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ENERGY CONSERVATION IN THE RETAIL SECTOR: EXECUTIVE ATTITUDES AND GOVERNMENTAL STRATEGIES

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The energy crisis is a matter of grave concern today. Business, government and individuals now recognize that supplies of energy are limited. As one conservation effort, the federal government has established a number of guidelines for energy consumption in business. In the retail sector, the subject of this paper, the guidelines concern temperature and lighting levels.

Energy conservation in the commercial/retail sector is important because the sector consumes 14.4 percent of all energy utilized in the United States (Public Technology, Inc., 1975:48). Further, the commercial sector evidenced the largest increase in consumption between 1968 and 1975 and is projected to increase consumption by 43 percent in the next ten years (Federal Energy Office, 1976:22). This compares with a 40 percent projected increase in the industrial sector, and a 30 percent projected increase in the government sector for the same period (Federal Energy Office, 1976:22-23).

In addition, there appears to be considerable potential energy savings in this sector. The Federal Energy Office estimates that savings in the commercial sector can approach 25 percent by utilizing techniques that require no capital outlay (Federal Energy Administration, 1975:2). The National Bureau of Standards projects a 30 percent energy savings in the sector by using simple conservation techniques. Most of this must come from changes in environmental conditions or environmental technology since the major proportion of retail energy consumption is for environmental conditioning.

A survey of the literature concerning energy usage in the commercial sector reveals considerable technical or engineering information about temperature, lighting and other environmental conditions. However, the literature review revealed only two empirical or descriptive studies concerning actual retail energy conservation efforts.

A Rand Corporation study evaluated the results of energy restrictions imposed on merchants in the Los Angeles area during the 1973-1974 oil embargo (Federal Energy Administration, 1975). The city of Los Angeles, facing severe shortages of imported oil, mandated cutbacks on commercial energy usage. Although the embargo was lifted shortly before the penalties went into effect, merchants decreased consumption by 28 percent with reportedly minimal discomfort or sales decline. The Rand study generally describes the retail conditions during the three-month period of 1973-1974 and does not evaluate alternative means of encouraging conservation. Neither does it evaluate executives' attitudes about energy and energy conservation which are critical to the design of successful conservation programs.

A 1975 study of lighting and heating conditions by the Massachusetts Public Interest Research Group, Inc., reported that stores in the Boston

area were well in excess of Federal heating and lighting guidelines (Massachusetts Public Interest Research Group, Inc., 1975). The study did not explore executive attitudes and was clearly biased in analysis. It suffered severely from that deficiency. Thus, the literature offers little, if any, information about retail environmental levels and no information about one key factor, executive attitudes toward conservation.

Given the present energy shortage, the growth rate predicted for the commercial sector, the estimated potential savings, and the apparent lack of information, a study of retail energy conservation appears useful at this time. The key element for conservation is the attitudes of the retail managers about energy conservation. Their beliefs and propensities will determine the success of conservation programs in the retail sector. Therefore, the purpose of this study was to explore the attitudes and beliefs of retail executives about energy, energy conservation, and energy conservation programs.

METHODOLOGY

The survey instrument was developed in a structured interview format. It contained 53 questions with a total of 77 responses and it required approximately 45 minutes to complete. The broad areas addressed in the questionnaire included managers' attitudes regarding: 1) the voluntary adoption of energy conserving techniques; 2) the avenues of information dissemination both past and potential; 3) the effect of energy conserving techniques on sales; 4) the specific energy conserving techniques appropriate to them; 5) the perceived severity of the energy crisis; and 6) their present and most appropriate temperature and lighting levels.

Project interviewers were given approximately 15 hours of training in interviewing skills which included familiarization with the questionnaire, video taped simulations, and role playing. In order to avoid confrontations with security forces and to enhance face validity, the interviewers were issued an identifying name tag and a letter of support from each Chamber of Commerce in the target cities.

Establishments in the six largest metropolitan areas in Florida were randomly selected from six retail categories utilizing the telephone directory "yellow pages." The six categories were groceries, department stores, discount stores, restaurants, pharmacies, and shopping malls. The categories of retail establishments were selected based upon high visibility and size or diversity of operations. Two hundred retail managers or assistant managers were targeted, and 159 interviews were completed. The field research took place in the summer season with the six interviewers spending one week in each location. The respondents were fairly evenly divided by city and distribution activities were as follows: grocery stores 17 percent, discount stores 18 percent, department stores 16 percent, pharmacies 19 percent, restaurants 14 percent, and malls 14 percent.

RESULTS

Descriptive statistics were generated from the interview data as a whole and the data were also analyzed by location, by establishment category, and by establishment size. These results varied little from the aggregate data analysis, so only the aggregate findings will be discussed.

Managerial Attitudes

Most managers, although convinced of a genuinely serious national energy problem, believe that the problem was in the northern areas of the country. Approximately one-third of the respondents believe the energy problem is very serious. Over one-half of the respondents believe it is a serious problem and one-sixth believe the problem is minor, it does not exist. Managers often explained that the energy crisis was not close at hand (for them). A wait and see attitude was frequently encountered during the interviews. Almost as frequently mentioned as the wait and see attitude was the belief that technology will soon provide additional energy. A majority of the businessmen felt that economical usage of solar energy and other technology is just a year or two away.

About three-fourths of the respondents indicated that their headquarters' policy on energy conservation would be highly supportive of increasing temperatures (decreasing cooling) for energy conservation. A few respondents did not know or felt that headquarters would not be supportive of the change. Approximately two-thirds of the sample reported that their headquarters would support the idea of reducing light levels for energy conservation, while approximately one-third did not know or felt that their company would be only slightly supportive.

In the recent past, seventy percent of those interviewed stated that they had made some changes in environmental levels to conserve energy. This is in contrast to the fact that two-thirds of the respondents were unaware of Federal energy guidelines.

One-third of the managers were in favor of legislatively required cut-backs of energy consumption with penalties for excess consumption. The same proportion were in favor of mandated cooling and lighting levels. The remaining two-thirds of those surveyed believe that the only function of government should be a publicity campaign to convince the public of the importance of energy conservation. Almost 85 percent of the respondents reported that they would voluntarily reduce lighting and cooling levels if they knew the levels exceeded those recommended by the Federal Energy Administration.

The managers definitely believe that the general public should receive more information and become better informed about the energy problem. They also believe that private residences consume large quantities of energy and that conservation efforts in that area should be emphasized. In addition, high positive correlations were found among those executives who had received energy information, those who think the energy problem is serious, and those who had implemented conservation techniques.

Energy Saving Techniques

The executives were asked a series of questions to determine their present use and potential use of a number of energy conservation techniques. These data are presented in Table 1.

TABLE I
MANAGERS' ATTITUDES TOWARD ENERGY SAVING TECHNIQUES

Technique	Managers' Responses ^a		
	Already implemented	In Favor	Not in Favor
Remove Lights from Fixtures	30%	35%	35%
Extinguish Exterior Lights/Displays at Additional Times	60%	30%	10%
Extinguish Interior Lights at Additional Times	70%	20%	10%
Change Air Conditioner Timing	55%	25%	15%
Increase Temperature	30%	40%	20%
Apply Reflective Material to Windows	20%	43%	26%
Curtail Hours of Service	6%	35%	55%
Decrease Lighting in Non-Display Areas	50%	30%	15%
Install Interior Reflective Material	15%	30%	38%
Install Additional	10%	54%	25%

^aAll possible responses are not included in some categories.

Table I indicates that decreasing lighting is the most common energy reduction technique utilized to date. There is strong opposition to curtailing hours of service. Few executives report increasing temperature (30 percent) or additional insulation (10 percent), but a large proportion do indicate a willingness to consider this measure (40 percent and 54 percent respectively).

Barriers to Changing Environmental Conditions

In response to the question, "What are some of the things that might prevent your store from meeting the Federal guidelines of 78° to 80°?" the managers gave a variety of responses. The overwhelming response was the possibility of discomfort for customers resulting in a reduction of sales. Approximately 40 percent believed that sales would decline if either light or temperature levels were changed. This problem was exacerbated because the executives believed that their competitors would not change environmental levels also and would thus gain a competitive advantage. Another reason given emphasized the discomfort and decreasing efficiency of employees. Also building design, open grocery coolers, and leasing requirements, for example, precluded increasing the temperature in some instances.

Reasons given for not decreasing the lighting levels included safety for both employees and customers, increased breakage and pilferage and decreased attractiveness of merchandise. Other reasons given included

potential reductions in sales, the appearance of a closed store, and the extensive physical changes required to change lighting fixtures.

Corporate headquarters was another reason often cited by executives or not doing more in energy conservation. Many managers did not want to "create a stir" and preferred to delay action until headquarters addressed the conservation problem. Compounding this problem, about 20 percent of the managers were not aware of their headquarters' policy on energy use or believed that headquarters would not support energy reduction plans. In addition, fewer than 43 percent of the managers indicated that they had a written conservation plan.

Governmental Strategies for Energy Conservation

An objective of the research was to determine appropriate strategies for government agencies to employ in encouraging energy conservation. To this end, the executives were asked about the types of promotional activities which would motivate them to conserve energy. The following activities were suggested with the percentages indicating the number of executives either moderately or strongly supporting the activities: mailed literature about energy conservation (90 percent), utilization of utility company consultants (90 percent), local seminars about conservation (85 percent), tax credits for energy programs (75 percent), energy consultants paid by the government (60 percent), legislatedly mandated energy cut-backs (33 percent), energy consultants paid by the firm (25 percent).

The executives were also asked to specify some conservation measures they would undertake if they were required to reduce their energy consumption 25 percent. Their ideas, in order of frequency, were as follows: change store temperature; lower lighting level; decrease parking lighting; reduce store hours; and install items such as awnings, blinds, insulation, and air conditioning timers. For maximum effectiveness, government strategies must take account of these executive propensities.

The executives indicated consistently that they desired additional information about highly specific conservation techniques directly appropriate to them. The importance of cost effective approaches to conservation is indicated by the 70 percent of executives who had implemented conservation techniques. They all did so because of a cost effective calculus.

A number of managers lacked basic energy conservation information particularly in regard to Federal guidelines and other governmental activities. Approximately two-thirds of the managers were not aware of temperature guidelines and 91 percent were not aware of lighting guidelines. In addition, governmental agencies appear to be the least likely source of energy information. Only 13 percent of the managers had received information from Federal, state, or local government units which contrasts sharply with 61 percent receiving information from company headquarters. Also, most managers did not know the lighting and temperature levels in their establishments. Surprisingly, few realized that the major portion of their energy consumption was for environmental conditioning.

Most managers preferred that energy conservation be voluntary, at least initially. They indicated a considerable reluctance toward governmental imposition and enforcement of additional regulations. The

managers believe that the only function of the government should be a publicity campaign to convince the public of the importance of energy conservation.

Strategies for Retail Energy Conservation

The apparent need and willingness of retail managers to receive well targeted information about conservation programs and techniques suggests that governmental agencies initiate several methods of developing and distributing energy information.

Executives indicate a greater rapport with utility company representatives than with governmental representatives so the cooperation and support of utilities should be solicited whenever possible. The utilities presently have manpower devoted to energy conservation and the inclusion of these individuals will multiply governmental efforts. One method of information dissemination could be a direct mail campaign utilizing highly targeted materials. This opening of communications would be enhanced by the inclusion of a toll free telephone line for additional information.

With the co-sponsorship of the utility companies, governmental agencies may also arrange a number of short seminars targeted to various groups of retail executives. In such programs, a major thrust should be the development of individual, written energy plans.

The development of mail campaigns, seminars, literature, and other approaches must be specifically targeted to particular groups of executives. Also, the literature must emphasize cost effective conservation measures because this is the highest motivational factor for retail managers.

SUMMARY

The commercial sector consumes over 14 percent of all energy consumed in the United States and is projected to increase consumption by 43 percent in the next ten years. In spite of this, there has been little research undertaken about energy utilization in the sector, particularly in the retail area. More specifically, no study has been undertaken concerning a key element in retail energy conservation; that is, executive attitudes toward energy and energy conservation. This work reports such a study.

One hundred and fifty-nine retail executives were given an indepth interview to determine their attitudes toward energy conservation. The executives were selected by stratified random sampling and the survey was accomplished in the summer of 1977.

The survey results indicated that the executives held mixed beliefs about the severity of the energy problem, but they expressed a strong willingness to cooperate for energy conservation. The results also indicated that the executives seriously lacked energy related information. However, they demonstrated serious concern for possible customer discomfort and sales declines resulting from a reduction of energy consumption.

Effective governmental strategy for energy conservation must center upon strong informational and motivational campaigns. These campaigns must be clearly targeted toward specific types of establishments and feature realistic cost effective approaches to conservation. Possible

campaigns could include mailed literature, utility company consultants, seminars, tax credits, and so forth. In any program, a major thrust should be the development of written conservation plans, unique to each establishment. Such plans, with follow-up motivational efforts by the sponsoring agency, have the potential for saving 25 percent of the energy consumed in the retail sector.

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