no significant differences in treatment rates (even after accounting for self-reported barriers) amongst these segments. The exception is that households that took our Spanish language survey were found to be less likely to participate than those that took the English survey.

The modeling results further revealed that “other race” households (those that were not White, Hispanic, African-American, or Asian) are more likely to participate relative to their representation as per census data. In addition, the analyses found that participation is greater if a household has been on the CARE rate longer, has been living at the residence longer, if a household member has a chronic medical condition and/or if a household has made a greater effort to conserve electricity, further suggesting the program is having an impact on improving participants’ home comfort.

Taken together, the analyses conducted as part of the modeling was consistent with other sources of data collection and analyses. In particular, the modeling revealed the following important drivers¹³ of and barriers to ESA participation:

- (Barrier) Trusting a contractor;
- (Barrier) Getting the landlord’s approval;
- (Barrier) Being home for appointments; and
- (Driver/Barrier) Needing something the program offers – if the household perceives the program offers something they need, this is a driver of participation, while this factor may be a barrier to those who do not perceive (correctly or not) that the program will provide them with something they believe they need.

D. In Home Interviews

In-home visits and more in-depth discussions with eligible non participants provided additional insights with respect to the reasons some people do not take advantage of the program’s free offerings. This component of the research found that customers report a variety of explicit and implicit reasons for not participating in the ESA program. Many of the reasons discussed have also been identified by the survey results and other data sources examined.

- **Lack of information or knowledge of the program.** One prevalent barrier among the households we encountered reflected customers’ lack of knowledge about what the program is and what it offers. Only about half of the non-participating customers we talked to were

¹³ Note: Since “saving energy” was an important driver to every household, its relative value could not be teased out via these analyses. That said, other findings presented in this study suggest that saving energy is a primary driver of participation.

aware of the program, and among those who were aware, their level of knowledge of the program and what it offered varied. For example, some referred to it as “the refrigerator program” because they knew someone who had an older refrigerator replaced with a new one, but they had little sense of what other measures and services are provided. This partial awareness is a barrier to further exploration of what the program has to offer. Similarly, others (in hotter regions of the state) were not aware the program could do anything about their cooling needs and costs. In such cases, the customers’ limited awareness of the “refrigerator program” may not be enough to generate the interest needed to learn more, leaving greater onus on more directed and persistent marketing and outreach and creating barriers to their effectiveness.

- **Too busy and/or other pressing concerns.** Over the course of the interviews, we also learned that the program, and energy efficiency in general, is not particularly high on eligible customers’ lists of priorities. We encountered a number of families dealing with more pressing challenges of everyday life including job insecurity, children, work, medical issues or bills, debt, or house maintenance, etc. These issues and demands on their time took priority over things like energy efficiency and the potential to receive free appliances, lighting, and weatherization-oriented services. That may be especially true when it is not clear what exactly the program will provide for them.
- **Renters.** The low income population includes many customers who rent single family homes or apartments. Of those we talked to, the customers living in apartments generally did not identify landlord-owned appliances as relevant to their participation in the program despite the fact that they pay the energy bills. Others encountered difficulties when seeking landlord approval (a program requirement) or felt that the savings/personal benefit is not likely to outweigh the difficulty and hassle of trying to get the landlord to participate or the risk of upsetting the landlord. For these reasons, renting customers, particularly those in apartment buildings where bills may be relatively low, may see little ‘savings’ benefit. The appliances are not theirs and transience is high; the benefit of participating in the program is considered relatively limited compared to the “cost”.
- **Reluctance to take a handout.** We encountered some households that seemed reluctant to accept a handout. While only a handful reported this issue, their perspectives seemed fairly strong and clear. One middle-aged participant, for example, talked of a general dislike of government handout programs because of the inherent waste he perceives in social programs and his appreciation for self-sufficiency. He would prefer more localized assistance in the form of neighbors helping neighbors. As a result, he was unlikely to seek information or assistance through CARE or ESA programs, but might consider the programs if actively pursued. Other customers we talked to reiterated that they would be unlikely to participate regardless of the marketing and outreach. A retired widow, for example, who was living modestly on her life savings, did not think she needed any assistance. While qualified, she appeared to be getting by fine by living a simple lifestyle and seemed perfectly comfortable. In fact, she even declined the \$100 study incentive because she did not feel she needed it.
- **Trust and concerns about home visits.** We encountered several households that agreed to in-home visits, but expressed wariness about the possibility that our visit might be a scam. Several cited news coverage about people pretending to work for utilities in explaining their caution. In most cases, we were able to address concerns and they agreed to speak with us; however, we visited several homeowners who expressed unrelenting skepticism. The idea that a household could get paid for a research visit seemed too good to be true, and it is

conceivable that a visit by a program contractor offering free appliances could come across the same way too.

- **Refusals for unknown or other reasons.** Finally, we gained some insights from recruited homes we were not able to visit. There were several cases in which we were able to successfully recruit AND schedule eligible customers to participate in the interview; however, when we arrived at the appointed time, members of the home were unavailable or refused to answer the door when we arrived. While the details regarding the reasons are not well understood, our encounters of these cases provide relevant insights into other reasons customers may not participate in the program. For example, in one case a respondent provided cryptic instructions about calling by telephone once we arrived at the home. However, the participant was never available when we called on multiple occasions; the only person we could ever reach was a child who indicated that the parent was not there and would be back later. In another case, the recruited customer was also unreachable after the initial scheduling. When the researcher arrived at the poorly maintained house with broken windows, a different member of the household firmly declined participation after appearing not to know anything about the visit. In a third instance, we arrived at a multifamily unit with a wide-open door and no response from inside to either our researcher or the security guard. Whatever caused these households to be so difficult to engage would also be hindrances to program outreach, let alone efforts to conduct multiple program visits required to conduct an assessment, install energy-saving equipment and measures, and inspect the work.

Each of the key themes that emerged as part of our in-home data collection efforts with non participants have been similarly identified and confirmed both via other methods within this study as well as via prior research with ESA participants and non-participants. Other studies (HINER & Partners, Inc. 2011; HINER & Partners, Inc. 2013; Research into Action 2011, etc) identified similar barriers, and customers offered context and details via the qualitative work conducted for those studies.

Summary and Conclusions

We all assess the non-monetary costs and tradeoffs involved in many choices we make. “Black Friday” shoppers, downloaders of free music, and children offered no-cost school lunches all face trade-offs despite the attractive financial offers for free goods and services. The hope for a free TV on the day after Thanksgiving may cost you your sleep and cause aggravation while standing in a long line. The “free” downloads come at the cost of registering on these websites which have been known to create havoc on computers with nasty malware or just the risk of spam and junk mail (Schwartz, 2003). Likewise, children may prefer to go without eating or strike bargains to obtain more appealing food rather than accept a “free” lunch that is unappetizing. (Confessore 2014).

Likewise, when it comes to “free” weatherization services, many low income customers determine that the benefits do not outweigh the costs. Some face barriers under the current program design; others are uninterested regardless of the program approach. Contrary to previous work suggesting that if we offer a “free” direct install program nearly all eligible customers (95%) will participate, this research suggests that it is more likely that closer to half (52%)¹⁴ of the remaining eligible customers are interested in participating in the ESA program. Hence, the research demonstrates that offering something at “no financial cost” is not the only driver for participating or not participating.

¹⁴ The research suggested a range between 52-72%. The lower bound was identified as potentially more accurate in order to accommodate the non-response bias as well as a certain % of customers who are initially ‘willing’ but later become ‘uninterested or unwilling’.

Moreover, as more and more customers are reached and refuse the program, the relative strength of the remaining “unwilling” customers will become greater, reducing the potential of commonly suggested intervention strategies such as more or targeted marketing.

Furthermore, the research identifies reasons people are not willing to participate or otherwise do not follow through when offered the opportunity to participate, and thereby offers insights for maximizing participation among the potentially willing households and confirms some known barriers to participation. Customers want measures that make sense for them and that will deliver savings. Given “other costs” involved in program participation, when customers are renters or do not perceive or understand the benefits of the measure, they are unlikely to participate even if the measure and service is free. Likewise, lack of knowledge of the program, inherent lack of trust associated with the program (“there is no such thing as a free lunch”), or having strangers in your home translate into non-monetary costs for many customers.

Where the barriers were already known, the research built on our understanding through the use of an extensive array of methods and approaches to collect data and examine key issues with greater breadth and depth than has been done in prior work. To this end, the work not only provided more details on nuances that were not well understood (e.g., customer issues of trust that may be more relevant to certain cultures or subgroups), but it also offered relatively more reliable and valid data on key issues (e.g., how many remaining eligible customers are willing to participate in the program).

The combination of different types of data and the consistency of the results served to increase study sponsor and stakeholders’ confidence in the results. To this end, to the extent study budgets can accommodate similar thoroughness, this work exemplified the methodological benefits of triangulation as part of the study approach. For example, the interviews with contractors and program staff provided insights and background to help inform the key issues driving some of the hypotheses that helped refine the data collection instruments. The population modeling in this context capitalized on large existing data sets (including census data and program data), while the phone surveys and analyses examined similar issues but also provided additional data inputs that were not available via existing sources. On the other hand, the in-home visits and interviews with customers provided both a greater depth of discussion on specific topics as well as observational information as to what was going on in the home that may influence program participation. The in-home visits also provided some insights into “willing” customers who never “pan out” as participants despite initial agreement to participate, leaving perhaps additional unanswered questions about the hardest-to-reach households. Moreover, while the study did not provide specific data on those who did not respond to the study (making it somewhat limited and biased to the customers we did get to participate), we attempted to accommodate the “non response” bias as part of an overall estimate of “unwilling” via an examination of the study recruiting disposition counts.

How many, and why, customers do not want to participate in this “free” direct install program remain critical pieces of information when it comes to setting policies, finding viable intervention and targeting strategies, and recommending program modifications. This work informs our understanding of practical, psychological, social, and behavioral-based barriers, some of which are not regularly embedded in our political or theoretical expectations as to why people will or will not participate in a program for which there is no financial cost associated.

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