What is it I need to know? The Relationship Between Information Seeking and Intended Action Relating to Energy Efficiency

Eric Rambo, PA Government Services Inc., Middleton, WI
Shel Feldman, Shel Feldman Management Consulting, Middleton, WI

ABSTRACT

The program logic on which brand advertising for the Wisconsin Focus on Energy has drawn is based on a commonly suggested sequence of cognitive and behavioral events (Ajzen 1988). Program administrators and their marketing coordinator developed the hypothesis that increasing awareness of a problem (here, the need for greater energy efficiency) leads to information seeking; additional information leads to intensified intentions to act on the problem. Accordingly, the program logic indicates that awareness of Focus among customers should grow more quickly than interest in additional information about energy efficiency, and that interest in additional information should grow more quickly than intentions to engage in actions to increase energy efficiency.

In the current evaluation design, these hypothesized effects of brand advertising are being monitored separately from the effects of more targeted advertising, such as that supporting the sale of ENERGY STAR appliances. As part of a baseline and monthly tracking studies, the evaluation team has conducted more than 2,000 telephone surveys with statewide samples of residential customers selected by random-digit dialing methods.

Information collected by the evaluation team raises questions about the theorized relationship and suggests that the program theory works only under a restricted set of conditions. In particular, approximately twice as many survey respondents report they are likely to undertake energy efficiency activities as report they are likely to seek information. Among those who are likely to undertake energy efficiency measures, about one in three is likely to seek information. If only those who intend more complex efficiency measures are considered, and past information seeking is taken to account, perhaps as many as 60% will acquire new information as part of undertaking energy saving measures.

This seems to imply that, although the theory captures part of the process leading up to the desired activities, there are other factors at work in a sizeable portion of the consumer population.

Introduction

How does the marketing of energy efficiency programs bring about desired outcomes? One challenge for the Wisconsin Department of Administration (DOA), administrator of the Wisconsin Public Benefits program Focus on Energy (Focus), was to develop a theory for program marketing. The DOA had committed to a theory-based evaluation, thus imposing on itself the discipline of explicitly articulating a set of processes by which program inputs would have desired outcomes. In April and May of 2002, the marketing lead from DOA and lead personnel of the Marketing Coordinator (MC) firm, Hoffman York, as well as the marketing evaluation team, met in a series of sessions to develop an appropriate theory for the marketing effort in the first program year. Although the evaluation team did comment on the theory as it emerged it was not charged with taking a directive role but with helping to clarify ideas developed by DOA and the MC.

A significant portion of the MC's budget was to be used for umbrella marketing of the program. This was marketing intended to boost awareness and image of Focus independent of specific program

delivery efforts. The plan for umbrella marketing included radio and television advertising, as well as print advertising and a public relations effort to garner news stories, editorials, and other earned media.

In these umbrella marketing program theory meetings, it was established that the role of the MC would be to address the following critical barriers to program success.

- Consumers are not aware of the opportunities for energy efficiency in their homes. They may assume that all currently available energy-using products and services are equally energy efficient.
- Consumers do not recognize their ability to achieve the benefits of energy efficiency. Often they believe that their actions will be ineffective at the personal level, the societal level, or both.
- Consumers anticipate (and often encounter) high transaction costs in obtaining information about energy-efficiency opportunities and benefits, as well as relevant programs and activities. Many of the messages currently or recently in the marketplace are incomplete, inconsistent, or include messages that are not trustworthy or not directed at benefits of interest to the targeted consumers. Moreover, they offer no guidance or means with regard to obtaining additional information or participating in relevant programs.

The logic of the umbrella marketing effort was that these barriers could be addressed initially—at least in the first program year—by making consumers aware of the Focus program and the ENERGY STAR® program, as well as by providing pertinent information and motivation through those efforts.

The specific goals that emerged from this perspective were as follows.

1. *Increase public awareness of programs that offer information and opportunities for action to achieve energy efficiency.* The relevant programs include both Focus and ENERGY STAR.
2. *Stimulate interest in obtaining additional information about energy efficiency opportunities, benefits, and actions.* Interest in pursuing such information would be dependent on HY having created appropriate motivational conditions, such as a sense of empowerment and the likelihood of experiencing a sense of satisfaction, as well as being a citizen of and contributing to the State of Wisconsin.
3. *Encourage the willingness to participate in actions to increase energy efficiency.* In the first program year, the concentration would be on participation in at least one relevant program. In subsequent years, the emphasis was to shift to include broadening the perspective of those who have participated to include other programs, including those that are new and innovative.

Implicit in this set of goals is that the marketing campaign would present Focus in such a way that awareness of the program would simultaneously stimulate the perception of a problem and provide a source of information for addressing the problem. It is important to understand that neither the DOA not the MC made this linkage explicit in the design of the theory, suggesting the potential for a

significant flaw in the marketing effort insofar as it does not take an approach linking Focus to a problem.[1]

Working with the theory as it was set out, it is clear that a sequence is expected to exist among the three goals, i.e. consumers become aware of Focus, they become interested in obtaining information about energy efficiency, and they become willing to undertake energy efficiency activities. This sequence is central not only to the marketing theory but also to the program as a whole. The official description of Focus begins, "Focus on Energy is a public-private partnership *offering energy information* and services to residential, business, and industrial customers throughout Wisconsin" (Focus on Energy 2002, emphasis added). The information referred to is not offered as an end in itself, of course, but serves the program's goal "to encourage energy efficiency and use of renewable energy, enhance the environment, and ensure the future supply of energy for Wisconsin."

The view articulated in the Focus description and in the marketing theory draws on a commonly suggested sequence of cognitive and behavioral events. It is hypothesized that increasing awareness of a problem (here, the need for greater energy efficiency) leads to information-seeking; additional information leads to intensified intentions to act on the problem. If the sequence [*program-awareness* $\Rightarrow$ *information-seeking* $\Rightarrow$ *energy-efficiency-activity*] obtains, we should see lagged increases in measures of the three states. That is, an increase in awareness of Focus should precede an increase in intentions to seek information, which should precede an increase in intentions to take energy efficiency measures. At any point in time we should expect to see a percentage of consumers intending to seek information about energy efficiency that is at least equal to if not greater than the percentage intending to undertake relevant activities.

Method

In order to evaluate five key performance metrics that were established in the marketing theory meetings, and to provide feedback to DOA, to the MC, and to program managers, the marketing evaluation team has conducted a regular survey of Wisconsin residential energy customers (see Feldman and Rambo, 2003). The survey includes questions about media awareness and use, about energy-related information seeking, and about energy efficiency activities, both undertaken in the past and intended. It also includes questions about awareness of Focus on Energy, ENERGY STAR, and Energy Guide Labels; and for those aware of Focus and ENERGY STAR, it includes an overall image question. Additionally, the survey asks questions about the importance of key issues facing Wisconsin, including energy-related issues. Finally, the survey includes a set of demographic items for classification purposes.

In May and June of 2002, a detailed survey of Focus attitudes and awareness was administered to 600 Wisconsin heads of household, to serve as a baseline for the later tracking survey. Beginning in July 2002 and continuing through May 2003, eleven additional monthly survey waves have been conducted. These tracking surveys are conducted by phone, beginning approximately on the 15th of each month and completed within 7 to 10 days. In each wave of the survey, 150 Wisconsin heads of household who are over eighteen years of age are interviewed. On a random basis interviewers ask to speak to the male or the female head of household. The response rate for these surveys has averaged 35%

[1] Indeed, the early media campaign was not evidently designed to stimulate the perception of a problem but had a more emotionally uplifting theme centered on the notion of "empowerment."

Findings

Awareness of Focus (unaided and aided combined) show an initial increase but flattens out beginning in November and December. In contrast, the reported intentions to seek energy-efficiency information and to undertake relevant activities have gone through a mild cycle of increase and decrease, but most recently are more-or-less at the same point at which they began. These findings are presented in Figure 1.

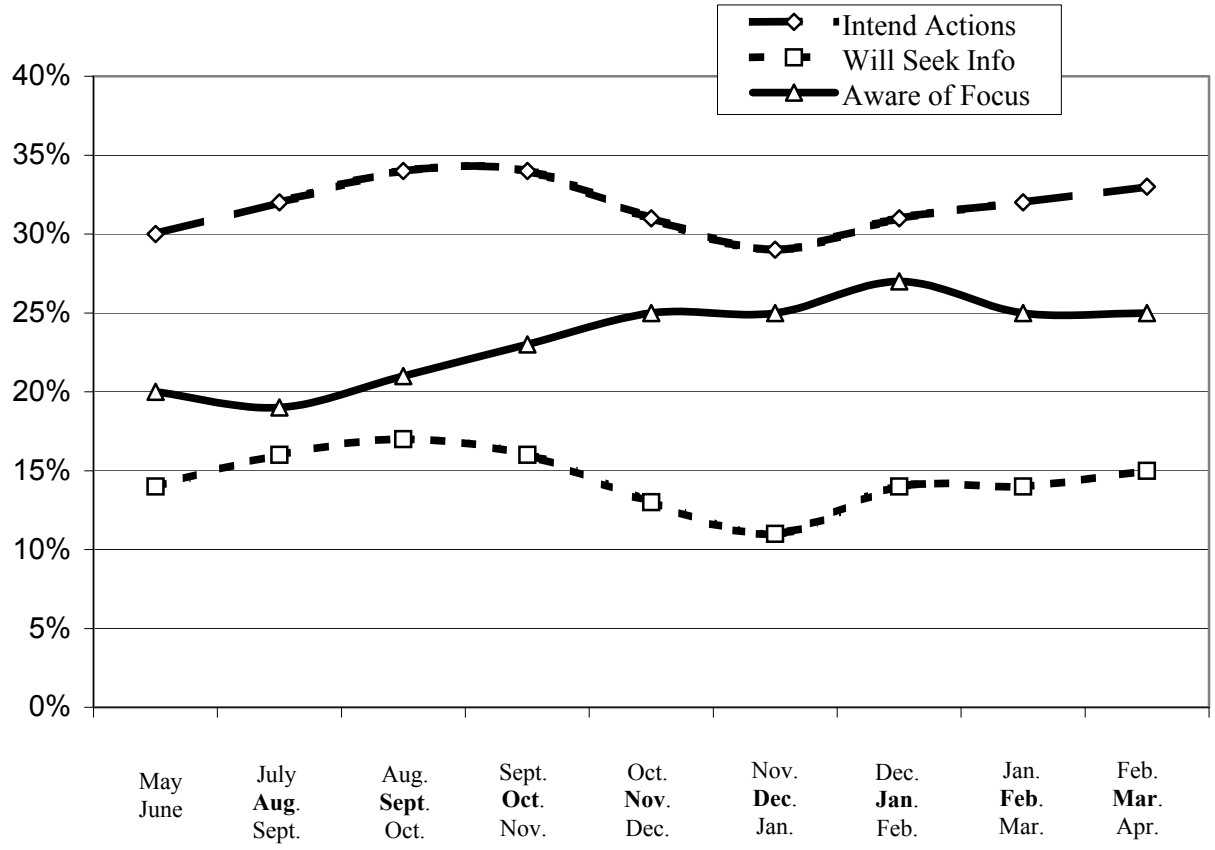

Figure 1. Percentage of respondents who report an awareness of the Focus on Energy program and who intend two kinds of actions

The first implication that might be taken from Figure 1 is that the Focus marketing effort either has not been effective, or has not had sufficient time or resources to move beyond its initial phase of increasing consumer awareness of the program. Although awareness of Focus rose initially, it stagnated at around 25%. This figure almost certainly overstates the true proportion of customers who are aware of Focus because it includes an unknown proportion of spurious recollections. This is partly indicated by the relatively large proportion of customers who reported awareness of Focus in the baseline survey of May and June, conducted before any marketing had been done. A fairly significant amount of this pre-marketing awareness may be genuine, however because a Focus pilot program had existed and been marketed in 17 Wisconsin counties prior to the statewide program, and because individual programs within the Focus effort had been in contact with customers statewide for at least 6 months before the marketing campaign got underway.

In a real sense, however, the program theory was never fully tested. In October, the statewide media campaign was scaled back because the November election was imminent. This event increased

competition for advertising space and thus its cost, and increased the number of other messages to Wisconsin residents and thus competition for attention. After that time, however, umbrella advertising was brought back to planned levels. Indeed, the umbrella marketing effort had only about one-third the intensity the Marketing Coordinator had expected when the umbrella marketing metrics were established. The media budget was about $690,000 rather than the planned $2 million; the total rating points purchased were 2,300 rather than the planned 7,200; the umbrella advertising was aired for 12 weeks rather than 36.

Umbrella marketing was not resumed primarily because of concern about a state budget shortfall, and in particular a sense at DOA that a high-profile marketing campaign would be perceived as wasteful in a time of severe constraints. Offsetting the cutback in umbrella marketing to some extent was the implementation of program-specific Focus advertising, particularly for a Change-A-Light campaign promoting CFLs. There was also an unknown amount of utility-sponsored advertising, some of which featured the Focus on Energy logo.

There is also evidence, however, that the theory would be faulty regardless of the intensity of the marketing campaign. Not only did the expected lags in change fail to occur, the expected connection between information seeking and intentions to engage in energy efficiency activity is clearly missing, because the rate of activity is consistently much higher than the rate of information seeking.

Throughout the research period, survey respondents were much less likely to report an intention to seek information than an intention to undertake energy efficiency activities. Over the entire survey period, 14% of respondents said they were "very" or "extremely" likely in next three months to seek out information about energy conservation that would be useful to their home or business.[2] During the same period roughly twice as many, or 31% of respondents, said they were "very" or "extremely" likely to do something specific to save energy or increase energy efficiency in their home over the next 12 months.[3]

Among respondents reporting they were "very" or "extremely" likely to undertake activities, 34% were also "very" or "extremely" likely to seek information. The important point, once again, is that this still leaves two-thirds of consumers who are likely to undertake activities but do not believe they are likely to first seek information. In this light, it is difficult to see how the hypothesized sequence [*awareness* $\Rightarrow$ *information* $\Rightarrow$ *activity*] could be a standard model.

[2] Note that the information-seeking item includes efficiency not only at home but also in the workplace. For activity intentions, a separate question was asked within and outside the home. Thus, the intention to seek information may be inflated slightly relative to the intention to undertake activities. This effect is probably very small, however, because only small numbers of respondents reported an intention to take energy efficiency measures outside the home.

[3] To be sure, intentions are an imperfect indicator of future actions but are well established in social psychological theory as an important precursor to action (see Ajzen 1988). There are other reasons for wondering about the validity of intentions data. For instance, some have wondered about social desirability effects related to intention items. The suggestion is that intentions to take energy efficiency actions might be over-reported because respondents would feel normative pressure to say they will do so. Aside from the fact that reported intentions are rather low, two aspects of the items are designed to decrease this normative pressure. First, the intentions are cast in terms of a likelihood, so that people who are feeling pressure to assent can do so, but at a lower level of certainty. The pressure to assent is offset by normative pressure to not knowingly tell a falsehood. The categories "somewhat likely" and "slightly likely" are, in effect, release valves for the cross pressures of social desirability and truthfulness. Only those saying they are "very" or "extremely" likely to seek information are counted as intending to do so. The second design feature that helps to mitigate the effect of social desirability is the relatively short time frame of the question, allowing respondents answering in the negative the psychological excuse that they may very well take actions at a later date.

The Likelihood of Seeking Information and the Likely Efficiency Measure Taken

In addition to asking how likely respondents would be to take energy efficiency measures, the specific activity or activities that respondents were most likely to undertake was recorded. Answers ranged from turning off lights and equipment when not in use, to installing solar and wind powered systems. It would seem plausible that some activities are much less likely to require new information than others. It may be that the Focus program theory fits better with more complex energy savings measures.

A comparison was made between two groups of respondents. One group comprised respondents who said they were "very" or "extremely" likely to undertake a set of basic efficiency measures, including turning off lights and equipment, changing the thermostat setting, generally conserving fuel or energy, and purchasing light bulbs that are more efficient. A second group of respondents comprised those who said they were "very" or "extremely" likely to undertake more complex measures, including replacing windows or doors, adding insulation, purchasing energy efficient appliances, replacing siding or roofing, remodeling or building a home, or installing a solar or wind system. (Since multiple responses were permissible, some of these respondents also mentioned the more basic activities.) A summary of the percentage of respondents intending each measure ("very or "extremely" likely) is presented in Table 3.

Table 3. Percentage of Respondents "Very" or "Extremely" Likely To Take Basic and Complex Energy Efficiency Measures (n = 1839)

	Activity	**n**	**%**
Basic Measures	Turn Up/Down Thermostat	207	11%
	Turn Off Lights/Equipment Not In Use	142	8%
	Buy More Efficient Lighting/Bulbs	121	7%
	Conserve Energy	87	5%
Complex Measures	Install (Additional) Insulation	295	16%
	Install New Windows/Doors	283	15%
	Buy Energy Efficient Appliances	272	15%
	Install Siding or Roofing	42	2%
	Install Solar or Wind System	14	1%

It is noteworthy that more respondents mentioned complex measures than basic measures. Basic measures were more likely to be the answer choices of respondents who showed less commitment to energy saving measures by saying they were only "somewhat" or "slightly" likely to take action.

There is a slight tendency for those intending to take complex actions to also be more likely to intend to seek information, but the relationship is not statistically significant (35% complex measures; 30% basic measures). Looking at individual measures, only the intention to buy energy efficiency appliances is associated with a significantly increased likelihood of intending to seek additional

information. This relationship is presented in Table 4. Even so, only 40% of respondents say they are likely to seek information.

Table 4. Percentage of Respondents Likely to Seek Energy Efficiency Information, Among Those Likely to Take Some Energy Efficiency Measure

	Likely to Buy EE Appliances	Likely to Take Other EE Measures
Not Likely to Seek Information	60% (n=77)	70% (n=350)
Likely to Seek Information	40% (n=52)	30% (n=152)
	100% (n=129)	100% (n=502)

One problem with the current approach may be that some respondents have already sought information for the measure they intend to undertake. This activity would not be captured in the prospective question about future information seeking. This issue can be addressed by analyzing *past* as well as future information seeking.

Although there is no item in the ongoing tracking survey about past information seeking, the baseline survey and first wave of the tracking survey did contain such an item. The item asked how often, in the last six months, the respondent had "looked for, read, or asked about information regarding energy efficiency." Those who answered "sometimes" or "frequently" are considered active information seekers. A composite item was created by combining those who have sought information in the past with those who intend to seek information in the future. [4]

Results from 738 respondents who have both prospective and retrospective measures of intentions shows that the complexity of the likely energy efficiency measure is related to the likelihood of seeking information.[5]

[4] Although data were also collected about past energy efficiency activity, the specific question does not allow use of the findings for the present purposes. Because information seeking is a more difficult activity to recall, we limited the retrospective time frame to six months. For activities, however, we extended the time frame to two years. Thus we cannot assert that the information seeking and activities are related to one another.

[5] It is important to keep in mind that in adding past information seeking into the comparisons the connection with the reported likely activity is attenuated. That is, some unknown proportion of the information seeking is certainly unrelated to the likely energy efficiency activities that respondents mention, for instance because the information was sought for past activities. Insofar as this tendency to overstate the information seeking related to the likely future activity is equally distributed over the four cells of Table 3, it would not affect the relationship but only exaggerate the total percentage of respondents likely to seek information for a given set of activities. With the information at hand it is not possible to estimate the amount of this overstatement of information seeking, or whether it is equally distributed over the cells. We can only estimate that the true percentage among people likely to take more complex measures falls somewhere between 35%, the value for prospective seeking only, and 62%, the value for prospective and retrospective seeking; for basic measures it falls somewhere between 30% and 39%.

Sixty-two percent (62%) of respondents intending to take complex measures intended to seek information. Only 39% of respondents intending only basic measures intended to seek information. This difference is statistically significant (χ^2 =7.03, d.f.=1, $\alpha < 0.05$). The rates of information seeking for complex and basic measures are reported in Table 5.

Table 5. Percentage of Respondents Likely to Take Energy Efficiency Measures, Who Have Sought or Are Likely to Seek Energy Efficiency Information

	Basic Measures Only	Complex Measures
No Information Seeking Reported	28 (61%)	51 (38%)
Information Seeking Reported	18 (39%)	82 (62%)
	46 (100%)	133 (100%)

The Perceived Need for More Energy Information

The findings reported here suggest the possibility that many people believe they already have enough information about energy efficiency. The baseline survey gathered information to test this hypothesis. It asked respondents about how much energy information they believe they already have, and about how much they believe they need.[6]

When respondents were asked to estimate how much knowledge they currently possess about "energy use and efficiency" in their homes, on a scale from 0 to 100, the mean response was 62 (std. dev. = 23). Twelve percent (12%) of respondents rated their current knowledge below 33; 50% of respondents rated their current knowledge above 66. When asked how much information would be "sufficient for you; that is, good enough for your own purposes," again on a scale from 0 to 100, the mean response was 65 (std. dev.=24). Forty-three percent (43%) of respondents said they either needed no additional information (18%) or that they actually had *more* information than they need (25%); 57% of respondents said they need more information. An additional 9% needed only 10 or fewer additional "information points." Thus, 52% of the sample says they need little or no additional information.

Among those who had sought information in the past, more rated their current knowledge to be high (above 66) than among those who had not sought information in the past (65% vs. 43%, respectively: χ^2 = 30.48, d.f. = 2, $\alpha < 0.05$). In addition, those who had sought information were *less* likely than those who had not sought information to say they need more information than they already have (47% vs. 57%, respectively: χ^2 = 7.37, d.f . = 2, $\alpha < 0.05$). Indeed, a disproportionate number among this group said they had more information than they need.

It is particularly striking that there is no increased likelihood for respondents who said they need more information to have also said they intend to seek more information. Respondents who intend to take any measures, or intend to take complex measures, are slightly more likely to say they need more information than the rest of the sample, but the difference is not statistically significant. These findings are represented in Table 5.

[6] These items derive from a theory of risk communication developed by Griffin et al (1999) and have proven valuable in a variety of other contexts for explaining public orientations to information.

Table 5. Percentage of Respondents Claiming to Need More Energy Efficiency Information

	Need More Energy Efficiency Information	Do Not Need More Energy Efficiency Information
Sought Energy Efficiency Information in the Past	96 (30%)	110 (40%)
Have Not Sought Energy Efficiency Information in the Past	215 (70%)	164 (60%)
Likely to Seek More Energy Efficiency Information	45 (15%)	38 (14%)
Not Likely to Seek More Energy Efficiency Information	264 (85%)	233 (86%)
Likely to Take Energy Efficiency Measures	72 (32%)	100 (27%)
Not Likely to Take Energy Efficiency Measures	194 (68%)	208 (72%)
Likely to Take Complex Energy Efficiency Measures	59 (21%)	46 (18%)
Not Likely to Take Complex Energy Efficiency Measures	228 (79%)	205 (72%)

Demographic Characteristics of Active Information Seekers

The tracking and baseline surveys include a number of demographic variables, including home ownership, household size, respondent age, respondent education, and respondent sex. The group of respondents who report they are likely to take more complex efficiency measures and that either has sought or is likely to seek information is more highly educated than the remainder of the population, and is younger—but more importantly is disproportionately represented in the middle of the age distribution (i.e. 35-54) than on the tails.[7]

[7] Age: $\chi^2 = 13.49$, d.f . = 2, $\alpha < 0.05$; Education: $\chi^2 = 8.02$, d.f . = 2, $\alpha < 0.05$.

Table 5. Percent Likely to Take Energy Efficiency Actions, by Age and Education

Demographic Variable		Intends Complex Actions and Seeks Information	Rest of Sample
Age	18-34	11 (14%)	128 (21%)
	35-54	51 (65%)	263 (43%)
	55+	17 (21%)	224 (36%)
	Total	79 (100%)	615 (100%)
Educational Attainment	High School Degree or less	20 (25%)	258(40%)
	Some College or Technical School	26 (33%)	192 (30%)
	4-year College Degree or More	34 (43%)	192 (30%)
	Total	80 (100%)	642 (100%)

If we compare this complex measures/information-seeking group to the group that has sought or is likely to seek information but is likely to take only more basic measures, the former group is slightly younger but *not* more highly educated. None of the other demographic variables are significantly related to either differentiation of groups.

Discussion

It appears that a sizeable portion of the energy consuming public that undertakes energy savings measures of some complexity does seek information first. Thus, with respect to marketing practice a decision to stick with the present program theory and attempt to influence the portion of the population to which it apparently pertains would not be an unreasonable strategy. The same group that is most likely to seek information before undertaking measures is the group that is most likely to be aware of Focus. Thus, it could be argued that marketing to this group, using the information-based marketing theory articulated in the introduction, is the best use of limited marketing resources.

At the same time, these findings also suggest a strong case for at least developing a better understanding of the precursors to action for the approximately one-half of consumers who do not report seeking information in advance of taking energy efficiency measures. It seems there are at least two ways to understand this apparent disconnection between information and action.

1. It may be that customers do make use of new information, but do not encounter the information in ways that lead them to report they have sought it out.

2. It may be that a perceived lack of information about energy efficiency is not the crucial barrier to taking energy efficiency measures but some other motivational factors, such as emotional, symbolic, or ritual elements, or an economic barrier. This would suggest the nee for a more complex marketing theory to reach these people.

Whereas the first understanding might lead to a redirection of resources away from the promotion of information seeking per se, toward the direct provision of program-specific information, the second understanding might lead to a refinement of the umbrella effort to address different motivational barriers.

The argument that customers do not seek out energy efficiency information because they feel they already have enough is not clearly borne out by this data. Half of the respondents feel they have enough information, but this clearly is not the principal barrier to undertaking further energy efficiency measures because there is no correlation between the two measures.

At this point, then, the factors motivating an intention to take energy efficiency measures appear to be quite complex. While some suggest economic barriers are paramount (we did not gather data to test this hypothesis), we find a more social-psychological explanation, such as that propounded by Griffin et al (1999), to be promising.

In brief, we believe there are different styles of information processing, rooted at least partly in the sense of personal efficacy, which differentiate between customers who employ a systematic approach to information, and those who use a more heuristic approach. A systematic style of information processing entails an openness to, and active pursuit of, information from a variety of sources and a sorting and weighing of that information in order to draw conclusions and formulate lines of action. A heuristic style of information processing, in contrast, attends to information and responds to it based on various cognitive short cuts, or rules of thumb, that simplify the sorting and weighing process. A heuristic rule of thumb, for example, might be to always turn to the same expert as a source of information; another might be that actions that have been adequate in the past should be continued without question or review. A marketing theory designed for a systematic style of information processing would not necessarily be effective for people using a more heuristic style.

These are conjectures that need further study. The Focus on Energy umbrella marketing program provided an important, though ultimately truncated opportunity to investigate the most effective means for promoting energy efficiency activity. Given the current direction marketing is taking in Focus, toward a more program-specific approach and away from an umbrella branding effort, it appears that further research into the matter will not be forthcoming soon.

References

Ajzen, I., 1988, *Attitudes, personality, and behavior*. Open University Press. Milton Keynes: UK.

Eagly, A.H., & Chaiken, S., 1993, *The psychology of attitudes*. Harcourt Brace Jovanovich: Fort Worth TX.

Griffin, R.J., Dunwoody, S., & Neuwirth, K. 1999, Proposed model of the relationship of risk information seeking and processing to the development of preventive behaviors. *Environmental Research*, 80, 230-245.