

Memorandum

AIC Retail Products Participant Survey Results

To: Fernando Morales, AIC; Jennifer Morris, ICC
From: The Opinion Dynamics Evaluation Team
Date: January 7, 2021
Re: Participant Survey NTG and Process Findings for 2020 Retail Products Initiative

Introduction

The Ameren Illinois Company (AIC) Retail Products Initiative, implemented by CLEAResult, partners with retailers and manufacturers to sell a range of discounted energy-efficient products, including LEDs, advanced power strips, advanced thermostats, and a number of home appliances. These discounts encourage customers who are reluctant to pay full price for these energy-efficient products to forego less efficient alternatives. As part of the evaluation of the 2020 Retail Products Initiative, we conducted a survey with participants who purchased rebated clothes washers, clothes dryers, refrigerators, and freezers. As part of the survey, we collected data to estimate net-to-gross (NTG) ratios for these products and solicited customer feedback on their experience with the offering. This memo presents participant survey findings, including estimates of free-ridership (FR) and spillover (SO).

The evaluation team would like to acknowledge that it is highly likely that findings from this research were influenced by the COVID-19 pandemic. We observe that the results of this NTG research differed substantially from the results of past research, and we also understand that there were broad challenges related to product availability and in-store program implementation efforts that may have affected customer decision-making. As a result, in accordance with the Illinois Energy Efficiency Policy Manual's directive that deemed NTG ratios should be "representative of best estimates of future actual NTG Ratio values likely to occur for the upcoming program year,"¹ we chose not to recommend these values for application to the 2021 program year during the annual Illinois Stakeholder Advisory Group NTG update process.

The subsequent sections of this memo present findings from the 2020 NTG research, which reflects customer decision-making during the pandemic. Per discussions with AIC and Illinois stakeholders, the evaluation team plans to re-visit this research in 2021 and conduct additional data collection to support a future NTG update for these measures.

¹ Illinois Energy Efficiency Policy Manual Version 2.0, Section 7.2.

Key Findings

Net-to-Gross

A net-to-gross ratio (NTGR) accounts for estimates of FR and participant spillover (PSO). The results of our NTGR estimates are shown in Table 1. The evaluation team calculated FR separately for each of the three measure groups. Spillover estimates were calculated for each measure group and then aggregated across the three to achieve a more robust estimate given its low-incidence nature. The resulting NTGR estimates are 0.452 for clothes washers, 0.448 for clothes dryers, and 0.352 for refrigerators and freezers. Additional details on the methods for developing of these estimates are provided later in this memo.

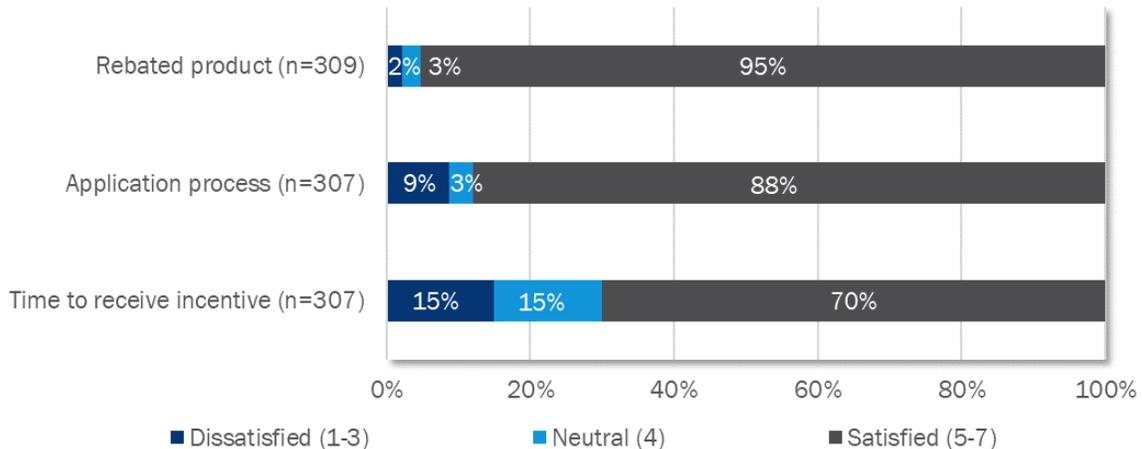
Table 1. Summary of NTGR Results

Measure	Free Ridership	Participant Spillover	NTGR
Clothes washers	0.565	0.017	0.452
Clothes dryers	0.569		0.448
Refrigerators and freezers	0.665		0.352

Customer Experience

Product satisfaction levels were generally very high.² As shown in Figure 1, 95% of respondents reported being satisfied with their purchased product (at least a 5 on a 7-point scale). Satisfaction with the application process was also generally quite high with 88% reporting they were satisfied. A somewhat lower percentage of respondents (70%) reported being satisfied with the time it took to receive their rebate, a detail that we explore further in Figure 2.

Figure 1. Customer Satisfaction with Key Initiative Elements



² Satisfaction ratings also appeared nearly identical for each sampled measure group.

Participants reported high levels of satisfaction with wait-times between applying for and receiving rebates so long as they were received within four weeks, which was the case for 61% of respondents. Among those who waited longer than four weeks, just 35% provided high satisfaction ratings, compared to 90% of those who waited two to four weeks. For those who waited less than two weeks to receive their incentive, nearly all (over 96%) expressed satisfaction with the timeline, as shown in Figure 2.

Figure 2. Satisfaction with Time to Receive Incentive by Reported Wait-time

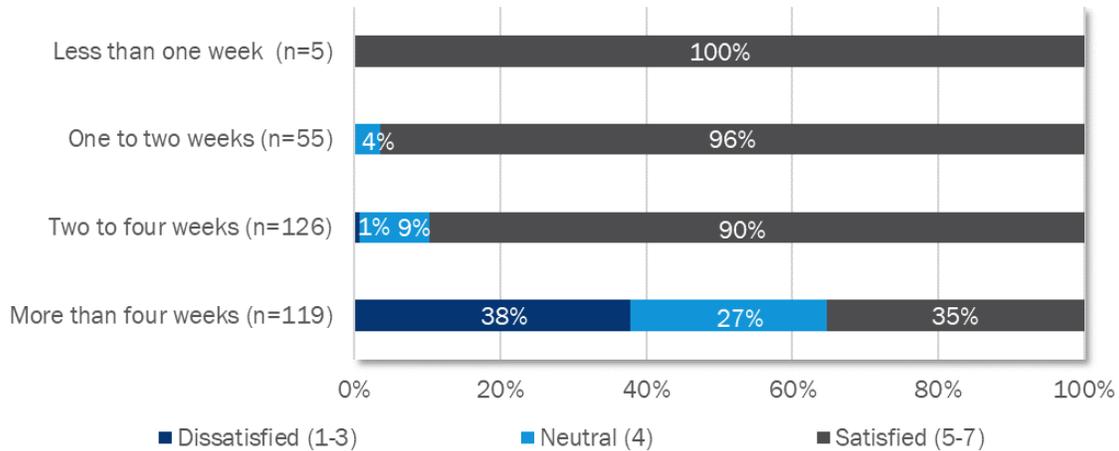
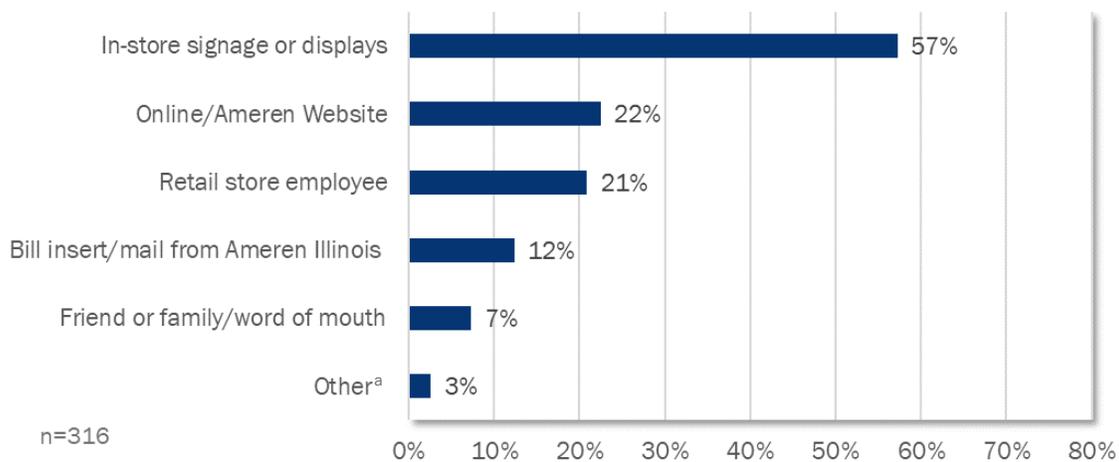


Figure 3 illustrates the sources of information about the Initiative cited by respondents. Participants reported a number of different sources of information, but “in-store signage and displays” (57%) was by far the most common. Online or specifically on the Ameren Illinois website (22%) and retail store employees (21%) were also common sources of exposure.

Figure 3. Sources of Initiative Information



^a Other sources also include social media and contractors.

Methods

Survey Sampling and Fielding

The evaluation team conducted a web-based survey with a total of 349 participants, of whom 151 purchased clothes washers, 93 purchased clothes dryers, and 105 purchased a refrigerator or freezer. Each sampled participant received an email invitation to the survey and up to two reminder emails. To minimize survey length and respondent burden, each participant was asked about a single product even if they purchased more than one rebated appliance. For customers who purchased multiple rebated products, one was selected for sampling purposes.

The levels of participation for clothes washers and clothes dryers were more than adequate to support a robust survey sample. Therefore, customers who purchased both were randomly assigned to one or the other to ensure representation of possible differences in circumstances or decision-making for those purchasing both appliances together rather than one individually. Because an insufficient number of freezers were purchased for stand-alone research, the evaluation team grouped them together with refrigerators for analysis purposes. Although refrigerators and freezers were combined for analysis, one of the two was randomly selected as the subject of survey questions for any customers that purchased both to ensure representative coverage of combined estimates. Table 2 outlines the sampling process for the survey.

Table 2. Summary of Sample Design

Metric	Clothes Washers	Clothes Dryers	Refrigerators	Freezers	Total
Total participants	938	513	430	18	1,899
Participants with valid email	938	513	393	18	1,862
Final sample	690	311	369	16	1,386
Survey completes	151	93	100	5	349

Note: Refrigerators and freezers were considered individually for sampling purposes but ultimately grouped together for analysis.

Net-to-Gross Methodology

Survey respondents were asked a series of questions relating to FR and participant spillover. Opinion Dynamics developed these questions using the NTGR algorithms outlined in the Prescriptive Rebate (With No Audit) Protocol section of Attachment A to the Illinois Technical Reference Manual for Energy Efficiency Version 8.0 (IL-TRM V8.0). The estimate of NTGR includes FR and participant spillover (see Equation 1 below).

Equation 1. NTGR Calculation

$$NTGR = 1 - \text{Free Ridership} + \text{Participant Spillover}$$

Free Ridership

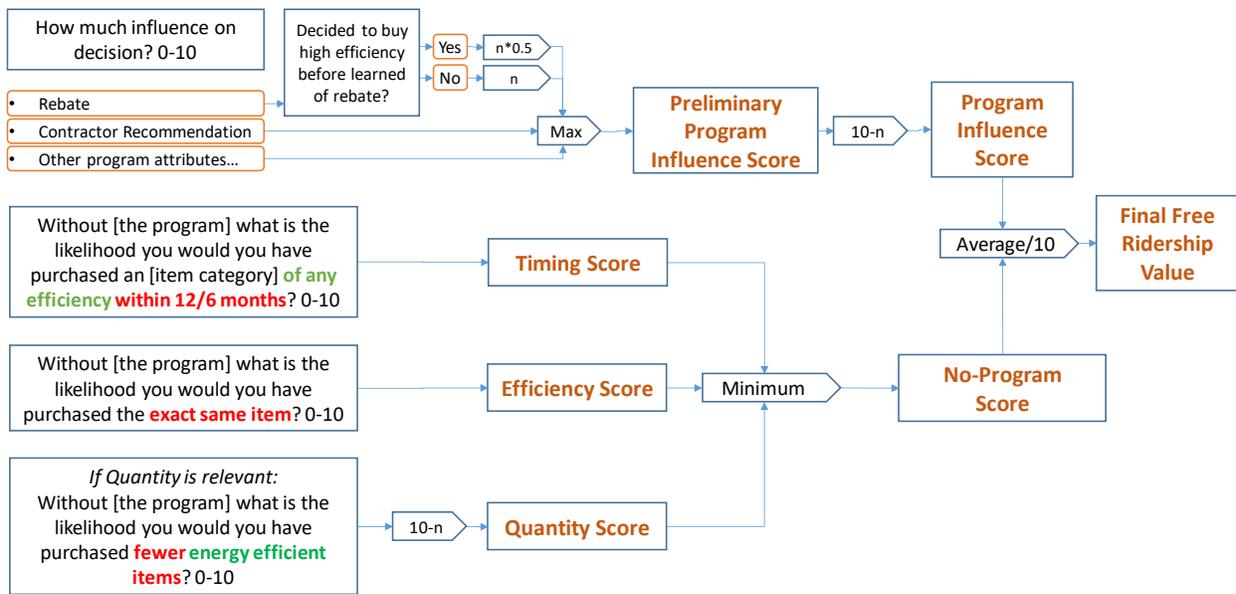
FR represents the portion of participants who would have purchased products with the same level of efficiency in the absence of program interventions. The Retail Products Initiative encourages customers to purchase efficient products by reducing the purchase price so that the price is closer to that of less efficient alternatives. The Initiative also educates customers about the benefits of energy efficient products. The final FR score accounted for both avenues of program influence.

As prescribed in the IL-TRM V8.0, Opinion Dynamics calculated FR as the average of two distinct scores – a program influence score and a no-program score.

- **Program Influence Score.** This score is based on the importance of Initiative components, including the Ameren Illinois rebate, information on the Ameren Illinois website, information from in-store materials or store employees, and information from a contractor (when appropriate). The score also accounts for the timing of program awareness relative to the decision to purchase Initiative-rebated product.
- **No-Program Score.** This score is based on the participant’s self-reported likelihood to have installed the exact same type of energy efficient equipment at the same time without the program.

Figure 4 illustrates the scoring algorithm.

Figure 4. FR Calculation Diagram



(Source: IL-TRM V8.0)

To address the possibility of conflicting responses, Opinion Dynamics included a consistency check consisting of an open-ended question asking respondents to describe in their own words the influence of the Initiative on their decision to purchase Initiative-rebated product(s). Consistent with the IL-TRM V8.0 instructions, Opinion Dynamics consultants analyzed individual responses for internal consistency, adjusting FR scores in cases where open-end responses resolved inconsistencies and omitting cases where they did not. Among the

316 respondents who answered FR-focused questions, 53 provided contradictory ratings (i.e. difference of 7 or more between program influence and no-program scores). After careful review of open-ended responses, 29 cases were left unresolved and omitted from analysis.

Spillover

Spillover results from the installation of non-rebated energy efficient products by Initiative participants that were influenced by initiative interventions. Survey respondents were asked whether they purchased and installed other energy efficient products without incentives after purchasing Initiative-rebated products. Those who did were then asked to rate the influence of the initiative on their decision to purchase non-rebated products. More specifically, participants were asked the following two survey questions to determine Initiative attribution:

- How important was your experience with the Ameren Illinois offering in your decision to make the additional energy efficiency improvements on your own? [Scale of 0 to 10, where 0 is not at all important and 10 is extremely important?] (referred to as **Measure Attribution Score 1**)
- If you had not participated in the Ameren Illinois offering, likely or unlikely is it that you would still have made the additional energy efficiency improvements on your own? [Scale of 0 to 10 scale, where 0 is extremely unlikely and 10 is extremely likely] (referred to as **Measure Attribution Score 2**)

Leveraging responses to these questions, Opinion Dynamics calculated an Attribution Score using the formula specified in the equation below. This is consistent with Method 1 for establishing spillover attribution in IL-TRM V8.0.

Equation 2. Calculation of Spillover Score

$$\text{Attribution Score} = \text{Average} (\text{Measure Attribution 1}, (10 - \text{Measure Attribution 2}))$$

Participants qualified as spillover candidates if the Attribution Score exceeded 5 (out of a possible 10). We initially identified seven respondents with potentially eligible cases of spillover, of whom three provided contradictory influence ratings (i.e. difference between measure attribution scores of 7 or more after inverting score 2). Of the three spillover candidates with contradictory responses, we were able to recontact one and confirm they did not qualify for spillover as the product in question was in fact acquired through an Ameren Illinois offering by which savings are already claimed. Participants with contradictory responses who could not be recontacted were excluded from spillover calculations.

The four participants with qualifying spillover included one clothes dryer, one refrigerator, and two clothes washer rebate recipients. Each customer reported between one and three efficient products purchased since participating in the Retail Products Initiative that did not receive an incentive but were influenced by their engagement with the offering. One of two customers who received clothes washer rebates went on to purchase efficient lighting and the other purchased an additional efficient clothes washer. The qualifying clothes dryer participant subsequently purchased efficient lighting, and efficient refrigerator/freezer, and an efficient dishwasher. Lastly, the refrigerator participant went on to purchase an efficient dryer.

The evaluation team developed estimates of total verified gross savings attributable to qualified spillover measures (i.e. spillover savings) associated with each sampled measure group. These savings as a percentage

of total savings across the sample of valid survey respondents represent participant spillover rates for each measure group. Given the inherent need for larger samples to achieve robust estimates of low-incidence events, spillover results are aggregated across the three measure groups, weighting by the relative contribution of each to overall Initiative-wide savings. Key components of this analysis are summarized in Table 3.

Table 3. Spillover Analysis Detailed Summary

Sampled Measure	Verified Gross kWh Spillover Savings	Verified Gross kWh in Sample	Participant Spillover Rate	Initiative Total Verified Gross kWh
Clothes washers	198	11,806	1.7%	84,716
Clothes dryers	189	13,477	1.4%	82,304
Refrigerators and freezers	160	5,844	2.7%	26,453
Total	547	31,127	1.7%	193,473

Discussion

The NTGR values presented in this memo warrant some additional discussion given their differences from the findings of prior Illinois-specific research and the period from which the survey sample was drawn. NTGR findings from past research conducted for relatively similar program offerings delivered to ComEd customers identified substantially lower FR rates and higher NTGRs for all three measure categories. While there are several possible program-specific explanations for these differences (e.g. the size of incentives relative to incremental costs, exact products for which rebates are offered, etc.), the far-reaching influences of the ongoing COVID-19 pandemic are a likely driver of differences in market trends specific to 2020 that make it impossible to reliably generalize results to past or future years. We note that while we do not have primary data to support some of these market trends, such as changes in customer behaviors, others, such as disruptions in product availability, are easily verifiable effects that occurred in the market during the research period. Some specific examples are listed below:

- Changes in customer demand for appliances:
 - Increased demand for refrigerators and freezers due to food stockpiling
 - Increased demand for clothes washers and dryers due to changes in customer behavior (increased time at home, avoiding laundromats and dry cleaners, occupancy changes)
- Disruptions or changes to product availability:
 - Unforeseen increases in customer demand for appliances (see above)
 - Decreased production due to manufacturing and supply chain disruption
- Disruptions or change to program delivery, including changes to program marketing:
 - Decreased accessibility to participating retailers for program staff to conduct field visits and utilize program point-of-sale marketing materials during much of the research period

The influences of the pandemic are exceedingly difficult to predict or quantify. As such, while we believe that this research accurately reflects customer decision-making and purchase behavior during the research period, many of these trends are likely specific to 2020 and do not accurately reflect current expectations for 2021 program performance.