

AN ANALYSIS OF THE PURCHASE
CLUSTERING PATTERNS OF
FOOD SHOPPERS

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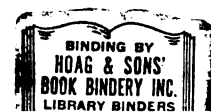
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ABSTRACT

AN ANALYSIS OF THE PURCHASE CLUSTERING PATTERNS OF FOOD SHOPPERS

By

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In an environment of increasing competitive pressures and rising costs, the trend in the recent years toward a greater incidence of multiple-store food shopping among consumers has been a matter of concern to the food retail industry. Multiple-store shopping by consumers, taking into consideration the number of food stores patronized as well as the dollar expenditures spread among these stores was referred to in the study as 'food purchase clustering' of shoppers and was the primary focus of the research.

The purpose of the research was to investigate if shoppers who exhibited different degrees of food purchase clustering could be identified in terms of selected characteristics of the shoppers. The characteristics examined were: (1) socio-economic and demographic variables, (2) selected food purchasing characteristics of shoppers, and (3) role-related self-perceptions of housewives. The research also examined if there exists a significant relationship between shoppers' perceptions of similarity

among the food stores patronized by them and the patterns of clustering of their food purchases among these stores.

The research was conducted in the city of Lansing, Michigan. Data were collected through self-administered questionnaires mailed to the homemakers of one thousand families who were selected according to a multi-stage stratified sampling procedure. The findings reported in the research were based on a total of 335 usable questionnaires returned by the sample families. A measure of the degree of food purchase clustering exhibited by families was developed by the research. The data were analyzed using appropriate statistical methods.

The major findings of the research were as follows:

1. The predictive efficacy of socio-economic and demographic variables in explaining differences in the food purchase clustering patterns of shoppers was very low. However, two of the variables, the stage in the family life cycle and multiple-automobile availability, were found to be significantly related to the extent of food purchase clustering of families. Families in the earlier stages of the life cycle clustered their food purchases to a relatively greater degree than those in the other stages of the life cycle.

2. Families who clustered their food purchases to a relatively greater extent were observed to have generally lower food budgets, do food shopping less frequently and spend lesser amounts of in-store grocery shopping time than

others. The degree of food purchase clustering was also found to be significantly related to the extent of multi-purpose food shopping on the part of the families.

3. Role-perception characteristics of the home-makers were found to be poor indicators of food shoppers' patterns of purchase clustering among stores.

4. Shoppers' comparative perceptions of the food stores they patronized with respect to prices and quality of meats were significantly related to the patterns of clustering of their food purchases among these stores.

The research has a number of implications for supermarket management and consumer behavior research.

1. Supermarket managements may achieve a more favorable 'customer loyalty mix' by carefully assessing the needs and wants of shopper families who are in the earlier stages of the family life cycle and suitably adjusting the merchandising and promotional efforts to increase the patronage of this shopper segment.

2. The research calls for more careful evaluations of decisions to locate supermarkets in shopping centers. It suggests that a supermarket in order to be located in a shopping center should be first justifiable as a good food location with respect to the consumer population in the relevant trading area who treat food shopping as a single-purpose activity.

3. The generally low predictive efficacy of the major groups of variables included in the research indicates the need for more search for important factors which influence food purchase clustering patterns of shoppers. The findings appear to generally support a growing realization among researchers that investigations of determinants of purchase behavior, to be fruitful, should consider characteristics that are idiosyncratic to both the customer and the product (or the purchase situation) and not to the customer alone as in the case of socio-economic variables or role-perception characteristics.

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CHAPTER I

INTRODUCTION

Nature of the Problem

In a marketing oriented economy, knowledge of relevant patterns of customer behavior is essential to the success of firms. Over the past decades the food retail industry in the United States adapted itself remarkably to shifting consumer needs and purchase habits. However, the need for studies that provide better insights into food shoppers' purchase behavior and discern and analyze significant trends of change in food shopping behavior is a continuous one.

Super market industry has been under a continuing profit squeeze over the recent past years. According to Progressive Grocer, average net operating profit of food chains had reached a new low of 0.49 percent¹ during 1967-68. Increasing pressures of competition and rising costs are commonly recognized as some of the contributing factors.

¹"Thirty-Sixth Annual Report of the Grocery Industry," Progressive Grocer, April, 1969, p. 69.

In part, the rising competitive pressures are the resultant of a significant growth in the number of supermarkets¹ whose market share of grocery business has reached the mark of 79 percent² and also in the number of convenience stores.³

Viewed in the context of the competitive environment in which stores have to strive for customer patronage, it is of great concern to grocery store managements that there has been a significant trend toward multiple-store shopping by consumers to fulfill their food buying needs. Progressive Grocer observed, ". . . customers free to pick and choose among many markets of similar nature, have been spreading their purchases among two, three or even more supermarkets. Store loyalty, many operators have to come to realize, has sunk to alarming lows."⁴ Data collected by Burgoyne Index Inc., through national surveys of food shoppers indicate the trends in the extent of multiple-store shopping of supermarket shoppers (Table 1-1).

¹1969 Supermarket Sales Manual--Chain Store Age, Vol. 45, Number 7A (Mid-July, 1969), p. 8.

²Ibid.

³Ibid., p. 23.

⁴"Food Retailing 1975: A Look Into the Future," Progressive Grocer, April, 1966, p. 153.

TABLE 1-1
EXTENT OF MULTIPLE-STORE SHOPPING FOR FOOD

Percentage of Supermarket Shoppers Patronizing	1954	1961	1963	1965	1967
	(%)	(%)	(%)	(%)	(%)
One supermarket exclusively	41	29	25	17	16
More than one supermarket	59	71	75	83	84

Source: Adapted from "The Fourteenth Annual Study of Supermarket Shoppers" (Cincinnati, Ohio: Burgoyne Index, Inc., 1967).

Although the above data give an idea of multiple-store food shopping in terms of the number of stores patronized by consumers, they do not indicate the extent to which food expenditures of consumers in dollar terms are spread among different stores. Multiple-store food shopping taking into consideration both the number of stores and expenditure spread among stores is referred to in the present study as the "purchase clustering behavior" of food shoppers, and is the primary focus of the research. The purpose of the research study is to investigate if different degrees of food purchase clustering can be identified by selected characteristics of shoppers.

Statement of the Problem

Purchase behavior is the resultant of a complex interaction of factors, some pertaining to the consumer and some pertaining to the object of the choice behavior. However, the research study does not attempt to pinpoint the motives and causal factors behind purchase clustering behavior of consumers although some inferences of such nature could possibly be drawn from the findings of the study. Spreading food purchases among several stores can be expected to involve some additional effort on the part of food shoppers in terms of travel, familiarization with merchandise layout, information search regarding prices, deals and other factors. The additional effort could be considered as part of the shopper's secondary purchase costs which in the shopper's perception are more than compensated for by the benefits derived from multiple-store shopping either in terms of matching her food needs more specifically or in terms of monetary savings. The primary purpose of the research is to examine if the (1) socio-economic and demographic variables, (2) the purchasing characteristics and (3) the role-related self-perceptions of homemakers can distinguish between food shoppers of differing degrees of purchase clustering.

The research is guided by the following questions:

1. Do families exhibit significant differences in their food purchase clustering patterns?

2. Is family income the variable among the socio-economic and demographic characteristics of shoppers most closely related to food purchase clustering patterns? Which of the other socio-economic and demographic variables are significantly related to the degree of food purchase clustering of families?
3. Are socio-economic and demographic variables, considered as a group, significant in explaining differences in the food purchase clustering patterns of families?
4. Which variable among the selected purchasing characteristics of the families have significant associations with their degree of food purchase clustering? Do the selected purchasing characteristics considered as a group have significant influence on the food purchase clustering patterns of families?
5. Do differential self-perceptions of homemakers with respect to selected role-related activities explain significantly differences in their food purchase clustering patterns?
6. Is there a significant relationship between shoppers' comparative perceptions of the food stores they patronize and the patterns of clustering of their purchases among these stores?

Hypotheses

The questions regarding correlates and patterns of food purchase clustering behavior of families have been formulated in terms of the following testable hypotheses and subhypotheses. They have been stated in the positive format only for the sake of convenience.

I. Socio-Economic Status Variables

- A. Family Income: The degree of food purchase clustering¹ of a family is significantly related to the total income of the family.
- B. Educational Level of the Homemaker: The degree of food purchase clustering of a family is significantly related to the educational level of the homemaker.
- C. Employment Status of the Homemaker: The degree of food purchase clustering of a family is significantly related to the employment status of the homemaker.
- D. Occupational Status of the Household Head: The degree of food purchase clustering of a family is significantly related to the occupational status of the household head.
- E. Multiple-Automobile Ownership: The degree of food purchase clustering of a family is significantly

¹For a definition of the term, see Chapter III, pp. 52-56.

related to the number of automobiles available to its members.

II. Demographic Status Variables

- A. Stage in the Family Life Cycle: The degree of food purchase clustering of a family is significantly related to its stage in the family life cycle.
- B. Family Size: The degree of food purchase clustering of a family is significantly related to its size.
- C. Age of the Homemaker: The degree of food purchase clustering of a family is significantly related to the age of the homemaker.
- D. Number of Pre-School Age Children: The degree of food purchase clustering of a family is significantly related to the number of pre-school age children in the family.

III. Socio-Economic and Demographic Status Variables

- A. Family income is the most significant variable among the selected socio-economic and demographic status variables in explaining differences in the degree of food purchase clustering of families.
- B. Socio-economic and demographic status variables as a group are significant in explaining differences in the degree of food purchase clustering of families.

IV. Purchasing Characteristics

- 1.A. Total Grocery Expenditure: The degree of food purchase clustering of a family is significantly related to its level of grocery expenditures.

- 1.B. Frequency of Grocery Shopping: The degree of food purchase clustering of a family is significantly related to the frequency of grocery shopping of the homemaker.
- 1.C. Extent of Multi-Purpose Food Shopping:¹ The degree of food purchase clustering of a family is significantly related to the extent of multi-purpose food shopping of the homemaker.
- 1.D. In-Store Shopping Time: The degree of food purchase clustering of a family is significantly related to the average amount of weekly shopping time spent by the homemaker in grocery stores.
2. Purchasing characteristics as a group are significant in explaining differences in the degree of food purchase clustering of families.
- V. Role-Related Self-Perceptions: Differences in self-perceptions of homemakers with respect to selected role-related activities explain significantly differences in their degrees of food purchase clustering.
- VI. Among multiple-store shoppers of food, those who perceive their first and second choice stores as similar in terms of geographic proximity and price image have significantly lower degrees of food purchase clustering with respect to the two stores than other shoppers.

¹For a definition of the term, see Chapter III, p. 52.

Research Design and Methodology

Mailed questionnaires were used to collect data on food shopping, household socio-economic and demographic characteristics and role-related self-perceptions of 335 homemakers in the city of Lansing, Michigan. A multi-stage sampling procedure was employed to select the subjects. Using 1960 census data, census tracts were stratified into five groups on the basis of the median incomes of the tracts. City blocks in each stratum were enumerated and a prespecified number of blocks were randomly selected from each stratum. Using the 1969 edition of R. L. Polk's City Directory - Lansing, Michigan,¹ systematic random samples of households were chosen from each city block.

Questionnaires were mailed on November 15, 1969. Follow up letters were mailed two weeks later requesting cooperation from non-respondents. Any questions that the respondents might have had in filling the questionnaires were answered over telephone. Responses sent back over a period of four weeks after the questionnaires were mailed, have been used as the data base for the study.

The data pertaining to the usable questionnaires were coded and transferred to punch cards for tabulation and statistical testing of the research hypotheses.

¹R. L. Polk, Polk's Lansing (Ingham County, Mich.) City Directory (Detroit, Michigan: R. L. Polk and Company, 1969).

Limitations of the Study

The results of the research are subject to the following limitations:

1. The investigation was confined to one metropolitan area, Lansing, Michigan. Hence the problem of generalizing from the results arises. Replication in another location may be needed to increase the degree of confidence in the conclusions of the study.
2. Due to the high costs involved, efforts to conduct a longitudinal study had to be abandoned. Purchase data were collected on the basis of recall on the part of homemakers and may be considered accurate only to that extent. Purchase data based on consumer diaries over an extended period, leaving aside cost considerations, could be expected to provide a more reliable data base for the study.
3. The dependent variable used in the study, the degree of food purchase clustering, is a time-averaged measure of purchase behavior rather than one that takes into consideration the time sequence of successive food purchases. This limitation should be kept in mind in interpreting the results of the research.

Potential Contributions of the Research

A vast amount of research in purchase behavior in recent years has been concentrated in the area of brand purchase behavior and brand loyalty phenomena. A similar emphasis on research in store choice behavior and store loyalty has been lacking. Some empirical studies have been concerned with customer store loyalty but have dealt only with product-specific store loyalty rather than store loyalty based on aggregate food purchases of consumers. The present study contributes toward filling the above mentioned gap in purchase behavior research to some extent.

The primary contribution of the present research is to develop a body of knowledge about the characteristics of food shoppers that may effectively discriminate between those with high and low degrees of food purchase clustering among stores. The research affords an opportunity to examine the efficacy of personal attributes in explaining differences among consumers in an important aspect of purchase behavior and thus should be of significance to those engaged in market segmentation research. Also, the 'entropy measure' used in the study to measure the dependent variable--food purchase clustering among stores, extends the existing store loyalty measures in that it takes into account both the number of stores visited by the consumer as well as the proportions of total food expenditure spent in each of the stores.

Another contribution of the research is to provide an understanding of the significance of role-related self-perceptions of homemakers in explaining differences in their store loyalty patterns in relation to food shopping. The role of household purchasing agent by a wife has been often referred to in the marketing literature.¹ However, the housewife performs in a number of other interacting roles which influence her buying behavior as the household purchasing agent. Some studies² have emphasized the influence of role-perceptions of housewives on their food purchasing decisions. No attempt has been made in previous research, however, to examine if role-perceptions of homemakers are significantly related to their store loyalty patterns in relation to food shopping. The present research makes a beginning in this direction. The role-perception characteristics of homemakers may prove to be important considerations in future market research.

The present study attempts to extend the existing empirical research that relates food shopping behavior to trip purpose (i.e., single-purpose versus multi-purpose).

¹Wroe Alderson, Marketing Behavior and Executive Action (Homewood, Illinois: Richard Irwin, Inc., 1957), p. 179.

²Howard Trier, Henry Clay and James Shaffer, "Differences in Food Buying Attitudes of Housewives," Journal of Marketing, Vol. 25 (July, 1960), p. 67; and Louis P. Bucklin, "Consumer Search, Role Enactment and Marketing Efficiency," The Journal of Business, Vol. 42 (October, 1969), p. 435.

Past research¹ investigated the relationship between trip purpose and the average distance the consumer is willing to travel for food purchases. The present study attempts to relate the extent of multi-purpose food shopping with another dimension of purchase behavior, the extent of food purchase clustering among stores. The findings may be of interest to managements of supermarkets in shopping centers who operate on the general premise that consumers economize on the time and effort required for individual transactions by doing their food and general merchandise shopping together.

The research findings may help supermarket managements to get a better insight into an important aspect of food shopping behavior of customers--namely, food purchase clustering among stores. Through such a knowledge of customer behavior, supermarket managements with the choice of appropriate marketing devices available to them, might succeed better in achieving a more profitable "customer store loyalty mix" for their stores. Such efforts to improve "customer store loyalty mix" seem imperative for supermarket managements in view of increasing pressures of competition among supermarkets within and without their 'own trading areas' and also in view of the apparent 'similarity' of supermarkets in shoppers' eyes.

¹William L. Garrison et al., Studies of Highway Development and Geographic Change (Seattle, Washington: University of Washington Press, 1959), Chapter II.

Organization

The remainder of the dissertation consists of four chapters: Chapter II reviews the literature relevant to the research problem. The areas which are reviewed include: (1) the early studies in consumer loyalty; (2) some theoretical constructs of consumer loyalty; (3) brand loyalty and its relevance for market segmentation research; and (4) empirical research on store loyalty. Chapter III explains the research design and methodology employed in the collection and analysis of the data. The research findings are presented in Chapter IV while Chapter V presents a summary and evaluation of the research hypotheses formulated in Chapter I. In addition Chapter V contains the conclusions of the research and presents some suggested areas for future research.

CHAPTER II

A REVIEW OF CONSUMER LOYALTY RESEARCH

Chapter II presents a review of relevant research in the area of consumer loyalty. First, a brief presentation of the early studies which have spurred the interest of researchers in consumer loyalty phenomena has been made. In the next section, a number of theoretical constructs in consumer behavior research which have been found useful in explaining the phenomena of consumer loyalty have been presented. The third and fourth sections examine the relevance of consumer loyalty for market segmentation research and present the findings of a number of empirical studies concerned with the important question of identifiability of brand and store loyal customer segments. The final section reviews some studies which emphasized the importance of role perceptions of housewives in influencing food buying decisions and points to their relevance for store loyalty research.

Consumer Loyalty--The Early Studies

The pioneering work of George Brown¹ and Ross Cunningham² provided the major impetus to much of the later work in the area of consumer loyalty behavior. Their work focused the attention of marketing researchers to the potential of consumer loyalty as a basis for a profitable market segmentation program for firms.

The first major study of brand loyalty was published by Brown in 1952 and 1953. Based on purchase histories of the Chicago Tribune panel households, Brown examined differences among consumers in terms of brand loyalty for a number of product categories. Brown used the following scheme for the measurement of brand loyalty:

Any family making five or more purchases during the year was placed in one of four basic categories, depending upon the purchase pattern shown . . . :

1. Family showing undivided loyalty bought brand A in the following sequence: AAAAAA.
2. Family showing divided loyalty bought brands A and B in the following sequence: ABABAB.
3. Family showing unstable loyalty bought brands A and B in the following sequence: AAABBB.

¹George Brown, "Brand Loyalty--Fact or Fiction?" Advertising Age, Vol. 23 (June 19, 1952), pp. 53-55; (June 30, 1952), pp. 45-47; (July 14, 1952), pp. 54-56; (July 28, 1952), pp. 46-48; (August 11, 1952), pp. 56-58; (September 1, 1952), pp. 80-82; (October 6, 1952), pp. 82-86; (December 1, 1952), pp. 76-79; and Vol. 24 (January 26, 1953), pp. 75-76.

²Ross M. Cunningham, "Brand Loyalty--What, Where, How Much?" Harvard Business Review, Vol. 34 (January-February, 1956), pp. 116-128.

4. Family showing no loyalty bought brands A, B, C, D, E, and F in the following sequence: ABCDEF.¹

Using the above classification scheme, Brown observed that a majority of customers concentrate their purchases on a relatively small number of brands and thus exhibit brand loyalty. Brown also noticed that the percentage of households that were 'undividedly loyal' varied from 12 percent to 73 percent across products.²

Cunningham³ emphasized the importance of understanding consumer loyalty to manufacturers as well as retailers. His studies broadened the spectrum of consumer loyalty analysis by focusing upon store loyalty as well as brand loyalty.⁴ His operational definition of brand loyalty was the proportion of total household purchases represented by the leading single brand used by the household. An analogous measure was used for store loyalty of households. Among the findings of Cunningham are:

1. Significant brand loyalty exists within product classes. Loyalty-proneness tendencies across product classes, however, were not significant.

¹George Brown, op. cit., January 26, 1953, p. 75.

²Ibid.

³Ross M. Cunningham, "Brand Loyalty--What, Where, How Much?" op. cit.

⁴Ross M. Cunningham, "Customer Loyalty to Store and Brand," Harvard Business Review, Vol. 39 (November-December, 1961), pp. 127-137.

2. Families vary widely in their first store loyalty.

The store loyalty patterns were reasonably stable over time and not a chance result of when a particular family happened to be studied.

The early studies of Brown and Cunningham mainly centered around the existence of brand and store loyalties of consumers. In their studies, consumer purchase data did not support the hypothesis that brands and stores are chosen by consumers on an equiprobable basis, thus pointing to the conclusion that consumer loyalty is a 'real' and reliable phenomena. The same conclusion was arrived at later by Tucker¹ who employed an experimental approach to study the formation of brand loyalty among consumers. In Tucker's experiment, each of a sample of 43 housewives chosen by sociometric methodology was presented four alternative brands on each of 12 consecutive household deliveries. The loaves were virtually identical except that they were labeled with different 'brand names' (L, M, P and H). Based on Tucker's definition, if no brand loyalty were present, it should be expected that 25 percent of each housewife's purchases will be made for each brand. It was found that more than half of the respondents developed a higher degree of allegiance to one of the four 'brands' than would be

¹W. T. Tucker, "The Development of Brand Loyalty," Journal of Marketing Research, Vol. 1 (August, 1964), pp. 32-35.

expected on an equiprobable basis. The significance of the experiment lies in the fact that it shows that consumers may become brand loyal even when there is no discernible difference between the branded items other than the brand itself.

Consumer Loyalty--Some Theoretical Constructs

The usual purpose of a theoretical construct is to explain some observed phenomenon. Such constructs evolve from diverse empirical studies and provide a common framework for the findings. In turn, they aid in the formulation of additional hypotheses to be investigated and tested. Much of the empirical research on consumer loyalty, however, has been conducted without the benefit of a sufficiently developed body of theory in the formulation of research hypotheses. The choice of research variables has been, for the most part, based on intuitive considerations and exploratory in nature. The consumer behavior literature offers some theoretical constructs which appear to hold promise in explaining the phenomena of consumer loyalty. These constructs focus on some behavioral dimensions in addition to the more usual variables such as price, product quality and store proximity.

The theoretical constructs of consumer behavior which appear to hold greatest promise are:

1. Learning Theory
2. Image Congruence

3. Risk Taking Theory

4. Group Influence

Each of these is presented along with supportive empirical findings.

Learning Theory

Learning theory has been advanced by some researchers as an explanation of brand loyalty behavior of consumers.

Four central concepts make up the theory of learning: drive or need, response, cue, and reinforcement. This approach may be summarized briefly in the following terms:

. . . Drive impels the subject to respond and the particular response is elicited by a cue. If there were no drive, no response would occur. Thus responses are determined by the combination of drive and cue. If the response is rewarded or reinforced, the response will be repeated when the drive and cue appear together, and thus we can say we have learning. The essence of learning is this cue-response connection.¹

The theory proposed by Howard and Sheth² to explain consumer brand choice and loyalty behavior has its theoretical roots in learning theory. A schematic diagram of the Howard-Sheth paradigm of brand loyalty is presented in Figure 1. Howard and Sheth focus on the element of repeat

¹John A. Howard, Marketing Theory (Boston: Allyn and Bacon, 1965), pp. 103-104.

²John A. Howard and Jagdish N. Sheth, "A Theory of Buyer Behavior," in Harold Kassarian and Thomas Robertson (eds.), Perspectives in Consumer Behavior (Glenview, Illinois: Scott, Foresman and Company, 1968), pp. 467-487.

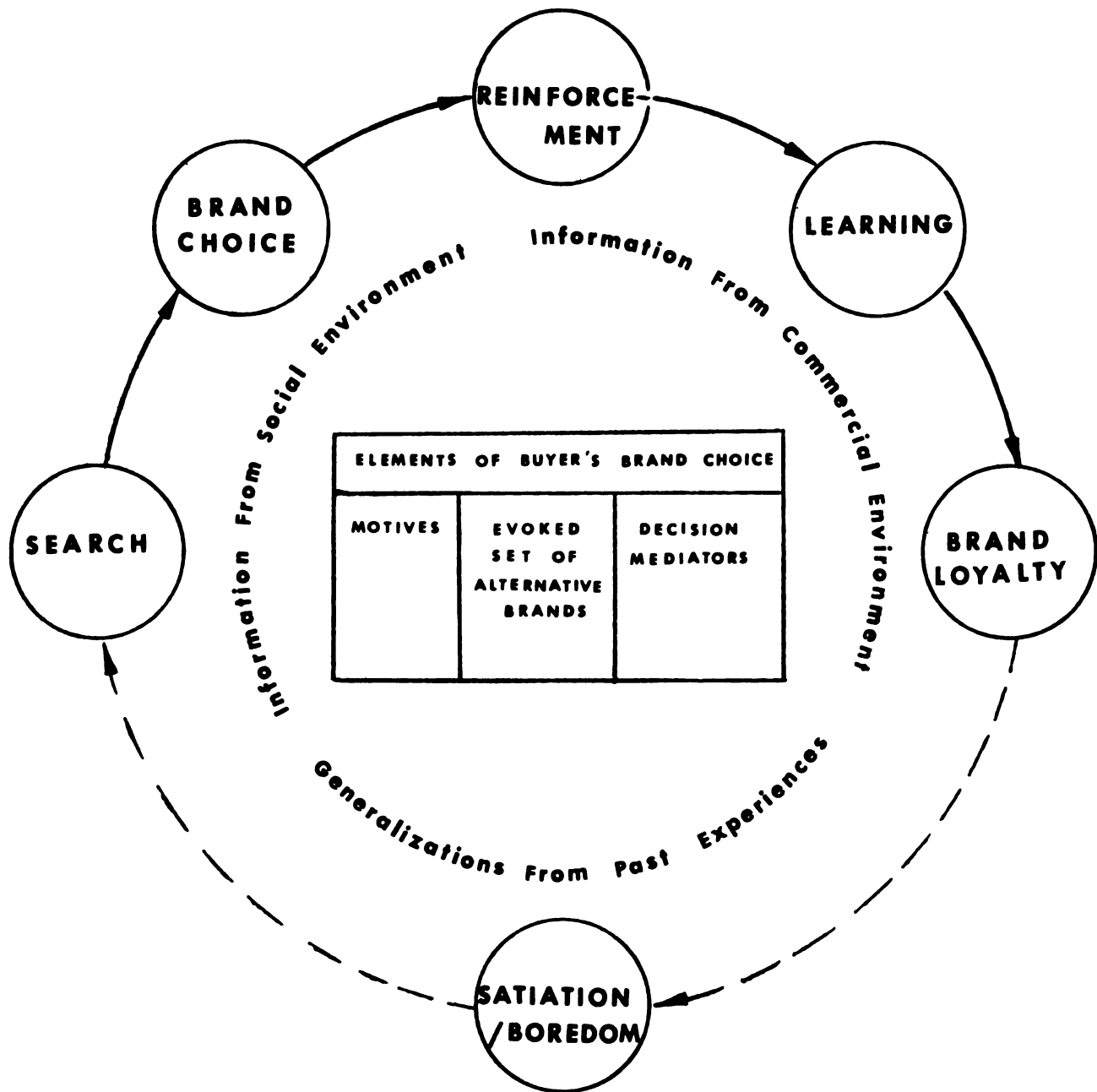


Figure 2-1. Howard-Seth paradigm of consumer brand loyalty.

Based on John A. Howard and Jagdish N. Sheth, "A Theory of Buyer Behavior," in Perspectives in Consumer Behavior, ed. by Harold H. Kassarkian and Thomas S. Robertson (Scott, Foresman and Company, 1968), pp. 467-487.

purchasing and present a theory that attempts to portray the dynamics of consumer decision making incorporating concepts of learning theory. The consumer, confronted by repetitive brand choice decisions, simplifies his task by storing relevant information and establishing a routine in his decision process. The elements of a buyer's brand choice decision are mentioned as (1) a set of motives, (2) several alternative brand choices and (3) decision mediators by which the motives are matched with the alternatives. The consumer relies on information from his social and commercial environments and/or his past experience with similar purchase situations to develop sufficient decision mediators to enable him to choose a brand which seems to have the best potential for satisfying his motives. If the brand proves satisfactory, the potential of that brand to satisfy his motives for subsequent purchases will be enhanced and the probability of repeat-purchase is increased. With the repeated satisfactory purchases of a brand, "the buyer is likely to manifest a routine decision process in which the sequential steps in buying are so well structured that an event that triggers the process may also complete it."¹ Such a stage in the consumer's purchase process implies high brand loyalty.

¹John A. Howard and Jagdish N. Sheth, op. cit., p. 468.

Howard and Sheth believe, however, that a consumer may revert to the search stage from the stage of high brand loyalty. This event is dependent upon the degree of risk perceived by the buyer in the purchase of the brand. In the words of the authors, "unless a product involves high purchase risk, there is a time limit on . . . brand loyalty."¹ As in the case of many frequently purchased products, the consumer may feel bored or become satiated even with a preferred brand and activate his search for new alternative brand choices.

The learning theory approach has not been subject to extensive empirical testing in the marketing context, although such attempts are reported by some researchers² to be underway. Kuehn's³ probabilistic analysis of Chicago Tribune panel data on household purchases of frozen orange juice showed that repeat brand purchase probabilities increase with brand purchase frequency and recency of purchase. The results are consistent with what would be expected on the basis of learning theory.

¹John A. Howard and Jagdish N. Sheth, op. cit., p. 483.

²Ibid., p. 487.

³Alfred A. Kuehn, "Consumer Brand Choice as a Learning Process," Journal of Advertising Research, Vol. 2 (December, 1962), pp. 10-17.

Image Congruence

With the growing affluence of the American consumers, marketing researchers have come to realize increasingly that consumer actions are difficult to explain neatly in terms of a 'rational calculus.' Price and quality are still important in the consumer's decision-making process, but the existence and the powerful influence of a host of other intangibles have to be reckoned with at the same time. The significance of a product (or brand) to the consumer often extends beyond the physical and functional aspects of the product. As Levy observed, "modern goods are recognized as psychological things as symbolic of personal attributes and goals, as symbolic of social patterns and strivings."¹

The symbolism associated with a brand (product) in the perception of the consumer is referred to as the brand (product) image and is influenced by a number of factors: socio-cultural influences, group influence, personal characteristics of the consumer, person-to-person communications, promotional information and product features.

The basic drive of human beings, in the words of Carl Rogers is "to actualize, maintain and enhance the experiencing organism."² In this process of striving for

¹Sidney J. Levy, "Symbols by Which We Buy," in L. Stockman (ed.), Advancing Marketing Efficiency (Chicago: American Marketing Association, 1958), p. 410.

²Carl R. Rogers, Client-Oriented Therapy (Boston: Houghton and Mifflin Company, 1965), p. 301.

self-enhancement, individuals form self-images. The self-image is "an organized configuration of perceptions of the self which are admissible to awareness."¹ The self-image takes into account one's perceptions about his own qualities and abilities, his relations to his associates and his environment, and the goals which are desired by himself and which generally enjoy some measure of approval from his 'valued' associates.

The image congruence construct of brand loyalty posits that consumers perceive brands as means through which they may achieve their desired self-images and that consumers choose and patronize brands whose images (in their perception) are most congruent with their self-images. Loyalty to a brand then, persists until the consumers perceive a change either in the brand image or in their self-image.

Some empirical studies have been conducted to validate the theory that consumer patronage to brands as symbols is patterned in congruent relationships with the consumers' self-image.

Birdwell¹ noticed significant relationships between self-concepts of buyers and several automobile makes. Grubb,²

¹Al E. Birdwell, "A Study of the Influence of Image Congruence on Consumer Choice" (unpublished Ph.D. dissertation, University of Texas, 1964).

²Edward L. Grubb, "Consumer Perception of 'Self-Concept' and Its Relation to Brand Choice of Selected Product Types," in P. D. Bennett (ed.), Marketing and Economic Development (Chicago: American Marketing Association, 1965), pp. 419-424.

in a limited study, found congruence of self-concept with the brand of beer consumed. Dolich's¹ study dealt with two public consumption goods and two private consumption goods and the result appeared to support the theory that consumers tend to relate the brand symbols to self concepts. However, Evans'² study of owners of Ford and Chevrolet automobiles failed to discriminate between the owners of the two automobiles in terms of personality variables. Evans observed that "the evidence points neither to strong images attracting definite kinds of people nor, specifically to the use of automobiles for satisfying deep inner needs in symbolic terms."³

The image congruence construct has also been found useful in explaining retail store patronage behavior. 'Store image' has been recognized as an important determinant of consumer store loyalty. Store image refers to "the way in which the store is defined in the shopper's mind, partly by its functional qualities and partly by an aura of

¹Ira J. Dolich, "Congruence Relationships Between Self Images and Product Brands," Journal of Marketing Research, Vol. 6 (February, 1969), pp. 80-84.

²Frank B. Evans, "Psychological and Objective Factors in the Prediction of Brand Choice: Ford Versus Chevrolet," Journal of Business, Vol. 32 (October, 1959), pp. 340-369.

³Frank B. Evans, "The Brand Image Myth," Business Horizons, Vol. 4 (Fall, 1961), p. 26.

psychological attributes."¹ Based on research on shopping behavior of consumers in Chicago and its suburbs, Martineau stated that, "the shopper seeks the store whose image is most congruent with the image she has of herself."²

Martineau identified social class as an important dimension in the image matching process that underlies consumers' retail patronage behavior. Shoppers patronize the stores which reflect the values of the social class to which they perceive themselves to belong. In a study of 'aggregate department store images,' Wyckham³ empirically tested the validity of Martineau's assumption that consumers of different social classes have significantly different perceptions of particular department stores. In the cases of two out of the three test stores in the study, the findings were supportive of Martineau's assumption, while in the case of the third store there was a commonality of image among all social classes. Wyckham noted, however, that the particular department store had built different types of branch stores that have different images to appeal to different social class groups. Consumers of different social classes might have based their responses on their experiences with

¹Pierre Martineau, "The Personality of the Retail Store," Harvard Business Review, Vol. 36 (January-February, 1958), p. 47.

²Ibid., p. 48.

³Robert G. Wyckham, "Aggregate Department Store Images: Social and Experimental Factors" (unpublished Ph.D. dissertation, Michigan State University, 1967).

the particular branches they patronized and this could have been partially responsible for the observed commonality of image of the third store among all social class groups.

Risk Taking Theory

Another construct of consumer loyalty focuses on the element of risk taking in consumer decision making. Bauer¹ considered risk taking as a central concept in explaining consumer purchase behavior. Bauer views consumer actions merely as strategies adopted by the consumer to deal with the perceived risk in purchase situations:

Consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which are likely to be unpleasant. . . .

Consumers characteristically develop decision strategies and ways of reducing risk that enable them to act with relative confidence and ease in situations where their information is inadequate and the consequences of their actions are in some meaningful sense incalculable.²

Following the reasoning of the risk-taking construct, brand loyalty may be interpreted as a device for reducing the risks in repetitive consumer brand choice decisions. Bauer predicted a strong correlation between degree of perceived risk and brand loyalty if risk is treated as a

¹Raymond A. Bauer, "Consumer Behavior as Risk Taking," in Perry Bliss (ed.), Marketing and the Behavioral Sciences (Boston: Allyn and Bacon, Inc., 1963).

²Ibid., pp. 89-90.

combination of uncertainty plus seriousness of the outcome of the purchase situation as perceived by the buyer. A similar line of argument underscores the importance of perceived risk in influencing the extent of consumer store loyalty.

Cunningham¹ reported supporting empirical evidence to indicate that repeated purchase of the same brand is used as a risk-handling strategy by consumers. Arndt² experimenting with coffee buyers observed that high risk perceivers are more likely than those low in perceived risk to be brand loyal and less likely to be interested in adopting new brands in the same product class.

Group Influence

Influence of groups on individual behavior has been the focus of social psychology and received considerable attention in consumer behavior research. Past research in consumer behavior points to group influence as a significant determinant of brand choice and loyalty behavior of consumers. Distinction has been made between two types of groups.

¹Scott M. Cunningham, "The Role of Perceived Risk in Product Related Discussions and Brand Purchase Behavior," (unpublished Ph.D. dissertation, Graduate School of Business Administration, Harvard University, 1965).

²Johan Arndt, "Word-of-Mouth Advertising and Perceived Risk," in Harold Kassarian and Thomas Robertson (eds.), Perspectives in Consumer Behavior (Glenview, Illinois: Scott, Foresman and Company, 1968), p. 332.

The most commonly considered are 'reference groups' which refer to social groups to which a person actually belongs or aspires to belong or to dissociative groups to which he aspires not to belong. The other type are 'face-to-face' or informal groups which are characterized by interpersonal interaction over a period of time and a consequent formation of 'interpersonal bonds of affect and respect.'¹

Reference groups influence individual consumer behavior in two major ways. Firstly, they influence aspiration levels and thus play a part in producing satisfaction or frustration in a purchase situation. Secondly, reference groups influence 'kinds' of behavior by establishing approved patterns of product (brand) acquisition and other aspects of purchase behavior. Thus they can produce conformity as well as contentment (or discontentment) in a product or brand choice situation.

Bourne² emphasized the importance of the influence of reference groups in consumer product and brand choice behavior. Consumers patronize products and/or brands which they perceive as 'approved' by their reference groups.

¹George C. Homans, Social Behavior: Its Elementary Forms (New York: Harcourt, Brace and World, Inc., 1961), p. 118.

²Francis S. Bourne, "Group Influence in Marketing and Public Relations," in Rensis Likert and Samuel Hays, Jr. (eds.), Some Applications of Behavioral Research (UNESCO, 1957).

Bourne, however, recognized that reference groups influence may not be significant in all purchase situations. Patronage to particular brands is influenced by reference groups only in the case of what he called 'brand plus' items,¹ those for which the brand names are socially conspicuous.

The influence of 'face-to-face' or informal groups on individual members, on the other hand, is effected through the dynamics of interpersonal interaction among members.² Each member of an informal group has a status and a role within the group. Informal structuring tends to occur within the group over a period of time based on the differential status of the members. The more status an individual has within the group, the greater his prestige; the greater one's prestige, the higher he is in the informal hierarchy and the more 'social power' he possesses. Social power has been defined as the total amount of opinion change one person could induce another to make. The member who has more status and social power than others is generally considered to be the group leader. Small group theory suggests that preferences and loyalty of informal group members to particular brands of products may be a manifestation of

¹Ibid., p. 221.

²For a detailed discussion of the concepts of small group theory, see, George C. Homans, Social Behavior: Its Elementary Forms, op. cit.; and see also, John A. Howard, Marketing Theory, op. cit., Chapter V.

'intragroup pressure' on members to conform to group norms of behavior. The pressure to conform that a member will experience normally increases with the cohesiveness¹ of the group.

Stafford,² in an experimental study, attempted to study how a consumer's brand preferences might be conditioned by intragroup communications and the perceptions of brand preferences of fellow members. The results of the study indicate that the informal group had a definite influence on its members toward conformity behavior with respect to preferred brands.³ Stafford also found that the greater the degree of brand loyalty of the group leader, the higher the percentage of his group also becoming brand loyal, most likely to the same brand preferred by the leader.⁴ Stafford did not, however, find evidence to support the hypothesis that cohesiveness of a group is a major determinant of the degree of brand loyalty exhibited by the members.⁵

The theoretical constructs outlined above are some explanations of consumer loyalty phenomena suggested by

¹Cohesiveness refers to the attraction a group has for its members. The greater the attractiveness of the group, the more cohesive the group.

²James E. Stafford, "Effects of Group Influences on Consumer Brand Preferences," Journal of Marketing Research, Vol. 3 (February, 1966), pp. 68-75.

³Ibid., p. 75.

⁴Ibid.

⁵Ibid.

behavior theories and are important additions to the commonly known 'rational' factors like price, quality and store proximity. However, it should be noted that probably no single one of these constructs can completely explain consumer loyalty behavior and be applicable to all purchase situations. More than one of the above outlined factors may probably underlie loyalty behavior observed in any specific purchase situation. The particular combination of the 'critical' determinants which may underlie loyalty phenomena and their relative magnitudes of influence depend upon the specific purchase situation--the product, the importance of the purchase to the consumer, as well as the personal attributes of the consumer himself. More research, both at theoretical and empirical levels, is needed to shed light on the causal influences underlying consumer loyalty phenomena.

Brand Loyalty and Market Segmentation Research

The strategy of market segmentation has been defined as "the development and pursuit of different marketing programs by the same firm, for essentially the same product, but for different components . . . of the overall market."¹ The different component markets are presumably more homogeneous in relevant consumer characteristics internally than

¹Ronald E. Frank, "Market Segmentation Research: Findings and Implications," in Frank Bass, Charles King and Edgar Pessemier (eds.), Applications of the Sciences in Marketing Management (New York: John Wiley and Sons, Inc., 1968), p. 39.

the overall market. In a mass-market economy, the strategy of market segmentation helps firms not only to provide product offerings that closely match the needs and the tastes of consumers, but also to channel their promotional and other marketing efforts most effectively. A profitable market segmentation program, however, involves a search for meaningful bases for segmentation. The pioneering work of Brown and Cunningham directed the attention of marketers to consumer brand loyalty as a potentially profitable basis for market segmentation policies. Any basis of market segmentation has to be evaluated at least against the following criteria:¹

1. Identifiability of customer segments: It must be examined whether customers of different segments can be identified in terms of their personal attributes. These personal attributes include characteristics such as socio-economic status, personality and media habits.
2. Differentiability of purchase characteristics of customer segments: It must be examined whether customers of various segments differ in terms of their purchase characteristics such as average purchase level and purchase frequency.
3. Differentiability of promotional elasticities of customer segments: It must be examined whether

¹Ibid., p. 43.

customers of various segments differ in their sensitivity to changes in the firm's promotional policies as well as those of the competitors.

A number of empirical research studies designed to evaluate brand loyalty have been conducted with the above criteria in mind. The results of these studies are presented below.

Identifiability of Brand Loyal Customer Segments

Several investigations have attempted to identify the personal attributes of high and low brand loyal consumers for several frequently purchased convenience goods. Cunningham, based on his analysis of purchase data of a sample of 66 households from a Chicago Tribune panel, reported that socio-economic characteristics had little relation with brand loyalty.¹

A study by the Advertising Research Foundation² dealing with purchase behavior of one-ply and two-ply tissue found virtually no association between personality, socio-economic variables and household brand loyalty. The total predictive efficacy as measured by the square of the multiple

¹Ross M. Cunningham, "Brand Loyalty--What, Where, How Much?" op. cit., p. 116.

²Advertising Research Foundation, Are There Consumer Types? (New York: Advertising Research Foundation, 1964).

correlation coefficient was 0.05 for one-ply tissue and 0.07 for two-ply tissue.

Studies reported by Farley¹ focused on the prediction of household brand loyalty separately for each of 17 grocery products. The data covered 197 households belonging to the MRCA panel in 1957; the households were made to predict brand loyalty based on knowledge of household income and size as well as the product consumption rate of each household. The results failed to indicate any significant basis for identifying brand loyal customers.

A study conducted by Massy, Frank and Lodahl² is probably the most extensive investigation of the association between household brand loyalty and socio-economic and personality attributes. Their analyses encompassed several measures of brand loyalty and were based on J. Walter Thompson's panel data on household purchases of beer, coffee and tea during 1956-57. The personality data base consisted of scores on the fifteen scales of the Edwards Personal

¹John Farley, "Testing a Theory of Brand Loyalty," Proceedings of the American Marketing Association, Winter Conference, December, 1963, pp. 308-315; and John Farley, "Brand Loyalty and the Economics of Information," Journal of Business, Vol 37 (October, 1964), pp. 370-381.

²William Massy, Ronald Frank, Thomas Lodahl, Purchase Behavior and Personal Attributes (Philadelphia: University of Pennsylvania Press, 1968).

Preference Schedule (EPPS).¹ The following results were reported pertaining to brand loyalty:²

1. High incomes and big markets generally mean low loyalty.
2. Husband's endurance score³ is associated with high loyalty for all three products. This is the most stable relationship between personality and brand loyalty behavior.
3. Brand loyalty may have two psychological bases in the wife's personality scores: one based on independence (autonomy score), and one based on resistance and fear of change (deference and succorance scores).
4. Husband's preferences may also play a strong role in brand behavior in families, considering the number and strengths of the relationships between husband's personality scores and brand behavior.
5. Brand switching behavior may have a psychological basis in needs for affiliation and deference on the

¹A. L. Edwards, Manual for the Edwards Personal Preference Schedule (New York: The Psychological Corporation, 1959).

²William Massy, Ronald Frank, Thomas Lodahl, Purchasing Behavior and Personal Attributes, op. cit., p. 118.

³In the EPPS, the need for endurance is measured with items such as the following: "to keep at a job until it is finished; to complete any job undertaken; to work hard at a task; to work at a single job before taking on others," etc. Taken together, these items seem to get at a need for completion on the part of a person.

part of the husband, suggesting that husbands in high-switching families are more susceptible to influence attempts.

Although the above findings are useful and significant in themselves, the results of the study indicated that only a modest amount of variation in household brand loyalty was explained by personal attributes.¹

Differentiability of Purchase
Characteristics and Elasticities
of Promotion of Brand Loyal
Customers

Cunningham² examined the relationship between average consumption rate and brand loyalty of households. His analysis indicated that there was little relationship between the two variables. A similar result was obtained by Massy, Frank and Lodahl.³ One exception is the study reported by Kuehn.⁴ Based on an analysis of frozen orange juice purchases of 650 households from the Chicago Tribune panel between 1951 and 1953, Kuehn found that brand loyalty

¹William Massy, Ronald Frank, Thomas Lodahl, op. cit., p. 110.

²Ross M. Cunningham, "Brand Loyalty--What, Where, How Much?" op. cit., p. 116.

³William Massy, Ronald Frank and Thomas Lodahl, op. cit.

⁴Alfred Kuehn, "An Analysis of the Dynamics of Consumer Behavior and Its Implications for Marketing Management," (unpublished Ph.D. dissertation, Carnegie Institute of Technology, May, 1968).

(measured by repeat purchase probability) was higher for heavy purchasers as opposed to light purchasers of the product.

Whether brand loyal and nonloyal customer groups differ in terms of elasticities of promotion was examined by Frank and Massy.¹ If loyalty were successful in building up the resistance of buyers to switch to other brands in the face of promotional changes in the market, it may be expected that the elasticities for loyal buyers would be less than those for nonloyal group. Frank and Massy's study of the response of a particular brand's market share in selected markets to changes in pricing, dealing and retail advertising levels revealed no statistically significant differences between the loyal and nonloyal groups in terms of elasticities of promotion.

The negative character of the results of the empirical studies reviewed above show that attempts to establish the relevance of brand loyalty for market segmentation strategy of firms have not been encouraging so far.

¹Ronald Frank and William Massy, "Market Segmentation and the Effectiveness of a Brand's Price and Dealing Policies," Journal of Business, Vol. 38 (April, 1965), pp. 186-200; and Ronald Frank and William Massy, "Short Term Price and Dealing Effects in Selected Market Segments," Journal of Marketing Research, Vol. 2 (May, 1965), pp. 171-185.

Empirical Research on Store Loyalty

Although the managerial need to understand consumer store loyalty patterns was recognized almost a decade ago,¹ it has been the subject of limited research only. Cunningham² was the first to broaden the scope of consumer loyalty analysis by focusing on store as opposed to brand loyalty. Cunningham performed an analysis of store loyalties of a random sample of fifty families from the Chicago Tribune panel, based on purchases made in seven product categories during 1956. He noticed wide variation in household store loyalty but the store loyalty patterns of individual households were relatively stable over time. Among Cunningham's other findings³ were:

1. Store loyalty is independent of the total amount spent for food purchases by the family.
2. There is more store loyalty generated toward chain stores than toward specialty stores or independents.

¹Russell S. Tate, "The Supermarket Battle for Store Loyalty," Journal of Marketing, Vol. 25 (October, 1961), pp. 8-13; and Ross M. Cunningham, "Customer Loyalty to Store and Brand," op. cit.

²Ibid.

³Ross M. Cunningham, "Customer Loyalty to Store and Brand," op. cit.

3. Store and brand loyalties are not significantly related.¹
4. High store-loyal families are more loyal to the private brands they purchase than are families with low store loyalty.

Cunningham's store loyalty analysis was based on household purchase data with respect to a sample of products rather than an aggregate household food purchases. The measure of store loyalty employed by Cunningham is the largest proportion of food purchases spent in a single store. Such a measure ignores purchases made in the other stores visited by the family. Thus, Cunningham's measure of store loyalty may result in distortions in summarizing a household's purchase clustering behavior, especially so, when the family spreads its food purchases over more than two stores. A new measure of store loyalty² proposed in the present study overcomes the above mentioned difficulty.

Some studies have attempted to identify important household and personal correlates of store loyalty. In a study of the shopping behavior of department store customers

¹This result was refuted by some later studies. See Tanniru R. Rao, "Purchase Decision Process: Stochastic Models," Journal of Marketing Research, Vol. 6 (August, 1969), p. 325; and see also James Carman, "Correlates of Brand Loyalty: Some Positive Results," Journal of Marketing Research, Vol. 7 (February, 1970), p. 73.

²See Chapter III, p. 49.

in Philadelphia, Blankertz¹ found that family income is a significant correlate of purchase clustering behavior of customers. Blankertz observed that "the most important finding of the study was the dispersion of trade of higher income families and relative concentration of trade by low-income families."²

Farley³ factor-analyzed the sample household data used by Cunningham with the addition of some demographic and shopping activity variables to discern important dimensions of supermarket choice patterns. He recognized the tendency to spread purchases over several stores as an important dimension but the "analysis failed to pinpoint characteristics of loyal families."⁴ The only demographic characteristics considered by Farley were family size and income.

Massy, Frank and Lodahl's⁵ study dealt only with product-specific store loyalty behavior rather than with store loyalty based on aggregate household food purchases.

¹B. F. Blankertz, "Shopping Habits and Income: A Philadelphia Department Store Study," Journal of Marketing, Vol. 14 (January, 1950), pp. 572-578.

²Ibid., p. 574.

³John U. Farley, "Dimensions of Supermarket Choice Patterns," Journal of Marketing Research, Vol. 5 (May, 1968), pp. 206-208.

⁴Ibid., p. 208.

⁵William Massy, Ronald Frank and Thomas Lodahl, Purchasing Behavior and Personal Attributes, op. cit., p. 120.

Their analysis of store loyalty behavior in the case of three products, beer, coffee, and tea, revealed the following patterns:

1. Market size and income are associated with low store loyalties.
2. Husband's endurance score is strongly and consistently related to high store loyalty.
3. Husband's deference score and wife's change score are associated with low store loyalty.¹

The study, however, evidenced a low degree of predictive efficacy of personality and socio-economic variables in explaining product-specific store loyalty behavior.

A study by Enis and Paul² was aimed at determining whether consumers who exhibit various degrees of store loyalty can be identified by socio-economic and/or psychological characteristics. The study is one of the few that used total food purchases of households to define store loyalty. The measure of store loyalty is a geometric mean of three commonly employed loyalty indicators: (1) proportion-of-budget received by the first choice store, (2) proportion of non-switches in first store choice and (3) number of stores in the market not patronized during the survey period. Enis and Paul found that store loyalty tended to be inversely related to educational attainment, and to be higher for blue-collar households than white-collar households. The

¹Ibid., p. 110.

²Ben M. Enis and Gordon W. Paul, "Store Loyalty: Characteristics of Shoppers and Switchers," Southern Journal of Business, Vol. 3 (October, 1968), pp. 267-276.

significant personality correlates of store loyalty included consumers' needs for exhibition, achievement, affiliation and deference; and economic and social values. However the above personality variates accounted for only 13.4 per cent of the total variance in store loyalty. Enis and Paul concluded that "for all practical purposes, loyal customers cannot be identified by socio-economic or psychological characteristics."¹

The loyalty measure employed by Enis and Paul ignores the purchases made by the shopper in stores other than the first choice store. Moreover, the measure is not meaningfully defined for shoppers in large metropolitan areas since determination of 'the number of stores in the market not patronized' by the shopper is at best ambiguous.

Based on a study of customer loyalty to particular food chains, Carman² suggested in a recent article that personal characteristics of consumers may be valuable in explaining differences in store loyalty of shoppers. Although preoccupation with methodology obscured the precise meaning of some variables employed by him, Carman indicated that perceived roles and interests of housewives are important predictors of store loyalty. Carman's conclusion was that:

¹Ibid., p. 274.

²James M. Carman, "Correlates of Brand Loyalty: Some Positive Results," Journal of Marketing Research, Vol. 7 (February, 1970), pp. 67-76.

. . . the most important predictors do present a profile of the store-loyal and nonloyal shopper which is meaningful and consistent. The nonloyal consumer is a full-time housewife with a strong interest in cooking and shopping with the time and means to shop. The loyal consumer is the busy woman who typically is working to help support a family. She values her time in such a fashion as to devote little attention to entertaining, cooking and being a careful shopper.¹

Empirical research on store loyalty appears to indicate a lack of consensus as to the usefulness of personal attributes in explaining store loyalty of shoppers. On an a priori basis, however, it could be reasoned that since store loyalty is a relatively more enduring characteristic of household purchase behavior than brand loyalty (which varies over products), more positive results could be expected in attempts to identify personal correlates of store loyalty. Additional research studies and experimentation with more fruitful dimensions of personal characteristics may be needed before definitive statements can be made about the usefulness of personal attributes in predicting store loyalty of shoppers.

¹James M. Carman, op. cit., p. 70.

Other Relevant Research

A number of marketing scholars¹ recognized the housewife's role as the household purchasing agent. A housewife, however, performs a number of other role-related activities like home maintenance, child rearing, entertaining in her home, and social and community activities outside her home. The value she attaches to these activities in terms of time and importance may influence her buying behavior. Some empirical studies have shown the importance of role perceptions of housewives on their purchase decisions. Trier² found that housewives could be distinguished significantly in terms of their role perceptions with respect to a number of factors influencing food purchasing decisions.

Bucklin,³ in a panel study of the food shopping processes of housewives in Berkeley, identified eight female roles from a factor analysis of some fifty questions on house and job interests and attempted to relate them to the

¹Wroe Alderson, Marketing Behavior and Executive Action (Homewood, Illinois: Richard Irwin, Inc., 1957), p. 179; and Henry O. Whiteside, "Interacting Roles of the Household Purchasing Agent," in Reavis Cox, Wroe Alderson and Stanley Shapiro (eds.), Theory in Marketing (Homewood, Illinois: Richard Irwin, Inc., 1964), pp. 270-280.

²Howard Trier, Henry Smith and James Shaffer, "Differences in Food Buying Attitudes of Housewives," Journal of Marketing, Vol. 5 (July, 1960), pp. 66-69.

³Louis P. Bucklin, "Consumer Search, Role Enactment and Marketing Efficiency," The Journal of Business, Vol. 42 (October, 1969), pp. 416-435.

food shopping behavior of housewives. He observed that the most interesting of all the findings of the study was the strategic importance of housewife roles in determining shopping decisions. Bucklin found that the concepts of social position appeared to be less powerful than housewife roles.¹

There has been very limited research as to the usefulness of housewife role perceptions in explaining consumer loyalty behavior. The findings of Trier and Bucklin indicate the potential fruitfulness of these variables in loyalty research. The present study attempts to examine the usefulness of role perceptions of housewives in explaining store loyalty patterns.

Summary

In a mass-market, consumer-oriented economy, firms often embark on a strategy of market segmentation to be able to provide product offerings that closely match the heterogeneous needs and tastes of consumers as well as to channel their promotional and other marketing efforts most effectively. The pioneering work of Brown and Cunningham directed the attention of manufacturers of frequently purchased consumer products to the possibility of employing consumer loyalty as a profitable basis for market segmentation programs.

¹Ibid., p. 435.

A vast amount of empirical research has been aimed at examining the feasibility of employing brand loyalty as a basis for market segmentation strategies. The research studies have attempted to identify the personal attributes of brand loyal customers and to examine if brand loyal customers can be distinguished from nonloyal customers in terms of their demand characteristics and elasticities of promotion. Findings to date seem to indicate that brand loyal and nonloyal customers are virtually indistinguishable. Thus, research attempts to establish the relevance of brand loyalty for market segmentation strategy have been so far discouraging.

Relatively fewer research studies have dealt with store loyalty as compared to brand loyalty. Empirical research on store loyalty appears to indicate a lack of consensus as to the usefulness of personal attributes in explaining store loyalty patterns of shoppers, although some studies indicated the poor predictive efficacy of socioeconomic variables. Recent research suggests the potential fruitfulness of role perceptions of housewives in explaining store loyalty. More research seems to be warranted before definitive statements may be made about the usefulness of personal attributes in explaining store loyalty patterns of shoppers and about the feasibility of its profitable use in market segmentation programs.

CHAPTER III

RESEARCH DESIGN

Chapter III presents the research framework and methodology employed in collecting the data for the research study and testing the research hypotheses generated in Chapter I. The first section of the chapter identifies the independent and dependent variables relevant to the research hypotheses. The section introduces a new measure of purchase clustering behavior of customers, referred to as 'the entropy measure' in the study, which was used as the dependent variable in the present research. The second section contains a description of the sampling procedure by which households were selected for the mailing of the questionnaires. The third section presents details of the questionnaire which served as the research instrument for the study and other details of the data collection process. The final section gives an account of the statistical analyses relevant to the testing of the various hypotheses under investigation.

Identification of Research Variables

Independent Variables

A major part of the research was aimed at investigating whether purchase clustering patterns of food shoppers can be identified in terms of selected characteristics of the shoppers. The characteristics of the shoppers which served as the independent variables for the analysis fall under three general categories. The categories are socio-economic and demographic characteristics of households, self-perceptions of housewives with regard to a number of role-related activities and, food purchasing characteristics of the shoppers. The specific socio-economic and demographic characteristics chosen were:

1. Family income
2. Employment status of the homemaker
3. Educational level of the homemaker
4. Occupational status of the household head
5. Multiple-automobile availability
6. Stage in the family life cycle
7. Family size
8. Age of the homemaker
9. Number of pre-school age children.

The stage in the life cycle variable was a classification based on the age of the homemaker and the ages of children, if any. Six stages of family life cycle were identified for the study on the basis of whether the family

had no children, pre-school age children, or older children only and whether the homemaker was above or below thirty-five years of age.

The second category of independent variables was role-related self-perceptions of the housewives. The role-related activities considered in the study were:¹

1. Decorating and cleaning the home
2. Budgeting family finances
3. Rearing and disciplining children
4. Keeping up personal appearance
5. Planning, shopping and preparing meals
6. Entertaining friends and associates
7. Participating in women's community activities outside the home
8. Planning and arranging recreational activities for the family.

The final category of independent variables include some general food purchasing characteristics of homemakers. The specific variables chosen were:

¹The role related activity descriptions were adopted mostly from the role battery used for the Berkeley Food Panel in 1965. See Louis P. Bucklin and James M. Carman, The Design of Consumer Research Panels: Conception and Administration of the Berkeley Food Panel (IBER Publications, University of California, Berkeley, 1967), p. 160; the above mentioned role battery was, in turn, closely based on Howard Trier's inventory of role perceptions. See Howard Trier, "Sociological Variables, Personality Traits and Buying Attitudes Related to Role Perceptions and Conflicts Among 242 Michigan Housewives" (unpublished Ph.D. dissertation, Michigan State University, 1959).

1. Total food expenditure of the family
2. Frequency of grocery shopping
3. Weekly in-store shopping time
4. Extent of multi-purpose food shopping.

In-store shopping time referred to the amount of time per week that the shopper normally spends inside food stores buying the food requirements for her family. The extent of multi-purpose food shopping referred to the frequency with which the shopper usually combines food and general merchandise purchases on her major shopping trips. The data, in fact, revealed that there was much variation in the extent of multi-purpose shopping among food shoppers.

Dependent Variable

The dependent variable for the research is the degree of purchase clustering among stores on the part of food shoppers. It is a time-averaged description of customer store loyalty as opposed to one that takes into account the time sequence of store choices by the customer. It was indicated in Chapter II that past research utilized a number of different measures of purchase clustering, but each seemed to possess certain inadequacies. Cunningham, for example, used the proportion of food purchases made by a family in its 'favorite' store as a measure of purchase clustering of the family. As was mentioned earlier, such a measure ignores the customer's purchases made in the food stores other than the favorite store and thus may lead to

distortions in summarizing the family's purchase clustering pattern. This is especially so when the family patronizes more than two stores.

The research study developed a summary measure of purchase clustering behavior of shoppers that utilizes information on dollar expenditures made in all the food stores patronized during the study period. The measure, referred to as 'the entropy measure of purchase clustering' in the present study, has been adopted from Shannon's mathematical theory of information.¹ The entropy measure of purchase clustering of food shoppers was defined in the following terms:

Suppose n is the number of food stores in which a family made purchases during the study period and p_i is the proportion of the total food purchases that is made in the i th store. Then, the entropy measure of purchase clustering of the family (for the study period) is defined by:

$$E = \left(- \sum_{i=1}^n p_i \cdot \log_2 p_i \right) \times 100$$

The measure is non-negative and its value depends on the number of stores the customer patronized for her food needs as well as on how she spreads her total food budget over different stores. In the simple situation where the

¹C. E. Shannon, "A Mathematical Theory of Communication," Bell System Technical Journal, Vol. 27 (1948), pp. 379-423.

consumer patronized only two food stores, the measure has a near-zero value if the consumer clustered a disproportionately large proportion of her food purchases in one of the stores and has a maximum value of 100.0 if she spread her food purchases equally among the two stores. A graphical illustration of the values of the entropy measure in the above situation is presented in Figure 2. Graphical illustrations become more complex when the consumer patronizes more than two stores. In general, the more the number of food stores the consumer patronized and the more evenly she spread her purchases among these stores, the larger will be the value of the entropy measure of purchase clustering (it may be noted that a high value for the entropy measure implies low customer loyalty to any single store).

The entropy measure of purchase clustering overcomes many of the deficiencies in the existing measures of store loyalty and may be expected to be used more commonly in future consumer loyalty studies.¹

¹The entropy measure of purchase clustering was developed by the writer in his Ph.D. thesis proposal in February, 1969. At that time there was no published work which used the entropy measure as a quantitative description of store loyalty patterns of shoppers and the writer was not aware of any unpublished documents suggesting the entropy measure of store loyalty. In two recent papers, however, Carman made use of the entropy measure in his consumer loyalty analysis. See James M. Carman, "Some Insights Into Reasonable Grocery Shopping Strategies," Journal of Marketing, Vol. 33 (October, 1969), p. 70 (Footnote); and see also James M. Carman "Correlates of Brand Loyalty: Some Positive Results," Journal of Marketing Research, Vol. 7 (February, 1970), p. 75.

Maximum = 100.0

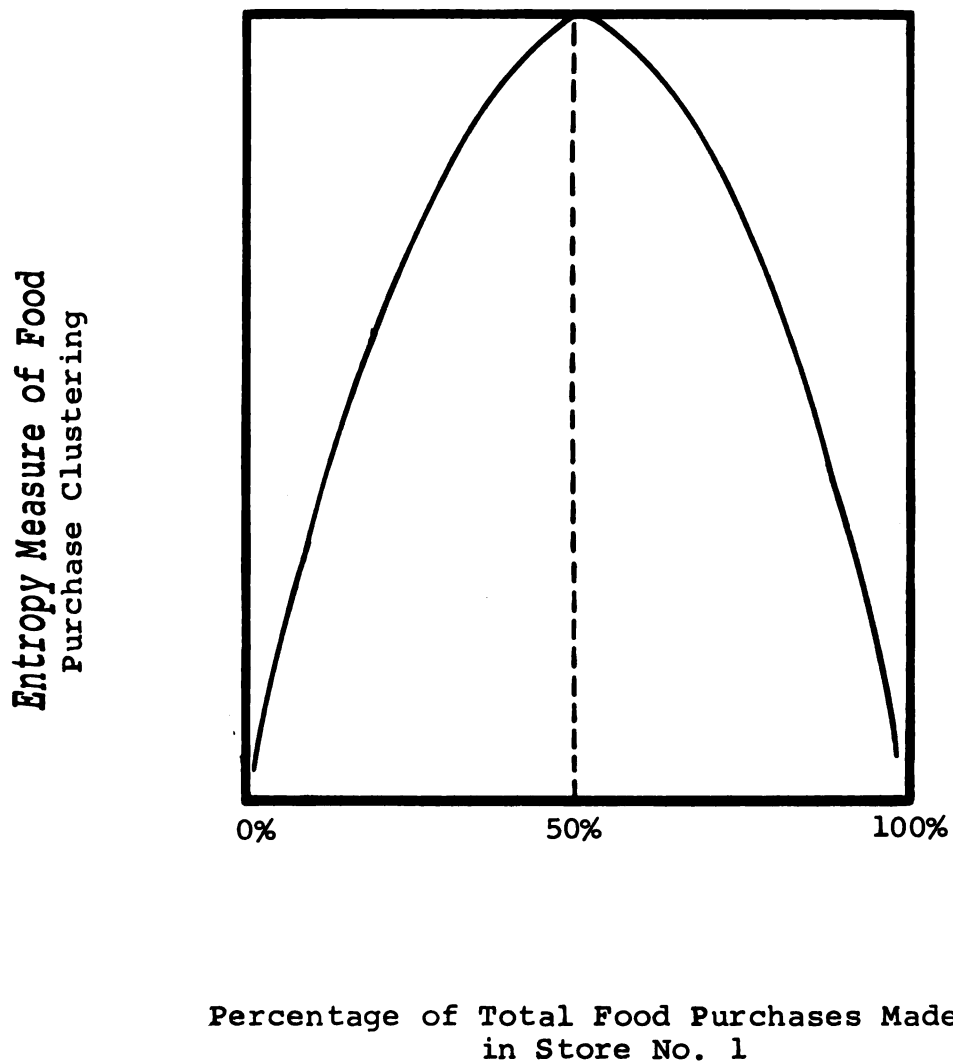


Figure 3-1. Graphical illustration of the entropy measure of purchase clustering when the shopper patronized only two stores for her food purchases.

The entropy measure of purchase clustering was used as the dependent variable in the research. In the computation of the entropy measure, however, only purchases made in retail grocery stores were considered. Thus, meats purchased in bulk quantities through special outlets, milk deliveries and milk purchased in dairy stores were not considered in the computation of the measure.

Additional Analysis and Relevant Variables

For testing hypothesis VI listed in Chapter I, information on additional variables is needed. Information is needed about travel times to the consumer's first and second choice food stores from her home and about the homemaker's perceptions of prices in the two stores. The hypothesis suggests that among multiple-store shoppers those who perceive their first and second choice stores as similar in proximity from home and price image have significantly lower degrees of purchase clustering than others. In the context of the hypothesis, the first and second choice stores were defined as similar in proximity from home if the homemaker estimates of the driving times to the two stores differ by less than five minutes. The stores were treated as similar in price image if the shopper places them both in the same position on a semantic differential scale depicting the homemaker's perceptions of store prices. Once these definitions were adopted, the degrees of purchase clustering of the shoppers who perceive their first and second choice food stores

as similar in proximity and prices were compared statistically with those of the shoppers who perceive the stores as dissimilar.

Sample Design

The Sampling Frame

The city of Lansing, Michigan, a community of about 131,500 population, provided the sampling frame for the research. Besides cost and proximity considerations, the choice was also prompted by the observation that there has been a noticeable growth in the number of retail food stores in the city over the recent years.

The research was primarily concerned with examining relationships between purchase clustering behavior of food shoppers and a number of personal attributes of the shoppers. In the light of this objective, obtaining proportionate representativeness of various socio-economic and demographic characteristics in the sample, though desirable, was considered less important than obtaining a random sample of households representing a fairly broad spectrum of socio-economic and demographic characteristics. To meet the time and cost constraints, family income was used as a 'proxy' variable for all household socio-economic and demographic characteristics. The population was stratified on this variable and quotas of households were randomly sampled from each stratum. The details of the sampling procedure employed in the research are presented in the next section.

Selection of Sample Households

The sample households in the study were selected according to a multi-stage quota sampling design. Family income was used as the basis to stratify the population. Information on median income by census tract for the city of Lansing which was available from 1960 census data,¹ was used toward this purpose. Census tracts in the city were grouped into five strata according to median incomes: (1) below \$5,000, (2) between \$5,000 and \$6,000, (3) between \$6,000 and \$7,000, (4) between \$7,000 and \$8,000, (5) above \$8,000. City blocks in each group of census tracts were enumerated and a random sample of a precalculated number of blocks were selected from each group using random number tables. The precalculated quotas were so determined as to reflect the relative sizes of the strata as well as expected differentials in response rates among different income strata. The groups of randomly selected city blocks provide the sampling frame for the second phase of the sampling procedure.

The second phase consisted in the sampling of household units from each of the randomly selected city blocks. Systematic random sample of six households were drawn from each block with the aid of R. L. Polk's City Directory - Lansing, Michigan. In the process, care was taken to

¹U.S. Bureau of the Census, U.S. Census of Population and Housing: 1960, Census Tracts, Final Report PHC (1) - 73 (Washington, D.C.: Government Printing Office, 1962).

discard any business units drawn as well as residents not comprising family units. Substitutions were made for both such categories. Using the city directory, mailing lists of the sample families who were to receive the questionnaires were prepared. The final number of families included in the sample was one thousand.

Data Collection

Self-administered questionnaires were mailed to one thousand sample households on November 15, 1969. A cover letter that accompanied each questionnaire was addressed personally to the homemaker, and explained the purpose and significance of the study and urged her cooperation. The cover letters were typed on Michigan State University letterheads. Postage-guaranteed envelopes with return addresses were enclosed along with the questionnaires, but no monetary or similar incentives were offered to stimulate a high response rate. The respondents were assured, however, that there was no way of identifying individuals from the returned questionnaires. The cover letter is reproduced in Appendix A.

The questionnaire developed for the research was designed to identify significant personal and household correlates of purchase clustering patterns of food shoppers. The information sought from the respondents in the questionnaire may be categorized under four broad areas. The first is information about the homemaker's general food purchasing habits, e.g., her 'normal' frequency of grocery shopping and

extent of her multi-purpose food shopping. The second type is information that relates more specifically to the homemaker's food shopping experience over the past month.

Information was requested about the food stores she visited during the past month and approximate dollar amounts spent in each store. Reliance was placed on the recall of the respondent to provide the estimates of expenditures made in each of the patronized food stores. Information was also requested about approximate traveling times to each of the stores from her home. The homemaker was also asked to

indicate, on a semantic differential scale, her opinion about the prices and quality of each food store she patronized during the past month. Questions in the third area request the homemaker to indicate, on a semantic differential scale, the time and importance she attaches to a number of role-related activities. The fourth area seeks information about the socio-economic and demographic characteristics of the homemaker and her family. The questions pertaining to socio-economic and demographic characteristics were purposefully included as the last in the questionnaire on the assumption that the respondent might lose interest if she were to see routine questions at the beginning of the questionnaire. Special care was taken to limit the size of the questionnaire to four pages. In view of the fact that it was intended for the general public rather than a specialized audience and that no monetary incentive was involved, it was felt that sending a lengthy questionnaire would

definitely mean risking a high non-response rate. The questionnaire is reproduced in Appendix A.

The questionnaire was pretested on a very limited scale, mainly for purposes of insuring its general readability and clarity.

The majority of the responses from the sample households were received during the first two weeks after the questionnaires were mailed. The number of usable questionnaires which were returned during the first two weeks was 238. At the end of the first two weeks, follow up letters were mailed out requesting cooperation from non-respondents. Usable questionnaires which were returned during the third and fourth weeks numbered 87.

Analysis of the Data

Data Preparation

The questionnaires returned by the sample households during the first four weeks provided the data base for the study. The usable questionnaires, which numbered 335 in total out of 1,000 mailed, were coded according to pre-determined classification procedures and the information was transferred to punch cards for computer analysis. The punch cards were verified for accuracy.

The computer analysis was primarily confined to the testing of the hypotheses listed in Chapter I. Appropriate statistical routines were employed for the purpose. In the process of testing the hypotheses, it was found necessary to

generate frequency distributions of a number of household characteristics and to group values of some of these characteristics so as to generate cell frequencies large enough to satisfy the assumptions of the relevant statistical tests.

Computer Programs for Statistical Analysis

First, an analysis of the sample composition of socio-economic and demographic characteristics was performed using the PERCOUNT computer program¹ developed by the CISSR group at Michigan State University. The program provided a percentage breakdown of the sample households according to each of the socio-economic and demographic characteristics. The composition of the sample with respect to relevant characteristics is tabulated in Appendix C.

For testing the significance of relationships between degree of food purchase clustering and individual personal characteristics (i.e., for hypothesis groups I, II and IV), non-parametric statistical methods were considered to be more appropriate than multiple regression analysis. Some personal characteristics are mutually highly correlated and such a situation will lead to the anomaly of multicollinearity in regression analysis. In the case of multicollinearity, sampling errors of estimates of regression

¹Michigan State University, Computer Institute for Social Science Research (CISSR), PERCOUNT, Technical Report No. 18, May 6, 1968.

coefficients may be so large as to make it difficult to draw valid inferences about the statistical significance of individual regression coefficients. For this reason Kruskal-Wallis one-way analysis of variance of ranks was used to test the relationships in hypothesis groups I, II and IV. The nonparametric statistics package newly developed by the CISSR group at Michigan State University provided the computer statistical routine¹ for the Kruskal-Wallis test.

For testing the significance of relationships between degree of food purchase clustering and groups of variables (i.e., for hypotheses III.B, IV.2 and V), a least squares routine was used. The Michigan State University LS computer program² on CDC 3600 provided the estimates and tests of significance of the multiple correlation coefficients corresponding to each of these hypotheses. For hypothesis III.A, a stepwise regression analysis was used to find the relative importance of family income among all socio-economic and demographic variables in explaining variations in purchase clustering patterns of food shoppers.

¹Michigan State University, Computer Institute for Social Science Research, Nonparametric Chi-Square Tests and Analysis of Variance, Technical Report No. 42, June 1, 1966.

²Michigan State University, Agricultural Experiment Station, Calculations of Least Squares Problems on the LS Routine, STAT Series Description No. 7, October, 1968.

Michigan State University LSDEL computer program¹ on CDC 3600 was used for the purpose.

For hypothesis IV, Mann-Whitney's U test was used. The nonparametric statistics package of the CISSR group provided the statistical routine.²

¹Michigan State University, Agricultural Experiment Station, Stepwise Deletion of Variables from a Least Squares Equation (LSDEL Routine), STAT Series Description No. 9, October, 1968.

²Michigan State University, Computer Institute for Social Science Research, Mann-Whitney and Wilcoxon Tests, Technical Report No. 45, September 15, 1967.

CHAPTER IV

PRESENTATION OF FINDINGS

Chapter IV presents the tests of the research hypotheses as they were set forth in Chapter I. Introductory to this, however, a brief examination of the extent of variation in the purchase clustering patterns exhibited by the sample families is made.

The first section presents findings relating to the socio-economic and demographic characteristics of food shoppers with varying degrees of purchase clustering. Findings with regard to the predictive efficacy of the socio-economic and demographic variables as a group in explaining variations in food purchase clustering patterns have also been included in this section. The second section presents findings relating to the investigation of other food purchasing characteristics of the respondent families which are hypothesized to be significantly related to the extent of food purchase clustering. Results pertaining to the predictive efficacy of the selected purchasing characteristics appear in this section. The third section presents findings pertaining to the questions of whether role-related self-perceptions of housewives are useful in explaining variations in the extent of purchase clustering displayed in

their food shopping behavior. The final section presents results of the investigation whether similarity of proximity and price perceptions about the food stores patronized by the shopper all significantly related to the pattern of relative clustering of purchases among these stores.

Tabulations supporting the findings have been presented along with each of the hypotheses. In many cases, it was found useful to tabulate the results with values of the entropy measure of purchase clustering grouped into four quartiles, since no other natural and meaningful breakdown was apparent. The quartile values for the entropy measure of purchase clustering for the sample families are presented in Table 4-1. Statistical significance of a hypothesized relationship is inferred only when the probability of significance stated in conjunction with the corresponding tabulation is less than 0.05 level.

Variations in the Food Purchase Clustering Patterns of the Sample Families

The sample families exhibited substantial variation in their food purchase clustering patterns. Differences in the extent of purchase clustering on the part of the families as measured by the entropy measure and also by the percentage of total food expenditure spent in the first choice grocery store are depicted by the descriptive statistics presented in Table 4-1.

TABLE 4-1
VARIATION IN PURCHASE CLUSTERING PATTERNS OF THE SAMPLE FAMILIES

Entropy Measure of Purchase Clustering	Proportion Spent in the 'Favorite' Food Store
Range:	0.0 to 199.8
Mean:	79.5
Standard deviation:	58.1
Lower quartile:	35.0
Median:	83.8
Upper quartile:	119.0

Range:	26.8 to 100.0
Mean:	74.2
Standard deviation:	20.5
Lower quartile:	57.7
Median:	75.1
Upper quartile:	93.2

The entropy measure of purchase clustering ranged from 0 to 199.81. A few numerical values of the entropy measure corresponding to some specific shopping situations may be useful for comparison purposes. It may be noted that when the family patronizes one grocery store exclusively for its food purchases the entropy measure is zero. If the family patronizes two grocery stores during the study period and spreads its purchases equally among the two, the entropy measure assumes a value of 100.0. In the situation where the family patronizes four grocery stores during the study period and spreads its purchases equally among these stores, then the entropy measure assumes a value of 200.0. These reference values for the entropy measure together with the descriptive statistics serve to indicate the substantial variation in the purchase clustering patterns of the sample families.

The ensuing sections will examine whether the observed variations in the degree of the purchase clustering may be explained by selected characteristics of the food shoppers.

Socio-Economic and Demographic Variables

The first three groups of hypotheses listed in Chapter I were formulated to identify significant socio-economic and demographic characteristics which can distinguish between shoppers of varying degrees of food purchase

clustering and to examine the overall predictive efficacy of these variables in explaining variations in the clustering patterns. The variables considered are: (1) family income, (2) educational level of the homemaker, (3) employment status of the homemaker, (4) occupational status of the household head, (5) multiple-automobile availability, (6) stage in the family life cycle, (7) family size, (8) age of the homemaker, (9) number of pre-school age children in the family. The results of the tests of these research hypotheses will be presented below.

Family Income

Families with higher incomes would presumably have less need for savings that may possibly accrue from multiple-store food shopping, and thus may be expected to cluster their food purchases to a greater extent than lower income families. The findings concerning the relationship between family income and degree of purchase clustering on the part of food shoppers are presented in Table 4-2.

The data fail to indicate that families in different income groups differ in their food purchase clustering patterns. However, for a majority of the families in each of the two lower income strata (\$0-\$4,999 and \$5,000-\$5,999) the degree of purchase clustering ranged in the lower two quartiles indicating a higher store loyalty. On the other hand, among the families with incomes over \$15,000 a majority of the families (57.8 percent) have the degree of

TABLE 4-2
DEGREE OF PURCHASE CLUSTERING BY FAMILY INCOME^a

		Family Income										
Entropy Measure of Purchase Clustering		\$0 to \$4,999	\$5,000 to \$5,999	\$6,000 to \$6,999	\$7,000 to \$7,999	\$8,000 to \$8,999	\$9,000 to \$10,999	\$11,000 to \$12,999	\$13,000 to \$14,999	\$15,000 and over		
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
High Store Loyalty	1st Quartile	28.6	35.0	23.1	20.0	31.4	28.1	25.0	21.0	18.8		
	2nd Quartile	28.6	30.0	23.1	26.7	20.0	22.8	28.1	29.0	23.4		
	3rd Quartile	35.7	15.0	46.1	26.7	25.7	22.8	17.2	26.3	28.1		
	4th Quartile	7.1	20.0	7.7	26.7	22.9	26.3	29.7	23.7	29.7		
Low Store Loyalty	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
		(14)	(20)	(13)	(30)	(35)	(57)	(64)	(38)	(64)		

^aKruskal-Wallis H (5.16 at 8 degrees of freedom) significant at 0.74 level.

purchase clustering ranging in the upper two quartiles indicating lower store loyalty. In the remaining income strat, the distribution of families in different quartiles of purchase clustering is similar to what may be expected as a matter of chance. The data were not statistically significant.

Educational Level of the Homemaker

Table 4-3 presents the data relevant to the level of education of the homemaker.

The educational level of the homemaker was not found to differ significantly for shoppers of different degrees of purchase clustering. The data indicate, however, that among the homemakers who had 'grade school or less' level of education, there was a high concentration (41.7 percent) in the first quartile of purchase clustering indicating low store loyalty. However, again, the data were not found to be statistically significant.

Employment Status of the Homemaker

Housewives who are employed may have higher opportunity cost for their time and thus are likely to show less inclination to do multiple-store food shopping than non-working housewives. Accordingly, it was hypothesized that there is a significant relationship between the homemaker's employment status and her extent of purchase clustering. The relevant data have been presented in Table 4-4.

TABLE 4-3

DEGREE OF PURCHASE CLUTTERING BY EDUCATIONAL LEVEL OF THE HOMEMAKER^a

		Educational Level of the Homemaker					
Entropy Measure of Purchase Clustering		Grade	Some	High	Some	College	Graduate
		School or Less	High School	School Graduate	College	Graduate	or Advanced Degree
		(%)	(%)	(%)	(%)	(%)	(%)
High Store Loyalty	1st Quartile	41.7	20.5	29.1	20.6	20.5	27.3
	2nd Quartile	16.7	25.6	26.0	23.5	29.5	27.3
	3rd Quartile	33.3	20.5	23.6	26.5	25.0	27.3
	4th Quartile	<u>8.3</u>	<u>33.3</u>	<u>21.3</u>	<u>29.4</u>	<u>25.0</u>	<u>18.2</u>
Low Store Loyalty	Total	100.0	100.0	100.0	100.0	100.0	100.0
		(12)	(39)	(127)	(102)	(44)	(11)

^aKruskal-Wallis H (4.30 at 5 degrees of freedom) significant at 0.50 level.

TABLE 4-4
DEGREE OF PURCHASE CLUSTERING BY EMPLOYMENT STATUS
OF THE HOMEMAKER^a

Entropy Measure of Purchase Clustering		Employment Status of the Homemaker		
		Not Employed	Part-Time	Full-Time
		(%)	(%)	(%)
High Store Loyalty	1st Quartile	22.9	25.4	28.3
	2nd Quartile	28.7	16.4	23.9
	3rd Quartile	23.9	29.1	23.9
Low Store Loyalty	4th Quartile	<u>24.5</u>	<u>29.1</u>	<u>23.9</u>
	Total	100.0	100.0	100.0
		(188)	(55)	(92)

^aKruskal-Wallis H (0.71 at 2 degrees of freedom)
significant at 0.70 level.

The data, however, did not support the hypothesis.

Table 4-4 reveals that the non-working housewives, the part-time employed housewives and the full-time employed housewives do not differ significantly in their food purchase clustering patterns.

Occupational Status of the Household Head

Table 4-5 presents the findings regarding the hypothesized relationship between occupational status of the household head and the extent of food purchase clustering. The data show the distribution of families in each of the occupational categories over different ranges of the degree of food purchase clustering.

The data in Table 4-5 indicate that there are no differences between occupational categories with respect to the degree of food purchase clustering. A closer examination of the data also reveals that there are no discernible overall patterns of differences in the distribution of families headed by blue collar workers over different quartiles of purchase clustering as compared to families headed by white collar workers. This is contrary to some past research findings which suggested that blue collar workers are more store loyal than white collar workers.¹

¹Refer to Chapter II, p. 43.

TABLE 4-5
DEGREE OF PURCHASE CLUSTERING BY OCCUPATIONAL STATUS OF THE HOUSEHOLD HEAD^a

Occupational Status of the Household Head									
Entropy Measure of Purchase Clustering	Semi-Professional		Clerks & Kindred of Small Business		Skilled Workers		Semi-Skilled Unskilled Workers		Retired Unemployed Students
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
High Store Loyalty	1st Quartile	26.7	18.6	28.6	29.4	28.4	31.3	12.5	20.5
	2nd Quartile	27.6	27.1	14.3	17.7	23.0	18.8	31.3	25.6
Low Store Loyalty	3rd Quartile	20.9	25.4	57.1	17.6	25.7	12.5	37.5	30.8
	4th Quartile	24.8	28.8	0.0	35.3	23.0	37.5	18.7	23.1
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		(105)	(59)	(7)	(17)	(74)	(16)	(16)	(39)

^aKruskal-Wallis H (2.91 at 7 degrees of freedom) significant at 0.89 level.

It may be noted, however, that among families headed by unskilled workers, a comparatively low percentage of families fall in the first quartile of purchase clustering indicating high store loyalty. In each of the occupational categories of semi-skilled workers and proprietors of small business high percentages of families are represented in the two extreme quartiles of purchase clustering. The first and fourth quartiles accounted for 68.8 and 64.7 percent, respectively, in these occupational categories. These two occupational groups are thus dominated by highly store loyal and highly non-loyal families with families of intermediate ranges of loyalty under-represented.

Multiple-Automobile Availability

Mobility of the shopper measured in terms of the number of automobiles available to the family may affect her patterns of food purchase clustering. Multiple-automobile availability contributes to easier access to different sources of food buying and thus would presumably increase the tendency to spread food purchases among several stores. The findings pertaining to the relationship between a family's extent of food purchase clustering and the number of automobiles available to it are presented in Table 4-6.

The data indicate that the relationship between the extent of food purchase clustering and the number of automobiles available to the family is statistically significant. The table shows that the percentage of families in the first

TABLE 4-6
RELATIONSHIP BETWEEN DEGREE OF PURCHASE CLUSTERING
AND MULTIPLE-AUTOMOBILE AVAILABILITY^a

Entropy Measure of Purchase Clustering		No. of Automobiles Available to the Family		
		One	Two	Three or More
		(%)	(%)	(%)
High Store Loyalty	1st Quartile	28.1	22.9	5.6
	2nd Quartile	22.8	29.9	16.7
	3rd Quartile	26.3	21.5	33.3
Low Store Loyalty	4th Quartile	<u>22.8</u>	<u>25.7</u>	<u>44.4</u>
	Total	100.0	100.0	100.0
		(171)	(144)	(18)

^aKruskal-Wallis H (8.27 at 2 degrees of freedom)
significant at 0.016 level.

quartile of purchase clustering decreased slightly as we move from one-car families to two-car families. However, a substantial decrease in clustering of food purchases is noticed when we move to the group of families with three or more cars. The percentage of families in the first quartile of purchase clustering (high store loyalty) was 5.6 percent compared to the corresponding figures of 28.1 and 22.9 for the one and two-car families. The percentage of families in the fourth quartile of purchase clustering (low store loyalty) is 44.4 percent compared to the corresponding figures of 22.8 and 25.7 for the other two groups.

There were only two families in the sample with no cars and these were omitted from the statistical analysis of the relationship under investigation because of the minimum cell size requirements for the statistical test.

Stage of the Family Life Cycle

The findings relating to the stage in the family life cycle are presented in Table 4-7. The life cycle concept employed was based on the age of the homemaker and the ages of the children in the family.

The data indicate that a disproportionately large percentage of families with no children and with the homemaker under 35 years of age are represented in the first quartile of purchase clustering implying a high degree of store loyalty. About 47.6 percent of the families in this stage of the family life cycle are represented in the first

TABLE 4-7
DEGREE OF PURCHASE CLUSTERING BY STAGE IN THE FAMILY LIFE CYCLE^a

Entropy Measure of Purchase Clustering		Stage in the Family Life Cycle							
		No Children, Homemaker Under 35	Preschool Children, Homemaker Under 35	Older Chil- dren Only, Homemaker Under 35	No Children, Homemaker Over 35	Preschool Children, Homemaker Over 35	Older Chil- dren Only, Homemaker Over 35		
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
High Store Loyalty	1st Quartile	47.6	28.2	16.7	27.9	0.0	22.1		
	2nd Quartile	4.8	29.5	29.2	22.1	22.7	28.8		
	3rd Quartile	23.8	21.8	20.8	26.7	40.9	23.1		
	4th Quartile	<u>23.8</u>	<u>20.5</u>	<u>33.3</u>	<u>23.3</u>	<u>36.4</u>	<u>26.0</u>		
	Total	100.0	100.0	100.0	100.0	100.0	100.0		
		(21)	(78)	(24)	(86)	(22)	(104)		
Low Store Loyalty	1st Quartile	47.6	28.2	16.7	27.9	0.0	22.1		
	2nd Quartile	4.8	29.5	29.2	22.1	22.7	28.8		
	3rd Quartile	23.8	21.8	20.8	26.7	40.9	23.1		
	4th Quartile	<u>23.8</u>	<u>20.5</u>	<u>33.3</u>	<u>23.3</u>	<u>36.4</u>	<u>26.0</u>		
	Total	100.0	100.0	100.0	100.0	100.0	100.0		
		(21)	(78)	(24)	(86)	(22)	(104)		

^aKruskal-Wallis H (11.58 at 5 degrees of freedom) significant at 0.041 level.

quartile. On the other hand, families with no children but with the homemaker over 35 years of age indicated no such distinct patterns of purchase clustering. The distribution of these families in the four quartiles of purchase clustering is close to what might be expected under chance. Younger families (with homemakers under 35) with preschool children did not exhibit any striking patterns of purchase clustering although they are slightly over represented in the lower two quartiles (57.7 percent) of purchase clustering. In contrast, the older families (with homemakers over 35) with preschool children indicated a distinct pattern of low clustering of food purchases. The percentage of families in this stage of the life cycle that are represented in the first quartile of purchase clustering is zero whereas 77.3 percent of them fall in the upper two quartiles of purchase clustering.

Younger families with older children only exhibited a tendency toward low store loyalty as compared to older families with older children only. The distribution of older families with older children only among different quartiles of purchase clustering was not very much different from what might be expected as a matter of chance. The relationship between food purchase clustering and stage in the family life cycle was found to be statistically significant at 0.041 level.

Family Size

The research results pertaining to the size of the family are presented in Table 4-8. The size of the family represents the number of both children and adult members of the family.

The data indicate that two member families are over represented in the first quartile of the entropy measure of purchase clustering (high store loyalty range). About 31.8 percent of two member families are represented in the first quartile. For large size families, the data indicate a tendency toward lower clustering of food purchases among stores. Among six member families, for example, only 13.0 percent are represented in the first quartile of purchase clustering. The corresponding figures for families with seven or more children is 17.4. For families of intermediate sizes, the data did not show any pattern of purchase clustering significantly different from what could be expected under pure chance. The data indicated that the overall relationship between the extent of food purchase clustering and family size was not statistically significant.

Age of the Homemaker

Table 4-9 presents the findings pertaining to the hypothesized relationship between the extent of food purchase clustering and the age of the homemaker.

TABLE 4-8

DEGREE OF PURCHASE CLUSTERING BY SIZE OF THE FAMILY^a

Entropy Measure of Purchase Clustering	Family Size					
	2	3	4	5	6	7 or More
	(%)	(%)	(%)	(%)	(%)	(%)
High Store Loyalty						
1st Quartile	31.8	24.6	22.6	22.0	13.0	17.4
2nd Quartile	18.7	31.6	25.0	26.8	34.8	30.4
3rd Quartile	26.2	24.6	22.6	19.5	30.4	30.4
4th Quartile	<u>23.4</u>	<u>19.3</u>	<u>29.8</u>	<u>31.7</u>	<u>21.7</u>	<u>21.7</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0
	(107)	(57)	(84)	(41)	(23)	(23)
Low Store Loyalty						
1st Quartile	31.8	24.6	22.6	22.0	13.0	17.4
2nd Quartile	18.7	31.6	25.0	26.8	34.8	30.4
3rd Quartile	26.2	24.6	22.6	19.5	30.4	30.4
4th Quartile	<u>23.4</u>	<u>19.3</u>	<u>29.8</u>	<u>31.7</u>	<u>21.7</u>	<u>21.7</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0
	(107)	(57)	(84)	(41)	(23)	(23)

^aKruskal-Wallis H (3.10 at 5 degrees of freedom) significant at 0.68 level.

TABLE 4-9
DEGREE OF PURCHASE CLUSTERING BY AGE GROUP OF THE HOMEMAKER^a

Age Group of the Homemaker									
Entropy Measure of Purchase Clustering	Less Than 25	Between 25 and 30	Between 30 and 35	Between 35 and 40	Between 40 and 45	Between 45 and 50	Between 50 and 60	Over 60	
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
High Store Loyalty	1st Quartile	35.3	29.7	20.0	22.6	25.0	15.8	22.0	25.0
	2nd Quartile	21.6	29.7	25.7	25.8	27.8	29.0	18.6	29.2
	3rd Quartile	19.6	27.0	20.0	29.0	30.6	21.0	27.1	25.0
	4th Quartile	23.5	13.5	34.3	22.6	16.7	34.2	32.2	20.8
Low Store Loyalty	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		(51)	(37)	(35)	(31)	(36)	(38)	(59)	(48)

^aKruskal-Wallis H (7.99 at 7 degrees of freedom) significant at 0.33 level.

The data indicate that the age of the homemaker is not a statistically significant indicator of the extent of food purchase clustering. It was observed that younger housewives were slightly over represented in the two lower quartiles of purchase clustering and older housewives (especially those between 45 and 60) to be slightly over represented in the two upper quartiles. An additional computation showing for each quartile the percentages of housewives in different age groups, revealed a clearer pattern. It showed that among families falling in the first quartile of purchase clustering (high store loyalty range) only about 37.3 percent were those with homemakers over 50 years of age. On the other hand, 50 percent of the families falling in the fourth quartile (low store loyalty range) were those with homemakers over 50 years of age. The data, however, were not statistically significant.

Number of Pre-School Age Children

Table 4-10 presents the findings relating to the relationship of food purchase clustering and the number of preschool children in the family.

It was assumed that the presence of preschool age children in the family would make it difficult for the homemaker to reach a number of different stores. Thus the extent of food purchase clustering was anticipated to be higher than that for families with no preschool children. The data, however, failed to support the hypothesis that any

TABLE 4-10

DEGREE OF PURCHASE CLUSTERING BY NUMBER OF PRESCHOOL AGE
CHILDREN IN THE FAMILY^a

Entropy Measure of Purchase Clustering		No. of Preschool Age Children		
		None	One	Two or More
		(%)	(%)	(%)
High Store Loyalty	1st Quartile	26.0	27.1	17.3
	2nd Quartile	24.3	22.9	32.7
	3rd Quartile	24.3	20.8	30.8
Low Store Loyalty	4th Quartile	<u>25.5</u>	<u>29.2</u>	<u>19.2</u>
	Total	100.0	100.0	100.0
		(235)	(48)	(52)

^aKruskal-Wallis H (0.09 at 2 degrees of freedom)
significant at 0.95 level.

statistically significant relationship exists between the extent of purchase clustering and the presence of preschool children in the family.

Family Income Versus Other Socio-Economic
and Demographic Variables

Past research suggested that family income is a good indicator of consumer store loyalty. Massy, Frank and Lodahl found that there is a significant relationship between family income and product-specific store loyalty.¹ Blankertz underscored the importance of family income as an indicator of the extent of 'dispersion of trade' by department store customers.² Based on these findings, it was hypothesized (Hypothesis III.A) that family income is the most significant variable among the selected socio-economic and demographic variables in explaining differences in the degree of food purchase clustering on the part of the respondent families.

It has been already noted that the data failed to indicate that the relationship between family income and the extent of purchase clustering is statistically significant. Additional analysis has been performed, however, to examine the relative explanatory efficacy of family income as compared to other socio-economic and demographic variables.

¹Refer to Chapter II, pp. 36-38.

²Refer to Chapter II, p. 42.

For this purpose, a stepwise regression analysis has been made with the entropy measure of purchase clustering as the dependent variable and the selected household socio-economic and demographic characteristics as the independent variables. The analysis examines the percent of variance of purchase clustering explained by all the independent variables and deletes one variable which least reduces the percentage of variance explained by the remaining set of independent variables. The step by step deletion of independent variables was continued either until all the variables remaining in the regression equation are significant at 0.05 level of significance, or until there are no more independent variables left in the equation. If hypothesis III.A were true, then family income would be the last independent variable to be deleted from the regression equation in the stepwise deletion process.

The results of the stepwise regression analysis, however, did not support the hypothesis. It was found that family income is not the last but the fourth variable to be deleted among the nine selected socio-economic and demographic variables. The number of preschool children in the family was the first variable to be deleted and the number of automobiles available to the family was the variable that remained last in the regression equation at the end of the stepwise deletion process.

Combined Predictive Efficacy of Socio-
Economic and Demographic Variables

Hypothesis III.B states the socio-economic and demographic variables as a group are significant in explaining differences in the food purchase clustering patterns of families. The results of a multiple regression analysis with the entropy measure as the dependent variable and the nine selected socio-economic and demographic characteristics as the independent variables were presented in Table 4-11. The data indicate that socio-economic and demographic variables as a group are not significantly related to the degree of purchase clustering at the chosen 0.05 level of significance.

TABLE 4-11

ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF
SOCIO-ECONOMIC AND DEMOGRAPHIC VARIABLES AS A GROUP^a

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	Probability of Significance
Regression	55867.6	9	6207.5		
				1.88	0.054
Error	1065197.2	323	3297.8		
Total	1121064.8	333			

^a $R^2 = 0.05$ (R denotes the multiple correlation coefficient between the entropy measure of purchase clustering and socio-economic and demographic characteristics of families).

The analysis also indicated that only about 5 percent of the variance of the entropy measure of food purchase clustering on the part of the respondent families was explained by their socio-economic and demographic characteristics.¹

Purchasing Characteristics

The second major group of hypotheses were formulated to investigate if the food purchase clustering patterns of families are significantly related to their other food purchasing characteristics. Five hypotheses were generated to guide the research. The first four hypothesize that families with varying degrees of food purchase clustering can be differentiated in terms of: (1) total food expenditures, (2) frequency of grocery shopping, (3) extent of multi-purpose food shopping by the homemaker and (4) in-store food shopping time. The fifth hypothesis pertains to the examination of the predictive efficacy of the selected purchasing characteristics as a group in explaining differences in purchase clustering patterns of food shoppers.

¹It may be noted that the percent of variance explained by a set of independent variables is measured by the square of the coefficient of multiple correlation between the dependent variable and the set of independent variables.

Total Grocery Expenditures

The level of monthly grocery expenditures measures the pay-off from food shopping. Higher levels of food purchases reflect greater opportunities for saving and greater effort needed to match grocery assortments with family requirements both of which would presumably be positively associated with search. Accordingly, it was hypothesized that the level of grocery expenditures of the family are significantly related to its extent of food purchase clustering. The relevant findings are presented in Table 4-12. The table shows the distribution of the respondent families with different levels of monthly grocery expenditures among the four quartiles ranges of purchase clustering.

The data indicate that the relationship between level of grocery expenditures of the family and the extent of purchase clustering is statistically significant. Table 4-12 reveals that as the level of the family's grocery expenditures increased there was lesser clustering of food purchases (lower loyalty to any single store). Among families with grocery expenditures of \$100 or less per month, about 31.2 percent are represented in the first quartile of purchase clustering in comparison with the 22.0 percent in the fourth quartile. In the case of families who spent \$150 or more per month on groceries, about 17.1 percent are represented in the first quartile in contrast with 31.6 percent in the fourth quartile. Higher food budget thus appears to

TABLE 4-12

DEGREE OF PURCHASE CLUSTERING BY TOTAL GROCERY EXPENDITURE^a

Entropy Measure of Purchase Clustering		Total Grocery Expenditure/Month		
		\$100 or Less	Between \$100 and \$150	\$150 or More
		(%)	(%)	(%)
High Store Loyalty	1st Quartile	31.2	22.0	17.1
	2nd Quartile	24.1	27.1	25.0
	3rd Quartile	22.7	26.3	26.3
Low Store Loyalty	4th Quartile	<u>22.0</u>	<u>24.6</u>	<u>31.6</u>
	Total	100.0	100.0	100.0
		(141)	(118)	(76)

^aKruskal-Wallis H (6.20 at 2 degrees of freedom)
significant at 0.045 level.

be a significant correlate of low clustering of food purchases on the part of the families.

Frequency of Grocery Shopping

Table 4-13 presents the research results relating to the frequency of grocery shopping by the homemaker. The table shows the distribution of families with different frequencies of weekly grocery shopping trips among the four quartiles of purchase clustering.

The data indicate that the relationship between frequency of grocery shopping and food purchase clustering is statistically significant. The table reveals a distinct pattern indicating that a higher frequency of grocery shopping is associated with lower degrees of purchase clustering (lower store loyalty) and vice versa.

Among families who shop less than once a week for groceries, about 43.9 percent are represented in the first quartile of the entropy measure of purchase clustering, whereas only 12.2 percent of them are represented in the fourth quartile. As the number of weekly grocery shopping trips increases, it may be noticed that the percent of families in the lower quartiles of purchase clustering (higher store loyalty) decreased while it steadily increased in the upper quartiles (lower store loyalty). For example, among families who shopped three times a week for groceries Only 7.1 percent are represented in the first quartile, while 46.4 percent of them are in the fourth quartile.

TABLE 4-13
DEGREE OF PURCHASE CLUSTERING BY FREQUENCY OF
GROCERY SHOPPING^a

Entropy Measure of Purchase Clustering		No. of Grocery Shopping Trips/Week				
		Less Than One	One	Two	Three	Four or More
		(%)	(%)	(%)	(%)	(%)
High Store Loyalty	1st Quartile	43.9	28.1	16.0	7.1	14.3
	2nd Quartile	17.1	29.8	28.4	7.1	14.3
	3rd Quartile	26.8	22.2	23.5	39.3	28.5
Low Store Loyalty	4th Quartile	<u>12.2</u>	<u>19.9</u>	<u>32.1</u>	<u>46.4</u>	<u>42.9</u>
	Total	100.0	100.0	100.0	100.0	100.0
		(41)	(171)	(81)	(28)	(14)

^aKruskal-Wallis H (26.60 at 4 degrees of freedom)
significant at 0.0000 level.

In the case of families who shopped four or more times a week for groceries, about 14.3 percent are represented in the first quartile in contrast with the 42.9 percent in the fourth quartile. It may be noted that there was only a modest amount of correlation (coefficient of correlation is 0.19) between the frequency of grocery shopping and the level of family's food expenditures so that a significant relationship of the extent of purchase clustering with one of these variables does not automatically imply a significant relationship with the other.

Extent of Multi-Purpose Food Shopping

Shoppers vary in the extent to which they combine their shopping for general merchandise with their shopping for food items. It was assumed that consumers who do not characteristically mix their general merchandise shopping with food shopping visit a smaller number of different food stores. Table 4-14 presents the findings relevant to the hypothesized relationship between the extent of multi-Purpose food shopping and food purchase clustering.

The data reveal that a substantial percentage of food shoppers do not combine shopping for food and general merchandise in the same shopping with any notable frequency. About 72.2 percent of the respondent families indicated that they combine food and general merchandise shopping 'almost never' or only 'a few times.' About 13.7 percent indicated

TABLE 4-14

RELATIONSHIP BETWEEN DEGREE OF PURCHASE CLUSTERING AND
EXTENT OF MULTI-PURPOSE FOOD SHOPPING^a

		Frequency of Shopping for Both Groceries and General Merchandise on Major Shopping Trips				
		Almost Never	A Few Times	Frequently	Very Frequently	Almost Always
Entropy Measure of Purchase Clustering		(%)	(%)	(%)	(%)	(%)
High Store Loyalty	1st Quartile	30.9	18.9	23.4	16.7	25.0
	2nd Quartile	27.2	20.8	25.5	38.9	25.0
	3rd Quartile	23.5	26.4	27.7	22.2	21.4
	4th Quartile	<u>18.4</u>	<u>34.0</u>	<u>23.4</u>	<u>22.2</u>	<u>28.6</u>
Low Store Loyalty	Total	100.0	100.0	100.0	100.0	100.0
		(136)	(106)	(47)	(18)	(28)

^aKruskal-Wallis H (10.26 at 4 degrees of freedom) significant at 0.0363 level.

that they do multi-purpose food shopping 'very frequently' or 'almost always.'

The data indicate that the relationship between the extent of multi-purpose food shopping and food purchase clustering is statistically significant. The results did not reveal any distinct trend of decreasing clustering of food purchases as the extent of multi-purpose food shopping increased as it was anticipated. The data, however, showed that compared to the shoppers who never or almost never did multi-purpose food shopping, each of the other groups exhibited a lower degree of food purchase clustering.

In-Store Grocery Shopping Time

The findings relating to the in-store shopping time are presented in Table 4-15. The data indicate the distribution of the respondent families who spend different amounts of time per week shopping in grocery stores among the four quartiles of purchase clustering.

The data show that the relationship between the extent of food purchase clustering and the weekly amount of in-store grocery shopping time is statistically significant. It may be noted that the correlation of in-store grocery shopping time with level of food expenditures and with frequency of grocery shopping was rather modest. The coefficients were approximately 0.22 and 0.30, respectively.

TABLE 4-15
DEGREE OF PURCHASE CLUSTERING BY IN-STORE
GROCERY SHOPPING TIME^a

Entropy Measure of Purchase Clustering		In-Store Grocery Shopping Time (in minutes) per Week			
		Less Than 60	Between 60 and 90	Between 90 and 120	Above 120
		(%)	(%)	(%)	(%)
High Store Loyalty	1st Quartile	34.8	20.3	23.4	5.3
	2nd Quartile	25.0	28.0	27.7	15.8
	3rd Quartile	25.7	21.2	25.5	34.2
Low Store Loyalty	4th Quartile	<u>14.4</u>	<u>30.5</u>	<u>25.5</u>	<u>44.7</u>
	Total	100.0	100.0	100.0	100.0
		(132)	(118)	(47)	(38)

^aKruskal-Wallis H (20.99 at 3 degrees of freedom)
Significant at 0.0001 level.

Table 4-15 exhibits an overall pattern of association between low clustering of food purchases (low loyalty to any single store) and large amounts of in-store grocery shopping time. Among families who spent less than 60 minutes per week inside grocery stores shopping for food about 34.8 percent are represented in the first quartile of purchase clustering as compared to 14.4 percent in the fourth quartile. Families who spent between 60 and 90 minutes in grocery shopping spread their food purchases comparatively to a greater extent. About 30.5 percent of the families in this category are in the fourth quartile of purchase clustering as compared to 20.3 in the first quartile. Families who spent more than two hours per week shopping for food in grocery stores exhibited a more distinct pattern of low clustering of purchases. Only 5.3 percent of these families are represented in the first quartile in contrast with the 44.7 percent in the fourth quartile. Almost 80 percent of these families are represented in the two upper quartiles of purchase clustering.

Combined Predictive Efficacy of
Purchasing Characteristics

Hypothesis IV.2 has been formulated to examine if the selected purchasing characteristics as a group are significant in explaining differences in the purchase clustering patterns of food shoppers. To test the hypothesis, an analysis of variance has been performed testing the

significance of the multiple regression function relating the entropy measure of purchase clustering and the other selected purchasing characteristics of the food shoppers. The associated results are presented in Table 4-16. The analysis indicates that the relationship between purchasing characteristics as a group and the extent of purchase clustering is statistically significant. The analysis also indicated that about 10 percent of the variance in the degree of purchase clustering has been explained by the four selected purchasing characteristics.

TABLE 4-16

ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF
PURCHASING CHARACTERISTICS AS A GROUP^a

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	Probability of Significance
Regression	111251.2	4	27812.81		
				9.02	< 0.0005
Error	1017801.3	330	3084.25		
Total	1129052.6	334			

$a_R^2 = 0.10$ (R represents the multiple correlation coefficient between the entropy measure of purchase clustering and purchasing characteristics of families).

Role-Related Self-Perceptions

Recent research in food shopping behavior indicated that role perception of housewives have a strong influence on their food purchasing behavior.¹ Based on these suggestions, it was hypothesized that self-perceptions of housewives with respect to eight selected role-related activities are significantly related to the extent of their food purchase clustering. To examine the validity of the hypothesis, an analysis of variance has been performed to test the significance of the regression function relating the entropy measure of purchase clustering and the eight role-related self-perception scores. The relevant findings are presented in Table 4-17.

The analysis indicates that role-related self-perceptions of housewives are not statistically significant as indicators of the extent of their food purchase clustering. The percentage of variance in purchasing clustering that was explained by the role-perception scores is only about 3.5.

Additional analysis was performed to find if any individual dimension of role-related self-perception of housewives is significantly related to the extent of food purchase clustering. Kruskal-Wallis analysis of variance has been performed with respect to each role-activity and

¹Refer to Chapter II, pp. 46-47.

TABLE 4-17

ANALYSIS OF VARIANCE FOR TESTING THE SIGNIFICANCE OF
ROLE-RELATED PERCEPTIONS OF HOUSEWIVES^a

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	Probability of Significance
Regression	39811.7	8	4976.5		
				1.49	0.16
Error	1089240.9	326	3341.2		
Total	1129052.6	334			

^a $R^2 = 0.04$ (R denotes the multiple correlation coefficient between the entropy measure of purchase clustering and the role-related self-perception scores of housewives).

the analysis failed to indicate the significance of any individual dimension of role perceptions as a correlate of food purchase clustering.

Degree of Food Purchase Clustering and
Perceptual Similarity of Stores

Consumers who do multiple-store food shopping may have different perceptions of the stores they patronize in terms of prices, proximity from home, and quality of merchandise. These perceptions are important components of supermarket images formed in the minds of food shoppers. Perceptual similarity of the stores patronized may influence the food purchase clustering behavior of the consumers. Hypothesis VI is formulated to examine if a significant

relationship exists between perceptual similarity of stores patronized by consumers and the extent of food purchase clustering among these stores. Only the first and second choice food stores were considered in the analysis, however. It was hypothesized that food shoppers who perceive their first and second choice stores as similar in prices and proximity from home spread their purchases more equally between the two stores than other shoppers. Two stores were considered as similar in perceived prices if the homemaker gave them identical ranks on a semantic differential scale with respect to store prices. The stores were considered as similar in proximity from home if the estimated travel times to the two stores differ by less than five minutes.

To test the validity of the hypothesis the entropy measure of purchase clustering has been computed with respect to only the first and second choice stores for each customer who patronized more than one grocery store. A Mann-Whitney one-sided U test was applied to compare the extent of purchase clustering for the group of shoppers who hold similar price and proximity perceptions about the two stores with that of others. Table 4-18 presents the results of the test. The data indicate that the hypothesized relationship is statistically significant and that shoppers who perceive their two major food stores as similar in prices and proximity do in fact spread their purchases more equally between the two stores than do other shoppers.

TABLE 4-18
DEGREE OF PURCHASE CLUSTERING AND STORE PRICE AND PROXIMITY PERCEPTIONS

	Sample Size	Entropy Measure of Purchase Clustering With Respect to the Two Stores	Mann-Whitney U Test	Probability of Significance
Food shoppers who perceived their two major stores as similar in prices and proximity	63	HIGHER	4392.5	0.01
Others	174	LOWER		

Although the above analysis indicated a significant relationship between similarity of store price and proximity perceptions and the extent of food purchase clustering, similarity of store proximity perceptions alone was not significant in differentiating between high and low purchase clustering food shoppers. A one-sided Mann-Whitney U test was used to compare the extent of purchase clustering of food shoppers whose two major stores differ or are perceived to differ by less than five minutes in travel time from home with that of other shoppers. The data indicated no statistically significant difference between the two groups. Table 4-19 presents the results of the analysis.

On the other hand, comparative store price perceptions by themselves are significantly related to the extent of the shopper's food purchase clustering. A Mann-Whitney U test indicated that food shoppers who perceived their two major stores as similar in prices spread their food purchases more equally among the two stores than other shoppers. The results are presented in Table 4-20.

Additional analysis was performed to examine if comparative perceptions of the quality of meats in the two major grocery stores patronized by the shopper are significantly related to the pattern of relative clustering of food purchases between the two stores. Again, an one-sided Mann-Whitney U test was performed to compare statistically the entropy measure of purchase clustering for the shoppers who perceive the quality of meats in the two stores as similar

TABLE 4-19
DEGREE OF PURCHASE CLUSTERING AND STORE PROXIMITY PERCEPTIONS

	Sample Size	Entropy Measure of Purchase Clustering With Respect to the Two Stores	Mann-Whitney U Test	Probability of Significance
Food shoppers who perceived their two major stores as similar in proximity from home	177	HIGHER	5507.0	0.09
Others	70	LOWER		

TABLE 4-20
DEGREE OF PURCHASE CLUSTERING AND STORE PRICE PERCEPTIONS

	Sample Size	Entropy Measure of Purchase Clustering With Respect to the Two Stores	Mann-Whitney U Test	Probability Of Significance
Food shoppers who perceived their two major stores as similar in prices	91	HIGHER	6047.5	0.01
Others	163	LOWER		

with that of other shoppers. Table 4-21 presents the results of the analysis.

The data indicate that the hypothesized relationship is statistically significant and that shoppers who perceive their two major food stores as similar in quality of meats do in fact spread their purchases more equally between the two stores than other shoppers.

Summary

Among the nine selected socio-economic and demographic characteristics of shoppers, only two were found to be significantly related to the extent of their clustering of food purchases among stores. The two significant characteristics were: the stage in the family life cycle and multiple-automobile availability to the family. The analysis indicated that younger families (homemakers under 35 years of age) with no children tended to cluster their food purchases relatively to a greater extent than older families (homemakers over 35 years of age) with no children. It was also found that older families with preschool age children in the family spread their food purchases among several stores considerably to a greater extent than do younger families with preschool children. However, the data revealed that younger families with older children only tended to spread their food purchase among several stores to a greater extent than do their counter-part older families.

TABLE 4-21
DEGREE OF PURCHASE CLUSTERING AND PERCEPTIONS OF QUALITY OF MEATS

	Sample Size	Entropy Measure of Purchase Clustering With Respect to the Two Stores	Mann-Whitney U Test	Probability of Significance
Food shoppers who perceived their two major stores as similar in quality of meats	158	HIGHER	4641.5	0.04
Others	69	LOWER		

The analysis relating to automobile availability indicated that the tendency to spread food purchases was higher as the number of automobiles available to the family increased. Low clustering of food purchases was strikingly evident in the case of families who had three or more automobiles available to them.

Contrary to some findings in the past research, family income was not found to be significantly related to the extent of food purchase clustering and was certainly not the best indicator of purchase clustering among the socio-economic and demographic variables. Higher income families are as likely to do multiple-store food shopping as are lower income families. Larger families were not found to cluster their food buying any different from smaller families. Better educated homemakers do not necessarily cluster their food purchases more or less than lesser educated homemakers. The data revealed no differences between the purchase clustering patterns of full-time working housewives and those of non-working or part-time employed housewives. The food purchase clustering patterns of younger homemakers were found to be similar to those of older homemakers. Finally, the occupational status of the household heads was not found to be significantly related to the food purchase clustering patterns of shoppers.

The predictive efficacy of the socio-economic and demographic characteristics as a group was rather poor. Only about 5 percent of the variance in the degree of

purchase clustering was explained by these variables. The analysis indicated that socio-economic and demographic variables as a group were not significantly related to the extent of food purchase clustering.

The selected purchasing characteristics of food shoppers performed comparatively better than socio-economic and demographic variables in explaining variations in the patterns of food purchase clustering. Nearly 10 percent of the variance in the entropy measure of purchase clustering was explained by the four selected purchasing characteristics. All of the four purchasing characteristics were found to be significantly related to the extent of food purchase clustering on the part of the shoppers.

The analysis relating to the purchasing characteristics indicated that families with higher food budgets generally tend to spread their food purchases to a greater extent than others. It was also found that the extent of clustering of food purchases tended to decrease with higher weekly frequency of grocery shopping by the homemakers. The data indicated that the extent of food purchase clustering was significantly related to the shopper's extent of multi-purpose food shopping. The results did not reveal that the extent of food purchase clustering steadily decreased as the extent of multi-purpose food shopping increased. However, it was found that relative to the shoppers who never or almost never did multi-purpose food shopping, other shoppers who did multi-purpose shopping to varying extents spread

their food purchases to a greater degree. In general, however, shoppers appeared to consider food shopping as an isolated activity usually not combined with general merchandise shopping. About 72.2 percent of the respondent families indicated that they never or almost never do multi-purpose food shopping. Another finding was that shoppers who spread their food purchases to a greater extent tend to spend more time per week shopping for food inside grocery stores. It is interesting to note in this context that there were only modest amounts of correlation between shopping frequency, level of grocery expenditures and in-store grocery shopping time.

Although some research studies have recently emphasized the importance of the influence of role perceptions of housewives on their food purchase decision process, the present study revealed that role-related self-perceptions are very poor indicators of the extent of food purchase clustering patterns. Only about 3.5 percent of the variance in the entropy measure was explained by this group of variables. The values that the housewife places on different role-related activities in terms of time and importance do not seem to be reflected in her food purchase clustering patterns.

Shoppers' comparative perceptions of the grocery stores patronized by them seem to be influential with regard to the relative clustering of their food purchases among

these stores. The analysis revealed that among the multiple-store shoppers those who perceived their first and second choice food stores as similar in prices and proximity from home tended to spread their purchases significantly more equally between the two stores than other shoppers. Additional analysis indicated that the shoppers' comparative perceptions of the quality of meats in their two major stores were also significantly related to the extent of clustering of their food purchases among the two stores. The shoppers who perceived their two major grocery stores as similar with respect to the quality of meats tended to spread their purchases more equally between the two stores than other shoppers.

CHAPTER V

SUMMARY AND CONCLUSIONS

Chapter V contains four sections. The first section is a general summary of the research study. The second section is concerned with an evaluation of the research hypotheses in the light of the findings presented in Chapter IV and presents the major conclusions of the study. The third section of the chapter details the implications of the research for supermarket management as well as for consumer behavior research. The final section identifies some potential areas suggested by the research for further investigation.

General Summary of the Research Study

In an environment of increasing competitive pressures and rising costs food retailers have witnessed with concern a trend in recent years toward a greater incidence of multiple-store food shopping among consumers. Multiple-store food shopping, taking into consideration the number of stores patronized as well as the dollar expenditures spread among these stores is referred to in the study as the 'purchase clustering behavior' of food shoppers and is the primary focus of the research.

The purpose of the research study was to investigate if shoppers with different degrees of food purchase clustering could be identified in terms of selected shopper characteristics. The characteristics examined were: (1) socio-economic and demographic variables, (2) other food purchasing characteristics of the shoppers, and (3) role-related self-perceptions of homemakers.

The present research study was directed toward such questions as:

1. Do families exhibit significant differences in their food purchase clustering patterns?
2. Is family income the variable among the socio-economic and demographic characteristics of shoppers most closely related to food purchase clustering patterns? Which of the other socio-economic and demographic variables are significantly related to the degree of food purchase clustering of families?
3. Are socio-economic and demographic variables, considered as a group, significant in explaining differences in the food purchase clustering patterns of families?
4. Which variables among the selected food purchasing characteristics of shoppers have significant association with the degree of food purchase clustering? Are the selected purchasing characteristics considered as a group significantly related to the food purchase clustering patterns of families?

5. Do differential self-perceptions of homemakers with respect to selected role-related activities explain significantly differences in their food purchase clustering patterns?
6. Is there a significant relationship between shoppers' perceptions of similarity of prices and proximity with respect to the food stores patronized by them and the patterns of clustering of their purchases among these stores?

Several research hypotheses were formulated to answer the above questions and then tested using data gathered from a sample of families in an urban area.

The research was conducted in the city of Lansing, Michigan. A multi-stage random sampling procedure was employed to select the subjects for the study. Census tracts in the city were grouped into five strata based on median tract incomes. City blocks in each stratum were enumerated and a prespecified number of blocks were randomly selected from each. In the second stage of sampling, systematic random samples of households were chosen from each city block. The total number of sample households selected were 1,000. Data were collected through self-administered questionnaires mailed to the homemakers of the sample families. Findings reported in the study were based on a total of 335 usable questionnaires returned by the sample families.

The research hypotheses were tested using appropriate statistical tests. A .05 level of confidence was chosen as the critical level of significance.

Evaluation of the Research Hypotheses and Presentation of the Major Conclusions

The following paragraphs review the research hypotheses around which the study was organized and integrate the research findings to derive the major conclusions of the study. The contents are organized according to the major groups of variables which were hypothesized to be significantly related to the purchase clustering patterns of food shoppers.

Socio-Economic and Demographic Characteristics

It would certainly be of great value if it were possible to identify the socio-economic and demographic characteristics of store-loyal as opposed to non-loyal food shoppers. Identifiability of these customer segments would allow a strategy of market segmentation based on store loyalty.

Family income was investigated as a potential differentiating variable with regard to food purchase clustering. However, it was found that families in different income strata did not differ significantly in terms of the extent of food purchase clustering. It was observed, though, that in the lower income ranges (below \$6,000 per annum) a

majority of the shoppers were in the higher store-loyal group whereas in the higher income ranges (over \$15,000 per annum) the majority were in the lesser store-loyal group. A step-wise regression analysis indicated that family income is definitely not the best indicator of the extent of food purchase clustering among the socio-economic and demographic variables. Blankertz's finding that higher income department store shoppers are characterized by higher 'dispersion of trade' does not appear to hold true in the case of food shoppers. This observation should serve as a caution against generalizing findings in the general merchandise shopping area to the food shopping area without empirical verification.

The extent of food purchase clustering among stores was expected to depend on the time available to the homemaker for shopping and thus would presumably be significantly related to the employment status of the homemaker, family size, number of preschool children in the family and the number of automobiles available to the family all of which may affect the time available to the homemaker for shopping. However, with the exception of the number of automobiles available to the family, none of these variables was found to be significantly related to the food purchase clustering patterns of the families.

In general, larger families (5 or more members) were observed to spread their food purchases to a greater extent than smaller families. Although the multiple-automobile

availability was found to be significantly related to food purchase clustering of families, its usefulness was somewhat limited because of two factors. Firstly, there were only two families among the respondents who did not have a car. Secondly, a pattern of very low store loyalty was observed only in the case of families with three or more automobiles, while the patterns of food purchase clustering among the groups with one or two automobiles were close to what may be expected under chance. This finding, however, may assume more significance in the future as the number of families in the nation having two or more automobiles increases.

The analysis also indicated that the extent of food purchase clustering was not significantly related to the occupational status of the household head, educational level or age of the homemaker. No essential differences were noticed in the purchase clustering patterns of blue-collar as opposed to white-collar workers.

Although the age of the homemaker was not significantly related to the extent of purchase clustering, it was observed that, in general, younger homemakers (less than 30) were over represented in the higher store-loyal group whereas older homemakers (above 45) were over represented in the lesser store-loyal group.

An important finding was that the patterns of food purchase clustering were found to be significantly related to the stage in the family life cycle of the shopper.

Families in the earlier stages of the life cycle, those with the homemaker under thirty-five years of age and either with no children or with one or more preschool children, clustered their food purchases relatively to a greater extent than families in the other stages. The result is particularly significant since store loyal and non-loyal shoppers were not found to be differentiable in terms of either age of the homemaker or the number of preschool children when these variables were considered separately.

The predictive efficacy of socio-economic and demographic variables in explaining differences in food purchase clustering patterns of shoppers was extremely low. Only 5 percent of the total variance in the entropy measure of purchase clustering was explained by these characteristics.

Other Food Purchasing Characteristics

All of the four selected food purchasing characteristics of the shoppers were found to be significantly related to the extent of their food purchase clustering. Families with higher food budgets generally tended to spread their food purchases to a greater extent than others. The extent of food purchase clustering was also significantly related to the weekly food shopping frequency of the families. Among families who shopped for food less than once a week about 44 percent were in the most store-loyal group while among those who shopped four or more times a week about 43 percent were in the least store-loyal group.

The extent of clustering of food purchases was found to be significantly and inversely related to the amount of time per week spent inside grocery stores by food shoppers. Although the level of food expenditures and the frequency of food shopping were positively correlated with the amount of in-store grocery shopping time, the coefficients were rather small (0.30 and 0.22, respectively).

Another important finding was that the extent of multi-purpose food shopping was significantly related to the extent of food purchase clustering. The extent of clustering of food purchases did not, however, decrease steadily as the extent of combining food and general merchandise shopping on the part of the homemakers increased. The analysis did indicate, however, that compared to shoppers who never or almost never did multi-purpose food shopping, other shopper groups (with higher degrees of multi-purpose food shopping) spread their food purchases among several stores to a greater extent.

The selected food purchasing characteristics performed comparatively better than the socio-economic and demographic variables in explaining variations in the food purchase clustering patterns of shoppers. About 10 percent of the total variance in the entropy measure was explained by the four selected food purchasing characteristics.

Role-Related Self-Perceptions of Homemakers

The marketing literature has emphasized the role of the housewife as the household purchasing agent and thus has pointed to the possible influence of role-acting on the housewife's purchase behavior. As was reported in Chapter II, some recent studies underscored the importance of role perceptions in food buying decisions. However, the research indicated that differences in housewives' perceptions of the time and importance they devote to the selected role-related activities were not reflected in their patterns of food purchase clustering. The amount of the variance in the entropy measure of purchase clustering explained by role-related self-perceptions was less than 4 percent. Although, the use of a more sophisticated inventory and measurement of role perceptions may be thought to have yielded a different answer, the writer is skeptical of obtaining significantly different results. Separate tests for possible significant relationships between the degree of purchase clustering and perceptions with respect to each of the role-related activities indicated that none of them was statistically significant.

Store Perceptions

The data supported the hypothesis that food shoppers who perceive their two major stores as similar in prices and proximity from home spread their purchases more equally between the two stores than do other shoppers. However, it

was found that proximity-similarity alone did not provide a significant clue as to the pattern of purchase clustering with respect to the two stores, although consumers' perceptions of price-similarity were found to be significantly related to the purchase clustering patterns relative to the two stores. Additional analysis indicated that the shoppers who perceived their two major food stores as similar in the quality of meats spread their purchases more equally between the two stores than did others.

Consumer perceptions of store prices, proximity and the quality of meats are only three of the components of a supermarket's image formed in consumers' minds. The above findings suggest the possible influence of the perceptual similarity of the food stores patronized by shoppers on their patterns of purchase clustering among these stores.

Implications of the Research Findings

Implications of the Research for Supermarket Management

In an environment of increasing competitive pressures and rising costs, the trend in the recent years toward a greater incidence of multiple-store food shopping among consumers has been a matter of concern to supermarket managements. Such a trend means added costs for food retailers and lower marketing efficiency for the food industry in general, since the marketing costs which have to be incurred by a store operator in his efforts to retain the patronage of a body of customers of relatively volatile loyalties may be

expected to be generally higher than those needed to retain the patronage of customers who are relatively more loyal to his store.

Store environment is a major influence conditioning consumer brand choice behavior. The food manufacturer, thus, also has a stake in learning more about consumer store loyalty patterns. Moreover, a customer completely loyal to a food store may be expected to be more likely to buy its private label merchandise than those who spread food purchases among several different stores. It is to the advantage of supermarket managements to strive toward achieving a more favorable 'customer loyalty mix' for their stores. They will be greatly aided in their efforts if they have a knowledge of the characteristics of food shoppers of varying degrees of purchase clustering.

Customer Loyalty Mix

One of the major implications of the research is that store loyalty may not be inherent to any specific socio-economic and demographic customer-types. Comparatively, the research yielded a clearer profile of store-loyal shoppers in terms of their other food purchasing characteristics than in terms of their socio-economic and demographic characteristics. The modest amounts of the variance in the degree of purchase clustering explained by each of these groups of variables seem to indicate the existence of other important factors that significantly influence food store patronage behavior which are as yet not manifest. However, it may be

of great value to the supermarket managements to take note of some variables which the present research found to be significantly related to the extent of purchase clustering of food shoppers. The analysis indicated that:

1. Families in the earlier stages of their life cycle, those with homemakers under thirty-five years and either with no children or with one or more pre-school children, clustered their food purchases to a relatively greater extent than families in the other stages of the life cycle.
2. Families who clustered their food purchases among stores to a greater extent were found to have generally lower food budgets than others.
3. Families who did food shopping less frequently were found to have clustered their food purchases among stores to a greater extent than others.
4. Families who clustered their food purchases among stores to a greater extent appeared to spend less time per week inside grocery stores for food shopping than others. Cross tabulations of the data indicated that these families also spend comparatively less time per visit in grocery shopping than others.

The fact that family units in the earlier stages of their life cycle tend to be relatively more store loyal suggests that it would be to the advantage of supermarket

managements to adjust their merchandising and promotional efforts to particularly appeal to this customer segment.

Supermarkets, through special marketing efforts which closely match the wants and needs of shopper families who are in the earlier stages of their life cycle, should continually strive to (1) retain the patronage of the families in this group who are already among their customers, (2) attract the patronage of family units in this group who are presently patronizing competing stores in their trading area, and (3) gain the acceptance of new family units entering the market place shopping for food for the first time on behalf of a family. So long as the management does not alienate shopper families in the other stages of the family life cycle to a significant extent, these efforts would enable a supermarket to achieve a more favorable customer loyalty mix.

Ascertainment of the needs and motivations of high purchase-clustering food shoppers is beyond the scope of the present research. However, the fact that the shoppers who clustered their food purchases to a greater extent tended to shop less frequently and spend less amount of in-store grocery shopping time per week than others seems to indicate their probable convenience-orientation in food shopping. In a recent food shopping study¹ it was found that, in general,

¹David L. Appel, "An Analysis of Consumer Market Segmentation in Response to an Institutional Innovation in the Food Industry" (unpublished Ph.D. dissertation, Michigan State University, 1968).

younger family units tend to value the convenience and economic aspects of food shopping rather than such promotional aspects as trading stamps, games and contests. Supermarket managements may also obtain useful clues as to the specific wants and needs of the shopper families in the earlier stages of life cycle in their trading area through direct interviewing in person or by telephone.

Supermarket Location Decisions

The findings pertaining to the consumers' extent of multi-purpose food shopping has important ramifications for the store location decisions of supermarket chains and shopping center developers.

It was reported that over the past five years, on the average, about 1,700 new stores have been constructed per year by supermarket chains.¹ A significant number of these new stores are constructed in shopping centers. About 40 percent of the new supermarkets built by chains in 1967 were located in shopping centers,² although the figure appears to have declined somewhat in the last two years. It is valuable to examine to what extent empirical patterns of consumer food shopping support the assumptions which seem

¹"Capital Investment Management Trends," Chain Store Age (January, 1969), p. E26; "CSA Construction Survey," Chain Store Age (January, 1968), p. E28.

²"CSA Construction Survey," Chain Store Age (January, 1968), p. E28.

to underlie decisions to locate food stores in shopping centers. One of the assumptions is that consumers attempt to minimize their shopping efforts through concentrating their food and general merchandise shopping activities in one location. It is believed that by providing such additional convenience, shopping centers help to foster consumer loyalty to the supermarket(s) located in them. The research findings suggest that these assumptions are not empirically well founded. A large percentage of the respondent families (about 72.2 percent) indicated that they combine their food and general merchandise shopping activities almost never or only a few times on their major shopping trips. Thus, food shopping appears to be treated by consumers as a single-purpose activity and the assumption that the general merchandise stores in the shopping centers help to build traffic to the supermarket(s) in the center does not seem to be supported by the data. The research also found that compared to shoppers who never or almost never do multi-purpose food shopping, other shoppers (who do multi-purpose food shopping to a greater degree) spread their purchases to a relatively greater extent. Therefore, it appears that patrons to shopping center-based supermarkets (since they are assumed to be characterized by a greater extent of multi-purpose food shopping) are less likely to display loyalty to any single food store than do others who treat food shopping as a single-purpose activity.

The research indicates the need for more careful evaluations of decisions to locate supermarkets in shopping centers. Often, supermarket chains proceed on the assumption that the convenience to consumers of being able to concentrate food and nonfood shopping in the same location automatically builds traffic and foster consumer loyalty to shopping center-based supermarkets. The research analysis indicates that this is not necessarily true. The research findings suggest that a supermarket if it is to be located in a shopping center must be first justifiable as a good food location in relation to the consumer population in the relevant trading area who treat food shopping as a single-purpose activity.

Store Images and Store Loyalty

It is often alleged that supermarkets are becoming standardized in store lay-out, merchandise assortments, store promotions and other features. The result, it is argued, is that the stores fail to elicit strong loyalty from food shoppers. The present research underscores the importance of supermarkets' efforts to build distinctive store images in the minds of consumers. The analysis indicated that the shoppers who perceived their two major food stores as essentially similar in prices and in quality of meats spread their food purchases more equally among the two stores than did others. Supermarket managements should direct their marketing efforts toward building store images

that are distinctive in relation to their competitors in the trading area. The appropriate choice of the distinctive features themselves should be made after careful study of the characteristics of the consumer population in the store trading area.

Implications of the Research for Consumer Behavior Research

Considerable interest has centered around the question of the feasibility of employing store loyalty as a basis for market segmentation strategies. Some research studies in the past have been directed toward this question, but most of them, unlike the present study, were concerned with product-specific rather than store loyalty defined in relation to consumers' aggregate food purchases.

The research found that store loyal and nonloyal shoppers lacked identifiability in terms of socio-economic and demographic characteristics and role-perception characteristics. Although the family life cycle variable and the multiple-automobile availability factor were significantly related to the measure of store loyalty, the amount of variance in the loyalty measure which was explained by the socio-economic and demographic variables was only 5 percent. The figure is less than 4 percent in the case of role-perception characteristics. The research, on the other hand, indicated that shoppers of varying degrees of store loyalty were statistically differentiable in terms of selected food purchasing characteristics of the shoppers.

The amount of variance in the loyalty measure explained by the purchasing characteristics was about 10 percent.

The generally low predictive efficacies of the major groups of variables included in the study seem to indicate the need for more search for factors which are influential in determining store loyalty patterns of food shoppers. The research seems to support a growing realization among researchers that investigations of determinants of purchase behavior should consider characteristics that are idiosyncratic to both the customer and the product (or the purchase situation) and not to the customer alone as in the case of socio-economic variables or role-perception characteristics.

Suggested Areas for Further Research

The present research focused on identifying the characteristics of shoppers with varying degrees of food purchase clustering and examining the relationship between consumers' comparative store-perceptions and the patterns of clustering of food purchases among the patronized stores. The limitations of the study and the insights provided by the findings into the store loyalty patterns of food shoppers suggest some important avenues for further research.

Firstly, the present study employed a time-averaged measure of store loyalty behavior and hence was essentially static in nature. Valuable insights into the dynamic aspects of store loyalty phenomena can be gained only through future research studies which examine the food

purchase clustering patterns of consumers over a period of time using longitudinal research designs. Such studies, however, involve considerable amounts of time and cost for individual researchers. At the present time, established consumer panels like the ones maintained by the Chicago Tribune and the MRCA provide records of consumer food purchases only by product class. It would be of great value in studying the dynamic nature of store loyalty phenomena if aggregate consumer purchase information by store can be made available for the panel members on a continuing basis.

Secondly, an important group of variables which were not included in the research are marketing variables related to food stores. A future research study incorporating the marketing variables of the stores and employing a longitudinal design would provide valuable information about the dynamic relationships between the marketing variables and customer store loyalty behavior.

Thirdly, future research designed to examine the relevance of store loyalty for market segmentation policies should attempt to develop research variables which are specific to food buying as well as the customer. Measures of convenience, quality and price orientations of consumers with respect to food buying may be examined for this purpose.

Store environment is an important variable which influences consumers' brand loyalty behavior. A fourth potential research area is to investigate the ways in which

consumers' store patronage behavior may influence their brand preferences for different product classes.

APPENDICES

APPENDIX A

COVER LETTER AND RESEARCH QUESTIONNAIRE

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION

DEPARTMENT OF MARKETING AND TRANSPORTATION ADMINISTRATION • EPPLEY CENTER

November 12, 1969

Dear Mrs.

So much money and time is invested by homemakers in buying food that some of us, at Michigan State University, felt that there exists an important need for a study of food shopping patterns of families in this community. You and your family have been chosen by means of scientific sampling to make a significant contribution to our project.

Considerable effort has gone into the planning of this study and will become fruitful only through your cooperation and help. We feel that this study could be of great value to students as well as to the community.

Our experience with pretesting this questionnaire with a small sample of homemakers tells us that completing the questionnaire may take only about 20 minutes of your time. The return postage is guaranteed. We request you to kindly return the completed questionnaire at your earliest convenience, before the coming holiday season starts pressing for your time.

If you have any questions about completing the questionnaire, we will be glad to answer them. (Call 351-1165 in the mornings or evenings.) Again, the success of this study completely depends on your help.

Sincerely,

Kanti Prasad
Doctoral Candidate
Department of Marketing

MICHIGAN STATE UNIVERSITY

FOOD SHOPPING STUDY

We are interested in learning about the food shopping patterns of home-makers in this community. We hope you will share with us some information about your family's food buying habits and also some general information about you and your household.

There is no way of identifying individuals from returned questionnaires, so strict anonymity is maintained. This questionnaire is meant to be completed by the homemaker of the family.

1. How often do you usually shop for groceries? Check one below

Less than once a week ☐

Three times a week ☐

Once a week ☐

Four times a week ☐

Twice a week ☐

Five or more times
a week ☐

2. About how much TIME PER WEEK do you usually spend inside grocery stores shopping for food?

_____ Hours and _____ minutes

3. About how much money do you usually spend PER MONTH for buying food?

\$ _____

4. Some families shop for food as well as non-food items (like clothing, shoes, appliances, etc.) on their major shopping trips of the week. Please indicate how often you shop for both food and non-food items on your major shopping trips. Check one below.

☐
☐
☐
☐
☐

Almost
never

A few
times

Frequently

Very
frequently

Almost
always

5. During the PAST ONE MONTH you may have shopped at different grocery stores for your family's food needs. Based on your food shopping experience in the PAST ONE MONTH, please provide the following information. (If a major part of your food shopping has been done in less than 4 food stores, provide the information only for as many.)

- | | STORE 1 | STORE 2 | STORE 3 | STORE 4 |
|--|----------|----------|----------|----------|
| a. Please list the names of the food stores where you did your major shopping IN THE PAST ONE MONTH (for example, A & P, Schmidt, etc.) | _____ | _____ | _____ | _____ |
| b. Please write the name of the street (or shopping center) where each of the stores is located | _____ | _____ | _____ | _____ |
| c. Please write the amounts of money you spend in each of these stores IN THE PAST ONE MONTH (These figures can only be rough, but please try to estimate them as best as you can.) | \$ _____ | \$ _____ | \$ _____ | \$ _____ |
| d. About how long does it take to travel from your home to each of these stores? | _____ | _____ | _____ | _____ |
| | Minutes | Minutes | Minutes | Minutes |
6. We would like to know your opinions about the overall prices and the quality of meats in each of the food stores you listed in Question No. 5. (Check the appropriate box for each store at which you did your major food shopping **IN THE PAST ONE MONTH**.)

- | | Low | Slightly Low | Neither Low nor High | Slightly High | High |
|--------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| IN YOUR OPINION, | | | | | |
| a. The overall prices of STORE 1 are | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. The overall prices of STORE 2 are | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. The overall prices of STORE 3 are | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. The overall prices of STORE 4 are | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

	Poor	Slightly Poor	Average	Slightly above average	Good
--	------	------------------	---------	------------------------------	------

IN YOUR OPINION,

- | | | | | | | |
|----|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| e. | The quality of meats in STORE 1 is | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. | The quality of meats in STORE 2 is | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. | The quality of meats in STORE 3 is | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. | The quality of meats in STORE 4 is | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

7. Below are some activities likely to be engaged in by homemakers. Please indicate your judgement of the time and importance that each of these activities receives from you. (Each box as you move to the right denotes a higher level of time and importance that an activity receives from you. Please check one box for each activity.)

LOW TIME
AND IMPORTANCE

CONSIDERABLE
TIME AND
IMPORTANCE

- | | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. | Decorating and cleaning the home | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | Budgeting family finances | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | Rearing and disciplining children | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | Keeping up personal appearance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. | Planning, shopping and preparing meals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. | Entertaining friends and associates | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. | Participating in women's community activities outside the home | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. | Planning and arranging recreational activities for the family | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8. How many persons are there in your home? (Include yourself, husband and children.) _____ persons
- How many are pre-school age children? _____
9. Are you (the homemaker) employed? Yes ☐ No ☐
- If YES, do you work part time? ☐ or full time? ☐
10. Please indicate to which of the following age group you (the homemaker) belong.
- | | | | |
|-------------------------------|--------------------------|-------------------------------|--------------------------|
| Less than 25 years | <input type="checkbox"/> | More than 40 but less than 45 | <input type="checkbox"/> |
| More than 25 but less than 30 | <input type="checkbox"/> | More than 45 but less than 50 | <input type="checkbox"/> |
| More than 30 but less than 35 | <input type="checkbox"/> | More than 50 but less than 60 | <input type="checkbox"/> |
| More than 35 but less than 40 | <input type="checkbox"/> | 60 years or more | <input type="checkbox"/> |
11. We would like to get a rough idea of the TOTAL income of your family last year. Please check the appropriate box below.
- | | | | |
|-------------------|--------------------------|---------------------|--------------------------|
| Under \$3,000 | <input type="checkbox"/> | \$8,000 - \$8,999 | <input type="checkbox"/> |
| \$3,000 - \$4,999 | <input type="checkbox"/> | \$9,000 - \$10,999 | <input type="checkbox"/> |
| \$5,000 - \$5,999 | <input type="checkbox"/> | \$11,000 - \$12,999 | <input type="checkbox"/> |
| \$6,000 - \$6,999 | <input type="checkbox"/> | \$13,000 - \$14,999 | <input type="checkbox"/> |
| \$7,000 - \$7,999 | <input type="checkbox"/> | \$15,000 and over | <input type="checkbox"/> |
12. Please indicate the last year of school which you (the homemaker) completed.
- | | | | |
|----------------------------|--------------------------|---------------------------------|--------------------------|
| Grade school or less | <input type="checkbox"/> | Some college or business school | <input type="checkbox"/> |
| Some high school | <input type="checkbox"/> | Graduated from college | <input type="checkbox"/> |
| Graduated from high school | <input type="checkbox"/> | Graduate or advanced degree | <input type="checkbox"/> |
13. What is your husband's occupation? _____
14. How many cars are there in your household? _____

THANK YOU FOR YOUR TIME AND CONSIDERATION. WE APPRECIATE VERY MUCH
YOUR IMPORTANT CONTRIBUTION TO OUR STUDY.

APPENDIX B

SOCIO-ECONOMIC AND DEMOGRAPHIC COMPOSITION OF THE SAMPLE FAMILIES

SOCIO-ECONOMIC AND DEMOGRAPHIC COMPOSITION
OF THE SAMPLE FAMILIES

	<u>Number of Family Units</u>	<u>Percent of the Sample</u>
<u>FAMILY SIZE:</u>		
2	107	31.9
3	57	17.0
4	84	25.0
5	41	12.2
6	23	6.9
7 or more	23	6.9
Total	335	100.0
<u>AGE OF THE HOMEMAKER:</u>		
Less than 25	51	15.2
25 to 30	37	11.0
30 to 35	35	10.5
35 to 40	31	9.3
40 to 45	36	10.8
45 to 50	38	11.3
50 to 60	59	17.6
60 and above	48	14.3
Total	335	100.0
<u>EMPLOYMENT STATUS OF THE HOMEMAKER:</u>		
Not employed	188	56.1
Part-time employed	55	16.4
Full-time employed	92	27.5
Total	335	100.0
<u>NUMBER OF PRESCHOOL CHILDREN:</u>		
None	235	70.1
1	48	14.3
2	45	13.4
Total	335	100.0
<u>NUMBER OF AUTOMOBILES AVAILABLE:</u>		
None	2	0.6
1	171	51.0
2	144	43.0
3 or more	18	5.4
Total	335	100.0

	<u>Number of Family Units</u>	<u>Percent of the Sample</u>
<u>FAMILY INCOME:</u>		
Under \$3,000	6	1.8
\$3,000 to \$4,999	8	2.4
\$5,000 to \$5,999	20	6.0
\$6,000 to \$6,999	13	3.9
\$7,000 to \$7,999	30	9.0
\$8,000 to \$8,999	35	10.5
\$9,000 to \$10,999	57	17.0
\$11,000 to \$12,999	64	19.0
\$13,000 to \$14,999	38	11.3
\$15,000 and above	<u>64</u>	<u>19.1</u>
Total	335	100.0
<u>EDUCATIONAL LEVEL OF THE HOMEMAKER:</u>		
Grade school or less	12	3.6
Some high school	39	11.6
Graduated from high school	127	37.9
Some college or business school	102	30.4
Graduated from college	44	13.1
Graduate or advanced degree	<u>11</u>	<u>3.3</u>
Total	335	100.0
<u>OCCUPATIONAL STATUS OF THE HOUSEHOLD HEAD:</u>		
Professional	105	31.3
Semi-Professional	59	17.6
Clerks and kindred workers	7	2.1
Proprietors of small business	17	5.1
Skilled workers	74	22.1
Semi-Skilled workers	16	4.8
Unskilled workers	16	4.8
Retired, unemployed and students	<u>39</u>	<u>11.6</u>
Total	335	100.0

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