CONSUMER SATISFACTION WITH FOOD MARKETING SERVICES: THE EFFECTS OF IN-STORE INFORMATION AND EDUCATION PROGRAMS

by

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A dissertation submitted to the Faculty

of the Virginia Polytechnic Institute and State University

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Housing, Interior Design and Resource Management

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April, 1985

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(ABSTRACT)

The purposes of this study were to identify the relationship between the provision of consumer information programs and satisfaction with food marketing services and to assess the benefits of a program as they affect both consumer satisfaction and retail food store profits.

A conceptual model which proposed a positive relationship between the provision of a consumer information program and increased product purchasing, increased satisfaction with the product, and increased satisfaction with the foodstore was developed for the study. The model was operationalized through the use of three indicators to measure each of the four constructs.

A field test of the model was conducted at a warehouse foodstore in central Connecticut where an in-store information program had been implemented one year prior to this study. The program, which focused on meats, provided three modes of presentation. Response to the program was measured by interviewing 277 shoppers during October and November, 1984. Respondents were asked about their use of the information presented, attitude toward the program, and perception of its usefulness.

The data collection instrument developed for this study was a two part questionnaire. The first part was self administered. Respondents were queried on satisfaction with the meat department and with the store. Twenty-one attitude, interest, opinion items related to food shopping and meal preparation were included in this section. The second part was an interview questionnaire which was utilized to obtain information on shoppers response to the information program, shopping habits, and demographic characteristics.

The sample was found to be representative of warehouse foodstore shoppers. The average household size was four persons, and the average food budget was $100.00 per week. Twenty-nine percent spent less than 50% of their meat budget at the store, but only 11% purchased less than 50% of their groceries (excluding meat) at this store.

Shoppers who responded positively toward the information program purchased more meat, and were more satisfied with the meat department and with the store. The conceptual model was able to explain positive response as measured by use, attitude, and perception of usefulness of the program in terms of these outcomes. The model was unable to explain negative response to the program.

Further analyses of the data resulted in the addition of two antecedent variables to the model. Those who were not predisposed to information seeking and had never enrolled in a consumer education course were likely to be nonusers of the information program.

ACKNOWLEDGEMENTS

The author wishes to express her sincere appreciation to those who gave generously of their time and support in order that this research could be completed.

Sincere gratitude is extended to Dr. Nancy A. Barclay for her guidance and assistance throughout my graduate program and for her continuing interest and encouragement during my dissertation research.

It would not have been possible to compete this study without the consultation and direction of the members of my committee. Appreciation is extended to Dr. Glen Mitchell for his expertise and counsel, to Dr. Jean Phillips for her thoughtful critique and support, to Dr. Edward Fern for his help in conceptualizing the problem and suggestions which enhanced the clarity of this dissertation, and to Dr. Jimmie Fortune for his assistance in the statistical aspects of this research.

Acknowledgement for contributions without which the completion of the graduate program and the dissertation could not have been possible is due the National Pork Producers Women and the Home Economics Research Foundation for financial support, and Heartland Food Warehouse for allowing the research to be conducted on the premises.

The implementation of the study and completion of the data collection could not have been accomplished without the assistance of

of Purity Supreme Supermarkets, Inc., and

Gratitude and appreciation are extended to family and friends who

provided encouragement and personal support. Particular thanks are extended to Dr. Helen Wells for sharing her knowledge and friendship during my year in Virginia.

This endeavor could never have been undertaken and completed without the help and confidence of my family. To my parents, and , and my two children, and , I thank you for your patience and understanding. My special thanks are owed to my husband, , for his faith and optimism in my ability to achieve my personal goal and for his supportive role in my personal life.

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CHAPTER I

INTRODUCTION

Food habits and preferences are part of the cultural heritage of a society. Basic attitudes toward food products are transmitted from one generation to another and they become entangled in the culture. The predominant food patterns of a society are determined by the availability and acceptability of specific commodities. With advances in technology a greater variety of foods has become available, the form of foods has been modified, and nutrient content of some products has been changed. Changing values and attitudes have altered the acceptability of certain food products. The current emphasis on fitness and weight control has contributed to a decline in the consumption of red meats including pork and beef. Americans, now concerned with their diet, especially with sodium and cholesterol intake, have switched their allegiance to fish and poultry which are reputedly lower in calories and more healthful.

Since 1980 world production and consumption of red meats have declined annually (Nix, 1984) A significant proportion of the decline can be attributed to the changing preferences of consumers in the United States and other developed countries. The pork and beef industries are interested in reversing the trend and regaining their share of the market (Linsen, 1984).

Today's pork is different from that produced two decades ago. Intensive genetic selection programs have resulted in the production

of hogs that are leaner and that yield a food product of high nutrient density (USDA, 1983). The Pork Producers Council, the trade association of the industry, is attempting to convey this message to the public through the development of promotional activities and consumer information and education materials which stress the nutritional value of pork.

Expenditures for food have traditionally accounted for a significant portion of the household budget. Consumers have continually sought means to obtain the best nutritional value for the food dollar either by changing their primary place of purchase (Mitchell, 1984), or by substituting lower cost food items (Dietrich, 1980; Yankelovich, 1983). Recent studies have reported that consumers reduction of red meat consumption is due to an effort to reduce the food bill as well as health concerns (Linsen, 1984; Stucker & Parkham, 1984).

A review of five consumer education texts (Garman, 1978; Ward & Neindorf, 1976; Spillman, 1976; Miller, 1981; and Leet & Driggers, 1983) indicated that meat accounts for the largest portion of the food budget. According to Leet and Driggers meat expenditures account for 35 percent of the food budget. These texts as well as other providers of consumer education suggest that shoppers check the newspaper food ads, plan menus around meat specials, and shop the store having the best meat specials. Given the high cost of meat in the budget and these food shopping recommendations, it appears that consumers may be motivated to select supermarkets on the bases of price, quality and variety of meat products.

The marketing concept as a philosophy of business holds that it is the function of business to produce goods and services that satisfy consumer wants and needs at a profit (Kotler, 1980). Hence marketers have traditionally been interested in identifying factors that contribute to satisfaction with the goods and services provided. Numerous studies have been conducted to develop an understanding of consumer behavior in retail markets and to identify attributes which determine store patronage.

The era of consumerism resulted in expanding the marketing concept to include a responsibility of the business community to protect and educate consumers in the marketplace (Sirgy, 1983). In response to this charge, food retailers have begun to engage in consumer education/information programs (Harris, 1980; Johnson, 1983). Many of these programs are general in that they provide educational/informational printed materials on nutrition, recipes, and answers to consumer questions. Several supermarket chains have targeted their educational efforts to specific product categories. As meats have traditionally accounted for up to 35 percent of retail food store sales volume, the decline in consumption of red meats has had a negative impact on supermarkets (Linsen, 1984). Spurred on by marketing efforts of the trade associations in conjunction with an infusion of promotional monies from government supported commodities groups (Morrison & Armbruster, 1983), many supermarket chains have begun to engage in consumer information and education programs on meat products. While it has been implied that these efforts should lead to greater consumer satisfaction with supermarkets (Aaker, 1982),

the expansion of consumer education/information efforts is also dependent upon the contribution of these programs to the profits of the firm.

The Purposes of the Study

The purposes of this study were to identify the relationship between the provision of consumer education/information programs and satisfaction with food marketing services, and to assess the benefits of a program as they affect both consumer satisfaction and retail food store profits.

The focus of this research and its execution encompassed [1] the development of a conceptual model relating the two variables of the provision of a consumer education/information program and consumer satisfaction with food marketing services, [2] the design of an instrument to empirically test the model, and [3] a field test of the model at a warehouse food store in Connecticut.

The specific objectives of the study were:

[1] to determine whether an in-store consumer information program focused on meats culminates in increased purchasing of meat products.

[2] to determine whether an in-store consumer information program focused on meats contributes to satisfaction with meat products.

[3] to determine whether meat satisfaction contributes to satisfaction with the supermarket.

Justification for the Study

A review of the literature in consumer behavior, consumer affairs, home economics, nutrition education, and retailing did not uncover studies regarding the effects of information/education programs on consumer satisfaction with retail markets. Selected studies within the paradigms of consumer information/education, retail patronage and store preference, and consumer satisfaction have been reviewed.

Three research streams on consumer information/education that have emerged within the field of consumer behavior include studies concerned with information processing and information load, studies which assess the sources of information used by consumers in purchasing decisions, and those which develop recommendations and proposals for consumer information/education programs. The research on information processing and information load has identified variables and conditions which foster or inhibit consumer use of information (Jacoby, 1974; Lehmann & Moore, 1980; Malhotra, 1982) or it has described information processing behaviors (Bettman, 1979; Sproles, 1978). Research on consumer use of sources of information has focused on the utilization of mandatory information disclosure (Freidman, 1977; Patton, 1981) or it has identified sources most commonly used in purchasing decisions (Beales, Mazis, Salop, & Stalin, 1981). Research on the development of information/education programs has focused on programs for public policy implementation (Bettman, 1975; Wilkie, 1975; Capon & Lutz, 1979) or on the development of independent consumer information systems (Thorelli, 1980; Dunn & Ray,

1980). Aaker (1982), in a conceptual paper, made recommendations for a corporate consumer information/education program and predicted benefits to the firm which included improved customer satisfaction, a better consumer image of the firm, and increased profits in the long run.

Studies on store preference have indicated that supermarket store choice is based primarily on locational convenience, low prices, and assortment of merchandise (Lindquist, 1974; Arnold & Tigert, 1981). Studies on store patronage have demonstrated that supermarket loyalty is extremely low. Heller, (1983) found that nine percent of warehouse food store shoppers were loyal and 27 percent of supermarket shoppers were loyal. Fulgoni & Eskin, (1981) showed that less than 20 percent of shoppers patronized fewer than three stores over a 24 week period. According to Engel & Blackwell (1983), loyalty is extremely important to the retailer as the stores with the largest number of loyal customers control the largest share of the market.

Awareness of low prices, convenient location, and assortment of merchandise as salient to store choice is of limited use to the food retailer who is interested in building store traffic and increasing sales. The location and square footage are fixed in the short run; it would not be feasible to be more locationally convenient or to significantly increase the assortment of goods. However, it is feasible for food retailers to expand their services. Levitt (1983) indicated that for marketers to maintain their profit positions, they must enhance their offerings of products by helping to solve the buyers' problems. The provision of consumer information/education

programs is a service of the food retailer which aids shoppers in this regard. Thus these programs have the potential for increasing store traffic and sales through increased consumer satisfaction.

The consumer satisfaction/dissatisfaction paradigm has evolved over the past decade (Arndt, 1984). Two major research tracks have emerged. The first of these focuses on the the conceptual and methodological issues in defining and measuring consumer satisfaction/dissatisfaction (Handy & Pfaff, 1975; Oliver, 1980; Swan & Trawick, 1980). The second track is concerned with the substantive issues related to consumer satisfaction/dissatisfaction with products and services. The emphasis within this track has been on elements of dissatisfaction and complaining behavior rather than on elements of satisfaction.

Linkages between the provision of consumer information/education and consumer satisfaction have been implied within the literature as have linkages between consumer satisfaction and increased product sales. However, the relationship between these constructs has not been established. It is the purpose of this study to establish these linkages and to provide an empirical test of the relationship between consumer information/education programs, consumer satisfaction, and benefits to the retailer.

Significance of the Research

Several consumer specialists (Swagler, 1978; Maynes, 1976) have stated that the availability of information is the major problem confronting individuals in their roles as consumers. It has been

suggested that for information to be useful, it must be available at the point of decision. This research measured the usefulness, as perceived by consumers, of information provided in the supermarket.

If information programs are to be provided by manufacturers, producers, and retailers, they must yield benefits to the provider of the program as well being perceived as useful by consumers. Manufacturers and retailers evaluate the benefits of any program in terms of sales volume generated. One measure of the consumers' perceptions of the information program used in this study was product purchases. Hence, this study has provided empirical evidence of the relationship of sales volume (consumer purchases) to the provision of an information program.

Increased sales volume may be the result of consumer satisfaction. Satisfied consumers will return to the food store and satisfied customers will report their satisfaction to others. Hence, increased satisfaction due to the provision of an information program will be beneficial to the food store merchant. General awareness of the empirically tested relationship between the provision of consumer information and the benefits which accrue to the provider should lead to an increase in the number of information programs in retail markets. This will be beneficial to both consumers and producers/retailers.

Public policymakers are continually searching for effective vehicles to transmit information to consumers. Numerous regulations have been promulgated to require information disclosures on food

products. The problem confronting policymakers is how to provide information that is both useful and used. Several studies (Dunn & Ray, 1980; Day, 1982; Capon & Lutz, 1977) have sought to solve this problem. The present study will contribute to the body of knowledge in this research stream. As the program evaluated in this study included three modes of presentation, the effectiveness of each mode in the supermarket situation may be helpful in identifying the most effective means of transmitting information.

This research has implications for consumers, business, and government - the three major segments of the economic system. The results of the study could be beneficial to each of the three segments.

Statement of the Problem

Advocates of consumer education have asserted that information needs are central to the purchase decisions. Consumers want and need information that will aid them in making effective choices in the marketplace. To fulfill this need, information must be available at the point of the choice decision and it must be easily processed and comprehended by those for whom it is intended.

Being cognizant of the need for information, the marketing community has begun to provide consumer information and education at the point of purchase. These programs are beneficial to both the consumers and the food retailers. In-store information/education programs should increase consumer satisfaction with the supermarket and this satisfaction should be measurable in increased product purchases and thus result in increased profits for the retailer.

These effects have been implied in the literature, but they have not been tested empirically.

The intent of this study was to measure the effects of an in-store information/education program. It addressed the following questions:

> To what extent does a consumer information/education program lead to increased product purchases?
>
> To what extent does a consumer information/education program lead to product satisfaction?
>
> To what extent does a consumer information/education program lead to store satisfaction?

Summary

In recent years consumers have reduced their consumption of red meats due to concerns for health and fitness. The beef and pork industries, in an effort to reduce this trend, have developed consumer information materials which emphasize the nutritional value of their products. Food retailers have also begun to engage in consumer education through the dissemination of informational materials on nutrition, food selection, and food preparation. The purpose of this study was to determine whether an in-store information program, focused on meats, contributed to consumer satisfaction with meats and with the store. It has been implied that the provision of consumer information will lead to greater consumer satisfaction with products and with the total shopping environment. Following a review of the literature, a conceptual model was developed which depicted a relationship between these variables. The model was operationalized and tested in a store intercept study.

CHAPTER II

A REVIEW OF THE LITERATURE

This review of the literature is divided into three parts each of which is focused on a construct relevant to the investigation of the effects of in-store information/education programs on consumer satisfaction with food marketing services. The first segment of the review examines the literature related to the development and assessment of effective consumer information/education programs. The second segment reviews studies on store preference and store patronage to identify predictors of store choice which may be used in the assessment of consumer satisfaction. The third segment reviews a selection of papers on the conceptual and methodological issues of consumer satisfaction/dissatisfaction.

The theoretical framework for this study was based on the literature review. The framework and a conceptual model which specifies the relationships between the provision of an in-store information program and product purchases, satisfaction with meat and satisfaction with the shopping environment are included within this chapter.

Consumer Information and Education

Consumer information/education has been treated as a single construct with the implication that the two terms, education and information, differ slightly in their meaning. Thorelli (1971) distinguished between these terms by describing consumer education as

dealing with generic data and consumer information as being comprised of all the data about individual markets and offerings. He likened consumer education to "consumer civics" in that it teaches the individual all that is necessary to be able to cope with the dynamic and complex economy and to make effective decisions in the marketplace. Aaker (1982) stated that consumer information could take on several forms which include the provision of specific information on product brand or attribute, the structuring of the decision process as by suggesting product attributes to be considered in choice decisions, or focusing on usership of the product. These last two forms of information have been termed education by Zaltman and Wallendorf (1983). According to Aaker. if a firm provides information that is directly or indirectly related to a specific product or its use, it is an information program; if the information is not related to a product or service provided by the firm, it is a public service. As many of the information/education programs are focused on enabling the consumer to make better purchase decisions with regard to a specific product class, they will be referred to as consumer information programs for purposes of this review.

The research and publications on consumer information programs can be divided into three areas which include [1] consumer information processing and information load; [2] sources of information used by consumers; and [3] the development of programs. This review includes selected studies or papers from each of the three areas as they relate to the objectives of this research.

Information Processing and Information Load

Research on information processing and information load is based on the premise that the amount of information that can be assimilated is finite. Recent empirical studies on information load and processing capacity cite the work of Miller (1956) and Simon (1957). In a seminal paper, Miller formulated a hypothesis of the limited size of the short term memory and introduced the concept of the "chunk" as a meaningful and organized information structure (Bettman, 1975). Simon postulated that the capacity to process information was limited and that individuals were selective in the information which they chose to process. He further suggested that people were intendedly rational, but they frequently engaged in satisficing rather than optimizing behavior. Several empirical studies have focused on identifying factors which impede or enhance the ability of consumers to process and utilize information. These studies are partially grounded in learning theory and the work of Kurt Lewin. Based on his empirical research on changing economic conditions, Katona (1975) expanded the simple stimulus/response model to account for the context or frame of reference and for individual attitudes, motives, and behavior. Katona's conceptual model is represented as:

$$S/x \longrightarrow I \longrightarrow R$$

The stimulus is represented by "S" and the situation in which the stimulus occurs is represented by "x." Individual motives, and attitudes are represented by "I" which moderates the response (R).

Recent empirical works which have examined information processing and information load include three which utilized information display

boards in laboratory settings (Jacoby, 1978; Sproles, Geistfeld and Badenhop, 1978; and Lehmann & Moore, 1981), three which utilized in home shopping simulations (Malhotra, 1982; Crosby & Taylor, 1981; Patton III, 1981), and two which utilized laboratory shopping simulation (Jacoby, 1974; Freiden, 1981). In all but two of these studies, food products were the experimental objects. The remaining two, (Malhotra and Crosby & Taylor) utilized housing profiles and grades of carpeting respectively. Their subjects were potential customers for the two products. The results of the studies on information processing and load are summarized within this section in terms of their findings based on stimulus effects or the manner in which the information was presented and in terms of their findings on individual differences in depth and manner of processing information.

Bettman (1975) stated that information was more easily assimilated when it was organized by attribute rather than by brand (alternative) for a larger number of subjects. He also indicated that as the number of attributes was increased, the processing task became more complex. Malhotra (1982), in a shopping simulation designed to compare housing profiles, reported that consumers can be overloaded and become confused as the number of "chunks" is increased. This overloaded condition was found by Malhotra to result in greater uncertainty and lower satisfaction with the task of choosing an alternative. However, Jacoby (1973, 1974) reported that in three separate experiments using food products subjects were confident in their judgments and satisfied with their decisions in spite of the heavy information load. Jacoby later (1984) stated that as more

information becomes available in the environment, consumers will be inclined to select certain "chunks" and ignore others. To the degree that critical information is ignored, the information process becomes dysfunctional. Lehmann and Moore (1980) found that consumers confronted with a large number of information cues tended to select those having a higher information content. They also found that when product names were descriptive [eg. raisin nut rather than Bona Flora bread] fewer information cues were utilized in the product selection. Sproles, Geistfeld and Badenhop (1978) found that as the amount of available information was increased, differences in decision efficiency between consumer classified as "high sophistication" and "low sophistication" decreased. Several studies reported that time pressure impeded information processing. Jacoby (1974) stated that as the number of items on a list increased, subjects processed less information due to time pressures. Both Freiden (1981) and Patton (1981), in two separate studies, reported that subjects preferred products which provided more information without consideration of the quality of the product or the quality of the information. The subjects in these two studies apparently used linear compensatory rules to select the products which provided the most information. As this method requires the least amount of information processing, it appears to have been the most parsimonious in terms of the time required. The subjects in Malhotra's study (1982) indicated that the task [selecting a preferred house] was too difficult to complete within the the time framed allotted. In a survey on nutritional information Klopp and MacDonald (1981) found that 43 percent of those

reporting non use of the information in food selection cited lack of time as the primary reason.

Individual differences in information processing have been recognized by many researchers. Thorelli and Engeldow (1980) differentiated Information Seekers (IS) from Information Avoiders (IA). They estimated that 20 to 30 percent of consumers in high consumption economies may be IS. This group is categorized as having higher than average income and level of education, as part of the upper middle class, and engaged in professional or managerial occupations. Their ownership of durables and general purchasing power is above the average. They are firm believers in test reports and will demand information and product quality. They are heavy in broadcast media usage and magazine readership.

Crosby and Taylor (1981), in a study which examined the influence of consumer information and consumer education, found that cognitive complexity of the subjects had a stronger influence on their abilities to select products on the basis of functional characteristics than either the consumer information or education. Although several studies have indicated that as subjects become more experienced with the purchase of items they will seek out less information, recent investigations have brought this conclusion into question. Jacoby (1978) found that experience with a non durable product resulted in more information utilization. The same study found that as product importance increased, information acquisition also increased. [It is possible that the subjects who were more experienced, as measured by the number of units of the product they normally consumed, were also

those who assigned higher importance to the product.] Jacoby also found that those who self reported their behavior in the experiment as optimizing utilized more information sources than those who reported their behavior as satisficing.

The findings on these studies have been used as the bases for the development of proposals for consumer information programs. Several of the researchers cited above have proposed or critiqued program proposals (Bettman, Jacoby, Thorelli). The results of the studies referenced in this section should be tempered in that they were experimental in nature to control internal validity. Specific findings to be of particularly limited generalizability include Sproles assessment of sophistication of the respondents and Malhotra's efforts to find a correlation between intelligence and total amount of information processed. The subjects in the Sproles, et al. study were college students who were assigned to sophistication categories based on their semester standing, age, number of consumer courses, awareness of brand names, etc. The product categories in the experiment were blankets and slow cookers. Lehmann and Moore attempted to differentiate their subjects on intelligence based on GMAT scores which is certainly not a representation of a range of intelligence. However, when precision is maximized as in experimental studies, generalizability is minimized (McGrath, Martin, & Kulka, 1982). Jacoby (1978) cautioned that no single study encompasses all relevant factors related to the purchase of nondurables. He recommended paradigmatic research for a comprehensive understanding as consumers are influenced by numerous other sources of information [in addition

to the information presented] such as advertising, family preferences, word of mouth.

Sources of Information

Considerable attention has been given to the external sources of information used by consumers. The purposes for identifying the most commonly used sources have been to provide marketers with information on specific channels for advertising and promotion or to aid public policymakers in the development of dissemination strategies for mandatory information disclosure. The external sources of information have been broadly classified as commercial [those which have an economic interest in the product class], independent [those without an economic interest in the product class such as Consumer Reports], or consumer oriented [sources which include friends and other personal sources]. Consumer use of the different sources depends upon the nature and importance of the product, the relative availability of the different sources, personal differences among purchasers, the amount and nature of the perceived risk and other considerations (Engel & Blackwell, 1982).

Capon and Lutz (1979) cited the cost of information as being critical to source selection. Specific costs referenced included monetary and non monetary expenditures. The non monetary include the thinking price, the time price, and the annoyance price. [See Maynes, 1975 for an extensive discussion of these search costs.] For the purchase of non durables, commercial sources are the most prevalent and pervasive. Beales, et al. (1981) described commercial

sources as being the least costly external source and inherently one sided. These writers concluded their assessment by stating that retailers may be less biased than manufacturers or producers because they sell a variety of goods and want consumer satisfaction with some brand rather than selling a particular brand. By providing information, retailers can increase satisfaction without losing business.

Numerous studies have been conducted which queried consumers on sources of information on foods and nutrition. Two studies reported by Bass, Wakefield, and Kholasa (1979) found that consumers rely heavily on the mass media for information. The first study (Fleigel, 1961) examined sources of information among nationality groups in Pennsylvania. Among those surveyed, 72% received information from television, 74% from the radio, 81% from daily newspapers, 52% from women's magazines and 6% from organized groups. A study of north central homemakers found that nutrition information was received through magazines (63%), newspapers (48%), books (47%), television (34%), radio (21%), extension and government publications (17%) and other lay sources (3%). Bass, et al. concluded that while these sources are most commonly cited, family members and friends are the most frequently used sources and are considered to be most credible.

A study of 171 Georgia homemakers (Thomas, 1981) found the newspaper to be the most frequently used source of information on food and nutrition. Among the sources identified, the Atlanta newspaper was used by 51.6% of the urban consumers in the study and the local newspaper was used by 59.6% of the rural subsample. Both

rural and urban groups reported consulting friends and relatives (43.9%) and the cooperative extension service (43.9%) for information. Consumer magazines were utilized by 39.2% of those surveyed. The respondents indicated a use of in store information. Nearly all those surveyed (91.4%) reported that they checked item prices while in the supermarket. A slightly higher proportion of urban consumers (59.1%) than rural consumers (47.4%) indicated use of unit price and nutritional information. A recent study by the U.S.D.A. on dietary changes for health purposes found that 21.0% of those reporting dietary changes cited food labels as an important source of food and nutrition information (Putnam & Weimer, 1981).

These empirical studies indicated a use of commercial, independent, and personal sources. Among the in store information sources available, only food labels and prices were cited. None of the studies reported the use of displays or informational brochures or recipes which have frequently been available (Johnson, 1981; Handy & Nadia, 1980). The low reporting of use of these sources may be due to failure to query consumers on these or it may be due to respondents' failure to recall this information processing activity. Field studies on the effects of display on supermarket sales (Chevalier, 1975; Curham, 1974; Wilkinson, Mason, & Paksoy, 1982) reported high increases in product sales due to the effects of special displays. Hence, it would appear that consumers do garner information for purchase decisions from displays.

A further reason for failure to report the use of in store information sources may be due to the fact that information

obtained while traveling through the supermarket is passively acquired and may not be recalled at a later date. Jacoby (1978) cited this as being a shortcoming of using recall data for measuring in store information search and the primary reason for using protocol (Bettman, 1979), eye fixation and laboratory experiments.

The use of internal search for information prior to external search has been an accepted tenet of consumer behavior (Engel & Blackwell, 1982; Howard & Sheth, 1969; Bettman, 1979). In addition to information stored in memory, new information may be passively acquired through low involvement (Engel & Blackwell, 1982) or information may be passively acquired through interrupts (Bettman, 1979). Beales, et al. (1981) stated that existence of alternatives is nearly always passively acquired and that information about product attributes and advantages/disadvantages of purchasing may also be passively acquired either by observing others [low involvement] or by being confronted with a stimulus such as a special display that is unexpected [interrupt]. Beales, et al. and Jacoby (1978) have indicated that it is frequently not known how much information is acquired actively from the stimuli presented and how much is retrieved from memory and added to the stimulus.

It is recognized that consumers use both internal and external sources of information. Due to the costs of acquiring information which included monetary and non monetary costs, individuals tend to to first access information from the least costly source which is most likely the information stored in memory.

Consumer Information Programs

The development, implementation, and evaluation of consumer information programs has received considerable attention in the literature within the past ten years. Maynes (1976), Thorelli, (1980), and Dunn and Ray (1978) have called for the development of local consumer information systems as an independent source which could provide unbiased information on goods and services in local markets as well as providing standards of quality which would be universally accepted. Beales, et al. (1981), Capon and Lutz (1979), Deshpande and Kirshnan (1981), and Miller (1980) addressed the need for effective consumer information programs in public policy arenas. Aaker (1981) proposed the development and implementation of successful corporate consumer information programs and also discussed the benefits of the programs to the firm. Day (1976) recommended methods and concepts to be considered in evaluating consumer information programs. With the exception of Deshpande and Kirshnan (1981) who provided data to demonstrate a method for assessing information needs, these papers were conceptual and prescriptive rather than empirical in nature.

Beales et al. discussed internal external information search and the implications for designing information programs. They focused on the issue of information costs and the consumers' lack of incentive to seek out new information when some is stored in memory. They emphasized the need for programs designed to reduce difficulty in processing the information.

Capon and Lutz presented a methodology for the development of a

program conceived within the marketing framework. The paper outlined a means of identifying consumer needs from a consumer's point of view rather than from the policymaker's perspective. A matrix solution was provided to examine the issues related to the type of information needed, the source most likely to be used and considered credible, and the means of distribution. Lutz and Capon addressed the issue of measurement and evaluation of these programs. They suggested that the results of previous research to assess program affectiveness were attenuated due to failure to account for some variables which impinge on consumer decisions. It was suggested that perhaps failure of consumer to use unit price information may be due to the convenience and ease of storage of a smaller package size or due to the pressures of a fixed weekly budget which might preclude purchasing the larger size which is least expensive in terms of unit cost. The authors also addressed measurement issues. They suggested the use of "free response format" rather than structured interviews as the latter has produced upward bias in reporting.

Miller (1980) proposed a product and services characteristics checklist to help determine the appropriateness of consumer information programs as remedies to consumer problems. He cited the consideration of importance factors which relate to to health and safety; cost as a proportion of the budget; and the consumers perception of the significance of the information as being critical to the success of a program. He also cited causes of failure of programs which included the following: [1] the information not being available at the decision time, [2] the consumer not being exposed to the

information, [3] the information being too complex to process and assimilate, [4] the information being inconsistent with the present value system.

The benefits and outcomes of independent consumer information systems and public policy programs have been discussed in several papers. Thorelli (1978) postulated that although information avoiders may not use the information they will benefit in two ways: the information used by the information seekers will be diffused and eventually reach the avoiders and the market should operate more efficiently as merchants with marginal policies will be forced out of business when their tactics become known. Studies previously cited (Freiden, 1981; Patton III, 1981) have suggested that although many consumers may not actually use information as in the case of nutritional labeling, they have more confidence in the producers and manufacturers who provide the information and they are more satisfied with the market economy. Day (1976) indicated that while consumers may not have adopted an information program, they may be more satisfied with the purchasing process simply because the program exists.

Aaker (1981) proposed a method for the development and implementation of a successful corporate consumer information program and delineated benefits which would accrue to the firm. These benefits cited by Aaker include:

[1] Improved consumer satisfaction. Satisfied consumers will generate loyalty and thus increased profitability to the firm.

[2] A well developed consumer information program will help

generate a positive consumer image.

[3] The process of developing consumer information programs can provide consumer insights which can stimulate new products and marketing programs.

[4] Information included in advertising will help make the advertising more effective.

While empirical data was not presented, Aaker cited the consumer information programs of Giant Foods Corporation as being in part responsible for increasing Giant's share of the market.

Aaker posited that for the program to be successful it should provide information that is useful in that it should be relevant to the consumer; it should contribute something that is not already known; the contribution should be substantial enough to motivate the consumer to process the information; and the information should be perceived by the consumer to be truthful, comprehensible, and complete.

The development of a successful corporate program is perceived by Aaker to be a five stage process. First, the target segment should be specified along several dimensions including the information seeking behavior, involvement in the product or service, level of current information and other demographic variables. Second, the information needs should be determined which involves understanding the decision processes used in the selection and use of the product as well as being cognizant of perceived consumer problems. Third, a variety of vehicles and approaches need to be considered in developing and testing the program. These might include printed materials, video and visual messages or product demonstrations. Fourth, the program should

be promoted along with its distribution. Failure to make consumers aware that the program exists will inhibit its use. Fifth, the program should be evaluated. Aaker suggested that evaluation of the program should include measures of behavior related to the product use, measures of the firm's consumer image, loyalty, and sales, and consumer awareness, understanding attitude toward and use of the information program.

Day (1976) presented a conceptual design for assessing the effects of information disclosure. He employed the hierarchy of effects model to assess changes as a result of an information program. He postulated that the consumer adoption of an information program is a gradual process which must necessarily begin with awareness of the program's existence. Awareness, comprehension and consideration of the information must produce a change in attitude before choice behavior can be changed. Lack of behavior change (as measured by use of the program) may be the consequence of lack of change in the prior stages. He hypothesized that there would be general and specific effects as a result of the information program which would be to increase buyer confidence in the choice situation [product] and with the industry [producer/retailer]. The increased confidence is hypothesized to increase satisfaction with the purchase decision process by reducing pre decision conflict. The model of A Hierarchy of Possible Effects of Information Disclosure Requirements is presented in Figure 1.

Day presented data from selected studies on information disclosure requirements which demonstrated support for the hierarchy

of effects and also provided a framework for developing questions to measure program effectiveness. Effect questions should include measures of awareness of the information, measures of comprehension of the information, assessments of confidence in judgement, satisfaction with the process and product, claimed use of the information, and impacts on behavior including self reports and other evidence. He indicated that the greatest effect of the program is generally at the awareness stage but cautioned that there will most likely be less

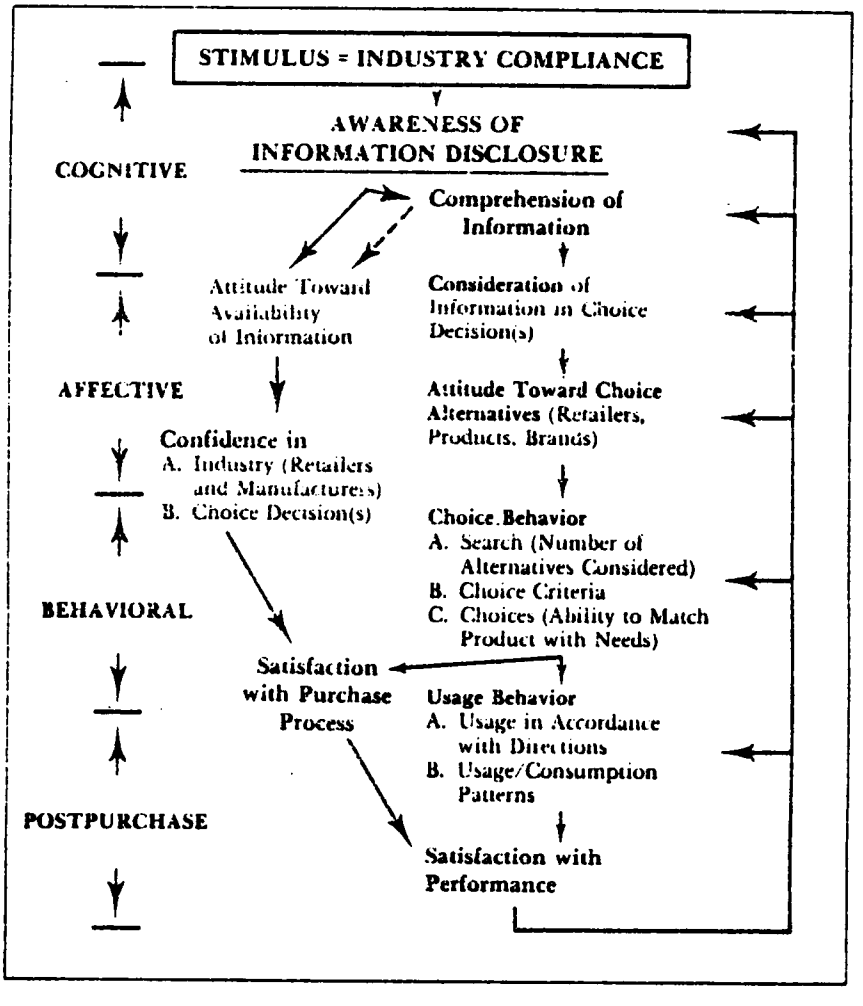

Figure 1: A hierarchy of possible effects of information disclosure. Source: Day, G. S., 1976.

than full awareness. Day further suggested that enhanced consumer confidence and consumer satisfaction may be the principle outcomes of disclosure requirements or information programs.

Summary

The information process and information load research in recent years has been conducted via laboratory experiments or shopping simulations. This methodology has been employed to isolate the effect of information stimuli from other influences that impinge on the shopper during the choice experience. Findings of these experimental studies will be summarized as they relate to this research.

In the case of non durable goods, consumers are parsimonious in their selection of information cues. They prefer more information to less and are more satisfied with their decisions when more information is available. Individuals vary in their ability and motivation to process information.

Both internal and external sources of information are used in the selection of non durables. Several studies identified the importance of commercial, independent, and personal sources of information on foods and nutrition. With the exception of labels and prices, no other in-store sources of information were cited.

The literature on information programs proposed methods for the development, implementation, and evaluation of effective programs. The hierarchy of effects model was recommended as a framework for evaluating the effectiveness of a consumer information program as the model allows for measurement of the stages of acceptance beginning

with awareness and culminating in behavior change as a result of the program. It was suggested that the principle outcomes of consumer information programs might be satisfaction with the decision process and with the product choice, and that this satisfaction could result merely from awareness that the program exists.

Store Preference and Store Patronage

Through a search of the literature within the disciplines of marketing, retailing, consumer affairs, nutrition education, and food distribution, twenty three studies on store patronage were identified and reviewed. These studies can be classified as being concerned with [a] store preference and [b] shopping behavior. The store preference works were analyzed to identify salient attributes used by consumers in the selection of supermarkets; the shopping behavior works were reviewed to identify behaviors associated with supermarket selection and to search for measures of patronage linked to satisfaction assessments.

Store Preference

Eleven studies on shopper preferences were analyzed; these are summarized in Table 1. A primary objective of these investigations was to identify attributes of retail outlets which are predictors of store choice and consequently predictors of satisfaction. Three different methods were used to derive the lists of attributes. [1] query consumers (Handy & Pfaff 1975; Arnold, Roth & Tigert, 1981), [2] consultation with the experts in food retailing (Heller, et al., 1983; Progressive Grocer, 1984), and [3] reviews of literature for

Table 1
Studies on Store Image and Shopper Preferences

REFERENCE	OBJECTIVE	ATTRIBUTES GENERATED	RESULTS
Arnold, Roth, Tigert (1981) n = 903	predict store choice across store types	16[a] Ask consumers 1 & 2 important	Location 22-52%; low price 12-40%; meat spec. suprmkt; loc. import inc. w/age & HH size; price imp. inc. with income
Doyle & Fenwick (1974) 40 London housewives	use INDSCALE to wt. attributes (Method)	5 G[b]. Consumers wt char. selected by rshr. rank prs. chains. ques. beh.	High quality, low price, assortment account for 50% variance. (Use of perceptual space)
Engel & Blackwell (1982) (text reference)	how shoppers choose store? discussion	prev. research cited	14 S - use non compensatory decision rules
Handy & Pfaff (1975) n = 1831	CS/D with food prod. & suprmkts	3 S Gen. CS/D Ask open end ques of small gr. to generate.	70.1% satis with suprmkt; 61.7 Adv., 60% with price info.
Hansen & Deutcher (1977) n = 485 consumers	define store image predictors: groc/dept,	41 G use of Lindquist items; base on literature review	similarity attrib. grocery & dept. store; demographic diff not specific shopper/non
Heller, et. al (1983) n = 827 consumers	loyalty/sat. by store format. re demo.	24 S executives of grocery magazine Progressive Grocer & atmos. imp. attrib;	CS/D differ by attrib./import. of attrib. not same; Higher Y more shop warhs.; price
Langrehr & Robinson (1981) n = 570	shopper profile for suprmkt vs. warehouse	5 S researcher det. incl: demo shop strategy; shop behav.	location imp. sup/ price imp. warhs; also lgr HH, higher food bill; shop less freq
Lindquist (1974) review n = 26	meaning of image	32 G frequency of scholarly mentions in articles	merch. selection, quality, pricing, styling are key determinants
Maddox (1977) n = 256	properties of CS/D store attributes	29 G retailer source of data researcher generated items	8 factors for CS/D: employee, physical, prestige, hrs. complaints, goods, conges.
Reed & Robbins (1983) n = 884	consumer demographic to predict image	6 S researcher generated items (warehs vs. supmkt)	younger shop warehs & use priv. label also bakery, deli, Lgr HH coupon, generic,
Stephenson (1969) n = 291	image: compare new store to reg.	5 items researcher generated (supmkt vs. meat sp)	image char. compared for new store sig. on physical char; friends shop; convenient; personnel; selection; price.

[a] = Supermarket specific (S) [b] = General attributes (G)

identification of attributes (Doyle & Fenwick, 1974; Engel & Blackwell, 1982; Hansen & Deutcher, 1977; Langrehr & Robinson, 1981; Lindquist, 1974; Maddox, 1977; Reed & Robbins, 1983; and Stephenson, 1969).

Four of the authors developed typologies or broad classifications of store attributes. The dimensions of store choice posited by Lindquist (1974), Hansen & Deutcher (1977), Maddox (1981), and Arnold et al. (1981) were designed as a basis to predict store choice across retail store types (Table 2). Arnold et al. acknowledged that while these attributes can be used as predictors across store types, different retail markets also have specific determinants for store preference. Among supermarkets, quality of meat was found to be the specific attribute mentioned most frequently. Within these broad classifications, each author devised an extensive list of attributes. Specific attributes assessed to be salient across store types which were identified by Lindquist, Hansen & Deutcher, and Maddox are shown in Table 3. If one reviews the attributes identified in this table, it becomes evident that many are not relevant to the supermarket situation. In addition to those mentioned as being least important to consumers, attributes such as "easy to exchange purchases, high fashion items, or believability of advertising" are not generally associated with food purchases. Among the ten rated as most important in an empirical test conducted by Hansen and Deutcher, eight would most likely be found on a list of attributes specific to supermarkets. The two remaining attributes cited as important (dependable products and high quality) are rather

Table 2

Store Attribute Classification Schemes

AUTHOR CLASSIFICATION	AUTHOR CLASSIFICATION	AUTHOR CLASSIFICATION
Arnold, Roth & Tigert 7 coefficients	Lindquist* 9 dimensions	Maddox 3 factors
location/convenience	merchandise	physical plant
lowest prices	service	employees
fastest checkout	clientele	hours/days
friendly service	physical facilities	prestige
assortment/variety	convenience	complaints
	promotion	goods
	store atmosphere	congestion/prices
	institutional	air conditioning

*Hansen and Deutcher (1977) used the same set of dimensions

Table 3
Store Attributes Studied in Predicting Consumer Satisfaction with Supermarkets - General

AUTHOR ATTRIBUTES	AUTHOR ATTRIBUTES	AUTHOR ATTRIBUTES
LINDQUIST	HANSEN/DEUTCHER	MADDOX
Merchandise Quality	Dependable Products +	Variety of Goods
Selection/Assortment	High Quality +	Quantity of Goods
Styling/Fashion	Numerous Brands	Friendly Personnel
Guarantee	Well-Known Brands	Helpful Personnel
Pricing	High Fashion Items	Employee Appearance
Service/General	Low Prices vs. Competition	Neatness of Store
Salesclerk Service	Many Specially Priced Items	Cleanliness of Store
Self Service	Lay-Away Available	Spaciousness of Store
Ease of Return	Courteous Sales Personnel	Hours Open a Day
Credit	Helpful Sales Personnel +	Hours Open a Week
Delivery	Number of Sales Personnel +	Prestige of Business
Phone Orders	Easy to Return Purchases	Speed of Service
Social class Appeal	Easy to Get Home Delivery -	Availability of New Products
Self-Image Congruency	Easy to Get Credit -	Advertising Quality
Store Personnel	Store is Known by Friends	Merchandise Display
Physical Facilities	Store is Liked by Friends -	Management's Knowledge of Products
Store Layout	Friends Recommend Store	Dependability of Firm
Shopping Ease	Many Friends Shop There -	Adequate Credit Policy
Architecture	Store is Clean +	Adequate Return Policy
Convenience	Easy to Move Through Store +	Traffic Congestion in Store
Locational Convenience	Easy to Find Wanted Items +	Price of Goods
Parking	Fast Check Out +	Air Conditioning
Sales Promotion	Attractive Decor	Location Convenience
Advertising/Display	Multiple Store Operation	Parking Facilities
Advertising	Store is Nearby	Adequate Delivery Service
Trading Stamps	Short Time to Reach Store	
Symbols and Colors	Convenient to Other Stores	DOYLE
Atmosphere/Congeniality	Easy to Park	
Reputation	Easy Drive to Store	Prices
Reliability	Informative Advertising	Variety of Goods
Satisfaction	Believeable Advertising	Reputationfor
	Friendly Store Personnel	Quality
	Company is Well Known	Layout
	In Community a Long Time	Parking
	Easyto Exchange Purchases	
(+ = important for supermarkets)	Fair on Adjustments	
(- = not important for supermarkets)	High Value for Money +	
	Wide Selection	
	Fully Stocked +	

nebulous and could be interpreted to mean several things.

It is possible that the researchers who used general retail image factors to measure salience of attributes to the supermarket environment may not have been able to accurately measure the construct. The attributes listed were generated by the researchers. Likert scales, semantic differential, or thermometer scales were used to rate the attributes in terms of importance. Each of these uses a forced choice mode. The inclusion of nebulous concepts such as "high quality" may be interpreted to refer to meat, produce, and or processed foods.

Store attributes specific to supermarkets which were identified by Arnold, Roth and Tigert, Heller, et al., Reed and Robbins, Langrehr and Robinson, Engel and Blackwell, and Stephenson are presented in Table 4. The attributes identified as important in the 1984 Progressive Grocer survey are the same those as identified by these researchers. Locational convenience, low prices, and assortment of goods were cited by Arnold, et al. to be the primary predictors. Heller, et al. identified prices and atmosphere as being the most important determinants of store choice in North Little Rock. However, Heller distinguished between factors which were important to store choice and those which contributed most to consumer satisfaction (Table 5). In his survey of 17 stores including conventional supermarkets, warehouse formats, combo stores, super stores, and a commissary, employee attitude, location and cleanliness contributed the most to consumer satisfaction. Shoppers rated satisfaction with their regular food store on these attributes. "Plus or minus"

Table 4
Store Attributes Studied in Predicting Consumer Satisfaction with Supermarkets - Specific

AUTHOR ATTRIBUTES	AUTHOR ATTRIBUTES	AUTHOR ATTRIBUTES
ARNOLD, ROTH & TIGERT	HELLER, ET.AL.	LANGREHR & ROBINSON
Easiest to get to from home	Lowest possible prices	Attractiveness of Store
Lowest prices	Pleasant shopping experience	Product selection
Best overall assortment of food products	Helpful personnel	Low prices
Best at being in stock	Good service	Location
Cleanest store	Prices marked on individual items	Other reasons
Best overall customer service	Store is locatted nearby	
Fastest checkout	Finish shopping as fast as possible	Reed & Robbins
Most friendly staff	Double coupons or other special incentives	In-store bakery
Best quality fresh meat *	Open late hours	In-store delicatessen
Best quality fresh produce	Employee courtesy	Generic products
Most pleasant shopping environment	Check cashing service	Private label products
Best overall advertising	Variety of national brands	Warehouse format
Best weekly specials	Variety of low price/private label brands	Manufacturer coupons
Best quality private label	Dairy department	Engel & Blackwell
Best specialty baked goods	Checkout service	Cleanliness
Best delicatessen dept.	Meat department *	Low prices
Stephenson	Prices on weekly specials	All prices labeled
Advertising	Other general merchandise	Produce dept.
Physical characteristics	Everyday pricing	Freshness - dated
Convenience	Health and beauty aids	Checkout clerks are accurate/pleasant
Selection	Do all shopping at one store	Well stocked shelves
Price	Produce dept.	
Friends shop at store	Delicatessen dept.	

Table 5
Important Attributes and Attributes Which Contribute to Satisfaction

What's Important in Choice?	Score[a]	Supermarket[b]	Warehouse
Lowest possible prices	78.9	+2	+8
Pleasant shopping experience/ helpful personnel/good service	76.2	+1	-3
Do all shopping in one-stop store	73.3	-2	0
Prices marked on packages	71.0	+8	-25
Selection or variety of store brands & lower priced items	65.4	+7	-3
Store is located nearby	63.5	+7	-17
Finish shopping fast as possible	55.2	0	-9
Double coupons or other incentive	50.2	0	+4
Open late hours	48.8	-15	+5
Special departments (bakery/deli)	44.1	-5	-20
How Much Satisfaction?[c]			
Employee courtesy/attitudes	83.2	-3	-5
Location	81.3	-2	-7
Cleanliness	80.3	-5	-11
Check cashing service	79.7	-4	-3
Pleasant/enjoyable to shop in	78.8	-1	-7
Selection/variety of nationally advertised brands	77.4	-4	-2
Selection/variety of store brands or lower priced items	77.3	-1	-1
Dairy department	77.2	+1	-3
Checkout service	76.8	-2	-1
Produce department	75.9	+2	-6
Meat department	75.2	0	-5
Prices on weekly specials	73.4	-3	0
Other general merchandise	73.3	-2	-4
Everyday pricing	71.3	-6	+5
Health & beauty aids	69.6	-6	-9

[a] Each factor rated as not at all important, slightly important, of medium importance, very important, or extremely important. Answers converted to scores on a 0 - 100 scale.

[b] Percent difference from average shopper among regular shoppers of these formats. (study also included superstores and combination format)

[c] Each factor rated as bad, not so good, average, good, or excellent. Answers converted to scores on a 0 - 100 scale.

Source: Heller, et al. Progressive Grocer, October 1983, 36-37.

percentage points from the average were assign to each store format as an indicator of satisfaction on the specific attributes. The data presented in Table 5 include only the relative satisfaction scores for the supermarkets and warehouse formats. Warehouse shoppers were more satisfied than supermarket shoppers with prices only. They were less satisfied on all other attributes.

Handy and Pfaff (1975) measured consumer satisfaction and dissatisfaction with food marketing services. They found overall satisfaction with food stores to be higher (2.22 [1 = always satisfied, 5 = never]) than for any of the seven specific dimensions considered. These included food store ads (2.34), price information (2.40), and four types of product information including processor ads (3.12), nutritional labeling (2.57), age dating (2.52), and ingredient labeling (2.48). This national survey also measured satisfaction and dissatisfaction with seven food groups. The level of satisfaction with all foods was 2.33; for meats and poultry it was 2.40. For meat products the important attributes identified by the consumers were price, taste, packaging, selection, freshness, tenderness, and amount of fat. If classified according to the store attributes previously cited, all these could be included as "quality and variety of assortment." Reed and Robbins, Langrehr and Robinson and Heller, et al. sought to specify shopper profiles for different food shopping formats. They attempted to identify variables which discriminated between warehouse and supermarket shoppers. Low price was found to be the major consideration for shoppers of warehouse formats. These shoppers tended to be heavier users of coupons, and generic brands.

Demographic factors of age, household size, and the food bill were found to be discriminating factors on store format. Warehouse shoppers were found to be younger, with higher food bills and larger households. Heller, et al. found an inverse relationship between income and price concerns transmitted to store choice. In this study, six of ten shoppers with incomes below $15,000 preferred the traditional supermarket, but 25 percent of those who identified the warehouse has being their primary place of purchase had incomes above $34,000.

In a comprehensive study of store patronage by Tigert and Arnold (1981), price concerns were also found to increase along with income. In this longitudinal and cross sectional study, the authors found that frequency of mention of salient characteristics varied over time and with different market conditions. Where there was greater price dispersion within a geographic market, price concerns were mentioned more frequently.

Engel and Blackwell (p. 329) stated that for supermarkets there are no demographic variables which specify market segments. Shoppers can be distinguished on their attitudes toward the shopping activity but they cannot be segregated into demographic markets. This lack of demographic segmentation may be due in part to the geographic dispersion of supermarkets. Store image studies which used attributes specific to the supermarket environment found location and prices to be the major criteria used by shoppers in store selection. Hence, it might be conjectured that shoppers visit the stores that are most convenient to their homes or places of business.

Store Patronage

Twelve studies on shopping behavior have been reviewed. These are summarized in Table 6. Eight of the twelve utilized survey methodology; two analyzed panel data; and two employed experimental designs. Darden and Erdem (1981) and Silbey and Heller (1981) attempted to identify predictors of conation. Darden and Erdem looked at three predictors for store patronage: attitude toward the store, retail work experience, and store familiarity. In testing three models, the Extended Fishbein was found to be the best predictor. Silbey & Heller presented multiple cues for store patronage to business and non business students. Patronage (conation) correlated with cues of price, quality, and peer approval; familiarity with store was not a predictor for supermarket or department store purchases. Stanley & Sewall (1978) combined functional measures (store size & travel distance) with survey responses to seventeen image questions. The objective of the study was to compare three attitudes scales for accuracy in predicting loyalty. Multiple R^2 for the image scales using INDSCALE, MDS, and semantic differential did not differ significantly. Due to ease of administration, semantic differential was judged to be the best method when combining attitudinal data with functional measures.

Six of the studies examined factors related to supermarket patronage and loyalty. Basseler and Newall found that 77 percent of the households surveyed shopped two or three stores per month. Fulgoni and Eskin (1981) in describing the advantages of the Behaviorscan method of data collection over traditional panel data,

Table 6
Studies on Consumer Shopping Styles

REFERENCE	OBJECTIVE	INDEPENDENT VARIABLES	RESULTS
Bassler & Newall (1982) 75 households w/children in nursery school	shopping frequency of young families	Correlations with shopping habits and nutrition	92% shop 1X wk; 77% =2-3 stores per mo; 86% shops warhs. or supmkt.
Darden & Erdem (1981) Survey n =125	Model test for purch. intent. appli/cloth.	Attitude toward store retail work exp. & prev. shop at store	Attitude/ familiarity/ peers shop significant. Extended belief model best predictor
Fulgoni & Eskin (1981) (NA - desc. system)	Adv. of Behaviorscan vs. panel data	demo. of store loyal patterns over time	Loyalty decr. over time = 4 wk 21% loyal; 16 wk 8% loyal
Goldman (1977-1978) Interview 350 women in Jerusalem	store loyalty by demographic char.	purch. furniture, shoes and women's clothing	loyalty inc./ socio econ dec.; pre purch. shop inc/loyalty dec.; p<.05.
Lessig (1973) Survey 91 consumers	Store loyalty relat. store image	% food dollar per at 4 store types	loyalty = avoidance; 5/11 cite negative image factors
Lookinland, Carvalho & Granzin (1982) Survey 202 shoppers	shopper style; price quality or deal prone	type of products info. sources used, demographics & gen. personality traits	identify 5 segments; quality prone, deal seekers, price watchers, quality use/select. deal seek/price watchers/loyal
Mazze (1974) Married students 150	shopping patterns cognitive mapping	number of trips; to diff. areas for food/drugs/newspapers	shop 2+ areas; not re. residence; 71% left trading area during 2 wk period
Monroe & Guiltman (1975) 189 panel data	patronage influence chng. in mkt condit.	interest/opinions; shop behav. rating stores/coupon & adv	attitude influences store switch; store perceptions precede planning, etc.
Samli & Sirgy (1981) 256 shoppers	predictors of loyalty	shop area loyalty; image congruity, +	store loyalty is multi dimensional
Sexton (1974) Panel Data 1956	shopping habits of diff family types by demographic char.	type of store shop purch of 11 items by store format & brand	blk city fewest private label; no diff in pkg size; store type; suburb shop more wkend
Sibley & Weller (1981) 91 students bus./non bus	intent to purchase in supmkt & dept. store	prices, peer shop, quality prev. shop	patronage corr. price, peers shop, quality p<.05 famil. NS
Stanley & Sewall (1978) survey 372 shoppers	determinants of shopping patterns: physical & image	distance & store size plus 3 image measures compared.	INDSCALE, MDS, semantic differential = same results (stat. signif)

cited data on store loyalty which showed a decline in store loyalty over a 24 week period: during the first four weeks of the study, 21 percent shopped one store and 33 percent shopped two. After 24 weeks, only six percent had shopped one store and 13 percent had shopped two. Mazze (1974) found that married students shopped at least two trading areas, and that these trading areas were not necessarily the closest to their residence. Seventy one percent of this sample had left the trading area to shop during the two week period studies. Sexton (1974) found no significant differences in shopping loyalty between black and white city and suburb residents in the Chicago area. In a study which used types of supermarket products purchased, information sources used, demographic characteristics and personality traits to assess shopping style as price, quality or deal prone. Lookinland, Carvalho, and Granzin (1982) found two types: "quality users," and "price watchers" to be most store loyal.

Lessig (1973) operationalized loyalty as the percent of food dollar spent at four food stores. In combining this measure with responses to a questionnaire on store image factors, he found differences between loyalty and image to be two distinct constructs. Five of the eleven image factors were negative; shopper loyalty was assessed to be based more on avoidance of certain stores rather than on satisfaction with the store most frequently shopped.

Goldman (1977) interviewed women in Jerusalem to assess store loyalty for furniture shoes and clothing. He found that loyalty deceased as socio-economic level increased, and that loyalty also decreased with increased comparison shopping. Loyalty was not found

to extend across products among the sample interviewed.

Samli and Sirgy (1981) found store loyalty to be a multidimensional concept which could not be explained by one variable or set of variables. A linear combination of area/shopping complex loyalty, socio economic status, store image, and self concept congruity explained less than 25 percent of the variance. Based on the findings of this study, the authors posited a causal model of store choice in which the variables were considered to be interdependent and directional in their influence.

Monroe and Guiltinan (1975) developed a sequence of effects model of store choice based on a path analysis of longitudinal survey data which measured shopping behavior under changing market conditions. The model (Figure 2) demonstrates that store choice is multidimensional. The model postulates that demographic and psychographic characteristics of the buyer contribute to opinions and attitudes toward shopping which shape perceptions of store attributes. The model also postulates that retailer strategies influence buyer opinions and attitudes toward the store. According to the sequence, in-store processing precedes the product purchase. There are feedback loops from both the in-store processing and product purchase to general opinions and attitudes. Where the in-store consumer information/education program is a "retailer strategy" and the awareness and level of use of the program is represented in the "in - store information processing," the feed back loops could be evaluative of satisfaction or dissatisfaction which would culminate in repeat patronage or store switching.

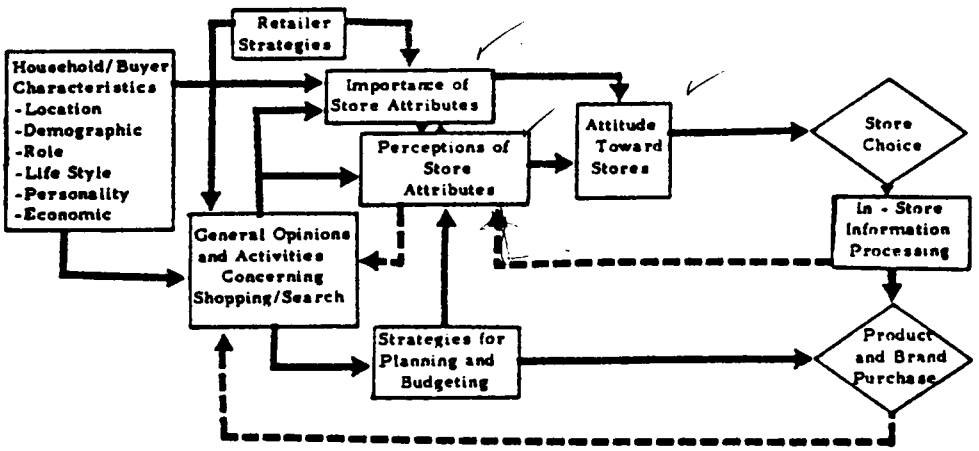

Figure 4: Sequence of effects in store choice.
Source: Monroe, K.W. & Guiltinan, J.P. (1975)

Summary

Perceptions and stated preferences are distinct from behavior. When asked to indicate which factors are important for store selection, generalized responses such as "low prices, convenient location and assortment of goods" are given which are representative of the total desirable store environment. Awareness of these attributes as salient is of limited use for two reasons. First, the importance of these attributes was not confirmed by findings of the store patronage studies. Mazze found that married students did not necessarily shop the stores most convenient to their residences. The Behaviorscan data cited by Fulgoni and Eskin indicated a low level of loyalty to the point that only 19 percent of shoppers frequented one or two supermarkets within a 24 week period. The Heller study provided evidence to discredit "low prices" as a major predictor or

salient attribute. While low prices were the most important attribute cited by warehouse shoppers, only nine percent were loyal to the warehouse format and 27% were loyal to the supermarket format.

Second, awareness of these attributes is not useful to food retailers who are interested in building store traffic and increasing patronage. Their locations and square footage are fixed; it would not be feasible to be more locationally convenient or to significantly increase the assortment of goods. Whether a particular food retailer could lower prices and operate profitably is a matter of conjecture. Hence, store attributes which could be manipulated by the retailer must be identified to be incorporated into retail strategies. The proposed study will examine the effects of an in store information and education program on satisfaction and store patronage.

Consumer Satisfaction and Dissatisfaction

The marketing concept as a philosophy of management holds that it is the function of business to produce goods and services that satisfy consumer wants and needs at a profit (Kotler, 1980). Hence, marketers have traditionally been interested in identifying factors which contribute to consumer satisfaction with goods and services.

The era of consumerism resulted in expansion of the marketing concept to include a responsibility of the business community to protect and educate consumers in the marketplace (Sirgy, 1983). It was anticipated that these efforts would lead to greater consumer satisfaction in the marketplace. This expansion of the marketing concept paralleled the development of the consumer satisfaction and

dissatisfaction paradigm in consumer research. These concurrent developments were considered to be a producer reaction to the changing mode of thinking from "caveat emptor" to "caveat venditor." The era of consumerism shifted the focus from maximizing consumer satisfaction to minimizing consumer dissatisfaction.

Satisfaction was one of the central concepts in the Howard and Sheth (1969) model of buyer behavior. The concept was defined as

> a mental state of being adequately or inadequately rewarded in a buying situation for the sacrifice the buyer has undergone. The adequacy is the consequence of matching actual past purchasing experience with the reward hat was expected from the brand in terms of its potential to satisfy the motives served by the particular product class. It includes not only the reward from consumption of the brand but any other reward received in the purchase and consuming process (pp. 415-416)

The volume of research in consumer satisfaction/dissatisfaction (CS/D) has increased significantly over the past ten years. In 1972 only seven papers were published on this topic. For the 1982 Consumer Satisfaction conference, more than 600 papers were submitted (Arndt 1984). Several research streams which have evolved include investigation of the substantive issues of dissatisfaction and complaining behavior, analysis of the theoretical and conceptual constructs of consumer satisfaction/dissatisfaction, and the development of reliable and valid measures. Several studies on the substantive issues of CS/D in store patronage were identified. Research by Maddox (1977) and Handy and Pfaff (1977) was discussed in the store patronage section of this review. The major tenets in a paper by Oliver (1981) on CS/D in retail sections have been incorporated herein. This section review is divided into two parts:

the first examines several of the conceptual papers on CS/D and the second addresses issues related to measurement of the construct.

Conceptualization of Consumer Satisfaction/Dissatisfaction

At the 1976 workshop, Conceptualization and Measurement of Consumer Satisfaction and Dissatisfaction, at least seven definitions were presented. Consumer satisfaction was often defined in terms of a yardstick for measures as "consumer surplus" (transactions which surpassed expectations) or it was expressed as a relationship between reality and an ideal point. It was described as an attitude that cannot exist without prior experience; it was perceived as an entity entity without substance or as an illusive entity. It was most often defined as the absence of dissatisfaction. Dissatisfaction appeared to be easier to define; it was identified as the "gap" between the ideal and the real. Dissatisfaction suggested action and it seemed to be more easily measured.

The theoretical base for the CS/D paradigm is derived from social psychology. Affective and cognitive theories have been used to explain the phenomena. Sirgy (1983) identified six cognitive theories which have been used to explain satisfaction/dissatisfaction: contrast theory, cognitive dissonance theory, exchange theory, contrast theory, assimilation-contrast theory, generalized negativity theory, and attribution theory. Fisk and Coney (1981) used Adams equity theory to explain CS/D with service choices. Oliver (1980, 1981) emphasized the role of Helson's adaptation theory in explaining low levels of dissatisfaction.

The Consumer Satisfaction/Dissatisfaction paradigm, as it has evolved, appears to represent a complex interrelationship of satisfaction, disconfirmation, expectations, performance, and attitude. It involves cognitive and affective elements In 1982 following six years of CS/D workshops, Day stated that....

> many different ideas have been proposed about what satisfaction/dissatisfaction is and how it and its consequences should be measured. Most of these ideas have been examined to some extent in field studies but as yet no consensus has been achieved with respect to a core theory of satisfaction/dissatisfaction (Day, 1982, p. 113).

The complexity of the issue and its seeming illusiveness have perhaps been responsible for the continued interest in CS/D by many researchers. A recent bibliography cited 18 papers by Ralph Day (1975-1983), eleven by J.A. Miller (1969-1981), 21 by J.E. Swan (1972-1982), six by Handy and Pfaff (1972-1978), Select papers from these authors have been reviewed and will be discussed within this review as they relate to the development of the research.

Handy and Pfaff sought to develop an index of CS/D for public policy assessment and development within the U.S. Department of Agriculture. The focus of the index was on satisfaction with food products. Pfaff (1977) addressed the conceptual and methodological issues involved in the development of the index. An economic model, a cognitive model, an affective model, and a communications effect model were considered for the development of the index. The economic model which used "consumer surplus" to define CS/D was perceived to be too restrictive in its interpretation. The cognitive model was based on the use of an ideal set of attribute combinations that an individual

considers relevant to himself and his perceptions of the actual combination of attributes. As individuals would differ in perceptions, this model appeared to have shortcomings with regard to aggregation. It was suggested that there may be differences in CS/D between socio-economic groups and that an index which measured discrepancies between what is realized in the market and what the market actually offers would be perceived differently. The affective model was suggested as a means of evaluating felt needs, aspirations and experiences. The communications effect model posited that observed changes in CS/D could be the result of communications rather than being inherent in the market transaction. A cognitive model was used for the development of the index.

Miller (1977) stated that CS/D results from an interaction of levels of expectation about anticipated performance and evaluations of perceived performance. He suggested that the researcher investigating CS/D must be cognizant of the aspirational levels of expectation and the comparison standards used by individuals in assessing performance. Miller postulated that the system of expectations probably varies among consumers on the basis of social learning experiences and within a given consumer over time or with a change in experience or situation. He suggested that CS/D is a dynamic condition to which an individual continually adjusts standards and modifies expectations with each experience and with new information.

Miller viewed satisfaction as a relationship between actual and expected performance. If actual performance is equal to or above expected performance, the consumer will be satisfied. If actual is

below the expected, there will be dissatisfaction. However, an individual's assessment or expectation for performance will differ according to the level at which expectations are set and the comparison standards against which perceived performance is judged. Expectations for a given situation may be set as the ideal [wished for performance], the expected performance [based on average prior experience], the minimum tolerable [least acceptable performance], or the deserved [the level that ought to exist]. If the perceived level of performance is measured to be above the expected performance, the satisfaction decision will fall within the "latitude of satisfaction." If perceived performance is below the expected, the satisfaction decision would fall within the "latitude of dissatisfaction." In low involvement product situations where the product may not quite measure up to expectations, the decision may fall within the "latitude of indifference." Miller suggested that individuals may be more apt to use one type or another in responding to expectations and in evaluating performance.

Swan, Trawick and Carroll (1980) examined satisfaction along two dimensions: predictive and desired expectations. Expectations have been defined as the consumer's estimate at the time of purchase, or prior to usage, of how the product would perform. Predictive expectations were conceived as the preusage estimate of the performance level that might reasonably be necessary for the consumer to be satisfied. Desired expectations were defined as reflecting what the consumer expected should be the level of performance. The core concept of the Swan thesis was that satisfaction is sensitive to

actual performance of the product in comparison to desired and predictive expectations. Consumer satisfaction/dissatisfaction as the confirmation or disconfirmation of expectations. By combining relative levels of predictive expectations (PE) with desired expectations (DE) and resulting performance (RP), positive and negative confirmation or disconfirmation of expectations can be measured as satisfaction. Examples of several possible combinations of expectation and outcomes can be represented symbolically as follows:

PE = DE	RP > PE,DE	Positive disconfirmation	High satisfaction
	RP = PE = DE	Disconfirmation	Satisfaction
	RP < PE,DE	Negative disconfirmation	Dissatisfaction
DE > PE	RP > DE > PE	Positive disconfirmation	High satisfaction
	RP = DE > PE	Confirmation of DE	Satisfaction
	RP = PE < DE	Confirmation of PE	Dissatisfaction/ Indifference
	RP < PE < DE	Negative disconfirmation	High dissatisfaction

Positive disconfirmation yields the highest level of consumer satisfaction. An empirical test of the theory involving restaurant patrons' satisfaction with food and service confirmed the hypothesized relationships as stated.

Studies by Oliver including Oliver (1980), Oliver and Westbrook (1980), Oliver and Linda (1981), and Oliver (1981) were reviewed. These works focused on the relationships of expectations to expectancy disconfirmation and the interrelationship of disconfirmation to satisfaction and expectations. Helson's adaptation level theory was the base for most of Oliver's conceptualizations of CS/D. This theory states that stimuli are perceived in relation to an adapted standard which is a function of the stimulus itself, the context, and the

psychological characteristics of the individual (Oliver, 1980, p. 360). Once established, the adaptation level serves to sustain subsequent evaluations in that positive and negative deviations will remain in the general vicinity of one's original position. Using the adaptation level theory concept, Oliver postulated that product satisfaction was based on the product itself including one's prior experience, brand connotations and symbolic elements, the context including the content of communications from social and referents and marketer dominated sources; and the individual's personality traits including persuasability and perceptual distortion. Deviations from the adaptation level were thought to be caused by the degree to which product performance deviated from expectations. Oliver defined expectations as belief probabilities of attribute occurrence. From this it necessarily follows that beliefs provide the foundation for attitude formation and serve as the adaptation level for subsequent satisfaction decisions. A series of equations to explain these relationships was given as:

$$\text{attitude } (t_1) = f \text{ (expectations)}$$

$$\text{satisfaction} = f \text{ (expectations, disconfirmation)}$$

$$\text{attitude } (t_2) = f \text{ (attitude } t_1\text{, satisfaction)}$$

By incorporating concepts from Fishbein's beliefs/intentions model, two more equations were added to demonstrate the relationship between satisfaction and intentions:

$$\text{intention } (t_1) = f \text{ (attitude } t_1)$$

$$\text{intention } (t_2) = f \text{ (intentions } t_1\text{, satisfaction, attitude)}$$

Following an empirical test of these relationships, Oliver

concluded that the consequences of satisfaction decisions were revised attitude and intention. These were reflected in the following sequence:

satisfaction ------> post attitude ------> post intention

Oliver developed this hypothesized sequence based on previous research which showed expectations measured before product exposure were uncorrelated with subsequent expectancy disconfirmation which indicated that satisfaction decisions mediate changes between pre and post exposure.

In another study (Oliver & Linda, 1981), Oliver examined the influence of satisfaction and its determinants on behavioral intention and product preference in a simulated two stage consumer situation. The results of this investigation showed that satisfaction was a function of expectation and disconfirmation; that intention was a function of satisfaction, and that preference was influenced by satisfaction and disconfirmation.

Oliver and Westbrook (1980) utilized factor analysis to measure the interrelatedness of satisfaction, attitude, and disconfirmation expressed as:

Attitude = f (expectations) and

Satisfaction = f (expectation, disconfirmation)

The analysis of the data indicated that satisfaction and disconfirmation were two distinct constructs. Disconfirmation was assessed to be a belief representing a perceived factual comparison between the expected and the received. Satisfaction was found to be more closely associated with evaluations and heavily influenced by the

evaluative tone existing before the disconfirmation experience. The differences between attitude and satisfaction were explained in that attitude was defined as the liking/disliking for the absolute object and satisfaction was defined as a liking for the disconfirmation experience surrounding the past purchase of the object. The authors concluded that satisfaction is an evaluation of the totality of the purchasing situation including the product outlet. Satisfaction was viewed as a disturbance acting on an attitude system. They called for further research to include disconfirmation measures and corresponding expectation items such as satisfaction relative to the ideal.

Sirgy first posited a social cognition model of CS/D in 1980. Since that time he has refined and tested this model in experimental settings. The social cognition model postulates that CS/D is based on evaluative congruity which is described as a cognition process in which a perception is compared to an evoked referent cognition to evaluate a stimulus object. Satisfaction or dissatisfaction as an outcome of the comparison is determined by assessment of the discrepancies identified through the comparison. [This concept is similar to the disconfirmation construct identified by Swan, et al., 1980]. Sirgy has suggested eleven possible congruity processes in determining CS/D. Included in these are variants of the expectational states identified by Miller (1977).

While there have been numerous investigations into the conceptualization of CS/D, the work of Miller, Swan, Oliver, Handy, and Day cited herein served to define or describe the major constructs and their interrelationships. These major constructs are expectation,

disconfirmation, performance, attitude, intentions, and satisfaction. The vast majority of the CS/D studies have utilized some variant of disconfirmation (Churchill & Supernant, 1982) which encapsulates the multiple constructs and permits measurement of the illusive construct of satisfaction. Swan (1982, p. 124.) presented the following sequence to describe the disconfirmation paradigm:

preattitudes ---> expectations ---> product usage and perception of performance ---> disconfirmation ---> satisfaction ---> postattitudes ---> intentions ---> word of mouth ---> repurchase

Day (1982) stated that feelings of CS/D resulting from a consumption experience are part of a broader experience which begins prior to the decision to purchase and continues throughout the shopping process and the consumption process. Aiello, et al (1978) concluded that satisfaction is a global concept which incorporates the many facets of the consumption system as well as the many attributes of the product. They defined a hierarchial structure of levels of the consumption system at which satisfaction can be measured and indicated that measured satisfaction may vary depending on which tier of the system is the object of study. The three level at which consumer satisfaction can be measured are:

<u>System Satisfaction</u> - the consumers' subjective evaluation of the total benefits received from the operations of the institutional marketing system.

<u>Enterprise Satisfaction</u> - the level in which consumers receive satisfaction from their dealings with complex product/service organizations such as retail stores and health care facilities.

> Product/Service Satisfaction - the consumers' subjective evaluation of the benefits, objective and otherwise, obtained from the consumption of a specific product or service. (Aiello, et al., 1978, p. 44)

The authors did not postulate a causal relationship or an ordering of the sequence. Oliver (1981) postulated a three stage model of satisfaction with retail stores. He proposed that satisfaction with retail stores was a factor of satisfaction with store attributes including parking facilities, friendliness of sales personnel, fast checkout, and assortment of merchandise. The satisfaction with the retail store [stage 1] is followed by satisfaction with the product category [stage 2] and that satisfaction/dissatisfaction with the complaint handling would follow as the third stage. Handy and Pfaff (1976) proposed a hierarchial model to explain satisfaction with food products. Their model illustrated a chain of satisfactions beginning with satisfaction with the attributes of a specific product [ie. beef] which contributes to satisfaction with the product category [ie. meat] and leads to satisfaction with the foods.

The Measurement of Satisfaction and Dissatisfaction

Miller (1977) identified several general measurement problems including timing, control, testing and reactivity, interactions, consumption coincidence, anchoring, and bargaining. The issue of timing of measurement has been raised by other researchers. Oliver (1981), Day (1982) and others have stated that satisfaction is a temporal condition. Responses are likely to differ depending whether the measurement is taken at the point of purchase, immediately

preceding consumption, or following consumption. The length of time that passes between actual consumption and measurement of "actual performance" will mediate the responses.

Anchoring of scaled responses is a particular problem with satisfaction measures. Memories of experiences and impressions of performance change over time. Instrument reactivity can occur in that the respondent's true measures of CS/D may be altered by the imposition of the questionnaire.

Oliver (1981) offered recommendations for measurement of the four major CS/D constructs. He suggested that attitudes be measured based on importance weights of the attributes that influence or are part of the experimental object. The total of the importance weights for the attributes might be summed for an assessment of the attitude of the respondent toward the product category or purchasing environment.

Expectations may be defined in terms of the expectational states including ideal, deserved, minimum tolerable, and expected or they may be defined in terms of obtained benefits without consideration of the level of comparison. Miller (1977) suggested a satisfaction index be calculated.

$$SI_j = \sum_{i=1}^{n} W_1 R_{ij},$$

where SI_j = Satisfaction Index for object j

W_i = Importance weight for satisfaction dimension i

R_{ij} = Rating of performance of object j on satisfaction dimension i.

Expectational states (ideal, expected, deserved) have been measured using global scales of satisfaction/dissatisfaction. Sirgy (1984) has suggested using global measures of the different states and summing the responses for a linear combination to be regressed on the general measure of satisfaction with performance.

Disconfirmation is measured as a post experience expectation. It is an assessment of the outcome based on prior expectations or for comparison level expectations. This construct is the most commonly measured within the CS/D construct; in empirical studies (Churchill & Supernant, 1982) disconfirmation measures obtained the highest reliability coefficients of the constructs measured. Common semantic differential or Likert scales are used to assess disconfirmation.

Satisfaction can be measured by using straight forward polar statements on semantic differential scales. Several researchers have compared different satisfaction measures to assess validity and reliability. Aiello, et al. (1978) compared overall simple satisfaction scales [not satisfied to extremely satisifed] to mixed scales, expectational scales, and affect measures. They found the simple scale to be preferable to the mixed scale as the latter, which uses a neutral mid point, compressed the positive response categories into a smaller space which tends to force the apparent satisfaction level to the positive end of the scale. The findings are based on a multitrait multimethod matrix analysis.

Assessments of CS/D have frequently incorporated both attribute composite and global measures of the constructs. Churchill & Supernant obtained composite construct reliabilities of .916 and .919

for composite and global measures of expectations and .873 on the same measures for performance. The global measures of satisfaction using a mixed scale resulted in a .657 reliability which was considerably below the .849 obtained for the composite and faces scales.

Aiello, et al. correlated single scale global measures with weighted and unweighted composite attribute measures of satisfaction. Higher correlations were obtained between the unweighted attribute and global measures than between the weighted attribute and the global scales. A summed linear attribute model and a regression model were used to obtain correlations. The regression model in which overall satisfaction measure was the criterion variable obtained the higher correlation coefficients.

Summary

The studies reviewed were selected for their individual contributions to the conceptualization and measurement of CS/D. Pfaff provided an overview of the problems inherent in the modeling of CS/D and methods of conducting a survey on the concept. Miller's contribution was the dichotomy of anticipated vs. perceived performance and the delineation of expected performance states - ideal, expected, deserved, and minimum tolerable. Swan differentiated between predicted expectations and desired expectations and the relationship of these to disconfirmation and the resultant satisfaction states.

Oliver's work, based on adaptation theory, provided an understanding of the illusiveness and temporal nature of satisfaction

and of the relationship between the major constructs of the CS/D paradigm. He postulated a sequence of effects based on the relationships between attitude, expectation, satisfaction, and intentions. Through empirical studies, Oliver was able to distinguish between the constructs of expectation, disconfirmation, and satisfaction. He concluded that disconfirmation was a factual assessment based on the performance of the product and that satisfaction was an emotional response involving the liking or disliking of the disconfirmation experience. He also concluded that CS/D was an evaluation of the total consumption experience including the purchasing environment.

Aiello et al. suggested that there are three stages to the consumption system in which CS/D can be measured. High correlations were found between the stages as measured by overall and composite attribute scales. They did not hypothesize a directional relationship among the states nor did they indicate that there may be a causal relationship between levels. Oliver suggested a directional relationship whereby satisfaction with the shopping environment precedes satisfaction with the product, but he did not provide empirical evidence to support this notion.

Several measurement issues included in this review addressed the problems of capturing satisfaction. Major problems relevant to CS/D include the timing of the measurement, the referent state, and the reactivity of the instrument with the satisfaction state. The determination of the most appropriate construct to be measured was discussed. Disconfirmation scales generally were found to provide

more reliable measures of the consumption experience than were scales on expectations.

Comparisons were drawn between global and attribute composite scales of CS/D. While there is some evidence to support the notion that global scales are superior to attribute composite measures, there is also some evidence of high correlations between the two types. Several researchers suggested weighting the attribute scales, however there has been empirical evidence that unweighted scores were more reliable and correlated more highly with the global measures. Several studies compared reliability of measurements based on the types of scales that were employed. Single scales, mixed scales, Delighted/Terrible, faces, ladders, and thermometer scales have been used to measure satisfaction/dissatisfaction. Except for the finding that single scales may be preferable as they provide a broader range of satisfaction states, there does not seem to be any consensus or research tradition in measurement. However, this is to be expected as there is no true consensus on the definition or the conceptualization of consumer satisfaction/dissatisfaction at the present time (Swan, 1982).

Theoretical Framework

Through a review of the literature, linkages between information and consumer satisfaction and between retailer strategies and consumer satisfaction were identified. The literature on information suggested that consumer information would lead to increased satisfaction with the decision process, with the product, and with the purchasing

environment. The literature on store patronage suggested that retailer strategies contribute to consumer attitudes toward the store thereby leading to store choice. In-store information processing, which is also influenced by retailer strategies, leads to product purchases. The literature on consumer satisfaction suggested that satisfaction leads to post purchase attitudes, which leads to intentions to repurchase. The relationship between consumer information/education programs in a retail environment and satisfaction is represented by the following conceptual model:

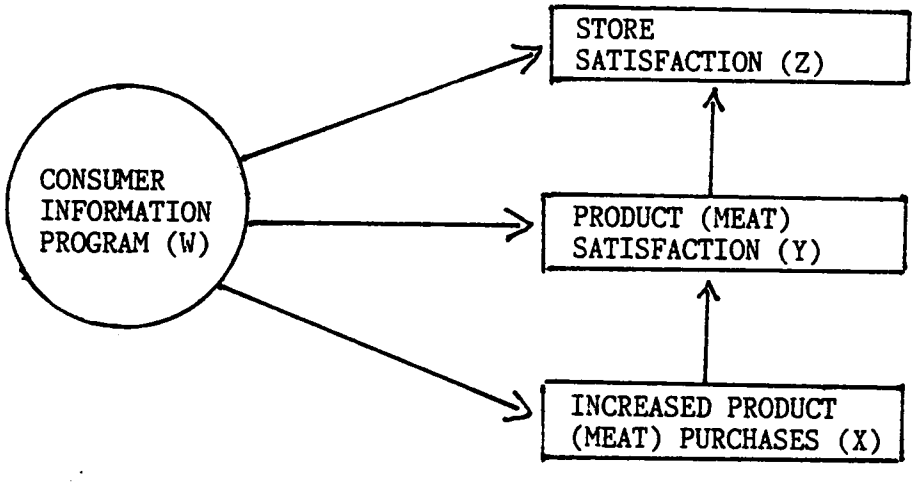

Figure 3: Conceptual model

There are four constructs included in this model. The model illustrates the benefits that accrue to the recipients of a consumer information program and to the providers of the program. The Consumer Information Program is defined as an ordered effort by an enterprise to provide product specific information that will help consumers in the selection and use of goods and/or services. Consumer information

incorporates both consumer information and education.

As the information is presented at the point-of-decision, product purchases should be expected to increase. The model states that consumer information program awareness will lead to increased product purchases.

As the purpose of the information program is to aid in the selection of specific products, consumers utilizing the information should be able to make more informed choices in the marketplace, and therefore experience higher levels of satisfaction with the products they select. Hence, the model posits that consumer information programs will lead to product satisfaction.

Previous research suggested that satisfaction is a broad concept and that consumer satisfaction involves not only the object or product under consideration, but that it is a measure of the total experience surrounding its aquisition. It was also suggested that the provision of consumer information will lead to improved overall customer satisfaction. Therefore, the model further posits that satisfaction with the product/object of the information will contribute to satisfaction with the store, and that the provision of consumer information will lead to store satisfaction.

Linkages between the projected outcomes are depicted as directional. It was posited that increased meat purchasing would lead to increased satisfaction with the meat department, and that this would contribute to increased satisfaction with the total shopping environment.

Hypotheses

This study was designed to provide an empirical test of the conceptual model. The purposes of the study were to define the relationship between the provision of consumer information/education programs and satisfaction with food marketing services; and to assess the mutual benefit of a program as it affects both consumer satisfaction and retail food store profits. The specific objectives of this study were:

[1] to determine whether an in-store consumer information program focused on meats culminates in increased purchasing of meat products.

[2] to determine whether a consumer information program contributes to satisfaction with meat products.

[3] to determine whether meat satisfaction contributes to satisfaction with the supermarket.

Based on these objectives, the following hypotheses were formulated:

H_o1: An in-store consumer information/education program will be associated with increased meat purchasing by shoppers at the supermarket providing the program.

- H_o1a: Shoppers who express a positive attitude toward the consumer information program will purchase more meat than shoppers whose attitude toward the program is neutral or negative.
- H_o1b: Shoppers who are users of the consumer information program will purchase more meat than shoppers who are nonusers of the program.
- H_o1c: Shoppers who perceive the consumer information program to be useful will purchase more meat than shoppers who do not perceive the program to be useful.

H_o2: An in-store consumer information/education program focused on meats will be associated with higher levels of satisfaction with the meat department.

H_o2a: Shoppers who purchase more meat will be more satisfied with the meat.

H_o2b: Shoppers who possess a positive attitude toward the consumer information program will be more satisfied with the meat department than those whose attitude is neutral or negative.

H_o2c: Shoppers who are users of the consumer information program will be more satisfied with the meat department than shoppers who are nonusers.

H_o2d: Shoppers who perceive the consumer information program to be useful will be more satisfied with the meat department than shoppers who do not perceive the program to be useful.

H_o3: An in-store consumer information/education program will be associated withhigher levels of satisfaction with the store.

H_o3a: Shoppers who are more satisfied with the meat department will express higher levels of satisfaction with the store.

H_o3b: Shoppers who express a positive attitude toward the program will be more satisfied with the store than those whose attitude is neutral or negative.

H_o3c: Shoppers who are users of the program will be more satisfied with the store than shoppers who are nonusers.

$H_0 3d$: Shoppers who perceive the consumer information program as being useful will be more satisfied with the store than shoppers who do not perceive the program as being useful.

Summary of the Review of Literature

This review was conducted to identify linkages among the constructs relevant to the investigation of the effects of in-store information/education programs on consumer satisfaction with food marketing services. Based on the review, a theoretical framework and

conceptual model depicting the relationships among these constructs were developed.

The review was divided into three sections. The first section focused on consumer information; the second section was concerned with store preference and shopping behavior; and the third section dealt with concepts and measurement issues of consumer satisfaction and dissatisfaction.

The literature on information processing and information load indicated that consumers will differ in their utilization of information due to individual attitudes and motivations. Differences in the presentation of information stimulus will also influence its utilization.

Previous research on sources of information on food and nutrition did not indicate a use of in-store sources with the exception of several studies which measured use of mandatory labeling information. The fact that in-store displays and other informational materials were not mentioned may be due to failure to list these forced choice questionnaires. It may also be due to the fact that information obtained in the store is acquired passively either through low involvement or through interrupts.

Recommendations for the development, implementation, and evaluation of consumer information programs were reviewed. Several papers suggested that program development and implementation be based on the precepts of the marketing framework. It was recommended that program evaluation be based on the hierarchy of effects model. This model allows for measurement of a range of indicators of program

effectiveness (awareness to behavior changes). Although there was no direct empirical evidence, several researchers indicated that satisfaction was a principle outcome of information disclosure. Day postulated that corporate consumer information programs would lead to increased consumer satisfaction and improved store image. Aaker suggested that information disclosure would lead to consumer satisfaction with the purchase process. Jacoby hypothesized that consumer satisfaction with the product and the purchasing environment would result from information disclosure, and that satisfaction would occur as the result of being aware of the information disclosure.

The store preference studies provided an assessment of the salient attributes used in the selection of supermarkets. Low prices, convenient location, and assortment of merchandise were the primary attributes identified. One study distinguished between attributes that are important to choosing a store and those which contribute to satisfaction. Supermarket satisfaction was found to be a factor of cleanliness, friendliness of personnel, merchandise quality. Warehouse format shoppers were more satisfied with prices than the average, but they were less satisfied with all other attributes. Several studies on shopping behavior found that loyalty to food stores was extremely low. Monroe posited a sequence of effects in store choice for food stores which attested to the multidimensionality of store patronage. According to this model, individual shopper characteristics and retailer strategies influence general opinions and attitudes toward the store and contribute to store choice. Information processing within the store leads to product choice and

feeds back to influence individual opinions and attitudes toward the store.

A review of several major and recent papers on consumer satisfaction selected from the extensive body of literature on the topic was conducted. The purpose of this review was to become familiar with the conceptual frameworks of the paradigm and the methodologies and techniques for measuring consumer satisfaction.

Eight theories from social psychology have been advanced to explain consumer satisfaction/dissatisfaction. Among the theories advanced, Helson's adaptation level theory appears to provide a clear explanation of the satisfaction/dissatisfaction outcome assessment. This theory states that stimuli are perceived in relation to an adapted standard which is a function of the stimulus. Once established, the adaptation level serves to sustain subsequent evaluations.

The major constructs of CS/D include expectation, disconfirmation, preference, and satisfaction. Several researchers have included attitudes and intentions in association with CS/D. The disconfirmation of expectations appears to be the essence of CS/D. Positive disconfirmation results in satisfaction, and negative disconfirmation results in dissatisfaction.

The measurement of the satisfaction construct is problematic for three reasons. It is temporal and subject to change based on the proximity of the experience. Its assessment depends on the referent state or the comparison level being used by the respondent and it is prone to instrument reactivity in its measurement. The suggestion of

satisfaction/dissatisfaction may alter the cognitive or affective perceptions of the respondent. Several investigations have focused on measurement methodology. Numerous scales have been devised to measure CS/D and are available to be used to capture the construct.

CHAPTER III

METHODOLOGY

The purpose of this study was to measure the effects of an in-store information/education program on consumer satisfaction with food marketing services. The study was conducted at a warehouse foodstore in central Connecticut where a consumer information/education program on meats was implemented in November, 1983. It was a three part program which consisted of 60 second video presentations, brochures which further discussed the topic of the video presentations, and recipe cards located along the meat counter.

A cross sectional survey design was incorporated into a store intercept study. This study measured the effects of a treatment through intervention. Since there was no randomization of subjects or treatments, this study could not be accurately described as being of an experimental design. Individual shoppers at the warehouse food store were the unit of analysis. The methodology for the study included [1] the development of an operational model, [2] the construction of the survey instrument, [3] an assessment of the consumer information program, [4] a pretest of the instrument, [5] sampling procedures, [6] collection of the data, and [7] the data analysis.

The Operational Model

The operational model for the study which specifies interrelationships among the constructs is presented in Figure 4.

This was based on the conceptual model (Figure 3) which depicted a directional influence of the of a consumer information program on product purchases, product satisfaction, and store satisfaction. The operational model is correlational. The purpose of this study was to determine that a relationship among the constructs does exist. It was based on the theory that consumer information leads to increased product purchases and higher levels of satisfaction with the products and the shopping environment. The lack of randomization of treatments or subjects within the research design prohibit the assumption of causality or directionality from the analysis of this data (Kerlinger, 1973). The existence of a directional influence may be conjectured or inferred.

The operational model consisted of four constructs and 12 indicators. Multiple indicators were used to measure each construct. Because the constructs represent abstract concepts they cannot be measured directly. Indicators or measurable observable characteristics were used to measure the constructs indirectly. Multiple indicators are preferable to single indicators as the construct validity can be assessed through correlational estimates of reliability of the indicators (Feldman & Sullivan, 1979; Cook & Campbell, 1979).

The Consumer Information Program

The conceptual model of the effects of consumer information programs on consumer satisfaction was tested at the Heartland Food Warehouse store located in central Connecticut where a three part

information program on meats had been implemented in November, 1983. The program consisted of 60 second video presentations, brochures, and recipe cards. During the time the present study was being conducted, the information program featured pork loin roast. The information materials on the pork loin had been developed by the National Pork Producers Council. The consumer information program is represented by **W** in Figure 4.

The study measured the effectiveness of an existing consumer information program. Effectiveness was operationally defined by three indicators. A behavioral measure of the consumers' use of the program (w_1) provided one indicator. A composite measure of usage included purchases of the featured meat, awareness of the video presentation, use of the brochures assessed as having "picked up" a brochure on one or more occasions, and use of the recipe cards assessed as having taken recipe cards from the rack, and having used the recipe cards in food preparation. An affective measure of the consumers' attitude toward the provision of information (w_2) provided a second indicator of the program's influence. A third indicator assessed the perceived usefulness of the program (w_3). These two were also composite measures derived from a series of questions.

Consumer Meat Purchasing

Consumer meat purchasing refers to fresh meat products which were bought at the experimental store. Consumer meat purchasing is represented by **X** in Figure 4. Three indicators of meat purchasing were used. The first indicator was the percentage of the meat budget

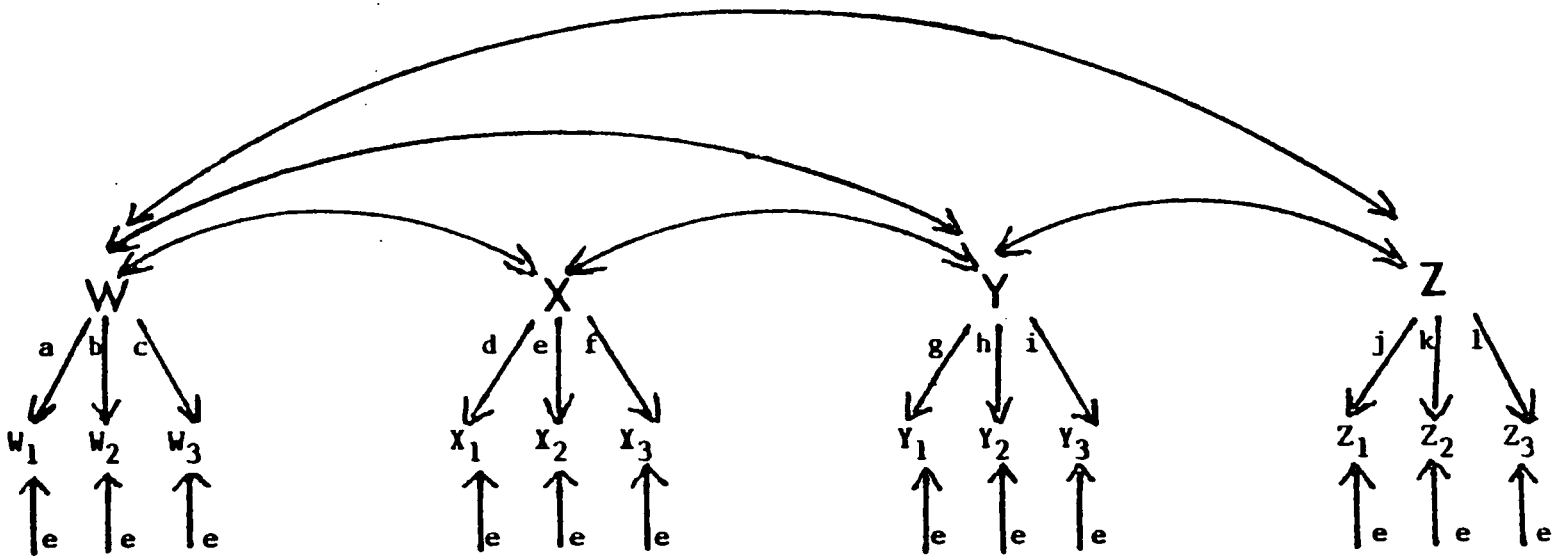

Figure 4: Operational model for the effect of in-store information programs on on consumer satisfaction.

W = Consumer information program
X = Consumer meat purchasing
Y = Consumer satisfaction with meats
Z = Consumer satisfaction with store
w_1 = Use of the program
w_2 = Attitude toward the program
w_3 = Usefulness of the program
x_1 = percentage of meat budget
x_2 = Number of meat items purchased
x_3 = Change in percentage of meat budget
y_1 = Meat satisfaction (store attributes)
y_2 = Meat satisfaction (global measures)
y_3 = Meat (disconfirmation/expectations)
z_1 = Store satisfaction (attributes)
z_2 = Store satisfaction (global measures)
z_3 = Store (disconfirmation/expectations)
e's = random error
a - l = correlated measures

spent at the experimental store (x_1). This was assessed by a self report of recalled experiences. The second indicator was a current behavioral measure. The number of meat items purchased during the shopping trip on the date of the research study was used as an indicator of meat purchase (x_2). Number of items was selected in preference to actual meat dollars because the latter would need to be factored by the household size. The third indicator was the change in the percentage of the meat budget spent at the experimental store (x_3).

Consumer Satisfaction with Meats

Numerous definitions for consumer satisfaction have been advanced over the past ten years. For purposes of this study, Oliver's (1981) definition will be used. Oliver defined CS/D as a "summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with a consumer's prior feelings about the consumption experience" (p. 27). Several researchers (Aiello, Czepiel & Rosenburg, 1981; Oliver, 1980;) stated that satisfaction occurs at different levels which include satisfaction with the product and satisfaction with the purchasing environment. Oliver (1980) concluded that disconfirmation was a function of the performance of the product, and satisfaction was a function of disconfirmation. Miller (1977) explained that disconfirmation states influence the measurement of satisfaction; satisfaction is a measure of a comparison to a predetermined standard. Based on these assessments, three indicators were used to measure the construct of

meat satisfaction. Previous research has indicated that these three measures should be highly intercorrelated. Meat satisfaction refers to satisfaction at the product level; it is represented by Y in Figure 4. The "meat" product refers to fresh meats including red meats and poultry products which were prepackaged and displayed in a foodstore meat counter.

The indicator, meat satisfaction [store attributes] (y_1) was developed from a series of questions on different characteristics or attributes whose importance has been previously defined. Handy (1977) specified seven attributes which explained 62.5% of the variance in the satisfaction with meats. These included: taste (26.9%), freshness (0.8%), selection (20.2%), price (0.5%), fat amount (22.5%) and tenderness (9.7%). In a 1983 survey conducted in the Chicago area, Shapiro (1982) found that when consumers purchased meats, they wanted service/cut to order (36%), freshness (35%), quality/leanness (27%) price (22%), and selection (20%). Based on these two studies, the meat attributes included in the composite satisfaction measure were selection, freshness, and quality/leanness.

The second indicator, meat satisfaction [global measure] (y_2), consisted of one question which asked how satisfied respondents were with the meat department at the experimental store. This indicator was not grounded in a reference point.

The third indicator, was based on the disconfirmation of expectations (y_3). This indicator specified levels of comparison to measure satisfaction with the meat department. Three levels of comparison were used. Satisfaction was asked in reference to the

expected, or to other warehouse stores; to the ideal, or best foodstore in which they have shopped; and to the minimum tolerable, or worst store in which they have shopped. The indicator was a summed linear combination of the disconfirmation states.

Consumer Satisfaction with Store

The construct, consumer satisfaction with store, refers to the overall satisfaction with the shopping environment. It is represented by Z in Figure 4. Previous research (Heller, 1983) has shown that determinants of store satisfaction are different from the attributes which are important in the selection of a foodstore. Three indicators of satisfaction with store were used.

The first indicator, store satisfaction [attributes] (z_1), was comprised of 22 store characteristics which have been used in previous research on store choice. The store performance on the attributes was used as a proxy measure for satisfaction.

The second indicator, store satisfaction [global measures] (z_2), consisted of a single question which asks satisfaction with the experimental store. No anchoring or referent point was used.

The third indicator, the disconfirmation of expectations (z_3), was measured using single questions which asked respondents to indicate satisfaction with the experimental store based on three expectational states. These expectational states included a comparison to other warehouse foodstores (the expected), to the best store previously shopped (ideal), and to the worst store (minimum tolerable).

Development of the Instrument

A survey instrument was developed to measure the effects of the information program. The instrument is shown in Appendix A. It was divided into two major parts which were differentiated by the method of administration. The first part was self administered and the second took the form of an interview administered by the researcher or an assistant. The instrument was developed to measure the constructs identified in the conceptual model and specified by multiple indicators in the operational model. The location of the constructs and indicators in the questionnaire is shown in Table 7.

The three indicators to measure the construct of the consumer information program effectiveness were the perceptions of usefulness, the attitudes, and the behavior of shoppers with respect to the program. Composite measures for each of these indicators were drawn from questions in the self administered and interview portions of the questionnaire. Behaviors associated with the program (w_1) were measured by a series of questions in the interview portion of the survey. These questions were designed to assess use of the program in terms of purchase of the featured meat, familiarity with the brochures, and use of the recipe cards. The attitudes of shoppers (w_2) were measured through a series of attitude, interest, and opinion (AIO) questions in the self administered portion of the instrument, by items on the importance of attributes measure, and by a direct question in the interview portion. Measures for the perception of usefulness (w_3) were derived from AIO questions and attribute satisfaction items in the self administered portion of the instrument.

The three indicators to measure the meat purchasing were the total number of meat items purchased, the percentage of the meat budget spent at the experimental store, and change in their percentage of the meat budget spent at the experimental store. These indicators were included in the interview portion of the instrument.

The three indicators to measure satisfaction with the meat department were the attribute satisfaction scale, the global satisfaction scale, and the disconfirmation of expectations scale. The attribute scale consisted of three attributes of meat products. The global satisfaction measure consisted of one question which asked how satisfied subjects were with the meat department. The third indicator, disconfirmation of expectations, was comprised of three questions. The three indicators used to measure store satisfaction were similar to those used to measure meat satisfaction.

Description of the Instrument

The self administered segment of the questionnaire was six pages in length. The items, method of questioning, and scales employed in the this segment have been used in previous research on store patronage and consumer satisfaction. On the first page of the questionnaire respondents were asked to rate the performance of Heartland on 22 store attributes. Seventeen of these were extrapolated from previous studies which used supermarket specific attributes, and from the 1984 Progressive Grocer list of 42 most important store attributes. Of the remaining five, three were meat attributes [quality, selection, freshness] and two were specific to

Table 7

Location of of Model's Construct Measures in the Questionnaire

Construct	Measure/Indicator	Page	Item Number
Consumer Information Program (W)	Use of the Program (w_1)	5 7, 8	3 3a, 4, 4a, 7, 7a, 8, 8a, 9, 10, 10a, 11, 12
	Attitude toward the Program (w_2)	2 5 7 8	13, 14 8 5 13
	Usefulness of the Program (w_3)	1 5 6	16, 17 6 12, 16
Consumer Meat Purchasing (X)	Number of Meat Items Purchased (x_1)	7	1
	Percentage of Meat Budget (x_2)	8	4c
	Change in Percentage of Meat Budget (x_3)	9	8
Consumer Satisfaction With Meats (Y)	Store Attributes (y_1)	1	5, 6, 7
	Global Measures (y_2)	3	4
	Disconfirmation of Expectations (y_3)	3	1,2,3
Consumer Satisfaction With Store (Z)	Store Attributes (z_1)	1	1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22
	Global Measures (z_2)	4	4
	Disconfirmation of Expectations (z_3)	4	1, 2, 3

the information program [nutrition information, and food preparation ideas]. Respondents rated the store's performance on these attributes as excellent to poor using a five point scale.

Several researchers in Consumer Satisfaction/Dissatisfaction (Miller, 1977; Oliver, 1980) have indicated that composite measures of satisfaction based on attributes did not correlate well with global measures. Miller suggested that the satisfaction scores on attributes be weighted by the importance of the attribute. Hence the second page of the questionnaire queried respondents on the importance of 19 store attributes. These were repetitious of page one with the exception of the three meat attributes which were not included on the importance rating. The attributes were assessed on a three point scale; they were either very important, important, or not important.

The global and disconfirmation measures used to assess satisfaction with the meats and with the store have been used in previous research. The single item satisfaction scales were selected in preference to the mixed scales to obtain a wider range of satisfaction levels. Mixed scales range from "very dissatisfied" to "very satisfied" with a neutral mid point. A single item scale permits one negative option [not satisfied] and several levels of positive options [slightly satisfied to very satisfied]. Due to the study being conducted among shoppers in the experimental store, the latter appeared to be more appropriate. If individuals were very dissatisfied with Heartland, they probably would not be shopping in the store.

The AIO questions were based on Monroe and Guiltinan (1974),

Yankelovich (1983), and included several questions designed by the researcher to capture attitude, use, and perceived usefulness of the consumer information program being studied. The sources of the individual questions are presented in Table 8. The questions extrapolated from the Monroe/Guiltinan and Yankelovich studies were included as moderating influences affecting use or non use of the information program.

Table 8

Sources of the Attitude, Interest, and Opinion Questions

Source	Item Numbers
Monroe, Guiltinan (1974)	1, 2, 7, 9, 14, 18, 21
Yankelovich (1983)	4, 5, 10, 11, 13, 15, 17, 19
Developed by the researcher to measure the constructs	3, 6, 8, 12, 16, 20

The interview portion of the instrument was three pages in length; it was divided into two parts. The first part consisted of questions to measure the construct of the consumer information program [items 1 through 13a]. Items 14 and 14a were included at the request of Purity Supreme and will be used in further analysis. With the exception of two questions [4c,8], the second part of the interview contained questions on the shopping habits and demographic characteristics of the shoppers. Items 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12a,b,c were concerned with shopping habits. The demographic

questions included household size, number and ages of children, occupation of the respondent and the spouse, education, age, and sex the respondent.

Assessment of the Consumer Information Program

The consumer information program used in this study was developed by the consumer relations department of Purity Supreme supermarket chain which is headquartered in North Bellerica, Massachusetts. The chain, which is owned by Supermarkets General, operates 29 Purity Supreme supermarkets in Massachusetts and New Hampshire, and 13 Heartland Food Warehouses in Massachusetts, Maine, and Connecticut. There are two Heartland stores in Connecticut. The experimental store used for this research is located in Newington which is approximately 12 miles south of Hartford. The store was expanded to an area of 96,000 square feet in 1983. It has 22 checkout lanes including one express lane. During heavy traffic periods on Thursday and Friday evenings and Saturdays between 10:00 AM and 3:00 PM all 22 lanes are open. The average customer count for the first ten days in November, 1984 was 3511. The consumer information program was implemented at this store in November, 1983.

The Purity Supreme program is focused on meats. It consists of video presentations, brochures, and recipe cards. The video presentations are 60 seconds in length and provide information on the selection, storage, and preparation of featured meat products. Brochures with additional information on the featured meats are available at the video machines. Recipe cards are placed along the

meat counter; they are rotated every two weeks. There are two types of recipe cards - "Supreme Choice" and "Eat Wise." The "Eat Wise" series includes nutritional information on the recipe [calories, protein, carbohydrate, fat, sodium]. Additional nutritional information related to the recipe or lower calorie modifications are found on the reverse side of the card. The "Supreme Choice" recipe cards are color coded to identify different meats. Information on the selection, storage, and preparation of the card of the featured meat is provided on the reverse side.

This consumer information program was appropriate for testing the conceptual model which specified a relationship between the provision of consumer information and increased product purchases, increased product satisfaction, and increased store satisfaction. The program had been in place for one year, it provided three modes of presentation, and it was product specific. As warehouse food stores typically have poor reputations for their meat (Heller, et al. 1983), there was a greater likelihood of obtaining an effect of the information program in this store environment than in a traditional supermarket with a reputation for high quality meats.

Evaluation of the Consumer Information Program

As the consumer information program had been developed by the supermarket chain rather than by the researcher, it was essential that the materials be evaluated for accuracy, completeness and appropriateness. The chairperson of the Nutritional Sciences Department [1] and a Professor of Dietetics [2] in the School of

Allied Health at the University of Connecticut evaluated the materials. Each judge was given 25 recipe cards, seven brochures, and one videotape to evaluate. The evaluation form, developed by the researcher, is shown in Appendix B. The results of the judges' assessments of the program are presented in Table 9.

Pretesting the Instrument

The survey instrument was pretested on 25 shoppers at the experimental store during the afternoon and evening of September 25 and 27, 1984. The purposes of the pretest were [1] to assess the method of administration, [2] to test the reliability of the instrument. and [3] to identify problematic items and instructions.

The Survey Administration

Shoppers were asked to participate in the study as they approached the check out lanes. They were told that this was a study on food purchasing habits of Connecticut shoppers, that the survey would require ten to fifteen minutes of their time, and that they would receive two dozen chocolate chip cookies from the bakery (value = $1.49) for their time. Subjects were given the self administered portion questionnaire attached to a clipboard and a pencil. Following the completion of the self administered portion, subjects were asked whether difficulties were encountered with the instrument. They were given the option of answering a few more questions immediately or of being telephoned the following day. All chose to answer the interview portion of the questionnaire at that time.

Table 9

Evaluation of the Consumer Information Program Materials

Materials/ Questions Posed	Evaluations/Response Judge 1	Judge 2
Brochures		
Is the consumer or nutritional information false or misleading?	NO	NO
Does the information appear to be biased?	NO	SLIGHTLY
Does the information appear to be appropriate to the reading level of most adult shoppers?	YES	YES
Recipe Cards - Supreme Choice		
Is the consumer or nutritional information false or misleading?	NO	NO
Does the information appear to be biased?	NO	NO
Does the information appear to be appropriate to the reading level of most adult shoppers?	YES	YES
Recipe Cards - Eat Wise		
Is the nutritional information false or misleading?	NO	NO
Is the nutrition information complete?	YES	YES
Does the information appear to be unbiased?	YES	YES
Is the information presented in a manner that it is comprehensible by most adult shoppers?	YES	YES
Video Presentation		
Is any of the information false or misleading?	NO	NO
Does the information appear to be biased?	NO	NO
Is the information in the video comprehensible by most adult shoppers?	YES	YES

The shoppers were generally cooperative; the only refusal was a woman who did not speak English. The time required to complete the self administered portion of the questionnaire was between six and ten minutes. The interview required an additional three to five minutes. An average of four to five surveys were completed in one hour.

It was found that shoppers could be approached and complete the survey in the check out lanes if there were at least three people in line with full baskets. If the lines were short or non existent, shoppers were willing to complete the self administered portion of the instrument before entering the checkout lanes. During periods of heavy store traffic, two subjects could be completing the survey simultaneously. Based on the the pretest experience, the following changes were made with respect to the administration of the survey:

[1] As the subjects in the pretest preferred to complete both portions of the survey in the store, the original plan to conduct the interview by telephone the following day was abandoned.

[2] The self administered and interview portions of the instrument were combined. Instructions to "stop here" were printed in half inch letters at the end of the self administered portion. This eliminated the additional work of numbering both portions and the concern that the self administered and interview questionnaires were correctly coordinated.

[3] Because the time required to complete an individual survey was approximately 15 minutes, the scheduling of the surveys was changed from the original plan. Two research assistants were engaged to aid in the data collection, and the surveys were conducted only

during time periods when heavy store traffic was expected [Thursdays, Fridays, and Saturdays].

Reliability of the Instrument

Reliability of the self administered portion of the instrument was measured by Cronbach's alpha (Null & Nie, 1981). Alpha was calculated for seven multi item scales. The scales, their location within the instrument, and the standardized alpha coefficients are presented in Table 10.

According to Nunnally (1967), the minimum acceptable level of reliability is .700. Two of the AIO scales had reliabilities below this acceptable level when all items were included. The question, "I like to go grocery shopping." was responsible for a low reliability on the total AIO scale. This item was not modified or deleted from the instrument because it may have been useful in explaining variance in the criterion. The item, "I don't have time to pay attention to the meat video," was responsible for a low reliability on the AIO items used to measure the constructs. This item was modifed.

Pearson product moment correlations of possible indicators for the construct, Consumer Meat Purchasing, showed that "times per week meat was served" did not correlate with the of meat items purchased [.00], or the percentage of meat budget spent at Heartland [-.220]. The change in percentage of the meat budget had a higher correlation with the percent of meat budget spent at Heartland [.410] and with the number of meat items purchased [.614]. Based on this analysis of pretest data, change in percentage of meat budget replaced times per

Table 10

Standardized Alpha Coefficients for Multi Item Scales [n = 25]

Scale Identification	Number of Items	Page	Alpha
Store Attribute Satisfaction	19	1	.86206
Store Attribute Importance	19	2	.82317
Meat Attribute Satisfaction	4	1	.98273
Meat Disconfirmation/Expectations	3	3	.81576
Store Disconfirmation/Expectations	3	4	.83256
Attitude Interest Opinions (AIO)	20	5 - 6	.64661[a]
AIO Items to Measure the Constructs	5	5 - 6	.65625[b]

[a]If #21 [I like to go grocery shopping] is deleted, alpha = .70075
[b]If #16 [I don't have time to pay attention to the meat video] is deleted, alpha = .75487

week as a third indicator of meat purchasing.

Problematic Items and Instructions

The subjects in the pretest did not report any problems in completing the survey instrument. However, in reviewing the completed questionnaires, it appeared that some subjects did not comprehend the instructions for responding to the Likert scale items. Rather than placing an "X" at the point on the line, several circled or placed an "X" above the anchor words. A sample scale was added to the instructions in the questionnaire.

As the questionnaire was originally designed, the first page queried respondents on the importance of 19 store attributes; and on second page they were asked to rate the performance of Heartland on these attributes. While the subjects were cautious in scoring the first page, several gave the same [excellent] ratings to Heartland on all the characteristics. The manner in which the responses were marked indicated a lack of forethought. Hence the first two pages were reversed. On page one respondents were asked to rate the performance on Heartland on the store attributes; on page two they were asked the importance of each attribute in selecting a supermarket.

One item on the AIO scale appeared to be problematic. The statement, "I don't have time to pay attention to the meat video information." [agree/disagree response] was the only item on the scale that was negatively stated. As this question was to be included in the indicator of usefulness of the consumer information program, it was restated rather than deleted. The item was revised to state:

"It is worth my time to check the information on the meat video."

There were no substantive changes required on the interview portion of the survey instrument. Editorial changes to improve the readability of the questions were made as a result of the pretest. Responses were printed in bold type to reduce the possibility of overlooking a question.

Summary of the Pretest

The survey instrument was pretested on a sample of 25 shoppers at the experimental warehouse foodstore. As a result of the pretest several changes were made with regard to the administration of the instrument. Two research assistants were engaged to aid in the data collection, and data were collected only on days when heavy store traffic was anticipated. Reliability estimates on seven multi item scales were found to be generally acceptable. Minor changes were made in the ordering of the questionnaire and instructions on the self administered portion were clarified.

Sampling Procedure

The sampling frame for this study was comprised of adult residents of central Connecticut who purchase groceries at the Heartland Food Warehouse in Newington, Connecticut. Forty-one percent of the subjects interviewed traveled more than ten miles to the store from their homes or places of business.

The study was conducted during eight shopping days between November 1 and November 17, 1984. As the interviewers were stationed near the checkout lanes, each shopper had an approximately equal

chance of being asked to participate in the study.

Data Collection Procedure

The data were collected on the store premises during a three week period in October and November 1984. This scheduling coincided with the end of the first year of the program's implementation. The researcher and two assistants interviewed shoppers on Thursday afternoons and evenings, Friday mornings, afternoons and evenings, and Saturday mornings and afternoons.

The interviewers were stationed at different locations near the end of the store. The number of surveys completed by each interviewer during each data collection session is presented in Table 11. As shown in the table, assistant #1 was not present during all sessions. Assistant #2 was present after 6:30 PM for the evening sessions.

The total number of refusals was 70. This represents a 79.8 percent response rate. The refusal rate varied by interviewer. The two assistants were male; the posted location of assistant #1 may have been partially responsible for his higher refusal rate. He approached respondents before they had completed their shopping. The major reasons for refusal included a language barrier, shoppers did not want to take the time, or they did not want to be bothered. The language barrier was responsible for approximately 50 of the refusals. The largest number were Spanish speaking, but there were also several Polish and Italian speaking shoppers who could not complete the survey.

The refusal rate given in the table was lower on November 15 and

Table 11

The Data Collection by Three Interviewers

Date	Time	Total	Researcher #	Researcher Refusals	Assistant 1 #	Assistant 1 Refusals	Assistant 2 #	Assistant 2 Refusals
November 1	3:30PM - 7:00PM	33	17	3	14	5	3	3
November 2	3:30PM - 8:15PM	47	21	5	19	9	7	3
November 3	10:30AM - 2:00PM	31	18	3	--	-	13	5
November 8	3:30PM - 8:15PM	48	22	3	21	8	5	3
November 9	9:30AM - 11:30AM	25	12	1	13	1	-	-
November 9	5:30PM - 7:30PM	23	11	2	10	5	2	2
November 10	10:00AM - 12:45PM	15	10	3	--	-	5	3
November 15	4:00PM - 4:15PM	14	14	1	--	-	-	-
November 16	9:30AM - 1:00PM	41	18	2	18	3	5	1
	TOTAL	277	142	22	96	30	39	18

16 than on the previous dates. A frequency distribution on the first 222 completed surveys indicated that there were too few "users" of the information program. In order to obtain an equal number of users and non users in the sample, only prospective users were sampled on the last two dates.[1] Prior to inviting participation, prospective respondents were asked if they had seen the video presentation or had picked up brochures or recipe cards on meats in the past. Only those who responded yes to two of these questions were asked to participate. It appears that respondents who were informed that "they qualified" were not likely to refuse.

The relatively high completion rate was probably due to the token gift of the chocolate chip cookies [contributed by the store]. Of the total number of persons interviewed, two refused the token gift.

Analysis of the Data

The data were coded and entered into the computer. Three types of statistical tests were run: [1] descriptive statistics, [2] correlational statistics, and [3] statistical tests of differences. Analyses were accomplished through the use of SPSS Statistical Package for the Social Sciences. Parametric statistics were used although the data were identified as ordinal. It has been an accepted practice in the social sciences to treat ordinal data as interval for statistical analyses (Kerlinger, 1973) A summary of the analyses is

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[1]Equal sample sizes were desired to reduce the chance of violating the equal variance assumption. In order to stabilize the statistic, the desired sample size was set at 110 (minimum) for each group.

presented in Table 12.

Descriptive analyses of the data consisted of frequency and percentage distributions in conjunction with measures of central tendency. The primary purpose of these analyses was to obtain information on the demographic characteristics and shopping behavior of the sample. Descriptive statistics were also used to examine the responses to items used to develop the indicators for response to the consumer information program (w_1, w_2, w_3), and to specify cut scores on these indicators. The cut scores were used to distinguish positive responses from negative or neutral responses on the three indicators.

The Determination of Cut Scores

Cut scores on the indicators for use of the information program were necessary in order to test the hypotheses of the study. Minimum and maximum scores for positive and negative responses on the composite measures were predetermined. The maximum negative score for each indicator was based on the response scoring for the questions included in the composite indictor. The minimum score for positive responses were derived by determining a lower bound which would eliminate contiguous scores and allow for discrimination between groups. In order to have comparability between groups, the lower bounds of the cut scores were set at a point to provide a sample size in the positive category which was approximately equal to the sample size in the negative category.

For the indicator of use of the information program (w_1),

Table 12
Data Analysis Summary

PART I: GRADE HEARTLAND and ATTRIBUTE IMPORTANCE

ITEM		CONSTRUCT	VARIABLE (INDICATOR)	# LEVELS & MEASUREMENT	ANALYSIS
HRTLGRADE (A1 - A22)					
A1	Low prices	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A2	Check clerks	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A3	Produce dept	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A4	Meat dept	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A5	Select. meat	Y(SS)	y_1	5 - ordinal	sum scale corr: $y_{2,3}$
A6	Quality meat	Y(SS)	y_1	5 - ordinal	sum scale corr: $y_{2,3}$
A7	Freshness meat	Y(SS)	y_1	5 - ordinal	sum scale corr: $y_{2,3}$
A8	Shelves stock	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A9	National brands	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A10	Private brands	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A11	Fast checkout	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A12	Location	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A13	Parking	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A14	Bulk foods	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A15	Prices mark	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A16	Nutrition info	W(CIP)	w_3	5 - ordinal	sum w/items marked w_3
A17	Food prep	W(CIP)	w_3	5 - ordinal	sum w/items marked w_3
A18	Dairy dept.	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A19	Help personnel	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A20	Freshness date	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A21	Gourmet foods	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
A22	Cleanliness	Z(SS)	z_1	5 - ordinal	sum scale corr: $z_{2,3}$
ATTRIB (B1 - B19)					
B1	Low prices	Z(SS)	z_1	3 - ordinal	corr./%food bill X A1
B2	Check clerk	Z(SS)	z_1	3 - ordinal	corr./%food bill X A2
B3	Produce dept.	Z(SS)	z_1	3 - ordinal	corr./%food bill X A3
B4	Meat dept.	Z(SS)	z_1	3 - ordinal	corr./%food bill X A4
B5	Shelves stock	Z(SS)	z_1	3 - ordinal	corr./%food bill X A8
B6	National brands	Z(SS)	z_1	3 - ordinal	corr./%food bill X A9
B7	Private brands	Z(SS)	z_1	3 - ordinal	corr./%food bill X A10
B8	Fast checkout	Z(SS)	z_1	3 - ordinal	corr./%food bill X A11
B9	Location	Z(SS)	z_1	3 - ordinal	corr./%food bill X A12
B10	Parking	Z(SS)	z_1	3 - ordinal	corr./%food bill X A13
B11	Bulk foods	Z(SS)	z_1	3 - ordinal	corr./%food bill X A14
B12	Prices mark	Z(SS)	z_1	3 - ordinal	corr./%food bill X A15
B13	Nutrition info	W(CIP)	w_2	3 - ordinal	sum w/ items marked w_2
B14	Food prep.	W(CIP)	w_2	3 - ordinal	sum w/ items marked w_2
B15	Diary dept	Z(SS)	z_1	3 - ordinal	corr./%food bill X A18
B16	Help personnel	Z(SS)	z_1	3 - ordinal	corr./%food bill X A19
B17	Freshness date	Z(SS)	z_1	3 - ordinal	corr./%food bill X A20
B18	Gourmet foods	Z(SS)	z_1	3 - ordinal	corr./%food bill X A21
B19	Cleanliness	Z(SS)	z_1	3 - ordinal	corr./%food bill X A22

Table 12—continued

PART I: GLOBAL SATISFACTION and DISCONFIRMATION/EXPECTATION - MEAT

ITEM		CONSTRUCT	VARIABLE (INDICATOR)	# LEVELS MEASUREMENT	ANALYSIS
MEATSAT (C1 - C4)					
C1	Expect/Meat	Y(MS)	y_3	5 - ordinal	sum w/C2,C3 corr. C4 y_1
C2	Ideal/Meat	Y(MS)	y_3	5 - ordinal	sum w/C1,C3 corr. C4 y_1
C3	Worst/Meat	Y(MS)	y_3	5 - ordinal	sum w/C1,C2 corr. C4 y_1
C4	General Meat	Y(MS)	y_2	5 - ordinal	corr: $y_{1,3}$

PART I: GLOBAL SATISFACTION and DISCONFIRMATION/EXPECTATION - SUPERMARKET

STORESAT (D1 - D4)					
D1	Expect/Store	Z(SS)	z_3	5 - ordinal	sum w/D2,D3 corr. D4 z_1
D2	Ideal/Store	Z(SS)	z_3	5 - ordinal	sum w/D1,D3 corr. D4 z_1
D3	Worst/Store	Z(SS)	z_3	5 - ordinal	sum w/D1,D3 corr. D4 z_1
D4	General/Store	Z(SS)	z_2	5 - ordinal	corr. $z_{1,3}$

PART I: ATTITUDES AND OPINIONS ON SHOPPING AND MEAL PLANNING

AIO (E1 - E21)					
E1	Plan list on ads	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E2	Check freshness	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E3	Chk. recipe cds.	W(CIP)	w_2	5 - ordinal	Sum w/w_2/corr. $w_{1,3}$
E4	Speed of prep.	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E5	Meat satis.	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E6	Meat video help	W(CIP)	w_3	5 - ordinal	Sum w/w_3/corr. $w_{1,2}$;
E7	Plan menus	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E8	Video serves	W(CIP)	w_2	5 - ordinal	Sum w/w_2 corr. $w_{1,3}$;
E9	Keep up recipe	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E10	Meat imp.	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E11	Time prep.	W(CIP)		5 - ordinal	Corr. $w_{1,2}$
E12	Recipe card help	W(CIP)	w_3	5 - ordinal	Sum w/w_3 corr. $w_{1,2}$;
E13	Meat costs	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E14	Shopping list	W(CIP)		5 - ordinal	Corr. $w_{1,2}$
E15	Recipe/mag.	W(CIP)		5 - ordinal	Corr. $w_{1,2}$
E16	Time for video	W(CIP)	w_3	5 - ordinal	Sum w/w_3 corr. $w_{1,2}$;
E17	Meat taste	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E18	Nutrit. label	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E19	New recipes	W(CIP)		5 - ordinal	Corr. $w_{1,2,3}$
E20	Pork favorite	----	-----	----	Future analysis
E21	Like to shop	W(CIP)		5 - ordinal	Corr. $w_{1,2}$

Table 12--continued

PART II: INTERVIEW

ITEM		CONSTRUCT	VARIABLE (INDICATOR)	# LEVELS & MEASUREMENT	ANALYSIS
1.	MEATPUR	X(MP)	x_1	0 - N	corr. w/$x_{1,3}$
2.	XWEEK	X(MP)		0 - 7	freq. corr. AIO
3.	VIDMEAT	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
3a.	WHYBUY	W(CIP)	w_1	0 - 2	sum w/other items marked
3a.	BUYFREQ	W(CIP)	w_1	1 - 5	
4.	SEEVIDEO	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
4a.	DESCVID	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
5.	GOODWAY	W(CIP)	w_2	0 - 2	sum w/w_1
6.	LASTPUR	W(CIP)	w_1	0 - 5	categ./check
7.	SEEBROCH	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
7a.	PIKBROCH	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
8.	PASTPIK	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
8a.	RECALL	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
9.	PIKRCPE	W(CIP	w_1	0 - 1[a]	sum w/other items marked
9a.	Supreme choice			0 - 1	freq.
9b.	Eat wise			0 - 1	freq.
10.	RCPEPST past	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
10a.	FREQPIK	W(CIP)	w_1	1 - 3[a]	sum w/other items marked
11.	PREPAR	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
12.	CARDINFO.	W(CIP)	w_1	0 - 1[a]	sum w/other items marked
13.	SHDPROV	W(CIP)	w_2	0 - 2	sum w/w_2

[a] = total all 1's for w_1 0 = NO 1 = YES

PART II: SHOPPING HABITS and DEMOGRAPHICS

SHOPPING HABITS					
1.	SHOPHTL			1 - 6	freq.
2.	HOWLONG			0 - 5	freq.
3.	ELSESHOP			0 - N (categ.)	freq.
4.	FOODBIL			$___	freq.
4a.	HTLND%			5 - 100	corr.W,Y,Z/freq.
4b.	HTLMEAT%	X(MP)	x_2	0 - 100	corr./$x_{1,3}$
5.	THSBIL			$___	freq.
6.	TYPICAL			1 - 3	freq./corr.w/MEATPUR
7.	CHNGFD			1 - 3	freq. corr.
8.	CHNGMT	X(MP)	x_3	1 - 3	corr. w/$x_{1,2}$
9.	HOWFAR			N miles (code)	freq.
10.	HOWFARA,B,orC			N miles (code)	future analysis
11.	SHOPTIME			0 - 1	freq.
12.	SHOPALONE			1 - 0	freq.
12a.	COMPAN			(categorical)	freq.
12b.	SHOPINFL			0 - 1[a]	future analysis

Table 12--continued

ITEM		CONSTRUCT	VARIABLE (INDICATOR)	# LEVELS MEASUREMENT	ANALYSIS
DEMOGRAPHICS					
X1.	Size hsld.	----	----	1 +	freq./future analysis
X2a.	Child age (0-5)	----	----	0 - N	future analysis
X2b.	Child age (6-11)	----	----	0 - N	future analysis
X2c.	Child age (12-18)	----	----	0 - N	future analysis
X2d.	Child age (18+)	----	----	0 - N	future analysis
X3.	Occup. shopper	----	----	categorical	corr. AIO ($w_{1,2,3}$)
X3a.	Occup. spouse	----	----	categorical	corr. AIO ($w_{1,2,3}$)
X4..	Education	----	----	1 - 5 categ.	corr. AIO ($w_{1,2,3}$)
X5..	Shopper age	----	----	1 - 6 categ.	corr. AIO ($w_{1,2,3}$)
X6.	Shopper sex	----	----	1 - 2 categ.	freq./corr.
X7.	Consumer ed	----	----	1 - 2 categ.	Discrim.

PART III: SUMMARY OF INDICATORS

INDICATOR =	QUESTIONNAIRE ITEMS	NUMBER OF LEVELS	ANALYSES
Construct $\underline{W}$ =	$w_1 + w_2 + w_3$	9 - 60	
w_1 =	E3 + WHYBUY + SEEVIDEO + DESCVID + SEEBROCH + PIKBROCH + PASTPIK + RECALL + PIKRCPE + RCPEPST + FREQPIK + PREPAR + CARDINFO	1 - 20 1 - 5 = NONUSER 9 - 20 = USER	Pearson Corr. $w/w_{2,3}$ t-test $w/x_{1,2,3}$ Y,Z Discrim. (criterion) w/XYZ
w_2 =	B13 + B14 + GOODWAY + SHDPROV + E8	3 - 15 3 - 9 = NEGATIVE 12 - 15 = POSITIVE	Pearson Corr. $w/ w_{1,3}$ t-test $w/x_{1,2,3}$ Y,Z Discrim. (criterion) w/XYZ
w_3 =	A16 + A17 + E6 + E12 + E16	5 - 25 5 - 14 = NEGATIVE 19 - 25 = POSITIVE	Pearson Corr. $w/w_{1,2}$ t-test $w/x_{1,2,3}$ Y,Z Discrim. (criterion) w/XYZ
Construct $\underline{X}$ =	$x_1 + x_2 + x_3$	1 - 113	
x_1 =	HTLMEAT%	0 - 100%	Pearson Corr. $w/x_{2,3}$ t-test $w/w_{1,2,3}$ Sum $w/x_{2,3}$ for Discrim.
x_2 =	MEATPUR	0 - 10	Pearson Corr. $w/x_{1,3}$ t-test $w/w_{1,2,3}$ Sum $w/x_{1,3}$ for Discrim.

Table 12--continued

INDICATOR = QUESTIONNAIRE ITEMS	NUMBER OF LEVELS	ANALYSES
x_3 = CHNGMT	1 - 3	Pearson Corr. w/$x_{1,3}$ t-test w/$w_{1,2,3}$ Sum w/$x_{2,3}$ for Discrim.
Construct Y = $y_1 + y_2 + y_3$	7 - 35	
y_1 = A5 + A6 + A7	3 - 15	Pearson Corr. w/$y_{2,3}$ Sum w/$y_{2,3}$ for T-test Sum w/$y_{2,3}$ for Discrim.
y_2 = C4	1 - 5	Pearson Corr. w/$y_{1,3}$ Sum w/$y_{1,3}$ for T-test Sum w/$y_{1,3}$ for Discrim.
y_3 = C1 + C2 + C3	3 - 15	Pearson Corr. w/$y_{1,2}$ Sum w/$y_{1,2}$ for T-test Sum w/$y_{1,2}$ for Discrim.
Construct Z = $z_1 + z_2 + z_3$	20 - 100	
z_1 = A1 + A2 + A3 + A4 + A8 + A9 + A10 + A11 + A12 + A13 + A14 + A15 + A18 + A19 + A21 + A22	16 - 80	Pearson Corr. w/$z_{2,3}$ Sum w/$z_{2,3}$ for T-test Sum w/$z_{2,3}$ for Discrim.
z_2 = D4	1 - 5	Pearson Corr. w/$z_{1,3}$ Sum w/$z_{1,3}$ for T-test Sum w/$z_{1,3}$ for Discrim.
z_3 = D1 + D2 + D3	3 - 15	Pearson Corr. w/$z_{2,3}$ Sum w/$z_{1,2}$ for T-test Sum w/$z_{1,2}$ for Discrim.
INFOSEEK = E1 + E2 + E3 + E9 + E18	5 - 25	Discrim. $w_{1,2,3}$
PROMEAT = XWeek + E5 + E10 + E17 + E20	4 - 27	Discrim. $w_{1,2,3}$
MGMT = E1 + E4 + E7 + E11 + E13 + E14	6 - 30	Discrim. $w_{1,2,3}$

Table 12--continued

PART IV: TESTS OF THE HYPOTHESIZED RELATIONSHIPS

HYPOTHESIS	STATISTICAL PROCEDURE	CONSTRUCTS/ VARIABLES
Hypothesis 1	Pearson product-moment correlation	w, X
Hypotheses 1a,b,c	t-tests	$w_{1,2,3}$ $w/x_{1,2,3}$
Hypothesis 2, 2a	Pearson product-moment correlation	w, Y; X, Y
Hypotheses 2b,c,d	t-tests	$w_{1,2,3}$ w/Y
Hypothesis 3, 3a	Pearson product-moment correlation	w, Z; Y, Z
Hypotheses 3b,c,d	t-tests	$w_{1,2,3}$ w/Z

PART V: VALIDATION OF THE MODEL

SUB MODEL	STATISTICAL PROCEDURE	CONSTRUCTS/ VARIABLES
Use or Nonuse of the Consumer Information Program	Regression Analysis	Nonuse(w_1) w/X,Y,Z Educ, Occup, Occupsp, Age, $w_{2,3}$ CNSRED, Age, PROMEAT, INFOSEEK, MGMT
	Discriminant Function Analysis	w_1 (criterion) w/ $w_{2,3}$, X, Y, Z, INFOSEEK, CNSRED
Positive or Negative Attitude toward the Consumer Information Program	Regression Analysis	Neg. Att. (w_2) w/X,Y,Z, Educ, Occup, Occupsp, PROMEAT, INFOSEEK, Age, CNSRED, MGMT
	Discriminant Function Analysis	w_2 (criterion) w/X,Y,Z, INFOSEEK, CNSRED
Perception of the Consumer Information Program as Useful or Nonuseful	Regression Analysis	Nonuseful (w_3) w/X,Y, Z, Educ, Occup, Age, Occupsp, MGMT, PROMEAT, CNSRED, INFOSEEK
	Discriminant Function Analysis	w_3 (criterion) w/X,Y,Z, INFOSEEK, CNSRED

nonusers were defined as those who scored between one and five points on the thirteen item composite measure. Thus a respondent who "never" checked the recipe cards (#E3), who saw the video (but did not recall the message), saw the brochures (but did not pick one up), picked up a brochure in the past (but couldn't recall the topic), and picked up a recipe card (but never used it), would be classified as a nonuser with a score of five. Users were defined as those who scored between nine and twenty on the thirteen item composite measure. Possible scores on this indicator ranged from one to twenty.

The indicator of positive/negative attitude toward the information program (w_2) was based on a composite of five questions. Negative attitude was defined by a score between three and nine on this indicator. Thus a respondent who indicated that nutrition information (#B13) and food preparation ideas (#B14) were unimportant, and who was negative or neutral on whether the video was a good way to provide information, and whether foodstores should provide information was categorized as negative. Positive attitude was defined by a score between 12 and 15. Possible scores on this indicator ranged from three to fifteen.

The indicator of perceived usefulness of the information program (w_3) was based on a composite measure of five questions. Perception of the information program as nonuseful was defined by a score between five and fourteen. Thus a respondent who was not satisfied with the nutrition information (#A16) or food preparation ideas (#A17), and who was negative to neutral on whether the video presentation and recipe cards were helpful (#E6,E12), and the video was worth watching, was

categorized as negative. Perception of the information program as useful was defined by a score of 19 to 25. Possible scores on this indicator ranged from three to twenty-five.

Statistical Procedures Used in the Analysis

Correlational statistics used in this study included internal consistency reliability for each of the indicators and Pearson product-moment correlation to measure relationships among the indicators for each construct.

Statistical procedures used to test the hypothesized relationships included Pearson product-moment correlation, and student's *t*. Discriminant function analysis was used to validate the model; regression analyses using dichotomous dependent variables were used in follow up tests to the discriminant analyses. The specific tests used for each of the hypotheses are shown in Table 12.

Limitations of the Study

The conceptual model introduced in the theoretical framework posited a relationship between the provision of a consumer information/education program and consumer satisfaction with the products and with the total shopping environment. This study provided an empirical test of this model which was limited to one program which was developed and implemented by a warehouse foodstore chain in Massachusetts. The assessment of the effects of the consumer information/education program was conducted at one store in the chain. This limited the generalizability of the results as the sampling frame consisted of shoppers at the experimental store. The study was

implemented through in-store interviews with shoppers over a period of three weeks. The interviews were conducted on Thursday, Friday, and Saturday of each week. Thus, the sample was limited to individuals who happen to be shopping during the interview periods; every patron of the experimental store did not have an equal chance of being included in the study. Because this study took place in the experimental store, demand characteristics imposed by the environment may have resulted in an upward bias in the results which might not have occurred if the study had been implemented at another location.

Summary

The purpose of this chapter was to present the methodological approach used to examine the relationship between the provision of an in-store consumer information program and consumer satisfaction with food marketing services. The chapter was divided into seven major parts which included [1] the development of the operational model, [2] the construction of the survey instrument, [3] an assessment of the consumer information program, [4] a pretest of the instrument, [5] the sampling procedure, [6] the data collection, and [7] a description of the data analyses.

The items used to measure the constructs in the conceptual model were identified, and the design of the instrument was explained. A description of the consumer information program at the experimental store was given, and an evaluation of the quality of the program was presented.

The instrument was pretested at the experimental store.

Modifications to the instrument as a result of the pretest were explained. Reliability measures for seven scales within the questionnaire were included.

The sampling plan was outlined within this chapter. A description of the data collection included the schedule for collection, the number of surveys completed by each interviewer and the rate of refusal.

The data analysis procedures were summarized and presented in tabular form.

CHAPTER IV

RESULTS AND ANALYSIS OF THE STUDY

The results of the study are presented in this chapter. Included in the results are a description of the sample and analyses of the data to measure the constructs, to test the hypothesized relationships, and to validate the model.

The Sample

Two hundred seventy-seven shoppers participated in this study. This sample size is consistent with that of previous studies on shopping behavior which reported an average sample size of 200 (Table 6). The demographic characteristics of the sample are presented in Table 13.

The subjects in this study represented households of one to ten persons; the model household size was four people. The majority of the respondents were female (n = 242) and 245 (88.4%) were married. The largest number (n = 93) were between the ages of 25 and 34. The demographic characteristics of this sample were parallel to warehouse shoppers described by other studies (Heller, et al., 1983; Langrehr & Robinson, 1981; Reed & Robbins, 1983).

A profile of the shopping habits of the sample relative to Heartland Food Warehouse is presented in Table 14. The majority shopped at Heartland once per week and had been purchasing groceries at the store for more than three years. The average weekly grocery bill was reportedly $85.73 with a range of $25.00 to $298.00. The

Table 13

Demographic Characteristics of the Sample

Characteristic	Number	Percentage
Household Size		
1	5	1.8%
2	62	22.0
3	51	18.6
4	100	36.2
5	34	12.3
6	15	5.4
7+	10	3.7
TOTAL	277	100.0%
Occupation		
Service worker	16	5.8%
Skilled and semi skilled	17	6.1
Sales and clerical	78	28.2
Management and professional	77	27.8
Full time homemaker	76	27.4
Unemployed	2	0.8
Retired	11	4.0
TOTAL	277	100.0%
Spouse's Occupation		
Service worker	13	4.7%
Skilled and semi skilled	74	26.7
Sales and clerical	27	9.7
Management and professional	102	36.8
Full time homemaker	14	5.1
Unemployed	1	0.4
Retired	14	5.1
Not Applicable	32	11.6
TOTAL	277	100.0%

Table 13--continued

Characteristic	Number	Percentage
Education		
Completed grade school	5	1.8%
Some high school	18	6.5
High school graduate	106	38.3
Some college	70	25.3
College graduate	78	28.2
TOTAL	277	100.0%
Age		
18 - 24 yrs	26	9.4%
25 - 34	93	33.6
35 - 44	79	28.5
45 - 54	41	14.8
55 - 64	28	10.1
65+	10	3.6
TOTAL	277	100.0%

Table 14

Shopping Habits of the Sample

Descriptor	Number	Percentage
Frequency of Shopping Heartland		
First time	3	1.1%
Rarely	3	1.1
Occasionally	5	1.8
Once per month	23	8.3
Twice per month	74	26.7
Once per week	139	50.2
More than once per week	30	10.8
TOTAL	277	100.0%
Length of Time Shopping Heartland		
Less than six months	21	7.6%
Six months to one year	32	11.6
One to three years	58	21.0
More than three years	166	51.9
TOTAL	277	100.0%
Number of Other Stores Shopped		
None	60	21.6%
At least one	217	78.3
Two or more	62	22.4
Three or more	13	4.7
Shopping Companions		
Shopping alone	128	46.2%
Shopping with spouse	73	26.4
Shopping with child over 16 yrs.	32	11.6
Other (friend or relative)	44	15.9
TOTAL	277	100.0%

average bill on the date the shoppers were interviewed was $90.98. Forty-five percent indicated that the bill on the day of the survey was typical of their shopping trips to Heartland. Of the total, 175 or 63.2 percent of those interviewed were shopping at their regular time.

In spite of the fact that only 30 percent of those interviewed traveled fewer than five miles to the store, forty-four percent said that they spent at least 90 percent of their grocery budget at Heartland. The same percentage indicated that they spent at least 90 percent of their meat budget at this store. However, 29.8 percent reported spending less than 50 percent of their meat budget at Heartland compared to 11.3 percent who spent less than 50 percent of their total food budget at the store. This latter figure is consistent with the findings of previous studies (Heller, et al., 1983; Langrehr & Robbins, 1981; Reed & Robbins, 1983) which indicated that consumers were less likely to purchase meat at a warehouse store than to do the bulk of their grocery shopping at this type of foodstore.

A Comparison of Subsamples

Although the demographic characteristics of this sample were found to be consistent with previous findings, the representativeness could have been attenuated by either interviewer bias or selection bias. Chi square tests were used to discern whether there were differences among the respondents.

The data for this study were collected by three interviewers.

They may have approached shoppers of different ages or socio-economic strata. With alpha set at 0.05 no statistical differences were found among the respondents interviewed by the three interviewers with respect to age (X^2 14.842, p = 0.25), household size (X^2 20.496, p = 0.31), occupation (X^2 20.157, p = 0.13), spouse's occupation (X^2 12.779, p = 0.54), education (X^2 3.04, p = 0.93).

The first 222 respondents were randomly selected from shoppers present in the store during the first two weeks of data collection. Descriptive statistics indicated that the number of users and nonusers in the sample was unequal; there were too few users. In order to correct this condition, the last 55 persons interviewed were preselected to potentially include only users. Respondents were asked whether they had seen the video presentation, and whether they had picked up brochures and recipe cards in the past. Chi square tests with alpha set at 0.05 did not find statistically significant differences between the the two groups on the demographic characteristics of age (X^2 3.772, p = 0.71), education (X^2 3.758, p = 0.44), occupation (X^2 10.347, p = 0.17), spouse's occupation (X^2 10.445, p = 0.16 and household size (X^2 6.50, p = 0.69). Statistically significant differences were found between the two groups on the three indicators for the Consumer Information Program (w_1 = X^2 33.56, p = 0.00; w_2 = X^2 9.738, p = 0.04; w_3 = X^2 15.054, p = 0.01). The difference between the groups approached nonsignificance on the attitude indicator (w_2). This may have been due to the fact that the items used for this indicator tended to be general (ie. Should foodstores provide consumer information?) rather than specific

to the information program at the experimental store.

Frequency distributions for the items used for the composite measure of information program use are presented in Table 15. This table illustrates the differences between the two groups on these questions.

As shown in the table, the number of users as measured by having picked up brochures or recipe cards on the day of the interview was low. However figures received from the store indicated that 2.88% of shoppers picked up one of the brochures on pork, the percentage of the first 222 respondents (4.5%) who did so was more than representative of all shoppers at the store during the two week period.

Measurement of the Constructs

This series of analyses was designed to assess the construct validity through correlations among the indicators and to measure internal consistency reliability. Positive significant relationships among the indicators used to measure the constructs was expected. These analyses also include the intercorrelations among the constructs of the operational model upon which this study was based.

Correlation of Consumer Information Program Indicators

The three indicators used to measure response to the consumer information program (W) were use of the program (w_1), attitude toward the program (w_2) and usefulness of the program (w_3). Each indicator was devised as a composite of items in the questionnaire as identified in Table 12. The Pearson product-moment correlation coefficients for the indicators are presented in Table 16. All

Table 15

Frequency Distributions for Indicator w_1 Items

ITEM	Respondents 1-222 [N=222] YES N	YES Percent	NO N	NO Percent	Respondents 223-277 [N=55] YES N	YES Percent	NO N	NO Percent	Total [N=277] YES N	YES Percent	NO N	NO Percent
SEEVICEO	90	40.5%	132	59.5%	49	87.3%	7	12.7%	138	49.8%	139	50.2%
DESCVID	22	9.9	200	90.1	23	41.8	32	58.2	45	16.2	232	83.8
SEEBROCH	28	12.6	194	87.4	30	54.5	25	45.5	58	20.9	219	79.1
PIKBROCH[a]	10	4.5	211	95.5	14	25.5	41	74.5	25	8.7	252	91.3
PASTPIK	97	43.7	125	56.3	41	74.5	14	25.5	138	49.8	139	50.2
RECALL	52	23.4	170[b]	76.6	21	38.2	34	61.8[b]	73	26.4	204	73.6
PIKRCPE	6	2.7	216	97.3	6	10.9	49	89.1	12	4.3	265	95.7
RCPEPST	110	49.8	111	50.2	49	80.1	6	10.9	159	57.6	117	42.4
FREQPIK[c]	78	71.0	32	29.1	34	69.3	15	30.6	112	70.4	47	29.6
PREPAR	72	64.9	39	35.1	35	71.4	14	28.6	107	66.9	53	33.1
CARDINFO	60	54.1	51	45.9	26	53.1	23	46.9	86	53.8	74	46.3

[a]Between October 30 and November 8, a total of 900 brochures were taken; the customer count for this time period was 31,240. The percentage of customers who picked up a brochure was 2.88.

[b]The number includes those who did NOT pick up a brochure in the past.

[c]Responses in the YES columns represent having picked up recipe cards occasionally or weekly; responses in the NO picked up recipes once or twice.

correlations were positive and significant. Cronbach's alpha for internal consistency reliability among the indicators was above the minimum acceptable level of .70 as defined by Nunnally (1967).

Table 16

Intercorrelation Matrix of Consumer Information Program Indicators of Use, Attitude, and Usefulness [N = 277]

Response to CIP	w_2	w_3	W
Use (w_1)	0.424	0.485	0.826
Attitude (w_2)		0.658	0.783
Usefulness (w_3)			0.853
CIP (W)			-----

* All correlations were statistically significant at p = .00000. Cronbach's alpha = 0.766

The correlations between w_1 and both w_2 and w_3 were "moderate, but the correlation between w_2 and w_3 could be considered to be within the lower limits of a "high" correlation. This might have been expected because these latter two measured attitudes and beliefs which were defined by similar items which queried respondents on their opinions. This type of measure is subject to demand artifacts as respondents often desire to give the appropriate answer. The questions used for indicator w_1 measured behavior or actions taken with respect to the information program and would be less subject to demand artifacts. For example, a respondent could indicate that the video presentation was a good way to provide consumer information and also indicate that the video was helpful to shoppers without having

actually watched the presentation. It would be impossible for a respondent to recall the video presentation without having seen it. Whether this response pattern was the result of demand characteristics is uncertain. An individual might have a positive attitude toward consumer information and a belief that the program was useful. and not have been personally motivated to view the presentation.

The lower correlation between attitude and the construct (W) might have been due to the differences in possible scores among the three indicators. Where the maximum scores for w_1 and w_3 were 20 and 25 respectively, the maximum score on w_2 was 15. A second explanation for this difference might be that w_1 and w_3 queried respondents specifically on the consumer information being studied, and w_2 queried respondents on their general attitudes toward consumer information.

Correlation of Meat Purchasing Indicators

The indicators to measure the construct of consumer meat purchasing (X) were percentage of the meat budget spent (x_1), number of meat items purchased (x_2), and change in the percentage of the meat budget spent at the experimental store (x_3). The correlation coefficients are presented in Table 17. All correlations were positive and statistically significant. The Cronbach's alpha for internal consistency reliability was slightly below the acceptable level (Nunnally, 1967).

Originally the three indicators which were to be used to measure this construct were the percentage of the meat budget spent at the

store, the number of meat items purchased on the day of the interview, and the number of times per week meat was served in the household. Correlations of times per week meat was served with the remaining indicators were lower than when change in percentage of meat purchased was used in conjunction with the remaining two variables.

Table 17

Intercorrelation Matrix of Consumer Meat Purchasing Indicators of Percentage of Meat Budget, Number of meat items purchased, and Change in Percentage of Meat Budget [N = 277]

Meat Purchasing	x_2	x_3	X
Percentage of Meat Budget (x_1)	0.400	0.467	0.998
Number of Meat Items Purchased (x_2)		0.201	0.435
Change in Percentage of Meat Budget (x_3)			0.482
Meat Purchasing (X)			-----

* All correlations were statistically significant at p = .00000.
Cronbach's alpha = 0.624

The low reliability of the indicators within this construct and the low correlation coefficient for meat items purchased and change in percentage of meat budget spent at the store were probably both attributable to a problem in the question on the number of meat items purchased. The shoppers were queried on the number of "packages" of meat purchased on the interview date. A "package" of ground beef might have been five pounds which would have been enough for several meals in a household of four persons. This might also explain the low correlation between times per week that meat was served (the

deleted indicator) and number of meat items purchased (r = 0.165).

The high correlation of percentage of meat budget spent with the construct (X) was due to the range of numbers for responses on the indicators. The range and size of the numbers for the percentage of meat budget overwhelmed the smaller numbers and limited ranges of the remaining two indicators. The mean score for percentage of meat budget was 75.97 (SD = 51.147); the average number of meat items purchased was 2.83 (SD = 1.554); the change in percentage of meat budget question measured three levels (increased, decreased, or remained the same).

Correlation of Meat Satisfaction Indicators

The indicators used to measure the construct of Meat Satisfaction were meat attribute satisfaction, global satisfaction with meats and disconfirmation of expectations. The correlation coefficients for the indicators are presented in Table 18. All correlations were positive and statically significant. The Cronbach's alpha indicated a high level of internal consistency among the indicators.

Meat attribute satisfaction was a composite measure of three characteristics of meats (quality, selection, freshness). The global satisfaction measure was based on one question which asked how satisfied respondents were (in general) with the meat department, and the disconfirmation of expectations indicator was a composite of three items which specified referent states against which satisfaction was measured. The three measures were included in the self administered portion of the questionnaire. The higher correlation between the

Table 18

Intercorrelation Matrix of Meat Satisfaction Indicators of Attribute Satisfaction, Global Satisfaction, and Disconfirmation of Expectations [N = 277]

Meat Satisfaction	y_2	y_3	Y
Attribute (y_1)	0.672	0.665	0.871
Global (y_2)		0.900	0.913
Discon./Expect. (y_3)			0.942
Meat Satisfaction (Y)			-----

* All correlations were statistically significant at p = .00000.
Cronbach's alpha = 0.896

global and disconfirmation indicators might have been due to the items being sequential on the questionnaire.

Correlation of Store Satisfaction Indicators

The three indicators used to measure the construct of Store Satisfaction were attribute satisfaction, global satisfaction, and disconfirmation of expectations. The attribute satisfaction indicator was a composite of 17 store characteristics from the store preference rating scale on the first page of the questionnaire. Of the 22 items on the scale, three were measures of meat satisfaction and two were measures of usefulness of the program [food preparation ideas and nutritional information]. The global satisfaction indicator was based on one question which asked how satisfied respondents were [in general] with the store. The disconfirmation of expectations indicator was a composite of three items which specified a referent

state [compared to the worst, most ideal, or other warehouse stores] against which satisfaction was measured.

Miller (1977) suggested that attribute satisfaction, a composite of characteristics, should be factored by the importance of the attributes to obtain an index of satisfaction. This index was expected to provide a more accurate measure. However, Aiello, et al. (1977) obtained better correlations with global satisfaction measures without inclusion of the importance scale.[2] Because of these apparently conflicting conclusions, a 19 item scale to measure the importance of store attributes was included in the questionnaire. Of the total, two items were deleted as these were used as measures of "attitude toward the consumer information program" (food preparation ideas and nutritional information). The correlation coefficients for the three indicators of store satisfaction and the importance scale are presented in Table 19. All correlations were positive and statistically significant. Cronbach's alpha for the three indicators was at an acceptable level (Nunnally, 1967).

As evidenced by the table, the importance (IMP) of the attributes did not correlate well with the remaining indicators. This was not totally unexpected as importance and satisfaction are two distinct constructs. The correlation of importance with the global measure and disconfirmation of expectations were extremely low. This would

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[2]Oliver and Linda (1981) concluded that global measures of satisfaction were superior to composite attribute measures. This conclusion was based on their finding low internal consistency on composite measures as well as recognition that certain attributes are salient to some individuals but not to others.

Table 19

Intercorrelation Matrix for Store Satisfaction Indicators of Attribute Satisfaction, Global Satisfaction, Disconfirmation of Expectations, and Importance. [N = 277]

Store Satisfaction	z_2	z_3	z_4	Z
Attribute (z_1)	0.487	0.484	0.193	0.975
Global (z_2)		0.724	0.356	0.542
Discon./Expect. (z_3)			0.066	0.592
Importance (z_4)				0.178
Store Satisfaction (Z)				-----

* Correlations $z_{1,2,3}$ statistically significant at p = .00000.
Cronbach's alpha = 0.767

indicate that factoring importance into the attribute indicator would attenuate the correlations between attribute measures and both the global and disconfirmation indicators. A second method to assess the value of including the importance ratings involved factoring the importance ratings by the percent of the food budget spent at the store and correlating this score with attribute satisfaction. This produced a correlation coefficient of 0.193. Therefore, it appeared that for this study, importance ratings of store attributes did not enhance the attribute indicator with respect to its correlations with the remaining indicators for the construct.

Although the importance ratings attenuated the correlations among the indicators of Store Satisfaction, importance might have enhanced the correlations of this construct with the remaining constructs in the operational model. This was suggested as the concept of factoring satisfaction by importance (Miller, 1977) was based on the premise that this would provide a more accurate measure of the true satisfaction state of the respondent. Hence the correlations among the constructs might be increased by the inclusion of the importance ratings. The construct Z and its modifications ZZ_1 and ZZ_2 were calculated as follows:

$$Z = z_1 + z_2 + z_3$$

$$ZZ_1 = z_1 + z_2 + z_3 + A1 + A2 \ldots + A22 + B1 + B2 \ldots + B19$$

$$ZZ_2 = z_1 + z_2 + z_3 + A1B1 + A2B2 + A3B3 \ldots\ldots + A22B19$$

The correlation coefficients for the constructs with the inclusion of the attribute scale of the store satisfaction

construct factored by importance and added to importance are presented in Table 20.

Table 20

Intercorrelation Matrix of Constructs: Consumer Information Program, Meat Purchasing, Meat Satisfaction, Store Satisfaction, and Store Satisfaction with Importance Added and Factored

Construct	X	Y	Z	ZZ_1	ZZ_2
CIP (W)	0.303	0.295	0.389	0.442	0.369
Meat Purchasing (X)		0.510	0.183	0.133	0.061
Meat Satisfaction (Y)			0.494	0.405	0.237
Store Satisfaction (Z)			-----	-----	-----

Factoring the attribute scale by importance did not enhance the intercorrelations of the constructs. As shown in the table, the addition of importance to the attribute scale increased the correlation between use of the information program and store satisfaction, but it resulted in lower correlations with meat purchasing, and meat satisfaction. As the correlations among the constructs (except for r_{XZ} where $p = 0.001$) were statistically significant at 0.000, and the inclusion of importance increased only one of the correlations, the importance scale was excluded from further analysis.

Intercorrelations Among the Constructs and Indicators

The previous sections examined the correlations among the indicators for each construct included in the operational model.

Within this section the question of validity is addressed through the intercorrelations of the indicators for the four constructs of the model. The correlation coefficients for 12 indicators of four constructs are presented in Table 21.

A determination of the construct validity of the model lies in the pattern of the correlations between and amongst the indicators. The indicators for each construct should be more highly correlated with each other than with those used to measure different constructs. The degree to which the indicators are correlated is indicative of their having measured the abstract concept or construct. An assessment of convergent and discriminant validity by comparing the correlations amongst the indicators can provide insight into the distinctiveness of the constructs. If the model is construct valid, it would be expected that $rw_1w_2 > rw_1x_1$ and also that $x_1x_2 > w_1x_1$.

As shown in the table, indicators for the Consumer Information Program were more highly intercorrelated with each other than with indicators of the remaining constructs with the exception that $w_3w_1 < w_3z_1$. The difference between the two correlations is not large and might not be of major consequence in the further analysis; however, this inconsistency should be examined. A possible cause could rest with the derivation of the measure of usefulness of the information program. Two of the five items within the composite measure used for w_3 were extrapolated from the store attribute scale (z_1). However, the correlation between these two items was 0.454 which was lower than rw_3z_1 where $r = 0.494$. In spite of this relationship, the possibility that this inconsistency in the data was due to an artifact of

Table 21

Intercorrelation Matrix for All Constructs and Indicators in the Operational Model

Construct / Indicator	w_2	w_3	x_1	x_2	x_3	y_1	y_2	y_3	z_1	z_2	z_3	W	X	Y	Z
CONSUMER INFORMATION PROGRAM															
Use (w_1)	0.424	0.483	0.102	0.299	0.164	0.119	0.179	0.164	0.132	0.091	0.138	0.826	0.298	0.180	0.142
Attitude (w_2)		0.658	0.021	0.217	0.047	0.178	0.143	0.172	0.374	0.185	0.155	0.783	0.213	0.186	0.369
Usefulness (w_3)			0.032	0.220	0.113	0.324	0.331	0.316	0.493	0.254	0.280	0.853	0.218	0.359	0.498
MEAT PURCHASING															
Percent of Meat (x_1)				0.399	0.467	0.316	0.512	0.561	0.145	0.227	0.233	0.306	0.999	0.507	0.186
Meat Items Purchased (x_2)					0.201	0.144	0.286	0.306	0.047	0.096	0.055	0.070	0.435	0.266	0.024
Change in Percent of Meat (x_3)						0.222	0.321	0.324	0.140	0.138	0.135	0.143	0.482	0.314	0.157
MEAT SATISFACTION															
Meat Attribute Sat. (y_1)							0.667	0.660	0.484	0.332	0.270	0.246	0.318	0.869	0.489
Meat Global Sat. (y_2)								0.900	0.369	0.301	0.424	0.264	0.517	0.912	0.427
Disconf./Expect. (y_3)									0.364	0.377	0.428	0.286	0.564	0.941	0.424
STORE SATISFACTION															
Store Attribute Sat. (z_1)										0.373	0.404	0.383	0.142	0.452	0.975
Store Global Sat. (z_2)											0.793	0.198	0.232	0.355	0.541
Store Discon./Expect. (y_3)												0.240	0.228	0.404	0.592
CONSUMER INFORMATION PROGRAM (W)													0.303	0.295	0.389
MEAT PURCHASING (X)														0.510	0.183
MEAT SATISFACTION (Y)															0.494

instrumentation cannot be completely discounted.

The intercorrelations among the indicators for Meat Purchasing were all positive and significant at 0.000. However, these indicators appear to be more closely correlated with those which measured meat satisfaction than with each other. In this study where 78% of the respondents shopped at least one other store, it might have been anticipated that satisfaction with meat and percentage of the meat budget spent at the store would be highly correlated. In another situation where the majority of the respondents shopped only one store because of mobility constraints and lack of competition in the trading area, the indicators for these two constructs might not have been correlated in this manner. The meat items purchased (x_2) indicator attenuated the intercorrelation of the indicators for the construct thereby resulting in higher correlations between x_3 and the measures used for Meat Satisfaction.

The indicators for Meat Satisfaction were more highly correlated with one another than with those of the remaining constructs. These were also more highly correlated with indicators of Store Satisfaction than were those designed to measure satisfaction with the store. As shown in the table, $z_1y_1 > z_1z_2$ or z_1z_3. This could have been due to the items for y_1 having been extrapolated from the store attribute scale (z_1). It can also be observed from the table that z_1z_2 and $z_1z_3 < z_2y_2$, z_2y_3 and z_3y_2, z_3y_3. These might also have been due to artifacts of instrumentation. The questions for global meat satisfaction and disconfirmation of expectations for meat were on the same page of the self-administered portion of the questionnaire. This

page immediately preceded the page on which the same questions were asked regarding satisfaction with the store.

Artifacts of instrumentation and measurement which may have attenuated the correlations among the indicators for each construct have been identified and discussed. Sullivan and Feldman (1979, p. 25) cautioned that "in most empirical studies there will be some inconsistent patterns in the data even if the measures are valid ones." The inconsistencies cited herein may have been due to the causes identified, to chance fluctuations in sampling of items and of subjects, or to the nature of the relationship among the model's constructs. Campbell and Fiske (1959) recommended that the traits (constructs) be as distinct as possible. There appears to have been a certain amount of shared variance among the constructs of this model and this shared variance may have been the major cause of the inconsistencies cited.

Intercorrelations Among the Constructs

The operational model for this study was specified as correlational due to the survey method of data collection and to the plan for analysis. The correlations amongst the constructs were positive and statistically significant. With the exception of the XZ correlation which was significant at $p = 0.001$, all correlations were significant at $p = 0.000$. The correlation coefficients applied to the conceptual model and to the operational model are presented in Figures 9 and 10 in Appendix C.

The pattern of the correlation coefficients in terms of their

relative magnitude was $r_{WZ} > r_{WX} > r_{WY}$. This pattern has been explained in the literature by Oliver (1981) and by Day (1976). Oliver suggested that satisfaction with the shopping environment may precede product satisfaction as the former incorporates all elements of the experience including product offerings. Product purchases may be the result of satisfaction with the environment and product satisfaction the result of post purchase evaluation. Day postulated that the measurement of the effects of an information program should be viewed from the perspective of a hierarchy of effects. He indicated that consumers' awareness of the existence of an information program will lead to a change in attitude prior to a change in behavior. Day also suggested that the principle outcome of a program might be increased confidence and satisfaction with the shopping environment. Therefore, if shoppers were aware of the program and of the efforts of the supermarket to provide information, their satisfaction with the store may have increased. Behavior with respect to purchases of meat would be expected to follow the awareness stage and satisfaction as post purchase product evaluation would follow experience with the product.

The correlation between Meat Purchasing and Meat Satisfaction has been discussed previously. In spite of the artifactual considerations identified with respect to the indicators, the relatively high correlation between the constructs was not unexpected. According to Miller (1980) and Swan (1982), if post purchase evaluation culminates in satisfaction, the intention to repurchase will follow. Thus shoppers who have been satisfied with the meat

could be expected to purchase a higher percentage of their meats at this store.

The lowest correlation coefficient for the constructs was r_{XZ}. No direct relationship between Meat Purchasing and Store Satisfaction would be assumed except the in the absence of a measurement for satisfaction with the meat. The literature on store patronage suggested that the quality of meat was a determinant of store preference for supermarkets (Arnold & Tigert, 1981). However, for warehouse stores, it was found that satisfaction with meat was lower than for traditional supermarkets (Heller, et al., 1983), and that shoppers were less likely to purchase meat at a warehouse store. A low correlation between Meat purchasing and Store Satisfaction might have been expected as shoppers could be satisfied with the store but not purchase meat at this particular outlet. The comparatively high correlation between Meat Satisfaction and Store Satisfaction could be explained in that those shoppers who did purchase a large proportion of their meat at the store were satisfied with the meat and this contributed to greater satisfaction with the store.

Summary

This section of the results addressed issues of validity and reliability. Cronbach's alpha for internal consistency reliability for the indicators was at or near the minimum acceptable level as defined by Nunnally (1967). Pearson product-moment correlations for the indicators for each construct were positive and significant at 0.000. An assessment of discriminant and convergent validity of the

indicators and the constructs found some inconsistencies in the data. These may have been due to chance fluctuation in sampling of items or to the nature of the relationships among the model's constructs. The pattern of correlations among the constructs was found to be somewhat consistent with the literature on consumer information and satisfaction.

Tests of the Hypotheses

Three major hypotheses and eleven testable sub hypotheses were formulated for this study. The data were analyzed to test these hypotheses. The total sample [n = 277] was split to test the sub hypotheses which stated that there would be differences between shoppers who responded positively to the consumer information program and shoppers whose response was negative or neutral. Cut scores were used to distinguish users from nonusers, those with a positive attitude from those with a negative attitude, and those who perceived the program to be useful from those who did not perceive it to be useful. In establishing the cut scores an attempt was made to have equal sample sizes. Scores clustered around the mean were deleted from the analyses. Because the clustering of responses differed for each indicator, the sample sizes used for these analyses are not the same for measures of program use (w_1), attitude (w_2), and usefulness (w_3).

Statistical procedures used to test the hypotheses included independent samples t-test and Pearson product-moment correlation. The level of significance was set at $p = 0.05$ for all tests.

Hypothesis 1

It was hypothesized that an in-store consumer information/ education program would be associated with increased meat purchasing by shoppers at the supermarket providing the program. The Pearson product-moment correlation (0.303) between the Consumer Information Program and Meat Purchasing was positive and statistically significant at $p = 0.0000$. Thus there was evidence to support the notion that shoppers might purchase more meat if they were aware of the existence of a consumer information program and had responded positively to the program. The response may have been in the use, attitude toward, or perception of usefulness of the program.

Hypothesis 1a

Hypothesis 1a postulated that shoppers who expressed a positive attitude toward the consumer information program would purchase more meat than shoppers whose attitude toward the program is neutral or negative. To test this sub hypothesis t-tests were conducted for each of the three indicators of meat purchasing and for the construct measure of Meat Purchasing. The results of these tests are presented in Table 22.

As shown in the table differences between shoppers whose attitude was positive and those whose attitude was negative or neutral were statistically significant for the total X and for the percentage of the meat budget spent at the store. The percentage of the meat budget (w_1) accounted for the largest share of the total Meat Purchasing (X) measure. This factor accounted for the similarity of the results

Table 22

Comparison of Negative/Neutral and Positive Attitude Toward theInformation Program on Three Indicators of Meat Purchasing: Percentage of the Meat Budget Number of Items Purchased, and Change in Percentage of the Meat Budget.

Indicator	NEGATIVE/NEUTRAL [N=94] M	SD	POSITIVE [N=87] M	SD	t	p*
Percentage of Meat Budget (x_1)	59.691	36.694	79.437	31.320	3.88	0.000
Number of Meat Items Purchased (x_2)	2.617	1.666	2.609	1.489	0.03	0.974
Change in Percentage of Meat Budget (w_3)	2.266	0.721	2.345	0.662	0.76	0.445
Meat Purchasing (X)	64.575	37.580	84.391	32.25	3.79	0.000

* 2-tail probability

for the t-tests. Differences between groups were not statistically significant for either the number of meat items purchased or for change in percentage of the meat budget. As evidenced by the table, the means for the positive and negative responses were similar. This similarity of means for the number of items purchased was due to problems inherent in the manner in which the question was asked. The similarity between groups for the change in percentage of the meat budget was due to restriction in range as there were only three levels of measurement for this variable.

Hypothesis 1b

Hypothesis 1b postulated that shoppers who were users of the consumer information program would purchase more meat than shoppers who are nonusers of the program. Four t-tests were conducted to test this sub hypothesis; a t-test was conducted for each of the three indicators of meat purchasing and a t-test was conducted for the construct measure of meat purchasing. Results of these tests are presented in Table 23.

Differences between users and nonusers of the information program were statistically significant for three of the four tests. Differences between the groups were not statistically significant for the number of meat items purchased. The probable cause for this result has already been discussed. However, it might be noted that although the difference was small, users of the program did purchase more meat items than nonusers.

As this hypothesis tested the behavior of shoppers with respect

Table 23

Comparison of Nonusers and Users of the Information Program on Three Indicators of Meat Purchasing: Percentage of the Meat Budget, Number of Items Purchased, and Change in Percentage of the Meat Budget

Indicator	NONUSERS [N=123] M	SD	USERS [N=115] M	SD	t	p*
Percentage of Meat Budget (x_1)	61.992	36.97	82.261	29.916	4.86[a]	0.000
Number of Meat Items Purchased (x_2)	2.695	1.523	3.017	1.628	1.68	0.095
Change in Percentage of Meat Budget (x_3)	2.195	0.720	2.444	0.638	2.81	0.005
Meat Purchasing (X)	66.862	37.906	87.722	27.927	4.81[a]	0.000

* 2-tail probability

[a]Separate variance t-test based on F test for homogeneity of variance

to the program, the results of the t-test for change in percentage of the meat budget are of practical significance as well as being statistically significant. Based on the three point scale that was used to measure the change, users of the program were found to have increased the percentage of their meat budget spent at the store. Although the test does not provide evidence of a causal relationship between the program and the change, causation might be implied.

The difference in the means between users and nonusers of the program on the percentage of meat budget does not allow an assumption of causation, but the magnitude of the difference could be of practical significance as evidence that a relationship does exist between the provision of information and product purchasing.

In addition to the percentage of the meat budget spent differing between groups, the variance also differed. There was less variation about the mean for users than for nonusers. The users appeared to be more stable in terms of their meat purchasing. As a large number of shoppers would purchase all their meat at the foodstore in the absence of an information program, it would be expected that a certain number who were not interested in the information provided would purchase 100% of their meat at the store. This might explain the greater variation among the nonusers.

Hypothesis 1c

Hypothesis 1c postulated that shoppers who perceived the consumer information program to be useful would purchase more meat than shoppers who did not perceive the program to be useful. To test this

sub hypothesis four t-tests were conducted. A test was conducted for each of the three indicators of meat purchasing and for the construct measure. The results of the tests are presented in Table 24.

Differences between shoppers who perceived the information program as being useful and those who did not were statistically significant for the percentage of the meat budget spent at the store and for the construct measure of Meat Purchasing. Differences between the groups were not statistically significant for the change in the percentage of the meat budget or for the number of meat items purchased.

Although the difference was not statistically significant, there was a slight difference between groups in the change in percentage of the meat budget spent at the store. There was a greater tendency toward an increase in the percentage among those whose response was positive.

Discussion of Hypothesis 1

This hypothesis posited an increase in meat purchasing would be associated with the consumer information program. The correlation of 0.303 between the two constructs, while statistically significant, was of a low magnitude. This correlation coefficient represents a shared variance of $r^2 = 0.092$ which could not attempt to provide an explanation for meat purchasing by shoppers at the store. As it is generally recognized that there are many reasons for which shoppers would purchase meat at a given foodstore and they would be expected to do so in the absence of an information program, a high correlation

Table 24

Comparison of Nonuseful and Useful Perception of the Information Program on Three Indicators of Meat Purchasing: Percentage of the Meat Budget, Number of Items Purchased, and Change in the Percentage of the Meat Budget

Indicator	NOT USEFUL [N=76] M	SD	USEFUL [N=77] M	SD	t	p*
Percentage of Meat Budget (x_1)	66.671	36.309	82.454	26.674	3.45[a]	0.001
Number of Meat Items Purchased (x_2)	2.829	1.747	2.909	1.480	0.31	0.750
Change in Percentage of Meat Budget (w_3)	2.250	0.733	2.442	0.659	1.70	0.091
Meat Purchasing (X)	69.750	37.535	87.805	24.462	3.39[a]	0.001

* 2-tail probability

[a]Separate variance t-test based on F test for homogeneity of variance

between the two constructs measured could not have been reasonably expected. The correlation between consumer information and meat purchasing did provide evidence that a relationship exists and that based on the these findings, this hypothesis was confirmed.

The sub hypotheses posited relationships between three indicators for the Consumer Information Program and Meat Purchasing. One was a behavioral measure as it assessed use of the program, one was an affective measure in that it assessed attitude, and one was a cognitive measure as it queried respondents on their beliefs. The correlation coefficients (Table 21) for the indicators were moderate thereby indicating low levels of shared variance[3]. Shoppers were not necessarily consistent in their responses; those whose attitude toward the program was positive may not have been users of the information.

The differences between groups for the Meat Purchasing measure were statistically significant for all sub hypotheses thereby indicating that whether shoppers actually used the information program was not the only measure of a program's effectiveness in terms of increasing product purchases. Shoppers who had a positive attitude toward the information program as well as those who perceived the program to be useful also purchased more meat regardless of whether or not they actually used the information program. The effect sizes for the primary indicator of Meat Purchasing (w_1) provide additional

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[3] For $w_1 1 w_2$ $r = 0.424$ and $r^2 = 0.180$; for $w_1 w_3$ $r = 0.483$ and $r^2 = 0.183$; for $w_2 w_3$ $r = 0.658$ and $r^2 = 0.233$.

evidence of the relationship. The magnitude of the difference in percentage of the meat budget spent at the store between groups for all sub hypotheses was substantial. Users of the program spent 20.27% more of their meat budget at this store than nonusers, those whose attitude was positive spent 19.75% more, and those who perceived the program to be useful spent 15.78% more.

These results are of practical significance as well as statistical significance. A food retailer would prefer to have shoppers spend a larger percentage of their meat budget at the store as meat is a large contributor to total store sales (Linsen, 1984).

Aaker (1982) suggested that for an information program to be successful, it should be useful in that it is relevant to the consumer and it should provide something that was not previously known. The difference between those who perceived the program to be useful and those who did not on the percentage of the meat budget spent at the store was statistically significant. This difference is also of practical significance as it may be construed to be a measure of the program's effectiveness.

An increase in the percentage of the meat budget spent at the store was found among users, those with and positive attitude, and those who perceived the program to be useful. Except for the users and nonusers, the change was not statistically significantly different between those who responded positively or negatively in terms of their attitudes or perceptions of usefulness of the program.

No statistical significance was found between groups for each of the sub hypotheses on the number of meat items purchased. This

indicator could have measured actual behavior rather than recall as the remaining indicators for this construct did. The shortcomings of this indicator have been discussed previously. However, it should be noted that the program users purchased more meat items on the date of the interview than did the nonusers.

Based on the manner in which they were stated, the sub hypotheses for hypothesis one were confirmed by the data. The sub hypotheses provided further evidence and substantiation for the major hypothesis which stated that an in-store consumer information/education program would result in increased meat purchasing by the shoppers at the store providing the program.

Hypothesis 2

It was hypothesized that an in-store consumer information/education program focused on meats would be associated with higher levels of satisfaction with the meat department. The Pearson product moment correlation (0.295) between the Consumer Information Program and Meat Satisfaction was positive and statistically significant at $p = 0.000$. Thus there was evidence to support the notion that a consumer information program that is focused on meats will contribute to increased satisfaction with the meat department.

Hypothesis 2a

Hypothesis 2a postulated that shoppers who purchased more meat would be more satisfied with the meat. The Pearson product-moment correlation correlation coefficient for the construct measures of Meat Purchasing and Meat Satisfaction of $r = 0.510$ was positive and

statistically significant at p = 0.000. The magnitude of the correlation might have been expected as shoppers who were more satisfied would be predisposed to purchase a larger share of their meat at the store. As 78.3 % of the shoppers interviewed for this study indicated that they shopped at least one additional store, those who were dissatisfied probably purchased their meat at another foodstore or meat market. Approximately 30% of those interviewed reportedly spent less than 50% of their meat budget at this store. This percentage can be contrasted with eleven percent who purchased less than 50% of their groceries (excluding meats) at the store. These figures attest to the suggestion that those who are not satisfied with the meat would purchase it elsewhere.

Hypothesis 2b

Hypothesis 2b postulated that shoppers who possessed a positive attitude toward the consumer information program would be more satisfied with the meat department than those whose attitude was neutral or negative. A t-test was conducted to test this hypothesis by assessing the differences in satisfaction between the two groups. The results of the test are presented in Table 25.

As shown in the table, the difference between groups was statistically significant. Shoppers whose attitude toward the information program was positive expressed higher levels of satisfaction with the meat department. This sub hypothesis was confirmed.

Table 25

A comparison of Negative/Neutral and Positive Attitude Toward the Information Program on the Construct of Meat Satisfaction

Group	M	SD	t	p*
Negative/Neutral Attitude [n=94]	27.968	6.303	3.42[a]	0.001
Positive Attitude [n=87]	30.851	4.881		

* 2-tail probability
[a]Separate variance t-test based on F test for homogeneity of variance

Hypothesis 2c

Hypothesis 2c postulated that shoppers who were users of the consumer information program would be more satisfied with the meat department than shoppers who were nonusers of the program. A t-test was conducted to determine whether there were differences between the two groups in terms of satisfaction with the meat department. The results of the test are presented in Table 26.

Table 26

A comparison of Nonusers and Users of the Information Program on Meat Satisfaction

Group	M	SD	t	p*
Nonusers [n=123]	28.244	6.306	2.89[a]	0.004
Users [n=115]	30.339	4.714		

* 2-tail probability
[a]Separate variance t-test based on F test for homogeneity of variance

As shown in the table, the difference between groups was statistically significant. Shoppers who were users of the consumer information program expressed higher levels of satisfaction with the meat department than shoppers who were nonusers. This sub hypothesis was confirmed.

Hypothesis 2d

Hypothesis 2d postulated that shoppers who perceived the consumer information program to be useful would be more satisfied with the meat department than shoppers who did not perceive the program to be useful. A t-test was conducted to determine whether there were differences between the two groups in satisfaction with the meat department. The results of the test are presented in Table 27.

Table 27

Comparison of Nonuseful and Useful Perception of the Consumer Information Program on Meat Satisfaction

Group	M	SD	t	p*
Nonuseful [n=76]	27.118	6.272	5.69[a]	0.000
Useful [n=77]	31.636	2.960		

* 2-tail probability
[a]Separate variance t-test based on F test for homogeneity of variance

As shown in the table the difference between groups was statistically significant. Shoppers who perceived the consumer information program to be useful expressed higher levels of satisfaction with the meat department than those who did not perceive the program to be useful.

Discussion of Hypothesis 2

Hypothesis two posited an increase in satisfaction with the meat department would be associated with an information/education program which focused on meats. This hypothesis was based on the premise that the consumer information program would enable shoppers to make more informed choices in the selection of meat and therefore experience higher levels of satisfaction with the meat department.

The Pearson product-moment correlation coefficient (0.295) demonstrated that the Consumer Information Program explained 8.7% of the variance in satisfaction with the meat department ($r^2 = 0.087$). There are a multitude of other factors that would be more salient in explaining satisfaction with the meat department. Selection, quality/leanness, and freshness have frequently been cited as being primary determinants (Handy & Pfaff, 1975; Shapiro, 1983). The relatively low magnitude of the correlation and shared variance between the consumer information program and meat satisfaction was expected. The correlation between these two construct measures did provide evidence that a relationship exists between the provision of consumer information and satisfaction with the meat department.

Hypothesis 2a posited a relationship between meat purchasing and satisfaction with the meat department. This sub hypothesis was formulated to provide a link between increased purchasing which is a producer benefit and satisfaction which is a consumer benefit. It was based upon Oliver's conceptualization of the consequences of consumer satisfaction which he expressed as a sequence beginning with satisfaction and leading to post purchase attitude and then to post

purchase intention. This sequence has been interpreted to explain the relationship between satisfaction and purchasing. A high correlation between meat purchasing and satisfaction with the meat department was obtained as expected.

Three sub hypotheses tested the relationship between satisfaction with the meat department and the indicators which measured response to the Consumer Information Program. Statistically significant differences in satisfaction were found between shoppers who responded positively and those who responded negatively in terms of attitude, use and perceived usefulness of the program. These results demonstrated that consumers might be more satisfied with the product due to the existence of an information/education program, and that satisfaction level is not dependent on actual use of the program.

These findings were consistent with the literature. Day (1976) explained this phenomenon in the hierarchy of effects model which proposed that awareness of the program could contribute to consumer confidence in decision making and higher levels of satisfaction. He proposed that the increase confidence and satisfaction could exist prior to or in lieu of actual use of the information.

For each of the sub hypothesis which examined differences between positive and negative response to the program there was greater variance in the satisfaction scores of those who responded negatively than those who responded positively. No attempt has been made to identify specific causes for this difference; however, this indicated greater stability among the positive responders. A partial explanation for the difference might be that high levels of

satisfaction within the negative group were the result of the more salient factors which explain satisfaction with a meat department and these account for small effect sizes. High levels of satisfaction with the meat department would be expected within the population of shoppers at any foodstore in the absence of an information program. The coefficient of determination provided evidence to support the existence of alternative explanations and rival hypotheses as only 8.7% of the variance in meat satisfaction was explained by the information program.

The four sub hypotheses for hypothesis two were confirmed by the data. These sub hypotheses provided further substantiation for the major hypothesis which stated that an in-store consumer information/education focused on meats would result in higher levels of satisfaction with the meat department.

Hypothesis 3

It was hypothesized that an in-store consumer information/education program would be associated with higher levels of satisfaction with the store. The Pearson product-moment correlation coefficient (0.389) for response to the Consumer Information Program and satisfaction with the store was positive and statistically significant at $p = 0.000$. Thus there was evidence to support the notion that a consumer information program can increase satisfaction with the total shopping environment even if the program is specific to one product or product category.

Hypothesis 3a

Hypothesis 3a postulated that shoppers who were more satisfied with the meat department would express higher levels of satisfaction with the store. The Pearson product-moment correlation between the construct measures of Meat Satisfaction and Store Satisfaction ($r = 0.494$) was positive and statistically significant at $p = 0.000$. A correlation coefficient of this magnitude was expected. Previous research had found that the quality of the meats was a primary determinant of supermarket choice and also of supermarket satisfaction (Arnold, Roth, & Tigert, 1981; Heller et al., 1983).

Hypothesis 3b

Hypothesis 3b postulated that shoppers who expressed a positive attitude toward the information program would be more satisfied with the store than those whose attitude was neutral or negative. A t-test was conducted to test this sub hypothesis. The results of the t-test are presented in Table 28.

Table 28

Comparison of Negative/Neutral and Positive Attitude Toward the Information Program on Store Satisfaction

Group	M	SD	t	p*
Negative/Neutral Attitude [n=94]	83.713	8.722	6.02	0.000
Positive Attitude [n=87]	91.448	8.530		

* 2-tail probability

As shown in the table, differences between shoppers whose attitude toward the information program was positive and those whose attitude was negative or neutral were statistically significant. In addition to statistical significance, the effect size demonstrated a substantial difference between groups with respect to satisfaction with the store, and the homogeneity of variance indicated that the both samples were equally stable. No assessment of causation can be made on the basis of these results. It cannot be ascertained whether the higher levels of satisfaction are due in part to the information program or whether they are completely attributable to individual differences and personality characteristics of the shoppers. As the hypothesis stated that the two groups would differ, it was confirmed by the data.

Hypothesis 3c

Hypothesis 3c postulated that shoppers who were users of the program would be more satisfied with the store than shoppers who were nonusers. A t-test was conducted to test this hypothesis. The results of the t-test are presented in Table 29.

As shown in the table, the difference between nonusers and users of the information program was statistically significant; users expressed higher levels of satisfaction with the shopping environment. The effect size was not as large as might have been expected, and there was more variation among the scores of the nonusers. There appears to be an indication that satisfaction with the store among some nonusers might have been as high or higher than satisfaction

Table 29

Comparison of Nonusers and Users of the Information Program on Store Satisfaction

Group	M	SD	t	p*
Nonusers [n=123]	85.268	10.061	2.60	0.01
Users [n=115]	88.452	8.705		

* 2-tail probability

expressed by users of the program. However, based on the manner in which the hypothesis was stated and the alpha level (0.05) which was established, this hypothesis was confirmed.

Hypothesis 3d

Hypothesis 3d postulated that shoppers who perceived the consumer information as being useful would be more satisfied with the store than shoppers who did not perceive the program as being useful. A t-test was conducted to test this hypothesis. The results of the t-test are presented in Table 30.

Table 30

Comparison of Nonuseful and Useful Perception of the Information Program on Store Satisfaction

Group	M	SD	t	p*
Nonuseful [n=76]	80.737	9.106	8.24	0.000
Useful [n=77]	92.143	7.986		

* 2-tail probability

As shown in the table, differences between shoppers who perceived the consumer information program to be useful and those who did not were statistically significant. The effect size demonstrated a substantial difference between groups on the measure of satisfaction with the store. As there has been no attempt to ascertain the possible reasons for the difference, no assumption of causation related to the provision of the consumer information program can be made. Based on the manner in which the sub hypothesis was stated, it was confirmed by the data.

Discussion of Hypothesis 3

Hypothesis three posited an increase in satisfaction with the store would be associated with a consumer information/education program. This hypothesis was based on the premise that consumer satisfaction involves not only the product under consideration, but that it is a measure of the total experience surrounding its acquisition. Aaker (1976) suggested that the primary outcome of a consumer information program might be higher levels of satisfaction with the shopping environment. The correlation between the Consumer Information Program and Store Satisfaction was higher than that obtained between the Consumer Information Program and either Meat Purchasing or Meat Satisfaction. The relative magnitude of the correlations was consistent with the Aaker's suggested outcome.

The Pearson product-moment correlation coefficient (0.389) indicated that 15.1% of the variation in store satisfaction could be explained by the Consumer Information Program (r^2 = 0.151). The

magnitude of the shared variance might not appear sufficient to define a relationship; but in consideration of the number of alternatives available to explain satisfaction with a foodstore, the obtained value of $r = 0.389$ was of practical significance.

The correlation coefficient for satisfaction with the meat department and satisfaction with the store of 0.494 specified a shared variance of $r^2 = 0.295$. Although there are other attributes which contribute to store satisfaction, the meat department has been identified in the literature as a primary predictor of store choice. In the 1984 Progressive Grocer survey, the meat department ranked third among the forty attributes identified as important for store selection. The correlation coefficient for satisfaction with the meat and the store might have been higher at a traditional supermarket where shoppers are more likely to be attracted by the meat department. The obtained value for this correlation was as expected.

Three sub hypotheses tested the relationship between store satisfaction and the three indicators which measured response to the Consumer Information Program. For all three, statistically significant differences were found between those who responded positively and those who responded negatively to the program. The effect sizes differed amongst the three tests. The effect size was smallest for the behavioral indicator and the difference in variance between groups was the largest. There was less of a difference between users and nonusers of the program in terms of satisfaction with the store than between positive and negative responders on the other indicators, and there was more variation in satisfaction scores

among nonusers than any other group.

The larger effect sizes for the attitude and usefulness indicators might have been due to the information program or they might have been due to the personality characteristics of the respondents. Aaker suggested that a program could result in higher levels of satisfaction with the environment, and Oliver (1981) suggested that satisfaction with the environment may precede product purchase and product satisfaction. Awareness of the consumer information program could have resulted in higher levels of satisfaction with the store among those whose attitude was positive and among those who perceived the program to be useful. If these shoppers perceived the information program to be an additional service of the foodstore, this explanation would appear to be valid.

The sub hypotheses for hypothesis three were confirmed. These provided further substantiation for the major hypothesis which stated that an in-store consumer information/education program would result in higher levels of satisfaction with the store.

Summary of the Hypotheses

Three major hypotheses were formulated for this study. These were based on the conceptual model and designed to test the major precepts of the model. Each hypothesis posited a correlational relationship between the provision of a consumer information program and a desired outcome. These outcomes included increased meat purchasing, increased satisfaction with the meat department, and increased satisfaction with the store. Sub hypotheses were formulated

to compare positive and negative responses to the information program for each of the posited outcomes. The positive and negative responses were measured in terms of use of the information program, attitude toward the program, and perceived usefulness of the program.

Statistical procedures used to test the hypotheses included Pearson product-moment correlation and the calculation of coefficients of determination to assess the relationships among the major constructs. Independent samples t-tests were used to compare positive and negative responders on each of the three indicators used to measure the response to the Consumer Information Program. The F test for homogeneity of variance required the use of separate variance t-tests in several instances.

All hypotheses and sub hypotheses were confirmed. The Consumer Information Program was found to be positively correlated with increased meat purchasing, increased satisfaction with the meat department and increased satisfaction with the store. Differences were found between users and nonusers of the information program as well as between those whose attitude was positive and negative and between those who perceived the program as useful and nonuseful. The differences between groups were statistically significant for all hypotheses. The positive responders appeared to be fairly stable. There was greater variation in the scores among those who responded negatively.

The findings of the study with respect to the hypotheses were consistent with the literature. The results of the hypotheses tests could be explained by previous empirical findings or suggested

outcomes on consumer information program use, store preference and patronage, or consumer satisfaction.

Confirmation of the Model

These analyses were conducted to confirm and assess the completeness of the model which was operationalized for this study. Discriminant function analysis was used to determine whether differences in use, attitude, and perceived usefulness of the information program could be explained by the predictors of Meat Purchasing, Meat Satisfaction, and Store Satisfaction. Based on the results of the discriminant analysis, stepwise regression was used to determine whether the addition of certain demographic and psychographic variables would enhance the model.

The conceptual model (Figure 3) depicted a relationship between the provision of a Consumer Information Program and projected outcomes of the program which included increased meat purchasing, increased satisfaction with meat, and increased satisfaction with the store. Figures 5a, 5b, and 5c represent the conceptual model as it was split into three sub models for which the three indicators were substituted for the construct measure of the Consumer Information Program.

As shown in Figure 5, the relative strength of the correlation coefficients for Meat Purchasing, Meat Satisfaction, and Store Satisfaction varied with the indicators. Use of the program (w_1) was most highly correlated with Meat Purchasing; this correlation was the lowest of the three for usefulness of the program (w_3). For the indicators of attitude and usefulness, the correlation with store

satisfaction was the highest. Because of differences in the relative magnitude of the correlation coefficients, it was expected that not all three of the predictors would enter into the discriminant function equations. Meat satisfaction was highly intercorrelated with both Store Satisfaction and Meat Purchasing indicating a substantial amount of shared variance between meat satisfaction and the remaining variables. Conversely, the low correlation between Meat Purchasing and Store Satisfaction indicated low shared variance and a greater likelihood that these two might enter into the analyses.

Validation of the Sub Model for Use of the Consumer Information Program

The discriminant function analysis for use or nonuse of the Consumer Information Program resulted in two of the variables entering the equation. Meat Purchasing and Store Satisfaction were identified as predictors of use or nonuse. The results of this statistical procedure are presented in Tables 31, 32, 33, and 34.

As shown in Table 31, Wilks' Lambda and the equivalent F were statistically significant. The discriminating power of the model while being statistically significant was not substantial. The minimum D squared or distance between users and nonusers provided evidence of the low explanatory power of the model.

The two coefficients which comprised the discriminant function equation (Table 33) were able to correctly classify users of the information program but were unable to predict nonuse with even a small amount of precision. The ability of the equation to predict

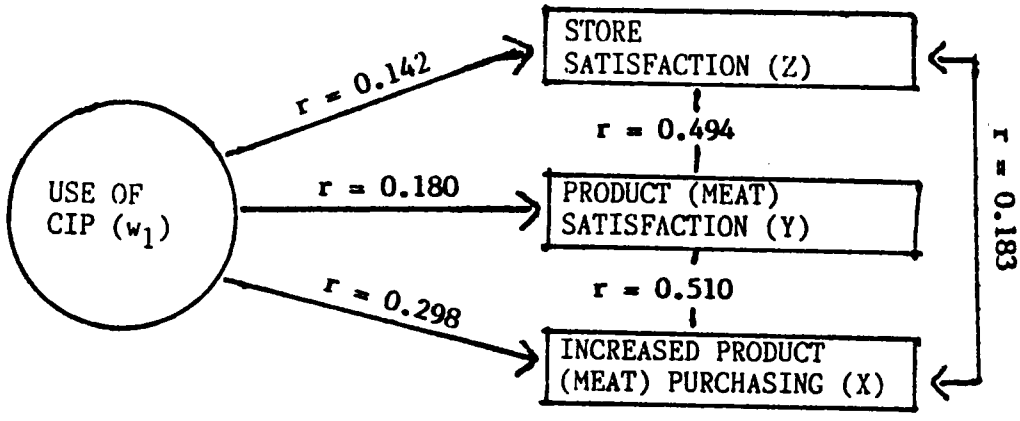

Figure 5a: Conceptual model for use of Consumer Information Program

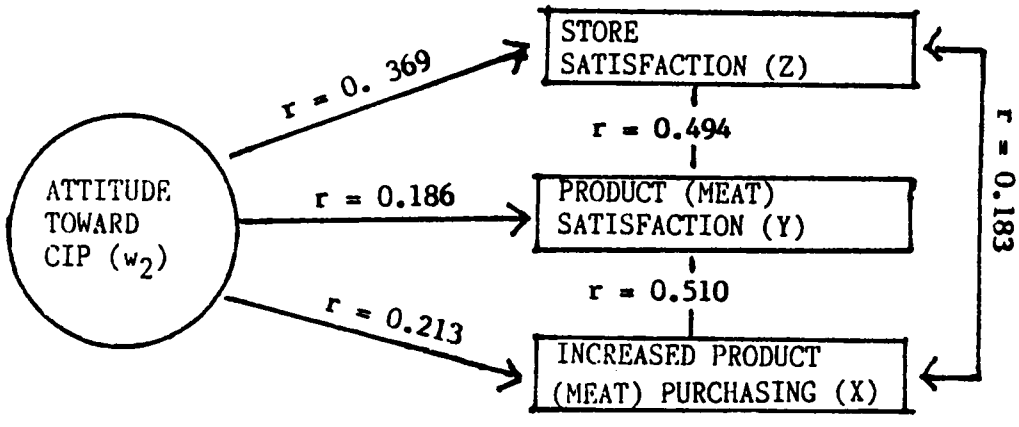

Figure 5b: Conceptual model for attitude toward Consumer Information Program

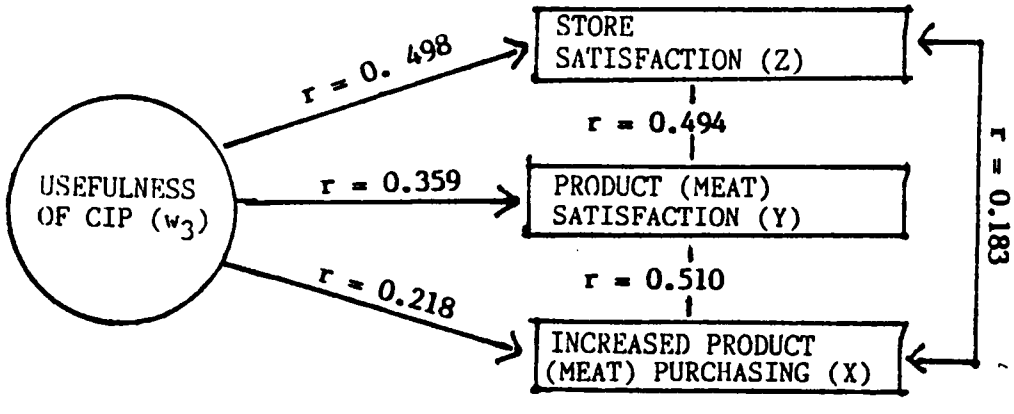

Figure 5c: Conceptual model for usefulness of Consumer Information Program

Table 31

F Table for Significant Prediction in Terms of Variance Explained in Use or Nonuse of the Consumer Information Program

Test of Significance	Statistic	df		p
Wilks' Lambda	0.900	1	236	0.000
Equivalent F	13.051	2	235	0.000
Minimum D Squared	0.441	2	235	0.000

Table 32

Significance of the Predictors for Discrimination on Use or Nonuse of the Consumer Information Program

Predictor	Wilks' Lambda	p
Meat Purchasing (X)	0.910	0.000
Store Satisfaction (Z)	0.900	0.000

Table 33

Standardized Discriminant Function Coefficients for Use or Nonuse of the Consumer Information Program

Predictor	Coefficient
Meat Purchasing (X)	0.876
Store Satisfaction (Z)	0.350

Table 34

Efficiency Table for Use or Nonuse of the Consumer Information Program

Group	Incorrectly Classified n	Incorrectly Classified percent	Correctly Classified n	Correctly Classified percent
Nonusers [n=123]	97	78.9%	26	21.1%
Users [n=115]	5	4.3	110	95.7

group membership is shown in Table 34. As a manipulation check, a stepwise regression was run to assess the variance explained by the two predictors. For this procedure, the criterion variable of use or nonuse was dichotomized and only nonusers' scores were included in the analysis. Of the three predictors (Meat Purchasing, Meat Satisfaction, and Store Satisfaction), only Meat Purchasing entered into the regression equation. The analysis produced an explained variance of $R^2 = 0.089$ which provided additional evidence of the incompleteness of the model.

Identification of Predictors to Explain Nonuse

Regression analysis using the stepwise procedure was conducted to identify additional predictors to enhance the sub model for Use of the Consumer Information Program. In addition to Meat Purchasing, Meat Satisfaction, and Store Satisfaction, the criterion variables for the remaining sub models of attitude (w_2) and usefulness (w_3) were included along with several demographic characteristics and composite measures derived from the AIO questions. The demographic variables included age, level of education, occupation, occupation of spouse, the length of time (years) the respondent had patronized the store, and whether the respondent had been enrolled in a consumer education course (CNSRED). The AIO derived composite measures included:

INFOSEEK - 5 items which measured interest in seeking out or obtaining information (E1,E2,E3,E9,E18).

PROMEAT - 5 items which measured the importance of meat including times per week meat was served and four AIO items (E5,E10,E17,E20).

MGMT - 6 which measured skills in planning and shopping (E1,E4,E7,E11,E13,E14).

For this analysis the criterion variable, use or nonuse of the Consumer Information program, was dichotomized and only the scores of nonusers were incorporated. The set of predictors that entered into the regression equation increased the explained variance for nonuse to $R^2 = 0.262$ from the previous level of $R^2 = 0.089$. The regression coefficients for the set of predictors are shown in Table 35.

Three variables were entered into the equation in addition to Meat Purchasing which contributed to increasing the explained variance by a substantial amount. The ANOVA summary for the significance of the regression equation is presented in Table 36.

Modification of the Sub Model - Use of the Consumer Information Program

A second discriminant function analysis was conducted to assess the degree to which the model could be enhanced by the inclusion of the variables identified by the regression and to determine the manner in which the model could be modified to be more complete. Because the discriminant analysis sought to explain both use and nonuse, several variables were included which did not enter into the regression equation. These additional variables were Meat Satisfaction, Store Satisfaction, and attitude toward the program (w_2).

This analysis resulted in increasing the minimum D squared to 1.469 from the previous level of 0.441. The modified discriminant function specified by this analysis included six predictors. Wilks' Lambda was significant at 0.000 for each of the predictors. The standardized discriminant function coefficients for the equation are presented in Table 37.

Table 35

Regression Coefficients for Nonuse of the Consumer Information Program

Variable	b	t	Sig.t
Usefulness (w_3)	-0.044	4.590	0.000
Meat Purchasing (X)	-0.003	3.837	0.000
INFOSEEK	-0.021	2.391	0.017
CNSRED	-0.159	2.240	0.026
(Constant)	1.856	11.424	0.000

Table 36

ANOVA Summary Table for Predictors
of Nonuse of the Consumer Information Program

Source	df	SS	MS	F
Between Predictors	4	15.544	3.886	20.630*
Within Predictors	253	43.889	0.188	
Total	237	59.433		

*p = 0.000

Table 37

Standardized Discriminant Function Coefficients for Modified Sub Model of Use or Nonuse of the Consumer Information Program.

Predictor	Coefficient
Meat Purchasing (X)	0.480
Store Satisfaction (Z)	-0.170
INFOSEEK	0.277
CNSRED	0.260
Attitude (w_2)	0.203
Usefulness (w_3)	0.570

Table 38

Efficiency Table for Modified Sub Model of Use or Nonuse of the Consumer Education Program

Group	Incorrectly Classified n	Incorrectly Classified percent	Correctly Classified n	Correctly Classified percent
Nonusers [n=123]	70	56.9%	53	43.1%
Users [n=115]	6	5.2	109	94.8

The addition of the variables into the equation increased the proportion of nonusers correctly classified as shown in Table 38. The number of cases correctly classified among nonusers increased by 100% with the loss of one correctly classified user. The total percent of grouped cases correctly classified increased to 68.7 from the previous level of 56.1.

The sub model depicted in Figure 5a was based on response to the Consumer Information program in the form of use or nonuse and the projected outcomes or consequences in terms of meat purchasing, satisfaction with the meat department, and satisfaction with the store. As a result of these analyses, a modification to the sub model has been proposed. The modified model incorporates antecedents and and consequences of use or nonuse of the program. The four antecedents include INFOSEEK and CNSRED which are individually based and determined prior to exposure to the foodstore. The remaining two antecedents, attitude (w_2) and usefulness (w_3), are individually determined, but these are conditioned by the information program. The two consequences of use of the program, meat purchasing and meat satisfaction, were outcomes projected in the original sub model. The modified sub model is presented in Figure 6.

The modified sub model proposes to explain differences in use and nonuse of the information program by the following equation:

$$D = 0.277_I + 0.260_C + 0.203_{w2} + 0.570_{w3} + 0.480_X + 0.170_Z$$

where I = INFOSEEK; C = CNSRED; w_2 = attitude; w_3 = usefulness; X = Meat Purchasing; and Z = Store Satisfaction

This equation represents the best combination of predictors for

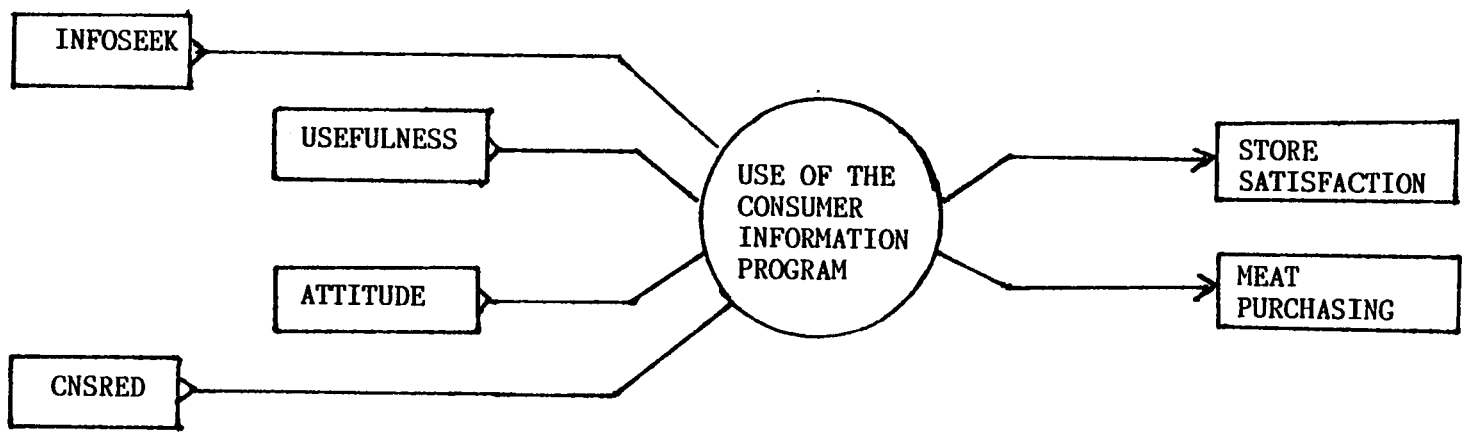

Figure 6: Modified sub model for use or nonuse of the Consumer Information Program

use or nonuse as measured by their ability to explain variance among nonusers and their ability to correctly classify users and nonusers.

Validation of the Sub Model for Positive or Negative/Neutral Attitude Toward the Consumer Information Program

The discriminant function analysis for the sub model of positive or negative/neutral attitude toward the Consumer Information Program resulted in two of the variables entering the equation. Meat Purchasing, and Store Satisfaction were identified as possessing explanatory power to predict differences in attitude toward the program. The results of the analysis are presented in Tables 39, 40, 41, and 42.

As shown in Table 39, Wilks' Lambda and the equivalent F were statistically significant. The discriminatory power of the model as assessed by minimum D squared was not high. The two coefficients in the equation were the same as those identified for the sub model on use or nonuse of the program. In the use/nonuse sub model, Meat Purchasing was the stronger of the two predictors; in this sub model, Store Satisfaction (Table 41) was stronger.

The two coefficients which comprised the discriminant function equation for attitude toward the Consumer Information Program were able to correctly classify 61.33% of the grouped cases. As shown in Table 42, the proportion of correctly classified was higher for those cases reflecting a positive attitude toward the program than for the negative/neutral cases.

A stepwise regression was run to assess the variance explained

Table 39

F Table for Significant Prediction in Terms of Variance Explained by Positive or Negative/Neutral Attitude Toward the Consumer Information Program

Test of Significance	Statistic	df		p
Wilks' Lambda	0.800	1	179	0.000
Equivalent F	22.229	2	178	0.000
Minimum D Squared	0.989	2	178	0.000

Table 40

Significance of the Predictors for Discrimination on Positive or Negative/Neutral Attitude Toward the Consumer Information Program

Predictor	Wilks' Lambda	p
Meat Purchasing (X)	0.831	0.000
Store Satisfaction (Z)	0.800	0.000

Table 41

Standardized discriminant Function Coefficients for Positive or Negative/Neutral Attitude Toward the Consumer Information Program

Predictor	Coefficient
Meat Purchasing (X)	0.439
Store Satisfaction (Z)	0.833

Table 42

Efficiency Table for Positive or Negative/Neutral Attitude Toward the Consumer Information Program

Group	Incorrectly Classified n	Incorrectly Classified percent	Correctly Classified n	Correctly Classified percent
Negative/Neutral Attitude [n=94]	62	66.0%	32	34.0%
Positive Attitude [n=87]	8	9.2	79	90.8%

among the negative attitude cases by the two predictors. For the procedure, the criterion variable was dichotomized to exclude the positive cases from the analysis. Meat Purchasing and Store Satisfaction entered into the equation. These two predictors resulted in an explained variance of $R^2 = 0.200$ which indicated that the model was not complete.

Identification of Predictors to Explain Negative Attitude

Regression analysis using the stepwise procedure was conducted to identify additional variables which could enhance the predictive validity of the sub model on attitude toward the consumer Information Program. In addition to Meat Purchasing, Meat Satisfaction, and Store Satisfaction, demographic characteristics and composite measures derived from the AIO questions were included. The demographic characteristics included age, level of education, occupation, occupation of spouse, the length of time (years) the respondent had patronized the store, and whether or not the respondent had ever enrolled in a consumer education course (CNSRED). The three composite measures derived from the AIO items were INFOSEEK, PROMEAT, and MGMT which were defined in the previous section.

For this analysis the criterion variable, positive or negative/neutral attitude, was dichotomized and only the negative/neutral group was included. The set of predictors that entered into the equation resulted in increasing the explained variance within the negative group to $R^2 = 0.353$ from the previous level of $R^2 = 0.200$. The coefficients for the regression equation are

presented in Table 43. Each of the four predictors was statistically significant. The ANOVA Summary for the significance of the equation is given in Table 44.

Modification of the Sub Model - Attitude Toward the Consumer Information Program

A second discriminant function analysis was conducted to assess the degree to which the model was enhanced by the additional variables. The variables identified by the regression were included in this analysis. The addition of CNSRED and INFOSEEK to the original sub model raised the minimum D squared from 0.989 to 2.160 which evidenced an increase in the discriminatory power of the model. Wilks' Lamba was statistically significant for the four discriminant function coefficients. The standardized coefficients are presented in Table 45.

Through the addition of INFOSEEK and CNSRED in the equation, the proportion of correctly classified cases including both positive and negative/neutral attitude rose to 70.17% from the previous level of 61.33%. There was a loss of one correctly classified positive case as a result of the expansion of the the sub model, but there was a corresponding increase of 17 correctly classified negative/neutral cases. The number and percent of correctly classified cases is presented in Table 46.

The sub model in Figure 5b depicted a relationship between attitude toward the Consumer Information Program and projected outcomes or consequences of attitude. Findings of the analysis to confirm the model indicated incompleteness in its predictive ability

Table 43

Regression Coefficients for Negative/Neutral Attitude Toward the Consumer Information Program

Variable	b	t	Sig.t
INFOSEEK	-0.471	5.749	0.000
Store Satisfaction (Z)	-0.014	4.224	0.000
Meat Purchasing (X)	-0.003	3.153	0.002
CNSRED	-0.201	2.844	0.005
(Constant)	2.770	9.501	0.000

Table 44

ANOVA Summary Table for Predictors of Negative/Neutral Attitude Toward the Consumer Information Program

Source	df	SS	MS	F
Between Predictors	4	15.970	3.992	24.053*
Within Predictors	176	29.213	0.166	
Total	180	45.183		

*p = 0.000

Table 45

Standardized Discriminant Function Coefficients for Modified Sub Model of Positive or Negative/Neutral Attitude Toward the Consumer Information Program

Predictor	Coefficient
Meat Purchasing (X)	0.398
Store Satisfaction (Z)	0.518
INFOSEEK	0.679
CNSRED	0.353

Table 46

Efficiency Table for Modified Sub Model of Positive or Negative/Neutral Attitude Toward the Consumer Information Program

Group	Incorrectly Classified n	Incorrectly Classified percent	Correctly Classified n	Correctly Classified percent
Negative/Neutral Attitude [n=94]	45	47.5%	49	52.1%
Positive Attitude [n=87]	9	10.3	78	89.7

with respect to negative/neutral attitude. By including additional variables in the analyses, two antecedents of attitude toward the program were identified. A modification to the model which includes the antecedents and consequences of attitude is presented in Figure 7. As in the sub model on use of the Consumer Information Program, the two variables referred to as antecedents of attitude were CNSRED and INFOSEEK. Both of these variables contribute to individual differences in information acquisition and both were established within the respondents prior to exposure to the information program.

The modified sub model was expected to explain differences in attitude toward the information program by the following equation:

$$D = 0.398_X + 0.518_Z + 0.679_I + 0.353_C$$

where X = Meat Purchasing; Z = Store Satisfaction; I = INFOSEEK; and C = CNSRED

This equation represents the best combination of predictors among those included in the analyses to assess differences in attitude toward the Consumer Information Program. The combination was selected on the bases of ability to explain variance among the negative attitude cases and ability to correctly classify cases based on differences in attitude toward the Consumer Information Program.

Validation of the Sub Model for Usefulness of the Consumer Information Program

The discriminant function analysis for useful or nonuseful perception of the Consumer Information program resulted in all three predictors entering the equation. The results of this analysis are presented in Tables 47, 48, 49, 50.

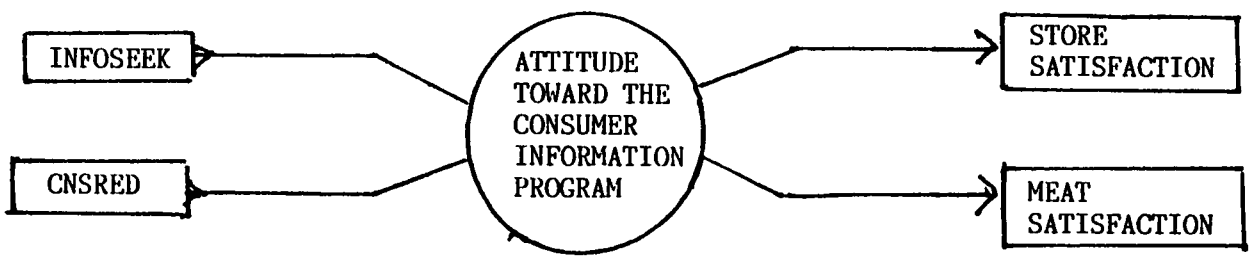

Figure 7: Modified sub model for positive or negative/neutral attitude toward the consumer information program.

As shown in Table 47 the discriminant function equation developed on the basis of the predictor variables was statistically significant. The discriminating power of the equation, as measured by the minimum D squared was greater than could have occurred by chance. Wilks' Lambda was statistically significant for the three predictors (Table 48). In Table 49 it can be observed that Store Satisfaction was the strongest predictor among the three and Meat Purchasing was the weakest. This ordering of the predictors was expected based on the ordering of the correlation coefficients as shown in Figure 5c. Of the three sub models, this was the only one in which the predictor Meat Satisfaction was entered into the equation.

The three coefficients which comprised the discriminant function equation were able to correctly classify 72.55% of the cases in terms of their perception of the Consumer Information Program as being useful or nonuseful. As shown in the efficiency table (Table 50), most of those who responded positively were correctly classified, but among those who did not perceive the program to be useful, only 50% were correctly classified.

In order to ascertain the amount of variance in the nonuseful group that was explained by the three predictors, a stepwise regression analysis was run. For this procedure, the criterion variable was dichotomized and only the nonuseful cases were included. Two of the predictors, Meat Satisfaction, and Store Satisfaction entered the equation. The variance explained by these two predictors for the respondents who did not perceive the information program to be useful was $R^2 = 0.330$.

Table 47

F Table for significant prediction in Terms of Variance Explained in Perceived Usefulness or Nonusefulness of the Consumer Information Program

Test of Significance	Statistic	df		p
Wilks' Lambda	0.668	1	151	0.000
Equivalent F	24.636	3	149	0.000
Minimum D Squared	1.958	3	149	0.000

Table 48

Significance of the predictors for discrimination on Perception of Usefulness or Nonusefulness of the Consumer Information Program

Predictor	Wilks' Lambda	p
Store Satisfaction (Z)	0.690	0.000
Meat Satisfaction (Y)	0.673	0.000
Meat Purchasing (X)	0.668	0.000

Table 49

Standardized discriminant function Coefficients for Perception of Usefulness or Nonusefulness of the Consumer Information Program

Predictor	Coefficient
Meat Purchasing (X)	0.168
Meat Satisfaction (Y)	0.214
Store Satisfaction (Z)	0.833

Table 50

Efficiency Table for useful or Nonuseful Perception of the Consumer Information Program

Group	Incorrectly Classified n	Incorrectly Classified percent	Correctly Classified n	Correctly Classified percent
Not Useful [n=76]	38	50.0%	38	50.0%
Useful [n=77]	4	5.2	73	94.8

Identification of Predictors to Explain Perception of Not Useful

Regression analysis using the stepwise procedure was conducted to identify additional variables which would increase the predictive validity of the model and enable greater precision in the classification of those who did not perceive the program to be useful. In addition to Meat Purchasing, Meat Satisfaction, and Store Satisfaction, certain demographic characteristics and composite measures derived from the AIO questions were used in the analysis. The demographic characteristics included age, level of education, occupation, occupation of spouse, length of time (years) the respondent had patronized the store, and whether or not the respondent had ever been enrolled in a consumer education course (CNSRED). the three composite measures derived from the AIO items were INFOSEEK, PROMEAT, and MGMT as defined in the section on use or nonuse of the information program.

For the analysis the criterion variable, perception of the program as useful or not useful, was dichotomized and only the not useful group was included. Three variables entered the equation; these three resulted in increasing the explained variance among those who did not perceived the program to be useful to $R^2 = 0.431$ from the previous level of $R^2 = 0.330$. The coefficients to explain nonuseful perceptions are presented in Table 51. Each of the three coefficients was statistically significant. The ANOVA summary for the significance of the regression equation is given in Table 52.

Table 51

Regression Coefficients for Perception of the Consumer Information Program as Not Useful

Variable	b	t	Sig.t
Store Satisfaction (Z)	-0.019	5.039	0.000
INFOSEEK	-0.043	5.141	0.000
Meat Satisfaction (Y)	-0.014	2.178	0.031
(Constant)	3.212	11.872	0.000

Table 52

ANOVA Summary Table for Perception of the Consumer Information Program as Not Useful

Source	df	SS	MS	F
Between Predictors	2	15.868	7.934	52.936*
Within Predictors	151	22.632	0.150	
Total	153	38.632		

Modification of the Sub Model - Perception of the Consumer Information Program as Useful or Not Useful

A follow up discriminant function analysis was conducted to determine to what extent the additional predictors would enhance the sub model on perception of the Consumer Information Program as useful or nonuseful. The regression analysis for nonuseful perception resulted in removing Meat Purchasing from the equation. This was the only regression analysis for negative response to the Consumer Information Program that did not identify CNSRED as a predictor. Because of their explanatory power in the use and attitude sub models, Meat Purchasing and CNSRED were included in the analysis.

The addition of CNSRED and INFOSEEK to the model resulted in increasing the minimum D squared from 1.958 to 3.087 thereby enhancing the model's ability to discriminate between those who perceived the program to be useful and those who did not. Wilks' Lambda was statistically significant at $p = 0.000$ for each of the four predictors in the equation. The standardized discriminant function coefficients are presented in Table 53.

The deletion of Meat Purchasing and inclusion of CNSRED and INFOSEEK enhanced the discriminatory power of the model and increased the proportion of correctly classified cases to 77.27% from the previous level of 72.55%. The increase in correct classifications was within the negative response group where 61.8% were correctly classified as opposed to 50.0% in the previous sub model. The number and percent of correctly classified cases in both groups is shown in Table 54.

Table 53

Standardized Discriminant Function Coefficients for Modified Sub Model of Nonuseful or Useful Perception of the Consumer Information Program

Predictor	Coefficient
Meat Satisfaction (Y)	0.304
Store Satisfaction (Z)	0.625
INFOSEEK	0.584
CNSRED	0.186

Table 54

Efficiency Table for Modified Sub Model of Useful or Nonuseful Perception of the Consumer Information Program

Group	Incorrectly Classified n	Incorrectly Classified percent	Correctly Classified n	Correctly Classified percent
Not Useful [n=76]	29	38.2%	47	61.8%
Useful [n=77]	5	6.5	72	93.5

The sub model in Figure 5c depicted a relationship between perceived usefulness of the Consumer Information Program and the outcomes or consequences which included Meat Purchasing, Meat Satisfaction, and Store Satisfaction. The analysis to confirm the model indicated that this was the most complete of the three models. In the discriminant analysis, the three predictors (Meat Purchasing, Meat Satisfaction and Store Satisfaction) entered the equation. However, as inclusion of additional variables in the equations for the sub models on use and attitude toward the program were found to have enhanced their ability to explain differences, these were included in this sub model. The antecedent variables of CNSRED and INFOSEEK increased the predictive validity and resulted in a modification. The proposed modification is presented in Figure 8. This sub model differs from that proposed for attitude. The usefulness model includes Meat Satisfaction as an outcome, the attitude model includes Meat Purchasing.

The modified sub model is expected to explain differences in perception of the Consumer Information Program by the following equation:

$$D = 0.304_Y + 0.625_Z + 0.584_I + 0.186_C$$

where Y = Meat Satisfaction; Z = Store Satisfaction; I = INFOSEEK; and C = CNSRED

This equation represents the best combination of predictors identified for explaining differences in perception of the Consumer Information Program as useful or not useful. The combination was selected for its ability to explain variance among those who did not perceive the program to be useful and for its ability to correctly

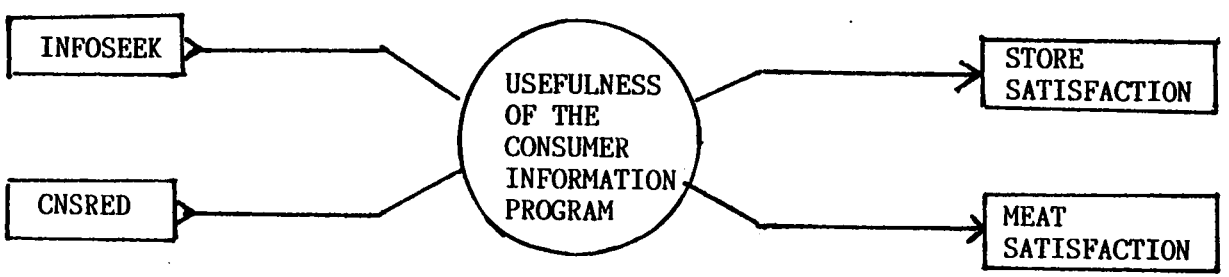

Figure 8: Modified sub model for perception of usefulness of the consumer education program

classify cases on differences in perception of usefulness of the Consumer Information Program.

Summary of the Validation of the Model

The conceptual model was split into three sub models in which the three indicators were substituted for the construct measure of the Consumer Information Program. The models depicted relationships between the indicators and three projected outcomes of meat purchasing, satisfaction with the meat department, and satisfaction with the store. These sub models did not include individual differences in demographic or psychographic characteristics which could mediate the projected outcomes. The hypotheses of differences between positive and negative responders with respect to the projected outcomes were confirmed. In validating the sub models, the responses to the program were dichotomized as they had been for the hypotheses tests. The assessment of validity of each model was based on its ability to explain differences between positive and negative responses.

Discriminant function equations comprised of the two predictors of Meat Purchasing and Store Satisfaction were able to explain and correctly classify positive responders for the sub models of use of the Consumer Information Program and attitude toward the Consumer Information program. For the sub model of usefulness, three predictors were incorporated into the equation to explain and correctly classify the positive responders.

The sub models were unable to explain negative responses on the

basis of the three predictors. In follow up analyses, demographic characteristics and composite measures derived from the AIO items on the questionnaire were included. Of the variables added, the propensity to seek out information (INFOSEEK) and previous enrollment in a consumer education course (CNSRED) entered the equations for all sub models. The addition of these two variables as moderators of the response to the Consumer Information Program enhanced the discriminating power of the three sub models.

The explained variance was lowest for the sub model on use of the Consumer Information Program. While the addition of CNSRED and INFOSEEK increased the predictive power of this sub model, the addition of the indicators of usefulness (w_3) and attitude (w_2) substantially enhanced the model. These two variables were included as both attitude and perception have been acknowledged to be antecedents of behavior (Fishbein & Ajzen, 1975; Day, 1976). Based on the analysis to validate the model, modifications to the sub models were proposed. The modifications for all sub models included the addition of antecedent variables of CNSRED and INFOSEEK and the deletion of one of the projected outcomes. The modifications for the sub model on use of the consumer information program were most extensive as the indicators of usefulness (w_3) and attitude (w_2) were also added.

Summary

The purpose of this chapter was to present the results of the study. It was divided into four major parts which included [1] a

description of the sample, [2] measurement of the constructs, [3] tests of the hypotheses, and [4] validation of the model.

The sample for this study was obtained by interviewing 277 shoppers at a warehouse foodstore in central Connecticut. The demographic characteristics of the sample were assessed to be representative of warehouse foodstore shoppers as identified in previous research. In examining the shopping habits of the respondents, a larger number was found to spend proportionately more of their meat budget than total food budget at another store. This was consistent with previous research which indicated that warehouse shoppers were less satisfied with the meat than with other attributes of the foodstore.

Use of the information program among shoppers was lower than expected. Descriptive statistics on the first 222 interviews indicated that there was a disproportionate number of nonusers in the sample. (Nonusers had been defined as those scoring below 6 on the 20 point scale) The last 55 respondents were prescreened to determine whether they might be classified as users. Of the 277 participants in the study, 83% could not describe the video presentation, and 8.7% had picked up a brochure on the day of the interview. Use of the program over time was higher as 70% had picked up recipe cards in the past, and 86% of these had read the information on the back of the cards.

Reliability and validity of the constructs and indicators devised for the study were measured. Cronbach's alpha coefficients for the indicators were at or near the minimum acceptable level as defined by

Nunnally (1967). Pearson product-moment correlation coefficients for the constructs and indicators were positive and statistically significant. An assessment of convergent and discriminant validity identified several inconsistencies in the data which might have been attributable to chance fluctuations in sampling of subjects or items.

The hypotheses for the study were formulated to test the conceptual model by specifying differences in meat purchasing, satisfaction with the meat department, and satisfaction with the store between those who responded positively to the Consumer Information Program and those who responded negatively. The three major hypotheses and twelve sub hypotheses were confirmed. Those who used the information program, possessed a positive attitude toward the program, and perceived it to be useful purchased more meat, were more satisfied with the meat department and more satisfied with the store. Based on the magnitude of the correlation coefficients amongst the indicators for response to the program, it was determined that those who possessed a positive attitude toward the program and perceived the program to be useful were not necessarily users of the program.

The data were analyzed to validate the model and to assess its completeness in explaining differences in use, attitude, and perceived usefulness of the Consumer Information Program. The conceptual model was split into three sub models in which the indicators (use, attitude, and perceived usefulness) were substituted for the construct measure of the Consumer Information Program. Discriminant function analyses indicated that the constructs of Meat Purchasing, Meat Satisfaction, and Store Satisfaction were able to explain and

correctly classify positive responders; but these failed to explain nonuse, negative attitude, or perception of the program as not useful. The addition of demographic and psychographic variables to the sub models resulted in adding a composite measure of information seeking behavior and previous enrollment in a consumer education class to the sub models. The explanatory power of use of the Consumer Information Program was further enhanced by the addition of attitude (w_2) and perceived usefulness (w_3) into the model. The analyses to validate the model and the proposed modifications to the model were included as the major focus of the study was on the development of a conceptual model to express the relationship between the provision of a consumer information program and consumer satisfaction with food marketing services.

Chapter V

SUMMARY, CONCLUSIONS, and RECOMMENDATIONS

This chapter summarizes the objectives, methodology, and results of the study. Conclusions based on the results are presented herein. The chapter concludes with recommendations for further research and for the implementation of consumer information programs.

Summary

The purposes of this study were to identify the relationship between the provision of a consumer information/education program and consumer satisfaction with food marketing services and to assess the benefits of a program as they affect both consumer satisfaction and retail foodstore profits.

The study was based on the premise that consumers want and need information in order to make informed choices in the marketplace. More informed choices will result in greater consumer satisfaction with the marketplace. Information that is available at the point of decision is the most easily assimilated and the most beneficial in terms of easing the purchase process. Food retailers who provide in-store information/education programs aid consumers in problem resolution and enable them to make more informed choices. This service should result in benefits to the consumer in the form of satisfaction with the marketplace and benefits to the retailer in the form of higher profits because of increased product purchasing. The

relationship between the provision of an information program and benefits that accrue to the information provider and to consumers have been implied, but a review of the literature did not uncover any empirical tests of these relationships. The specific objectives of this study were:

[1] To determine whether an in-store information program focused on meat will culminate in increased purchasing.

[2] To determine whether an in-store information program focused on meat contributes to increased satisfaction with meat products.

[3] To determine whether meat satisfaction contributes to store satisfaction.

Summary of the Procedures

The execution of this research encompassed [1] the development of a conceptual model relating the two variables of the provision of an in-store information/education program and consumer satisfaction with food marketing services, [2] the design of an instrument to test the model, and [3] a field test of the model at a warehouse foodstore.

The conceptual model developed for this study was based on a review of the literature in three research domains including consumer information processing and the development of information programs, retail store preference and store patronage, and consumer satisfaction and dissatisfaction. The conceptual model posited a relationship between the provision of a consumer information program and the three outcomes of increased product (meat) purchasing, satisfaction with the

product (meat), and satisfaction with the store.

The field test of the model was conducted at a warehouse foodstore in central Connecticut where an in-store information program which focused on meats had been implemented in November, 1983. This was a three part program comprised of 60 second video presentations, brochures which provided further information on the featured meats, and recipe cards along the meat counter. The warehouse foodstore was selected because the information program was specific to meat products, and because the image of warehouse foodstore meat departments is generally poor. Thus an in-store information program would be more likely to create a measurable effect than if it were tested at a foodstore known for its meat department.

The operational model for the study specified correlational relationships among the four constructs of the conceptual model. The construct of the Consumer Information Program was operationally defined by three indicators which measured use of the program, attitude toward the program, and perception of usefulness of the program. Each of these indicators was a composite of several questions extrapolated from the questionnaire. The construct of Meat Purchasing was defined by the percentage of the meat budget spent, the number of meat items purchased, and whether the percentage of the meat budget spent at the store had changed. Meat Satisfaction and store satisfaction were both operationally defined by three indicators which included a composite of attributes, a global measure of satisfaction, and the disconfirmation of expectations.

Two instruments were developed for the study. The first was an

instrument to evaluate the quality of the consumer information materials utilized by the store. These materials were either produced by the consumer relations department of the store chain or acquired from trade associations such as the Pork Producers Council, or the Meatboard. Two experts in the field of food and nutrition were asked to evaluate the program materials on the bases of objectivity and completeness. The recipe cards (which included information on meat selection, preparation, or nutrition), the brochures, and a video presentation were found to be acceptable and appropriate for use with average supermarket shoppers.

The survey instrument developed for this study was divided into two parts on the basis of method of administration. The first was a six page self administered questionnaire. This included the items to measure satisfaction with the store and with the meat department. Also included were twenty-one attitude, interest, and opinion items related to food shopping and preparation. The second part was a three page interview questionnaire which queried respondents on their use of the information program, shopping habits, and demographic data. Questions to measure attitude toward the program and usefulness of the program were drawn primarily from the first part of the questionnaire.

The instrument was pretested at the data collection site. Cronbach's alpha for internal consistency was above .80 for all multi-item and indicator scales. Minor modifications were made as a result of the pretest.

Two hundred seventy-seven shoppers were interviewed at the

warehouse store during October and November 1984. Data collection was conducted on Thursdays, Fridays, and Saturdays when store traffic was heavy. The researcher and two assistants interviewed shoppers. As each interview required ten to fifteen minutes, a maximum of five could be completed by each interviewer in one hour. The offer of a token gift provided an economic incentive which contributed to a response rate of more than eighty percent.

Summary of the Results

The first 222 respondents were randomly selected from the shoppers who were in the store during the hours the data were being collected. Descriptive statistics on this sample revealed that there was an imbalance in the proportion of users to nonusers of the information program. The remaining 55 respondents, while being randomly selected from among all shoppers, were queried on their use of the program, Only those who indicated that they had seen the video presentation or had used the brochures or recipe cards in the past were asked to participate in the study. There were no statistical differences between the two subsamples on demographic characteristics.

The sample of 277 shoppers was representative of warehouse foodstore clientele. The average household size was four persons and the largest share of shoppers interviewed was between the ages of 25 and 34 years. Fifty percent reported an average weekly food bill of $100.00. Half of those interviewed shopped at the warehouse store once per week and half had been patronizing this store for more than three years. Store loyalty was low as 78.1% reported that they shopped

at least one other foodstore. Twenty-nine percent purchased less than 50% of their meat at the store, but only eleven percent spent less than 50% of their food budget (excluding meat) at the store.

Analysis of the data to assess the the model was divided into three sections. The first section examined the reliability and validity of the indicators used to measure the constructs. The second section presented the tests of the hypotheses, and the third was concerned with the validation of the model.

Cronbach's alpha for the measures of the constructs was at or near the minimum .70 specified for widely used measures (Nunnally, 1967). Pearson product-moment correlation coefficients between and amongst the indicators for each construct were positive and statistically significant at 0.000. Correlation coefficients for the constructs were also positive and statistically significant.

Three major hypotheses and eleven sub hypotheses were formulated for the study. These were based on the objectives of the study and designed to the provide an empirical assessment of the conceptual model. Each of the three posited a relationship between the provision of a consumer information program and one of the projected outcomes (Meat Purchasing, Meat Satisfaction, Store Satisfaction). The sub hypotheses tested differences between those who responded positively to the program and those whose response was negative. Cut scores were used to differentiate those who responded positively from those who responded negatively on the indicators of use, attitude, and usefulness of the information program.

The major hypotheses were confirmed based on Pearson product-

moment correlations; the eleven sub hypotheses were confirmed based on the results of independent samples t-tests. The results of the hypothesis tests were as follows:

[1] There was a positive and significant correlation between response to the Consumer Information Program and increased Meat Purchasing. Respondents who were users of the information program purchased more meat than nonusers. Those who possessed a positive attitude toward the program purchased more meats than those whose attitude was negative, and those who perceived the program to be useful purchased more meat than those who did not perceive it to be useful.

[2] There was a positive and significant correlation between response to the in-store Consumer Information Program focused on meat and satisfaction with meat. The correlation between Meat Purchasing and Meat Satisfaction was also positive and statistically significant. Respondents who were users of the Consumer Information Program were more satisfied with the meat department than those who were nonusers. Those whose attitude toward the program was positive were more satisfied with the meat than those whose attitude was negative, and those who perceived the program to be useful were more satisfied than those who did not perceive it to be useful.

[3] There was a positive and statistically significant correlation between response to the Consumer Information Program and satisfaction with the store. The correlation between Meat Satisfaction and Store Satisfaction was also positive and statistically significant. Respondents who were users of the Consumer

Information Program were more satisfied with the store than those who were nonusers. Those whose attitude toward the program was positive were more satisfied with the store than those whose attitude was negative, and those who perceived the program to be useful were more satisfied with the store than those who did not perceive the program to be useful.

The hypotheses tests confirmed the relationships posited by the conceptual model. As the primary focus of the research was on the development of the model, further analysis was undertaken to assess the completeness of the model and to measure the explanatory power of the model with respect to its ability to differentiate positive and negative responders on the bases of the projected outcomes.

Discriminant function analyses indicated that Meat Purchasing, Meat Satisfaction, and Store Satisfaction could explain and correctly classify positive responders. The model failed to explain negative response. The addition of demographic and psychographic variables into regression equations for which only negative responses were included resulted in the identification of two significant antecedents to the information program. The propensity of an individual to seek out information and previous enrollment in a consumer education course were found to enhance the model by explaining negative response in terms of attitude toward the program and perception of usefulness of the program. Nonuse was explained by these two variables and also by attitude and perceived usefulness. Respondents who had a negative or neutral attitude toward information or who did not perceive the program to be useful were likely to be nonusers.

Conclusions

The major focus of this study was on the development of a conceptual model to explain the relationship between the provision of consumer information and benefits which accrue to the provider of the information and to consumers. The conclusions, based on the results of the study, are presented as they related to the purposes and objectives set forth.

The conceptual model for the study posited a relationship between the provision of a consumer information program and consumer satisfaction with food marketing services. The results of the study indicated that there is a positive relationship between the provision of an information program and consumer satisfaction. Because this study was based on a cross sectional survey design with intervention on a treatment and the conclusion is based on statistically significant correlations between the two variables, no assumption of causality can be made. As shoppers who responded positively toward the program were more satisfied with the meat department and with the store, it was concluded that there is a relationship between the provision of consumer information and consumer satisfaction with food marketing services. This conclusion is limited to those shoppers who are likely to have a positive attitude toward consumer information, perceive the particular information program to be useful, or actually use the program.

In measuring the relationship between the provision of an in-store information program and increased satisfactions, the program was viewed from the consumer's perspective. The Consumer Information

Program was operationally defined as response to the program materials. The results of the study indicated that whether response was measured in terms of use of the program, a positive attitude toward the program, or perceived usefulness of the program, shoppers who responded positively expressed higher levels of satisfaction with the meat department and with the store. Therefore it was concluded that if benefits are defined as satisfaction with the marketplace, consumers did benefit from the provision of the in-store information program.

The benefits to the provider of the Information Program were measured directly in the form of increased purchasing of meat and indirectly by the increase in consumer satisfaction which could culminate in increased patronage. The results of the study indicated that those who responded positively to the program purchased more meat and were more satisfied with the meat department and the store. Therefore it was concluded that the Consumer Information Program benefited the provider directly through increased purchasing of meat products by users of the information program, and indirectly through satisfactions received by the store's patrons.

The conceptual model proposed a positive relationship between the provision of consumer information and increased satisfaction and product purchasing. The model was validated by analysis of the data. Positive response to the information program was explained by increased meat purchasing, satisfaction with the meat department, and satisfaction with the store. The reverse of this position was not confirmed. Due to instability and variation in the scores, negative

response was not explained by the model in terms of lower levels of meat purchasing, satisfaction with the meat department, and satisfaction with the store.

The analyses to validate the model indicated that negative response to the program was primarily due to individual differences in information processing and utilization. Previous enrollment in a consumer education course and the propensity to seek out information were found to be determinants of use or non use of the program. Therefore it was concluded that consumer education courses can be of value in enhancing satisfaction with the marketplace.

Recommendations

Based on the results and conclusions of the study, recommendations are offered for further research, for the implementation of consumer information programs, and for consumer education.

Recommendations and Implications for Research

The relationship posited by the conceptual model was validated through the analyses. Positive attitude toward the information program, use of the program, and perception of usefulness were explained by the model. Further research should be undertaken to explain negative responses to a consumer information program. As the research design was not capable of assessing causality, research should be designed which could establish a causal relationship between the provision of information and satisfaction. Recommendations for research to study nonusers and to establish causality are:

[1] There is a need to identify characteristics of nonusers of information provided in a variety of environments. The identification of characteristics should be directed toward the product or service attributes that are most salient to the nonuser segment most likely to purchase the products build the information program around these attributes.

[2] In studies similar to the present one, the reasons for nonuse of the information to determine whether nonuse is the result of factors related to the program or the provider of the information or the result other personal characteristics of the respondent should be explored.

[3] Determine the specific information formats that might be perceived as useful and/or used by a typical nonuser segment. This type of inquiry should be structured by offering alternatives or suggested formats rather than asking open ended questions.

[4] Focus groups might be used to identify the information formats that could be perceived as useful by typical nonusers, and the results of this mode of inquiry then be utilized in a structured format for further data collection.

[5] A research program on the identification of nonuser characteristics and the types of information that they would perceive as useful should culminate in an experimental study where the treatments were manipulated to include a variety of information formats.

[6] A research program as recommended above which utilizes an experimental design should be undertaken to measure the effects of

varying levels of treatment. This would enable the identification of a causal relationship between the treatment and outcomes.

Several recommendations are offered for the design of a survey instrument similar to the one used for this study. The nine page questionnaire was lengthy and could have been shortened by one page by deleting the scale on the importance of attributes. Where the intent of this study was to identify levels of satisfaction, the importance scale attenuated the satisfaction scores and could not be used. One item that was particularly problematic was the manner in which respondents were asked the number of meat items purchased. A better measure would have been found by asking how many meals would be served with the meat purchased.

Recommendations and Implications for Public Policy

The recommended research program would have implications for public policy makers in the implementation of disclosure requirements and for the business community in its efforts to develop information programs. Specific recommendations for public policy include:

[1] The identification of information formats preferred by nonuser segments should be undertaken prior to implementing disclosure requirements.

[2] Information formats preferred by nonuser segments should be utilized for disclosure requirements. This might encourage wider use of information already available in the environment.

[3] Encourage the business community to incorporate information disclosures in advertising in order increase awareness of the

availability of the information.

Recommendations and Implications for Information Programs

Several recommendations are offered for the development and implementation of corporate consumer information programs.

[1] Usefulness of the program was found to correlate more highly with increased purchasing and satisfaction. Therefore, it is recommended that in implementation of a program, usefulness of the materials should be the primary concern. The materials should provide information that is salient to clientele. Whether it is actually used might be subordinate to the perception of it being useful.

[2] For foodstore consumer information programs, several modes of presentation are probably needed as clientele cannot be segmented on socio economic variables. Due to the variation among shoppers, one type of presentation could not be expected to be perceived as useful by all.

[3] Providers of the information program should take actions to encourage use by focusing attention on the information materials through the use of product spotter signs within the store, or by incorporating the information with other promotional materials. Consumer information could be given in conjunction with coupons or it could be included with the newspaper advertisements.

[4] Providers of the program should experiment with information materials locations within the store. Materials should be located where they are easily seen. Visuals such as video machines should be located in an area such as near the deli counter or check-out lanes

where shoppers' activity of moving through the store would not be interrupted.

[5] Food retailers should be encouraged to engage in consumer information/education programs. These can be of particular benefit in attempting to upgrade the image of the whole store or of a particular product category.

Recommendations and Implications for Consumer Education

Previous enrollment in a consumer education course was found to be a predictor of positive or negative response to the information program which attests to its usefulness. Recommendations for further study in consumer education are:

[1] As the long run benefit of consumer education has been questioned and continuation of course offerings in the schools is in jeopardy, it is recommended that questionnaires on consumer behavior and satisfaction include one item in this regard.

[2] The inclusion of questions on previous consumer education experiences in multiple consumer behavior research studies could help to build an understanding of the effects of consumer education.

[3] The results of multiple studies which measured the effects of consumer education could contribute to a justification for encouraging enrollment by all students in courses of this nature.

[4] Courses should emphasize the importance of information search and utilization as these contribute to informed decision making and satisfaction with the marketplace in this dynamic and complex consumer society.

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APPENDIX A

The Survey Instrument Used in the Study

NUMBER_____

DATE_____ DAY_____

AM_____PM_____EVE_____

A SURVEY OF GROCERY SHOPPING HABITS

This is a survey of the food purchasing habits of Connecticut consumers. It is an independent research project being conducted by Mary L. Carsky, Lecturer in the School of Family Studies at the University of Connecticut.

The survey is divided into two parts. You will answer the questions in the first part by reading the questions and checking the answers. I will ask you the questions in the second part. The total time required for this survey is between 10 and 15 minutes.

THANK YOU FOR YOUR COOPERATION.....

You will receive a token gift for your time.

HOW DO YOU RATE HEARTLAND?

How would you grade Heartland on each of these store characteristics? Please circle the letter that represents your opinion.

EXCELLENT = A GOOD = B AVERAGE = C FAIR = D POOR = F

	EXCELLENT				POOR
LOW PRICES	A	B	C	D	E
ACCURATE PLEASANT CHECKOUT CLERKS	A	B	C	D	E
PRODUCE DEPARTMENT	A	B	C	D	E
MEAT DEPARTMENT	A	B	C	D	E
SELECTION OF MEATS	A	B	C	D	E
QUALITY OF MEATS	A	B	C	D	E
FRESHNESS OF MEAT	A	B	C	D	E
SHELVES WELL STOCKED	A	B	C	D	E
ASSORTMENT OF NATIONAL BRANDS	A	B	C	D	E
ASSORTMENT OF LOW PRICED PRIVATE BRANDS	A	B	C	D	E
FAST CHECKOUT	A	B	C	D	E
CONVENIENT LOCATION	A	B	C	D	E
PARKING FACILITIES	A	B	C	D	E
AVAILABILITY OF BULK FOODS	A	B	C	D	E
ALL PRICES CLEARLY MARKED	A	B	C	D	E
NUTRITION INFORMATION	A	B	C	D	E
FOOD PREPARATION IDEAS	A	B	C	D	E
DAIRY DEPARTMENT	A	B	C	D	E
HELPFUL PERSONNEL IN BAKERY & DELI	A	B	C	D	E
FRESHNESS DATE ON PERISHABLES	A	B	C	D	E
GOURMET FOOD SECTION	A	B	C	D	E
STORE CLEANLINESS	A	B	C	D	E

WHAT IS IMPORTANT IN CHOOSING A SUPERMARKET?

How important are these store characteristics to your overall satisfaction ith grocery stores in general? Please respond by placing an 'X' in the box that represents your answer.

	NOT AT ALL IMPORTANT	IMPORTANT	EXTREMELY IMPORTANT
LOW PRICES	[ ]	[ ]	[ ]
ACCURATE, PLEASANT CHECKOUT CLERKS	[ ]	[ ]	[ ]
GOOD PRODUCE DEPARTMENT	[ ]	[ ]	[ ]
GOOD MEAT DEPARTMENT	[ ]	[ ]	[ ]
SHELVES WELL STOCKED	[ ]	[ ]	[ ]
GOOD ASSORTMENT OF NATIONAL BRANDS	[ ]	[ ]	[ ]
GOOD ASSORTMENT OF LOW PRICED PRIVATE BRANDS .	[ ]	[ ]	[ ]
FAST CHECKOUT	[ ]	[ ]	[ ]
CONVENIENT LOCATION	[ ]	[ ]	[ ]
GOOD PARKING FACILITIES	[ ]	[ ]	[ ]
AVAILABILITY OF BULK FOODS	[ ]	[ ]	[ ]
ALL PRICES CLEARLY MARKED	[ ]	[ ]	[ ]
NUTRITION INFORMATION	[ ]	[ ]	[ ]
FOOD PREPARATION IDEAS	[ ]	[ ]	[ ]
GOOD DAIRY DEPARTMENT	[ ]	[ ]	[ ]
HELPFUL PERSONNEL IN BAKERY & DELI	[ ]	[ ]	[ ]
FRESHNESS DATE ON PERISHABLES	[ ]	[ ]	[ ]
GOURMET FOOD SECTION	[ ]	[ ]	[ ]
STORE CLEANLINESS	[ ]	[ ]	[ ]

HOW SATISFIED ARE YOU WITH THE MEAT DEPARTMENT?

The questions in this section ask your opinions about the meat department at HEARTLAND FOOD WAREHOUSE. For each question, Please place an 'X' at the point that best describes your feelings.

Read the scale as:	:	:	:	:	:
	NOT SATISFIED	SLIGHTLY SATISFIED	SOMEWHAT SATISFIED	RELATIVELY SATISFIED	VERY SATISFIED

1. In comparison to other WAREHOUSE foodstores how satisifed are you with the meat department at Heartland?

   NOT SATISFIED :____:____:____:____:____: VERY SATISFIED

2. In comparison to the BEST or MOST IDEAL foodstore in which you have ever shopped, how satisfied are you with the meat department at Heartland?

   NOT SATISFIED :____:____:____:____:____: VERY SATISFIED

3. In comparison to the WORST foodstore in which you have every shopped, how satisfied are you with the meat department at Heartland?

   NOT SATISFIED :____:____:____:____:____: VERY SATISFIED

4. In general, how satisfied are you with the meat department at Heartland?

   NOT SATISFIED :____:____:____:____:____: VERY SATISFIED

HOW SATISFIED ARE YOU WITH THIS SUPERMARKET?

The questions in this section ask your opinions about HEARTLAND FOOD WAREHOUSE. For each question, please place an 'X' at the point that best describes your feelings.

Read the scale as :	NOT SATISFIED	: SLIGHTLY SATISFIED	: SOMEWHAT SATISFIED	: RELATIVELY SATISFIED	: VERY SATISFIED	:

---

1. In comparison to other WAREHOUSE foodstores, how satisfied are you with Heartland?

   NOT SATISFIED :____:____:____:____:____: **VERY SATISFIED**

2. In comparison to the BEST or MOST IDEAL foodstore in which you have shopped, how satisfied are you with Heartland?

   NOT SATISFIED :____:____:____:____:____: **VERY SATISFIED**

3. In comparison to the WORST foodstore in which you have shopped, how satisfied are you with Heartland?

   NOT SATISFIED :____:____:____:____:____: **VERY SATISFIED**

4. In general, how satisfied are you with HEARTLAND FOOD WAREHOUSE?

   NOT SATISFIED :____:____:____:____:____: **VERY SATISFIED**

HOW DO YOU FEEL ABOUT MEAL PLANNING AND SHOPPING FOR FOOD?

What are your attitudes and opinions on grocery shopping and meal planning? Please reply to each statement by placing an 'X' at the point that best expresses your attitude or opinion.

Read the scales as: _____:_____:_____:_____:_____:
NEVER RARELY SOMETIMES USUALLY ALWAYS

_____:_____:_____:_____:_____:
STRONGLY DISAGREE DISAGREE NEUTRAL AGREE STRONGLY AGREE

1. I plan my shopping list around items mentioned in the newspaper ads circulars.

NEVER :____:____:____:____:____: ALWAYS

2. I check the freshness date on bakery and dairy products.

NEVER :____:____:____:____:____:ALWAYS

3. I check the recipe cards in the meat department when I shop.

NEVER :____:____:____:____:____:ALWAYS

4. Speed of preparation is most important in deciding what foods to buy.

NEVER :____:____:____:____:____:ALWAYS

5. In order to really satisfy my appetite, a main meal must include meat.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

6. The meat video is helpful to shoppers in deciding what meat to buy.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

7. I plan the next week's menus before going grocery shopping.

NEVER :____:____:____:____:____: ALWAYS

8. The in-store video programs are an excellent way to serve customers.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

9. I try to keep up with the latest recipes and cooking ideas.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

10. The meat is the most important part of any main meal.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

11. I rarely have time to fix meals that take more than a half hour to prepare

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

12. The recipe cards in the meat department are helpful to shoppers. (064)

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

13. The main reason I don't eat more meat is because it's too expensive. (065)

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

14. Before going grocery shopping I prepare a shopping list.

NEVER :____:____:____:____:____: ALWAYS

15. I use recipes from magazines and newspapers.

NEVER :____:____:____:____:____: ALWAYS

16. It is worth my time to check the information on the meat video.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

17. Compared to other foods I might have as a main course, meat tastes best.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

18. I look for nutritional labeling information on grocery packages.

NEVER :____:____:____:____:____: ALWAYS

19. Experimenting with new recipes/foods gives me a sense of creativity.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

20. Pork is one of my favorite meats.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

21. I like to go grocery shopping.

STRONGLY DISAGREE ____:____:____:____:____: STRONGLY AGREE

****

STOP HERE

PART II: INTERVIEW

1. What meats did you purchase today? [LIST THE MEATS] _____

_____ _____ _____ _____

2. How many times per week do you serve meat or poultry at the main meal? ____

If purchased the meat promoted on the video continue with #3. otherwise proceed to #4.

3. Was the purchase of [meat on video] planned? YES [ ] NO [ ]

3a. Why did you purchase [meat on video]? SAW VIDEO [ ] SAW RECIPES [ ]

OTHER [specify]_____

3b. How often do you purchase this meat? EVERY WEEK [ ] EVERY TWO WEEKS [ ]

1X PER MONTH [ ] OCCASIONALLY [ ] RARELY [ ]

4. Did you notice the video presentation? YES [ ] NO [ ]

4a. If yes, could you describe the message? YES [ ] NO [ ]

_____

(Briefly describe response)

5. Do you think that this is a good way for supermarkets to provide information to consumers? YES [ ] NO [ ] DK [ ]

IF NO to purchase of meat, but can describe video ask #6

6. When was the last time you purchased [meat on video]? WITHIN PAST MONTH [ ]

WITHIN PAST 6 MONTHS [ ] RARELY BUY [ ] NEVER BUY [ ]

7. Did you notice the brochures on (name meat)? YES [ ] NO [ ]

7a. If yes, did you pick up a brochure? YES [ ] NO [ ]

8. Have you picked up any meat brochures in the past? YES [ ] NO [ ]

8a. If yes, do you recall the meat in the brochure? YES [ ] NO [ ]

(Briefly describe respons)_____

9. Did you pick up a recipe card for meat today? YES [ ] NO [ ]

9a. If yes, did you pick up a (supreme choice) recipe card? YES [ ] NO [ ]

9b. If yes, did you pick up a white (eat wise) recipe card? YES [ ] NO [ ]

10. Have you picked up recipe cards in the past? YES [ ] NO [ ]

10a. If yes, how often? 1 - 2 TIMES [ ] ON OCCASION [ ] WEEKLY [ ]

11. Have you prepared any of the recipes? YES [ ] NO [ ]

12. Have you used the information on the back of the cards? YES [ ] NO [ ]

13. Do you think that foodstores should provide consumer information? YES [ ] NO [ ] DK [ ]

13a. If YES, what type of consumer information would be most helpful?

_____

(Briefly describe response)

14. Did you notice the video in the produce department? YES [ ] NO [ ]

14a. If YES, could you describe the message? YES [ ] NO [ ]

_____

(Briefly describe response)

Demographics

1. How often do you shop at Heartland? MORE THAN 1X WEEK [ ] 1X WEEK [ ]

2X MONTH [ ] 1X MONTH [ ] OCCASIONALLY [ ] RARELY [ ] FIRST TIME [ ]

2. For how long have you been shopping at Heartland Food Warehouse? _____
(Record months or years)

3. In addition to Heartland, at what other stores do you shop for food?

[a]_____ [b]_____ [c]_____
STORE NAME STORE NAME STORE NAME

4. How much is your average weekly food bill? _____

4a. Approximately what percentage is spent at Heartland? _____

4c. What percentage of your meat budget is spent at Heartland? _____

5. How much was today's grocery bill? _____

6. How typical is today of you grocery shopping at Heartland?

LARGER [ ] ABOUT THE SAME [ ] SMALLER [ ]

7. Since you first shopped at Heartland, has the percentage of your food dollar spent at this store

INCREASED [ ] DECREASED [ ] REMAINED THE SAME [ ]

8. Since you first shopped at Heartland, has the percentage of your meat budget spent at this store

INCREASED [ ] DECREASED [ ] REMAINED THE SAME [ ]

9. Approximately how far is Heartland from your home? _____
(Record response in miles or minutes)

10. Approximately how far from your home is store [a]_____ [b]_____ [c]_____
(Refers to other stores shopped - question #3)

11. Do you regularly shop at this time? YES [ ] NO [ ]

12. Is shopper alone? YES [ ] NO [ ]

12a. If with another, identify the relationship _____

12b. Ask.. Did shopping companion influence your food purchases today? YES [ ] NO [ ]

13c. If YES, for which products?_____

****

Size of household_____ # children under six____ 6-11____ 12-18____ 18+____

Occupation_____ Spouse's Occupation _____

Highest educational level achieved:

COMPLETED GRAMMAR SCHOOL [ ]
SOME HIGH SCHOOL [ ]
HIGH SCHOOL GRADUATE [ ]
SOME COLLEGE [ ]
COLLEGE GRADUATE [ ]

Present Age:

18 - 24 (GROUP 1) [ ]
25 - 34 (GROUP 2) [ ]
35 - 44 (GROUP 3) [ ]
45 - 54 (GROUP 4) [ ]
55 - 64 (GROUP 5) [ ]
OVER 65 (GROUP 6) [ ]

Sex of shopper FEMALE [ ] MALE [ ]

Just as an aside, have you ever taken a consumer education course? YES [ ] NO [ ]

****

THANK YOU FOR YOUR COOPERATION.....

APPENDIX B

EVAULATION OF CONSUMER EDUCATION MATERIALS

FOR

CONSUMER SATISFACTION WITH FOOD MARKETING SERVICES: THE EFFECTS OF IN-STORE INFORMATION AND EDUCATION PROGRAMS

by

MARY L. CARSKY

EVALUATION OF HEARTLAND CONSUMER INFORMATION MATERIALS

The purpose of this study is to assess consumer satisfaction with food marketing services as a result of consumer information/education programs. It is based on the theory that an in store information program will increase consumer satisfaction with the product category featured in the program, with the retail foodstore providing the program, and and shoppers who use the program will increase their purchases in the product category. Prior to measuring the results of the program, it is essential to be confident that the materials used by the program to be measured in this study are accurate. The materials for a consumer information program should be unbiased, accurate, complete, and appropriate to the comprehension level of the intended audience.

Overview of the Program

Heartland Warehouse Foods is part of the Purity Supreme Supermarket Chain which is headquartered in North Bellerica, Massachusetts. There are two Heartland stores in Connecticut; one is located in Newington and one in Vernon. The consumer relations department has initiated a three part consumer information program which focuses on meats. The program consists of video presentations, brochures, and recipe cards. The video presentations are 60 seconds in length and provide information on the selection, storage, and preparation of featured fresh meat products. The video machine is located at the beginning of the meat counter. Brochures with additional information on the featured meats are available at the video machines. Recipe cards are placed along the meat counter above the meat featured in the recipes. Recipe cards are rotated every two weeks. There are two types of recipe cards - regular recipes and "eat wise." The eat wise series includes nutritional information on the recipe (calories per serving, protein, carbohydrate, fat, sodium). Additional nutritional information related to the recipe or lower calorie modifications of the recipe are found on the reverse side of the card. The other set of recipes called "supreme choice" are color coded to identify different meats. Information on the selection, storage, and preparation of the featured meat is provided on the reverse side of these recipe cards.

The Development of the Program

The consumer information program was developed by Alice Grover, Director of Consumer Relations for Purity Supreme, Inc. Ms. Grover is a home economist who received her degree in home economics and consumer education from the University of Cincinnati. She began the consumer relations department at Purity Supreme eleven years ago. The recipes used in the consumer information program come from cookbooks, food institutes (ie. Pork Producers Council, Meat Board, etc.). The nutrition information and information on selection and storage of meats which is used in the recipe cards, video presentations, and brochures, is derived from materials received from the U.S.D.A., the Meat Board, and similar sources.

PART I: PROGRAM BROCHURES

Five brochures are available for review. These include the Purity Supreme EAT-WISE Program, STRETCH YOUR BEEF DOLLAR, KABOB COOK OUT and IT'S PICNIC TIME. An additional brochure which describes the "Purity Supreme Group" has been included for your information. The EAT-WISE and STRETCH YOUR BEEF DOLLAR brochures appear to contain the most consumer information as well as being most representative of the types of information and quality of the information in the program.

What is your opinion of these brochures? Your may give an overall impression, or you may want to assess brochures individually.

1. Is the consumer information FALSE or MISLEADING in a serious manner?

   YES [ ] NO [ ]

2. Is any of the nutrition information FALSE OR MISLEADING?

   YES [ ] NO [ ]

3. Does the information appear to be BIASED?

   YES [ ] NO [ ]

4. Does the information appear to be appropriate to the reading level of most adult food shoppers?

   YES [ ] NO [ ]

COMMENTS _____

_____

_____

_____

PART IIA: RECIPE CARDS - SUPREME CHOICE

This set of recipe cards includes recipes for pork, beef, lamb, veal, and poultry dishes. The reverse side of these cards provides information on selection, storage, preparation, or nutrition (see Savory braised beef, Sesame baked chicken, Sweet & sour pork).

1. Does any of the consumer information on these recipe cards appear to be FALSE or MISLEADING?

   YES [ ] NO [ ]

2. Is any of the nutritional information FALSE or MISLEADING?

   YES [ ] NO [ ]

3. Does the information appear to be BIASED?

   YES [ ] NO [ ]

4. Does the presentation of the information appear to be appropriate to the reading level of most adult shoppers?

   YES [ ] NO [ ]

COMMENTS _____

_____

_____

_____

PART IIB: RECIPE CARDS - EAT-WISE

The EAT-WISE recipe cards include recipes for beef, pork, poultry, and lamb dishes. Nutritional information per serving is given at the bottom of each recipe. Additional nutritional information is provided on the back of each card.

1. Does any of the nutritional information appear to be FALSE OR DECEPTIVE?

   YES [ ] NO [ ]

2. Does the nutritional information appear to be sufficiently complete?

   YES [ ] NO [ ]

3. Does the information appear to be unbiased?

   YES [ ] NO [ ]

4. Does the nutritional information appear to be presented in a manner that it will be comprehensible to most adult shoppers?

   YES [ ] NO [ ]

COMMENTS _____

_____

_____

_____

_____

PART III: A VIDEO PRESENTATION

Please view the video presentation and answer the following questions.

1. Does any of the information in the video presentation appear to be FALSE or MISLEADING?

   YES [ ] NO [ ]

2. Does the information appear to be BIASED?

   YES [ ] NO [ ]

3. Does the video presentation appear to be comprehensible by most adult shoppers?

   YES [ ] NO [ ]

COMMENTS _____

_____

_____

_____

****

Do you have any additional comments about the program? _____

_____

_____

SIGNATURE _____ DATE _____

TITLE/POSITION _____

APPENDIX C

The Conceptual and Operational Models with Correlation Coefficients

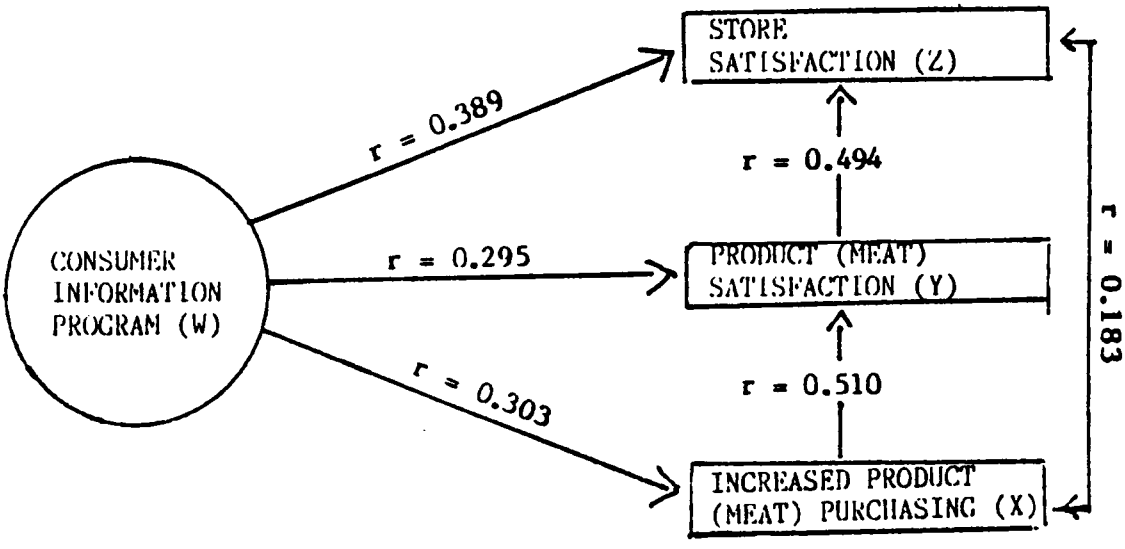

Figure 9: The Conceptual model for the effects of in-store information programs with correlation coefficients

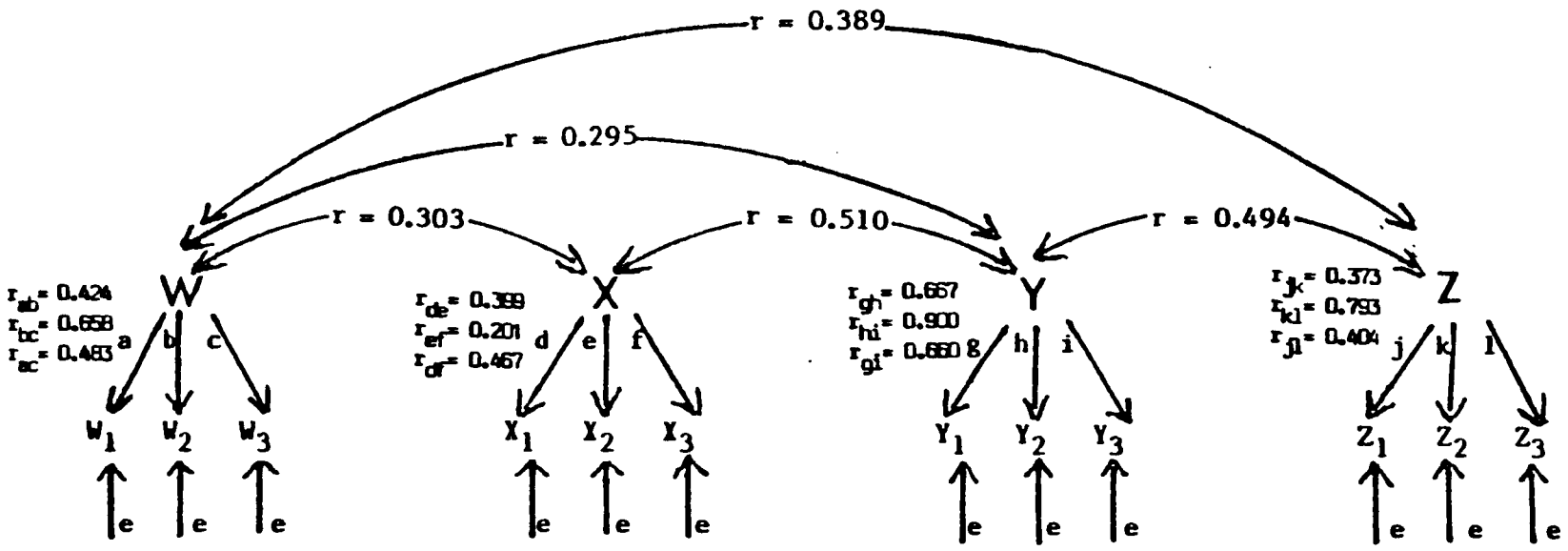

Figure 10: The operational model for the effects of in-store information programs on consumer satisfaction with correlation coefficients

W = Consumer information program

X = Consumer meat purchasing

Y = Consumer satisfaction with meats

Z = Consumer satisfaction with store

w_1 = Use of the program

w_2 = Attitude toward the program

w_3 = Usefulness of the program

x_1 = percentage of meat budget

x_2 = Number of meat items purchased

x_3 = Change in percentage of meat budget

y_1 = Meat satisfaction (store attributes)

y_2 = Meat satisfaction (global measures)

y_3 = Meat (disconfirmation/expectations)

z_1 = Store satisfaction (attributes)

z_2 = Store satisfaction (global measures)

z_3 = Store (disconfirmation/expectations)

e's = random error

a – l = correlated measures

APPENDIX D

Definition of Terms

Consumer Information Program. A three part program developed and implemented at the experimental store. The program consists of a video presentation, brochures which are coordinated with the video presentation, and recipe cards. The program is focused on meats.

Attitude toward the Program. An affective measure of consumer acceptance of the information program.

Use of the Program. A behavioral measure of consumer acceptance of the information program.

Usefulness of the Program. A cognitive measure of consumer acceptance of the information program.

Consumer Meat Purchasing. A construct operationally defined to assess the benefits of the information program which accrue to the provider of the program.

Change in Percentage of Meat Budget. An indicator of meat purchasing which refers to an increase, decrease, or no change in the percentage of meat purchased at the experimental store over time.

Number of Meat Items Purchased. An indicator of meat purchasing which refers to the number of fresh meats purchased on the day of the interview.

Percentage of Meat Budget. An indicator of meat purchasing which refers to the percentage spent at the experimental food store.

Meat Satisfaction. The construct operationally defined to assess like or dislike of the product that is the focus of the program.

Store Satisfaction. The construct operationally defined to assess the consumers' like or dislike of the shopping environment.

Attribute Measure of Satisfaction. An indicator of satisfaction that is based on assessment of a number of characteristics. It is a composite measure.

Disconfirmation of Expectations. An indicator of satisfaction that is based on referent states. It is a composite of the expected of similar stores, a comparison to the worst store, and a comparison to the best or most ideal store.

Global Measure of Satisfaction. An indicator of satisfaction that is based on a single general question. It is not anchored in a reference point.

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