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A STUDY OF THE KNOWLEDGE GAINED THROUGH THE PROCESS OF
HOME PURCHASING BY A SELECT GROUP OF POSTPURCHASE HOME-
BUYING CONSUMERS

The University of Oklahoma

PH.D.

1980

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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A STUDY OF THE KNOWLEDGE GAINED THROUGH THE PROCESS
OF HOME PURCHASING BY A SELECT GROUP OF
POSTPURCHASE HOME-BUYING CONSUMERS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

VONCILLE A. WINTER

Norman, Oklahoma

1980

A STUDY OF THE KNOWLEDGE GAINED THROUGH THE PROCESS
OF HOME PURCHASING BY A SELECT GROUP OF
POSTPURCHASE HOME-BUYING CONSUMERS

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CHAPTER I

THE PROBLEM

Introduction

Consumerism has been big news for the past two decades, with an increased interest in consumer education during this time. "The current consumer movement dates from a statement on March 15, 1962, by the late President Kennedy when he declared that every consumer has four basic rights--the right to be informed, the right to safety, the right to choose, and the right to be heard."¹

President Johnson reiterated the four consumer rights proclaimed by President Kennedy in a message to Congress on February 5, 1964.² In March, 1966, President Johnson asked Congress for effective laws on lending charges and packaging practices. Legislation on these matters was passed by Congress in 1967 and 1968.³

President Nixon's message to Congress on October, 1969, included a concern for consumerism.⁴ Later in 1969, an international declaration

¹Arch W. Troelstrup, The Consumer in American Society (5th ed.; New York: McGraw-Hill Book Company, 1974), p. 624.

²Ibid., p. 23.

³Ibid., p. 24.

⁴Ibid.

of consumers' rights was adopted by the Congress of the International Co-operative Alliance in London. The declaration affirmed that consumers have a right to:

1. A reasonable standard of nutrition, clothing, and housing.
2. Adequate standards of safety and a healthy environment free from pollution.
3. Access to relevant information on goods and services and to education on consumer topics.
4. Influence in economic life and democratic participation in its control.¹

The renewed interest in the consumer and the desire to educate him did not result in sufficient federal funding for the purpose of consumer education. Roberts discussed this problem in his book on Vocational and Practical Arts Education, with the following statements:

The emphasis on home and family living includes consumer education and has been referred to during most of the past half-century as homemaking education. Federal aid for the home economics program for home and family living began with the passage of the Smith-Hughes Vocational Education Act in 1917.

The vocational education acts of 1963 and 1968 reduced much of the federal aid for home and family living but authorized funds for gainful occupations, which included those in which knowledge and skills in home economics were involved. . . . The importance and popularity of the program ensure that funds from some source will be provided for years to come for consumer and homemaking education.²

Even with the shortage of funding, home economics educators continued to recognize the importance of housing in the curriculum. Roberts also reported:

. . . a report of a series of workshops for home economics educators conducted in 1962, 1963, and 1964 suggested that the curriculum in home economics education be structured on basic concepts and generalizations in five areas. These five areas are (1) human development and the family, (2) home management and family economics, (3) food and nutrition, (4) textiles and clothing, and (5) housing. . . .

¹Ibid.

²Roy W. Roberts, Vocational and Practical Arts Education (3rd ed.; New York: Harper & Row, 1971), p. 240.

It is expected that this curriculum resource material may be adapted to local conditions and community needs by the teachers of vocational home economics education throughout the nation.¹

Recognizing the uniqueness of each family, housing education in the home economics department tends to be guided by standards. Roberts said:

The American homemaker encounters many problems in planning new homes and in adapting old ones to family use. Some of the problems are due to the fact that many of the occupied dwellings were not planned for the families residing therein. . . . Standards have been established to assist the homemaker in planning for proper heating, ventilation, illumination, and sanitation for the protection of the health of the family. . . . Standards for determining the needed capacity of refrigerators, sizes of stoves, and heights of sinks are available. Standards are also available for the selection, purchase, and location of washing machines, dryers, ironers, and other appliances. The proper use of these standards will bring an added measure of health and happiness to American homes.²

Consumer education moved into the realm of higher education in the late '60s and the early '70s. Troelstrup reported on this with the following statement:

The higher education law which the President reluctantly signed in late June, 1972, includes a section on consumer education. Major provisions include:

1. Setting up a director of consumer education.
2. Giving the director authority over a grant program to improve consumer education not only in the schools but also in the communities.
3. Funding the office in fiscal 1973 with \$20 million, in 1974 with \$25 million, and in 1975 with \$35 million.

Recognizing that there are neither sufficient funds nor trained personnel to teach consumers, Congress concentrated its assistance on developing curricula and training teachers. The purpose of the law, Congress said, is:

To encourage and support the development of new, improved curricula.
To demonstrate the use of such curricula in model education programs.

¹Ibid., p. 248.

²Ibid., pp. 243-44.

To evaluate the effectiveness of these model programs.
 To provide support for initiating and maintaining consumer education programs at all educational levels.
 To disseminate educational materials and other information for use by citizens throughout the nation.
 To provide training programs for teachers and other educational personnel, public service personnel, community and labor leaders and employees, and government employees.
 To provide for community consumer education programs.
 To provide for preparation and distribution of consumer materials by the mass media.¹

As consumer education moved into higher education, "consumerism" became popular in departments other than home economics. Miller discussed this trend in the following statement:

The 1970s have been called the "age of the consumer." If we were to use as evidence the growth in interest in consumer economics courses, we would certainly have to agree; consumer economics is now being offered not only in home economics departments, but in departments of economics and in business schools as well. More and more students want to find out how they can be rational consumers. . . .²

The assumption that consumers want to be "rational" is not necessarily correct, according to Troelstrup. Troelstrup said:

Economists assume that consumers are rational. Psychologists and sociologists, however, insist that we are social men rather than economic men. Our motivations include a desire for status, for conformity, for prestige, and for power, to mention only a few.³

The lack of "consumer rationalism" is evident in home purchasing, for instance. In purchasing a home, much more is involved than simply providing shelter for the family. The amenities involved have a major impact upon the health and happiness of the entire family. Miller addresses this issue in stating:

¹Troelstrup, The Consumer, pp. 588-89.

²Roger Leroy Miller, Economic Issues for Consumers (New York: West Publishing Company, 1975), p. xxi.

³Troelstrup, The Consumer, p. 17.

After all, why do we buy houses or mobile homes, or buy or rent apartments? We buy or rent them for the services they yield, just as we do clothes or cars or anything else that lasts. When we buy a house, we expect to reap an implicit rate of return in the form of housing services over a number of years; thus, it is important not to get confused between the existing stock of housing and the flow of services from that stock.

What we are buying is not the house itself, but how much pleasure we get out of living in it month in and month out. And that pleasure is a function of its size, the convenience it has, how pretty the view is, what the neighborhood is like, and everything else that can contribute to our happiness when we are home. Generally, the reason there is "no place like home" is because all of us try to make our homes as special as possible so that we get the greatest amount of utility or services from them. . . .¹

Housing, however, has received only a small portion of the overall attention given to consumerism. Although the purchase of a home is usually the largest single purchase made by the majority of American consumers, little is known about how the decision to purchase is actually made. In The Home Buyer's Guide, Nancy R. Hess discussed this dilemma:

For most people, the decision to buy or build a home represents a commitment to a way of life. It is also the largest single purchase most people ever make.

There is a dearth of basic information on the overall subject of home ownership. On rare occasions, one finds an article in a magazine on a fundamental aspect of home ownership. But most magazines tend to stress interior decoration, entertaining, food, and usually one or two houses that are notable in their layout and interior design. Thus, first-time homeowners are dependent upon advice from friends and relatives and second-time homeowners have only the benefit of their limited past experience. Although they try to avoid making the same mistakes, they may very easily make new ones.²

Maximizing the welfare of their family is a problem that faces every prospective home purchaser. Exactly how each chooses to solve this

¹Miller, Economic Issues, p. 206.

²Nancy R. Hess, The Home Buyer's Guide (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976), p. ix.

problem is still not known. In his book, Fundamentals of Marketing, William J. Stanton states:

. . . because we know relatively little about how the human mind works, there is still no comprehensive body of knowledge which is generally accepted as the "theory of buyer behavior." Instead, over the years several different theoretical models have been developed to explain buyer behavior. Each makes some interpretive contribution, and some are more useful than others in explaining the purchase behavior toward a given product. . . .¹

Many research studies have been done in the area of consumerism, including some on housing. However, no studies were found that dealt specifically with knowledge gained by the home buyer during or after the process of the home purchase. This research centered on the knowledge gained by the home-buying consumer as a result of the home-buying process.

Purpose of Study

The purpose of this study was to identify and evaluate the knowledge gained by home-buying consumers through the home-purchase process that would have been of value to them as prepurchase knowledge. A secondary purpose of this research study was to identify knowledge that could be passed on to future home-buying consumers and those in the housing industry.

Statement of Problem

Analyzing the full range of consumer education for prospective homebuyers was beyond the scope of this research. In determining how to narrow the problem, it seemed logical that those who had recently had need for home purchasing knowledge could best decide if their knowledge

¹William J. Stanton, Fundamentals of Marketing (4th ed.; New York: McGraw-Hill Book Company, 1975), p. 76.

had been sufficient for the decision-making process of choosing a home. What do prospective home-buying consumers need to know? How do they gain the knowledge needed to make their decisions?

If one possessed sufficient knowledge for the home purchase decision-making process prior to making their purchase, there would be no change in knowledge during or after the home-purchasing process. In other words, an increase in knowledge would imply that sufficient knowledge either was not available prior to the home purchase or that the home purchaser had not taken advantage of the knowledge that was available.

This study, therefore, was a descriptive research project, with the purpose of identifying and analyzing the knowledge gained by home-buying consumers through their home-buying process. John W. Best identifies a major problem with this type research in his book, Research in Education:

Descriptive research seeks to find the answers to questions through the analysis of variable relationships. What factors seem to be systematically associated with certain occurrences, conditions, or types of behavior? Since it is often impracticable to arrange occurrences, an analysis of what actually does happen is the only feasible way to study causation.¹

For the purpose of this research, the problem was stated as: "What knowledge do home-buying consumers acquire during the home-buying process that would have been valuable as prepurchase knowledge?"

This was a complex problem, involving three basic research objectives. Research Objective I was concerned with the knowledge gained by different groupings of the respondents. Research Objective II was concerned with the relationship of certain characteristics of the

¹John W. Best, Research in Education (3rd ed.; Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977), p. 145.

respondents to the knowledge gained by the respondents. Research Objective III was concerned with the interrelationships of the characteristics of the respondents as determinants of the knowledge gained, and identification of the subsets of characteristics with the best predictive ability of the knowledge gained.

The questions relevant to Research Objective I were stated as:

1. Is there a difference in the knowledge of home-buying consumers in their prepurchase status and their post-purchase status?
2. Do experienced home-buying consumers differ from inexperienced home-buying consumers in the amount of knowledge gained?
3. Do male and female home-buying consumers differ in the amount of knowledge gained?
4. Do home-buying consumers who are under pressure to move differ from those consumers who are under no pressure to move in the amount of knowledge gained?
5. Do home-buying consumers who employ a real estate agent differ from those consumers who do not employ a real estate agent in the amount of knowledge gained?

The questions relevant to Research Objective II were stated as:

1. Is there a relationship between the education of the home-buying consumer and the amount of knowledge gained?
2. Is there a relationship between the age of the home-buying consumer and the amount of knowledge gained?
3. Is there a relationship between the price of the home purchased and the amount of knowledge gained?
4. Is there a relationship between the marital status of the home-buying consumer and the amount of knowledge gained?
5. Is there a relationship between the home-buying consumer's position in the family life cycle and the amount of knowledge gained?
6. Is there a relationship between the home-buying consumer's job classification and the amount of knowledge gained?

7. Is there a relationship between the number of homes previously owned by the home-buying consumer and the amount of knowledge gained?
8. Is there a relationship between the degree of satisfaction/dissatisfaction with the home purchased and the amount of knowledge gained?
9. Is there a relationship between the home-search period of the home-buying consumer and the amount of knowledge gained?
10. Is there a relationship between the number of visits the home-buying consumer made to their prospective home and the amount of knowledge gained?

The questions relevant to Research Objective III were stated as:

1. What degree of interrelation is there among the education, age, price range, marital status, family life cycle position, job classification, pressure to move, previous home ownership, degree of satisfaction/dissatisfaction, use of a broker, search period, number of visits to the prospective home as determinants of the amount of knowledge gained?
2. Which functional form of subsets of the characteristics of education, age, price range, marital status, family life cycle position, job classification, pressure to move, previous home ownership, degree of satisfaction/dissatisfaction, use of a broker, search period, number of visits to the prospective home, has the best predictive ability of the amount of knowledge gained?

Significance of Study

This study was an attempt to identify and evaluate the knowledge gained by home-buying consumers through the home-purchase process that would have been of value to them as prepurchase knowledge. Knowledge of the information gained by recent home buyers during the home-buying process should be helpful information for housing counselors, home builders, real estate brokers, mortgage lenders, consumer educators and future home-buying consumers.

Housing counselors should find the results of this research helpful in their counseling of prospective home buyers. Home builders

and real estate brokers should find the results helpful in marketing their product. Mortgage lenders should find the research helpful in their lending process since some counseling does take place during most financial lending transactions.

Understanding the problem-solving process, the knowledge gained thereby and the resulting satisfactions and/or dissatisfactions of recent home buyers should be helpful to future prospective home buyers. Consumer educators should find the results of this study most valuable, however, for use in structuring consumer education courses.

Hypotheses to be Tested

The hypotheses tested in this study are presented in the null form. Five hypotheses are associated with Research Objective I, ten hypotheses are associated with Research Objective II, and two hypotheses are associated with Research Objective III.

Hypotheses relevant to Research Objective I:

- Ho₁ There is no significant difference in the knowledge of home-buying consumers in their prepurchase status and their postpurchase status.
- Ho₂ There is no significant difference in the amount of knowledge gained by experienced home-buying consumers and inexperienced home-buying consumers.
- Ho₃ There is no significant difference in the amount of knowledge gained by male home-buying consumers and female home-buying consumers.
- Ho₄ There is no significant difference in the amount of knowledge gained by home-buying consumers who were under pressure to move and those who were under no pressure to move.
- Ho₅ There is no significant difference in the amount of knowledge gained by home-buying consumers who employ a real estate broker and those who did not employ a real estate broker.

Hypotheses relevant to Research Objective II:

- Ho₆ There is no relationship between the education of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.
- Ho₇ There is no relationship between the age of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.
- Ho₈ There is no relationship between the price of the home purchased by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.
- Ho₉ There is no relationship between the marital status of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.
- Ho₁₀ There is no relationship between the home-buying consumer's position in the family life cycle and the amount of knowledge gained as a result of the home-buying process.
- Ho₁₁ There is no relationship between the job classification of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.
- Ho₁₂ There is no relationship between the number of homes previously owned by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.
- Ho₁₃ There is no relationship between the degree of satisfaction/dissatisfaction the home-buying consumer has with his/her new home and the amount of knowledge gained as a result of the home-buying process.
- Ho₁₄ There is no relationship between the length of time the home-buying consumer spent looking for a home and the amount of knowledge gained as a result of the home-buying process.
- Ho₁₅ There is no relationship between the number of visits made to the prospective home by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Hypotheses relevant to Research Objective III:

- Ho₁₆ The group means of the characteristics of those home-buying consumers who gained knowledge during the home-buying process and the group means of the characteristics of those home-buying consumers who gained no knowledge during the home-buying process are equal.

- Ho₁₇ There is no significant difference in the predictive ability of the subsets of characteristics in the prediction of the amount of knowledge gained.

Limitations of Study

Certain limitations were present in this study. The very complexity of the problem implied limitations. The major limitations are listed herein.

First, the study was limited to a sampling of the home buyers who purchased their homes in the counties of Oklahoma, Cleveland, and Canadian, in the state of Oklahoma, during the month of August, 1977. These are the three major counties in the Oklahoma City Standard Metropolitan Statistical Area (SMSA)¹ and include the cities of Oklahoma City, Edmond, Midwest City, Del City, Norman, and Yukon. Other communities, either larger or smaller than the Oklahoma City SMSA, might yield different results. Climatic conditions, state regulations regarding the sale of real estate, and consumer education available (voluntary or compulsory) in another community could also yield different results. A study conducted at another period in time might yield different results due to differing economic and social conditions.

Second, the study was limited by unknown psychological influences. Homebuyers today tend to purchase much more than shelter. The amenities that belong to the great American dream of homeownership are very important in their decision-making. Psychological influences have a strong

¹The other two counties included in Oklahoma City SMSA are McClain and Pottawatomie. See Gerald M. Lage, Ronald L. Moomaw, and Larkin Warner, A Profile of Oklahoma Economic Development 1950-1975 (Oklahoma City, Okla.: Frontiers of Science Foundation of Oklahoma, Inc., 1977), p. 29.

impact upon decision-making, knowledge gained, and satisfaction received. Measurement of such psychological influences, however, is very difficult. The measurement of psychological influences, per se, is not a part of this study, although the importance of such influences is recognized.

Third, the study was limited by the lack of consideration given to, or adjustments made for, economic trends, business cycles, seasonal influences, or inflation. While all these factors influence the housing market a great deal, the year 1977 was a rather normal year for the '70s in that an economic recovery was in progress and the business cycle of the housing industry was moving into an expansionary stage.¹ The month of August is often used by local real estate people for comparison purposes.² The purpose of this study was to focus on the knowledge gained by the consumer, and none of the factors mentioned above were considered.

Fourth, the lack of a truly representative sample was another limitation of this study. While the questionnaires were mailed to a group randomly selected from the population, all questionnaires were not completed and returned.

Minium addressed this problem in his book, Statistical Reasoning in Psychology and Education:

We are often reduced to limiting our conception of the target population to what we may hope we have adequately sampled taking precautions to exclude obvious sources of bias, and hoping that our sampling procedure, though not strictly random, has been

¹John Booth, Oklahoma Mortgage Company, Oklahoma City, Okla., private interview, March, 1979.

²Dewey Jernigan, Southwest Title & Trust Company, Oklahoma City, Okla., private interview, March, 1979.

sufficiently carefully done that the sample is like what would have occurred under true random sampling.¹

Chou also addressed this problem in his book, Statistical Analysis with Business and Economic Applications, in a discussion of the Chi-Square distribution:

Although with small samples we do not have as much information as we would like, we are not destitute. The proper course is to draw conclusions or to make decisions from the sample by taking into account the scanty nature of the evidence. . . . we cannot apply the central limit theorem and assume that sampling distributions are normal. . . . for small samples, sampling distributions may take a number of forms. In addition to the binomial distribution . . . there are three important probability distributions which the distribution of a statistic with small n may assume. They are chi-square, F , and Student's distributions. All three models are related to the normal probability model and are defined in terms of the number of degrees of freedom. . . .²

Fifth, this study was limited by the inability of individuals to properly identify their areas of satisfaction/dissatisfaction. Levels of satisfaction mean different things to different individuals. While one person may be quite happy, contented and satisfied with few material goods in a very chaotic existence, another person might require perfection before rating himself as being "satisfied."

Sixth, this study was limited by unknown factors and variables, beyond those considered in this research study. For example, past family and personal experiences, particular preferences of the family, and societal restrictions may have been more important factors than indicated by the respondents. Thus, specific factors may have had an effect upon the type of knowledge gained.

¹Edward W. Minium, Statistical Reasoning in Psychology and Education (New York: John Wiley & Sons, Inc., 1970), pp. 384-85.

²Ya-lun Chou, Statistical Analysis with Business and Economic Applications (New York: Holt, Rinehart and Winston, Inc., 1969), p. 373.

Assumptions of Study

Certain assumptions were also present in this study. The major assumptions are listed herein.

First, the assumption was made that buyers were able to identify the areas of their knowledge and the knowledge actually gained by themselves during the home-buying process. The areas of knowledge and the amount of knowledge gained varied among the home owners surveyed, and the assumption that they were able to properly identify their own reactions was necessary if the survey was to be meaningful.

The second assumption was that the group surveyed was representative of SMSAs of the South Central area of the United States. The characteristics of the population of the Oklahoma City SMSA are such that the SMSA is frequently used for the sample marketing of new products.¹

Methodology and Analytical Procedures

The methods and procedures used in collecting the data necessary for this study were planned to make the data as meaningful and as accurate as possible. The procedure for data collection and the procedure for data analysis and interpretation are given in this section.

Procedure for Data Collection

An initial step in collecting the data was the random defining of a sample from the population. Guffey's Journal, a bi-weekly newspaper directed toward the real estate industry, lists all the deed recordings (the population) for Oklahoma, Cleveland, and Canadian counties. The mailing addresses of the parties drawn in the sample

¹Bennett Griffin, Facts: Marketing & Economic Research Corp., Oklahoma City, Okla., private interview, March, 1979.

were obtained from the metropolitan Oklahoma City telephone directory, if listed. For those not listed in the telephone directory, the property address was obtained from the public records in the County Tax Assessor's office.

A letter and a questionnaire were mailed to each home-buying consumer whose name was drawn from the listings in Guffey's Journal. The returned, completed questionnaires constitute the sample used in the statistical testing of the seventeen hypotheses formulated for the study.

Procedures for Data Analysis and Interpretation

After the questionnaires were returned, the data were subjected to statistical analyses for testing of the hypotheses formulated previously in this chapter. The data relevant to Research Objective I were subjected to χ^2 tests.

The data relevant to Research Objective II were also subjected to χ^2 tests, obtained by the use of Contingency Tables, from which Contingency Coefficients and Correlation of Attributes were calculated. The data relevant to Research Objective III were subjected to both a Multiple Discriminant Analysis (MDA) and a Factor Analysis (FA).

Answers to the open-ended questions were grouped into several areas and reported accordingly. No statistical analyses were performed on the responses to the open-ended questions.

Organization of Study

An introduction to the investigation has been presented in Chapter I. Included were the introduction, purpose of study, statement of problem, significance of study, hypotheses to be tested,

limitations of study, assumptions of study and the methodology and analytical procedures.

Chapter II presents a review of the literature which is related to the study. Included are marketing theories, research studies, and consumer education as it relates to housing.

Chapter III presents the methodology used in the study. Collection of the data and the methods of analyses are described.

Chapter IV presents the results of the statistical analyses and interpretation of the data collected for the study.

Chapter V presents a summary of the study. Conclusions are drawn and recommendations are made from the results of the study.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Much has been written about housing, mostly during the twentieth century. However, most of the literature approaches housing from a national economic level.

While economists are concerned about the growth and migration of our population, those in the building industry and real estate business are concerned with marketing their product. General marketing theories, for the most part, apply to the housing industry.

The literature directed to the individual home buyer is a part of general consumer literature, which has grown rapidly in the last two decades. Much of this literature has been public service type education, with some governmental and industrial education being offered on a request basis. On a more formally structured basis, a section on housing is included in consumer education courses offered in most universities, colleges, junior colleges and secondary schools.

For the purpose of this review, the literature and studies are divided into three groups: (1) marketing theories, (2) research studies, and (3) consumer education.

Marketing Theories

One of the earliest theories of consumer behavior was developed by the classical economists in the course of formulating a comprehensive theory of the individual firm.¹ This theory is based on the notion that man is an economic, rational human being, who acts in his own self-interest at all times. Adam Smith² expressed this theory in his concept of an "invisible hand" over mankind, whereby everyone benefits by each person acting in his own self-interest.

This early theory of behavioralism was later refined by the neoclassical economists into the marginal-utility theory of value. The marginal-utility theory holds that one will continue to buy units of a given product as long as the satisfaction he receives from the last unit consumed (marginal utility) equals or exceeds the marginal utility derived from the same expenditure for any other product.³ Ferguson and Gould make the following assumptions in their discussion of utility and preference, as used in analyzing consumer behavior:

Assumptions: (a) Each consumer has exact and full knowledge of all information relevant to his consumption decisions--knowledge of the goods and services available and of their technical capacity to satisfy his wants, or market prices, and of his money income.

(b) Each consumer is able to make comparisons of commodity bundles such that (i) for any two bundles A is preferred to B, B is preferred to A, or the consumer is indifferent between A and B; (ii) if A is preferred (indifferent) to B and if B is preferred (indifferent) to C, then A is preferred (indifferent) to C;

¹Adam Smith, An Inquiry Into the Nature and Causes of the Wealth of Nations 1776 (New York: The Modern Library, 1937).

²Ibid.

³C. E. Ferguson and J. P. Gould, Microeconomic Theory (Homewood, Illinois: Richard D. Irwin, Inc., 1975), pp. 11-28.

(iii) if bundle A is strictly larger than bundle B, then A is preferred to B.¹

William J. Stanton questioned the complete applicability of the marginal-utility theory to consumer behavior in his book, Fundamentals of Marketing, in part stating:

This theory . . . holds that a consumer will continue to buy units of a given product as long as the satisfaction he receives from the last unit consumed (marginal utility) equals or exceeds the marginal utility derived from the same expenditure for any other product.

This theory is based on some strong assumptions: (1) that the consumer is always trying to maximize his satisfactions (utilities) within the limits of his financial resources, (2) that he has complete knowledge of alternative sources for satisfying his wants, and (3) that he is always acting in a rational manner.

Some of the limitations in such a model should be obvious. First, it does not include the psychological and sociological factors which influence behavior. Totally rational behavior is not typical among consumers. Nor is the theory sound when it implies that impulsive behavior is irrational. Finally, it is difficult to quantify the satisfactions received from a product. Research efforts over the years by scholars in such organizations as the Survey Research Center at the University of Michigan have done much to realistically modify the basic theory. . . .

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the theory can be particularly useful when it is treated as a normative rather than an absolute or descriptive model of behavior. For instance, from the model we might hypothesize that the sales of a product will increase as its price decreases. For the model to be realistically useful, we must treat this sample hypothesis as a generalization. That is, sales will usually increase, or the hypothesis is applicable for most (not all) consumers. The fact that some consumers refrain from buying when the price goes down does not invalidate the hypothesis-generalization.¹

In addition to the marginal-utility theory described above, Stanton discusses psychological and sociological theories of consumer behavior. The sociological theories, some of which were developed by

¹Ibid., p. 14.

²Stanton, Marketing, pp. 76-77.

cultural anthropologists, focus primarily in interpersonal relations and influences. The psychological theories are more individually-oriented and fall basically into two groups, identified as learning theories and psychoanalytic theories.¹

The learning theories are further divided into three groups: (1) stimulus-response theories, (2) cognitive theories, and (3) gestalt theories. The stimulus-response theories are based on laboratory experiments with animals (this school of theorists include Pavlov, Skinner, and Hull) and holds that:

. . . learning occurs as a person (or animal) responds to some stimulus and is rewarded (reinforced) with need satisfaction for a correct response or penalized for an incorrect one. When the same response is repeated in reaction to a given stimulus, habit-behavioral patterns are established.²

Cognitive theories hold that learning is influenced by factors such as attitudes and beliefs, previous experiences, and an understanding of how to use this previous knowledge in the current situation so as to achieve a goal. Stanton summarized the cognitive theories by this statement:

Habitual behavioral patterns, then, are the result of perceptive thinking and goal orientation. In summary, cognitive theorists postulate that a person's brain processes and nervous system are significant in forming his behavioral patterns, while S-R theorists pay little attention to these intervening variables.³

The gestalt theories are similar to the cognitive theories in that the key elements are perception, past experiences, and goal orientation. The Gestalt psychologists, however, believe that man perceives the whole of his environment rather than its parts. They further postulate that ". . . a person's perception of the whole is quite different

¹Ibid., pp. 77-81.

²Ibid., p. 77.

³Ibid., p. 78.

from what we might expect if each part were considered separately."¹

In discussing Kurt Lewin's field theory as a useful refinement of the Gestalt psychologists' theories, Stanton said:

This theory holds that the only determining force accounting for a person's behavior at any given time is his psychological "field" as it exists at that time. The concept of a person's field or life space, which is a key element in the theory, may be defined as the totality of existing facts pertaining to the individual and his environment at the time of the behavior. Thus, to understand a consumer's goal-oriented behavior, we must understand him and his perception of his environment--all the complex forces, barriers, conflicts, etc., which influence him as he strives to satisfy the drive which initiated the goal-seeking process.²

Stanton reported that the psychoanalytic theories of human personality and behavior, originally founded by Sigmund Freud, have had a tremendous impact on marketing theories. In relating the psychoanalytic theories to marketing principles, Stanton said:

Freud's behavioral thesis was that a person enters this world with certain instinctive biological desires which cannot be satisfied in a socially acceptable fashion. As a person learns that he cannot gratify these needs in a direct manner, he develops other, more subtle means of seeking satisfaction. As the basic urges are being repressed, tensions and frustrations are developing. Also, feelings of guilt or shame about these drives cause a person to suppress or even subliminate them to the point where they become subconscious. Instead, he substitutes rationalizations and socially acceptable behavior. Yet the basic urges are always there. The net result is very complex behavior. Sometimes the person himself does not understand why he feels or acts as he does. . . .

One significant marketing implication in psychoanalytic theory is that a person's real motive for buying a given product, shopping at a certain store, or performing any other consumer buying act may well be hidden. The usual research techniques which are feasible for determining demographic and economic data normally will prove fruitless in uncovering the real reasons for a person's buying behavior. This situation has given rise to marketing's use of motivation research, a series of techniques originally developed for use in psychology. . . .³

¹Ibid., pp. 78-79.

²Ibid.

³Ibid., pp. 79-80.

One of the most important theories in motivation research is Maslow's Need Hierarchy, formulated by A. H. Maslow,¹ a psychologist, in the early '40s. In Maslow's theory, man's needs are arranged in a hierarchy, with the lowest-level needs being physiological and the highest level being self-actualization. The needs are identified as:

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|-------------------------------------|---|
| 1. Physiological: | The need for food, drink, shelter, and relief from pain. |
| 2. Safety and security: | The need for freedom from threat, i.e., the security of being safe from threatening events and/or surroundings. |
| 3. Belongingness, social, and love: | The need for friendship, affiliation, interaction, and love. |
| 4. Esteem: | The need for self-esteem, and esteem from others. |
| 5. Self-actualization: | The need to fulfill oneself by maximizing the use of abilities, skills, and potential. ² |

According to Maslow, the lower-order needs must be satisfied before a higher order need can begin to control the conscious thoughts of a person. Once a need is satisfied, it ceases to act as a motivator.³ Stanton gives an example of this in his discussion of buyer behavior:

To illustrate, as long as a person is hungry, thirsty, etc., the physiological (biogenic) needs dominate. Once they are satisfied, the psychogenic needs in the safety category become important. When safety needs are largely gratified, new (and higher-level) needs arise, and so on.⁴

¹Abraham H. Maslow, Motivation and Personality (New York: Harper & Row Publishers, Inc., 1954).

²Ibid., pp. 80-106.

³Ibid.

⁴Stanton, Marketing, p. 83.

The consideration of multiple motives, or the interaction of motives, for the same behavior was also discussed by Stanton:

While the Maslow construct has much to offer us, there are still some unanswered questions and disagreements. For one thing, there is no consideration of multiple motives for the same behavior. A teacher takes a ship's cruise to better her knowledge of foreign countries, to meet new people, and to rest her frazzled nerves. Other problems not fitting our model are (1) identical behavior by several people resulting from quite different motives¹ and (2) quite different behavior resulting from identical motives.¹

Motivation theory is not easily understood, and probably never understood by many buyers. In trying to identify buying motives, Pederson and Wright wrote:

. . . it is recognized that many buyers are unaware of the real drives that cause their patterns of behavior. In some cases, the buyer, under this set of circumstances, will assign a motive for actions taken. This assignment of a motive may not involve any conscious realization that rationalizing is taking place. Buyers usually will assign a motive that is acceptable or compatible with their own personalities. Of course, if the buyer is motivated in a manner which is socially undesirable or harmful, every effort may be made to conceal such motives. . . . if a product is capable of giving enough human satisfaction to justify its cost, then it should be possible to motivate the purchase of the product or service. It is recognized that consumers will buy a product if it is sufficiently satisfying. . . . Sociological and psychological needs and drives, sometimes called "psychogenic," are motives for the purchase of most products and services. These drives stem from the customs of society and from one's culture and may be emotional or rational, or both, in nature.²

Psychogenic needs have been identified as motives through both sociological and psychological theories of behavior. Sociological theories are concerned with group actions and behavior, stemming from the culture and customs of society. Psychological theories, on the

¹Ibid.

²Carlton A. Pederson and Milburn D. Wright, Selling: Principles and Methods (6th ed.; Homewood, Illinois: Richard D. Irwin, Inc., 1976), pp. 99-103.

other hand, are concerned with the actions and behavior of individuals. Psychological theories include both psychoanalytical theories and learning theories.¹

In marketing research, the psychoanalytical theories have received the most attention. Centering on motivational theory, the psychoanalytical theories relate to marketing in the free enterprise system much more than do the learning theories. The research involved in this study relates to motivational theories.

Research Studies

Several research studies have been completed relating to buyers' motives, needs and desires; however, very few have been done relating to the buyer's knowledge qualifications. The studies relating most directly to the research involved in this study are reviewed in this section.

The educational needs of prospective home owners were studied by Loyd Wallace VandeBerg² in 1955, at the University of Missouri. VandeBerg randomly selected 424 homeowners and 76 specialists (real estate dealers, architects, and building contractors) in the state of Washington.

A questionnaire was used to collect the information considered important by the respondents in selecting a completed house for purchase. No statistical testing was used in the study. The majority of the respondents agreed that information about selecting, purchasing, constructing, maintaining, and repairing a house was needed and favored a program of education for their communities; however, no details of the

¹Ibid.

²Loyd Wallace VandeBerg, "Educational Needs of Prospective Home Owners Concerning the Acquisition and Ownership of a House" (unpublished Ed.D. dissertation, University of Missouri, 1955), pp. 8-10.

material to be covered in such a course was reported. VandeBerg simply recommended that college teacher training programs should incorporate such a course into their programs.¹

Some research into buyer satisfaction and protection was done in 1949 by law students at the University of Alabama. They conducted personal interviews with more than a hundred recent home purchasers. The research was later reported by John C. Payne, a professor of law at the University of Alabama, in the Spring, 1964, issue of the Alabama Law Review.²

The Alabama research was centered around legal representation for buyers. Title problems can be expensive and worrisome to resolve; yet, the research found that most homebuyers had taken no precautions to protect themselves. Mr. Payne reported:

The home buying public in Dixie City at the time the survey was made was grossly ignorant of the legal formalities attending the purchase. Purchasers had no idea what they had a right to expect or what protection their interests required. Where an original mortgage was used to finance the sale the most common procedure was for the purchaser to turn over everything to the real estate broker. The broker then placed the loan, and the attorney for the mortgagee furnished whatever legal supervision was exercised over the transaction. In some cases the buyer-mortgagor knew that he was receiving no personal representation but assumed that the one lawyer in the transaction would adequately protect everyone's interests. In an appreciable number of cases, however, he assumed that the mortgagee's attorney was also his attorney. . . .

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Where the home was purchased subject to an existing mortgage a common practice was simply to take a deed without any

¹Ibid., p. 81.

²John C. Payne, "101 Home Buyers: The Consumer, the Conveyancing Process, and Some Questions of Professional Conduct," Alabama Law Review, Spring, 1964 (University of Alabama, 1964), pp. 322-23.

further examination of title and without any representation by an attorney for either party. . . .

Because the buyer did not know what to demand, the services rendered were insufficient to meet his needs. . . .

These conclusions are based upon a limited survey conducted in a single community more than a decade ago. Do they illustrate conditions sufficiently typical to be the basis for generalized conclusions? Informal inquiry addressed to lawyers in several sections of the country and the admittedly small body of printed sources would seem to indicate an affirmative answer. Although title practices differ in detail from place to place, certain conventional patterns have been evolving, and these patterns are illustrated by the findings made in the course of the survey. The rapid increase in the use of institutional credit which has been reflected in all phases of American life has had a strong and not entirely salutary effect upon the home buying process. One of the results has been the considerable reduction in the protection given purchasers and mortgagors. If this is a true construction of the facts, it raises a serious question of what can and should be done to make the home buying process more satisfactory. This is not an easy question to answer, but any effective approach must begin by considering what the interests of each of the several parties are and how best their interests can be served. . . .¹

While Mr. Payne indicated that he felt the buyer-mortgagor was not being sufficiently protected, he later made the statement that "Although there may be some conflict of interest between the purchaser and mortgagee, it can be said that most often the purchaser simply has a more extensive interest needing wider protection. . . ."²

Payne's research is relevant to this study because it describes conditions of legal representation that are prevalent in much of Oklahoma today. The problems created by such insufficient representation or lack of representation are usually not discovered until the property owner is ready to sell his property. Since the present study will be limited to recent home purchasers, problems in this area may not be reported; however, legal representation is one of the questions included in the questionnaire.³

¹Ibid.

²Ibid.

³Ibid.

In 1967, Kain and Quigley¹ conducted a study in an attempt to measure the value of housing quality. They reported the research in the June, 1970, issue of the Journal of the American Statistical Association. In discussing the difficulties of their research, they stated:

Difficulty in measuring the physical and environmental quality of the dwelling unit and surrounding residential environment is perhaps the most vexing problems encountered in evaluating the several attributes of bundles of residential services. These problems are so serious that the Bureau of the Census omitted all measures of dwelling unit quality from the 1970 housing census. . . . This article clearly illustrates the complexity of the bundle of residential services consumed by households and, by implication, the inadequacy of so much previous empirical and theoretical work on urban housing markets. . . .²

Household size proved to be a major significant variable in a study of social factors related to housing selection in a 1972 study by Cora McKown Barnes.³ The Barnes study was an exploratory study based on data gathered from 26 families in home interviews. The sample was limited to white nuclear families (having both husband and wife) with children, earning between \$3,001 and \$12,000 per year, who lived in working-class neighborhoods in Randolph and Boone Counties in North Central Missouri.⁴

Social interaction was cross-tabulated with length of tenure, sex, income, and stages in the family life-cycle. The χ^2 Tests of Independence were applied, but no apparent relationships were found.

¹John F. Kain and John M. Quigley, "Measuring the Value of Housing Quality," Journal of the American Statistical Association, June, 1970, Volume 65, Number 330, pp. 532-48.

²Ibid.

³Cora McKown Barnes, "Social Factors Related to Housing Selection," (unpublished Ph.D. dissertation, University of Missouri, 1972).

⁴Ibid., pp. 55-58.

Household size was a major significant variable in relation to satisfaction with present dwelling, satisfaction with present room arrangement, anticipation of residency change within the next 12 months, monthly expenditure for rent or housing payment, second choice of type of housing preferred to live in, and length of tenure in the present dwelling. Other less significant variables were age, sex, income, education, mobility, employment and the stage in the family life cycle.¹

The value of accessibility to work was examined by Alexander Kane² in 1972 at the University of Pittsburgh. Kane reexamined the economic theory that households (families) evaluate the price of housing services (total housing expense) in the perspective of accessibility to employment opportunities in the urban case, with the intent of determining the specific variables which significantly influence the value of housing in a community. He studied the entire sample of approximately 30,000 households in the city of Pittsburgh drawn for a study identified as "Toward a Regional Plan," by the Southwestern Pennsylvania Regional Planning Commission in 1970.³

Housing value/bedrooms was used as the dependent variable, while the independent variables were employment accessibility, the physical characteristics of the unit, and the characteristics of the community within which the unit was located.⁴

¹Ibid., p. 90.

²James Alexander Kane, "An Analysis of the Determinants of Housing Value with Special Attention to Employment Accessibility and Locational Externalities" (unpublished Ph.D. dissertation, University of Pittsburgh, 1972).

³Ibid., pp. 28-31.

⁴Ibid.

Correlation coefficients and F scores were calculated. Kane found that employment accessibility variables were consistently insignificant, while the physical characteristics of housing units and the socio-economic characteristics of a community were statistically significant determinants of housing value.¹

A study of the knowledge needed by home buyers was reported by Everard in 1972.² Everard examined the difficulties that home buyers had encountered for the purpose of helping future buyers make intelligent home-buying decisions. In addition to surveying recent home buyers, Everard consulted experts in the housing field who were likely to have firsthand evidence of buyers' difficulties. Everard's study was based on data gathered in the fall of 1961 by personal interviews with 60 home owners. (Note: This was before the big "consumerism" movement in America.) Everard reported:

Deduced from the findings are the following areas of knowledge pertaining to home planning about which buyers need considerable understanding:

1. Over-all planning of the new home purchase.
2. Advantages and disadvantages of owning versus renting for determining the best means of fulfilling one's housing needs.
3. Financial capacity, including guides for purchasing safely within one's financial means.
4. Housing specialists, particularly as to selection and services and functions.³

¹Ibid., p. 85.

²Kenneth Eugene Everard, "An Identification of Areas of Knowledge About Which Home Buyers Need Understanding" (unpublished Ed.D. dissertation, Indiana University, 1972).

³Ibid., pp. 145-46.

In addition to finding that home buyers needed better understandings of how to plan for a home, Everard found that home buyers are, for the most part, poor financial managers. Everard stated:

From the findings, the following areas of knowledge about which buyers need maximal understanding pertaining to home financing were deduced:

1. Nature of and basic differences among conventional, FHA and VA mortgage loans.
2. General loan requirements.
3. Sources of home-loan funds.
4. Advantages and disadvantages of acquiring home ownership through a conditional sales contract and by assuming an existing mortgage.
5. Preliminary home-buying costs, particularly closing fees.
6. Home-loan costs, including the down payment, principal, and interest.
7. Recurring ownership costs, including taxes, insurance, and upkeep.¹

Everard made no attempt to analyze data from buyers on the basis of such variables as education, age, or income; however, his report does imply evidence of trial-and-error education by consumers. He stated:

. . . the housing specialists frequently distinguished between the knowledge and understandings possessed by experienced and inexperienced buyers. In addition, many of the owners interviewed, especially those who had purchased prior homes, indicated that their experience had benefited them. The experienced buyer would seem to be somewhat wiser and better informed than the first-time buyer. The trial-and-error method appeared to be a predominant way for buyers to become educated about home-buying affairs, which might suggest educational implications to schools and the housing industry. . . .

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An identification of the areas of knowledge about which buyers need understanding, based on evidence of buyers'

¹Ibid., p. 147.

difficulties, is the primary end product of the study. . . . the following inferences are drawn which are applicable to the majority of home buyers: (1) buyers have an inadequate understanding of many of the knowledges necessary for a wise home purchase; (2) buyers tend to act illogically; (3) buyers tend to underestimate the total cost of home buying and owning; (4) buyers are hindered by external conditions beyond their control; and (5) buyers fail to recognize the need for expert assistance. The inferences are not mutually exclusive; there is a close relationship among some of them.¹

A study on the "Uses of Types of Information Sources by Pre-purchase and Postpurchase Home Buying Consumers" was conducted in 1973 at the University of Oklahoma by John Joseph Shaw.² The problem was stated as "How does the aspiring consumer go about finding and purchasing a home?" Fifty-five hypotheses were formulated by Shaw for his study. The 55 hypotheses were grouped into six classifications of relationship: (1) personal data, (2) financial status and purchase requirements, (3) physical structure and arrangement and social and geographic factors, (4) the level of home buying experience, (5) the number and type of personal contacts, and (6) the buyer's search pattern characteristics.³

A total of 204 participants in the study were classified into four groups, based on their level of interest in purchasing a home: (1) slightly involved, (2) involved, (3) very actively involved, and (4) post-purchase. There were 80 participants in the first group, 39 in the second group, 31 in the third, and 54 in the fourth group. Each participant was personally interviewed. No statistical tools or testing were employed in this descriptive study.⁴

¹Ibid., pp. 145-48.

²John Joseph Shaw, "The Uses of Types of Information Sources by Prepurchase and Postpurchase Home Buying Consumers" (unpublished DBA dissertation, University of Oklahoma, 1973).

³Ibid., pp. 23-35.

⁴Ibid., p. 57.

Shaw found that the four groups were consistent in reporting the uses of types of information sources. Real estate brokers were listed as the source of information most frequently used, with newspaper advertisements being ranked second and walking or riding around listed as the third most frequently used source.¹

The husband-wife influence in purchase decisions was analyzed by Kenneth Lee Bernhardt² at the University of Michigan in 1974. The purpose of the study was to determine the structure of husband-wife influence at each stage of the purchase decision process for houses, to study the determinants of this influence in a multivariate way, and to develop a model for the prediction of husband-wife influence in the house purchase.³

The population for the Bernhardt study was identified as all households with both husband-wife living together who had purchased a house costing between \$15,000 and \$35,000 for owner-occupancy, located in a nonrural county of Michigan (50% or more of the county's population classified as urban in the 1970 Census of Housing), excluding Wayne County (Detroit), and who recorded the warranty deed in May, June, or July 1971. Bernhardt drew a sample of 400 from 464,485 deed recordings by means of multistage probability sampling. Personal interviews were conducted in 197 husband-wife households who had recently purchased a house in selected nonrural areas of Michigan.⁴

¹Ibid., pp. 136-37.

²Kenneth Lee Bernhardt, "Husband-Wife Influence in the Purchase Decision Process for Houses" (unpublished Ph.D. dissertation, University of Michigan, 1974).

³Ibid., p. 2.

⁴Ibid., p. 33.

Four dependent variables were identified: (1) husband influence, (2) wife influence, (3) husband's net influence, and (4) total influence. Thirty-four independent variables were identified, including such variables as education, age, income, social class, occupation, family life cycle, size of town, race, experience, attitudes toward home ownership, and urgency.¹

Univariate, bivariate, and multivariate analysis techniques were employed, utilizing such statistical tests as Chi Square, Spearman's Rank Order Correlation, and Multiple Classification Analysis (MCA).²

Bernhardt found that the wives' level of influence was highest for the decisions concerning the number of bedrooms, the features the house should have, and which house should actually be purchased. The husbands' influence was highest for the decisions concerning which price range, which house to purchase, and the decision that the family should move. The husbands' net influence was highest in families where the wife was 18-24 years of age, with comparable education to the husband, with a life cycle category of under 45 years and children less than six years old, and the husband's occupation status in the top 10% of his field.³

The value of housing services was studied in 1974 by Richard Lee Haney⁴ at Indiana University. Haney utilized the 1970 Census records for a representative metropolitan area, Indianapolis-Marion County, Indiana, for his data. Haney developed a model of the

¹Ibid., p. 178.

²Ibid., pp. 180-99.

³Ibid., pp. 205-08.

⁴Richard Lee Haney, "Some Determinants of the Value of Housing Services" (unpublished Ph.D. dissertation, Indiana University, 1974).

determinants of the value of housing services, explicitly stating that consumers derive utility not from commodities themselves, but from the characteristics or services emanating from the use of those commodities.¹

Haney's testing procedure relied upon a combination of the multivariate technique of principal components analysis and multiple regression analysis. The independent variables were divided into three groups:

(1) commodity characteristics, such as accessibility, physical structure, physical environment, and the social environment, (2) financial characteristic (income), and (3) situational characteristics, such as stage in the life cycle, occupation, education, and the ethnic background.²

Haney found that the accessibility amenity was not as important as most economics-oriented studies³ have assumed. The social environment and physical structure amenities were considered to be the most important determinants of value by both the owner-occupants and the renters, while the physical environment amenity proved to be less crucial than expected. The life cycle variable was important to the renter model, but not in the owner-occupant one. The income elasticity was smaller than most studies have suggested; however, the racial component indicated that non-whites do indeed pay a modest premium for equivalent housing over that which whites must pay.⁴

In 1974, a study was conducted in the Atlanta, Georgia Metropolitan Area on "The Ultimate Consumers' Attitudes Toward Property

¹Ibid., pp. 69-80.

²Ibid., pp. 81-109.

³Edgar M. Hoover, An Introduction to Regional Economics (2nd ed.; New York: Alfred A. Knopf, 1975), pp. 307-08.

⁴Haney, Determinants of Value of Housing Services, pp. 160-69.

Ownership: Conceptual and Empirical Foundations," by Robert W. Obenberger.¹ A random sample of 1,004 was drawn from the Atlanta Telephone Directory and a questionnaire was mailed to each subject. The research sample consisted of 247 usable responses.²

The purpose of the Obenberger study was to discern the ultimate consumer's attitudes toward property ownership and to determine whether those attitudes differed with respect to certain independent variables. A Likert-type attitude scale was used to measure the dependent variable of attitudes toward property ownership. The independent variables included were home ownership, age, educational attainment, income, occupational status, mobility, past leasing-rental experience, and the life-cycle stage of the consumers.³

From the results of the 247 observations, Obenberger discerned that respondents moderately favored property ownership. Obenberger reported that "Of the variables included in the individual effects hypotheses, only one--home ownership--was significant at the .05 confidence level. Home owning respondents exhibited significantly higher ownership propensities than did non-home owners. . . ."⁴ F tests and t tests were used to analyze the data, while empirical methods were used in portions of the research.⁵

A study on the "Relationship Between House Style Preferences and Personality Characteristics" was conducted in 1975 at the Illinois

¹Robert W. Obenberger, "The Ultimate Consumer's Attitudes Toward Property Ownership: Conceptual and Empirical Foundations" (unpublished Ph.D. dissertation, Louisiana State University and Agricultural and Mechanical College, 1974).

²Ibid., p. 24. ³Ibid., pp. 146-64. ⁴Ibid., p. 259.

⁵Ibid.

Institute of Technology by Karla C. D. Klein, utilizing personality tests.¹ The study was designed to investigate the relationship between house style preferences and personality variables. Six house styles were ranked for preference by 120 subjects, who were then given the Myers-Briggs and the 16 PF personality tests, a demographic questionnaire, and a "Draw-Your-Ideal-House" test. The 120 subjects were chosen from three universities and the general population, on an availability basis. All were volunteers from a class or group available to the researcher (three class groups, a group of staff members at a high school, a social club, a church group, and friends made up the seven groups studied), with group sizes ranging from 5 to 47.²

Klein analyzed the data by use of multiple regression analysis, factor analysis, multidimensional scaling method, and cross-tabulation. The house style preference was considered a dependent variable and the independent variables were demographic factors such as neighborhood, cost of house, aesthetics, and the scores from the personality tests. The results showed that there were distinct personality characteristics associated with the preferences for different house styles; however, the hypothesis of childhood housing history influencing house style preference was not substantiated.³

The Klein study has an emphasis on a middle-class background. The sample of subjects was non-normative, and the variations of house styles were limited to six (no A-frames, log cabins, innovative or foreign architectural styles were included).⁴

¹Karla C. D. Klein, "Housing Style Preferences and Personality" (unpublished Ph.D. dissertation, Illinois Institute of Technology, 1975).

²Ibid., pp. 20-36.

³Ibid., pp. 68-69.

⁴Ibid., pp. 85-86.

A pilot educational housing program was analyzed by Suzanne Hurt Peery¹ in 1976 at the Virginia Polytechnic Institute and State University. A sample of 200 was drawn from more than 1,000 participating families in a pilot educational housing program in Pittsylvania County, Virginia, who had been enrolled for a period of not less than one year. The participating families were low-income families who lived in the designated depressed areas in the county. The dependent variable was the degree of success that families attained in the program, while the independent variables were grouped into categories of socio-demographic characteristics, technicians' knowledge and attitudes, and the degree of anomie within families. The statistical tools used were a t-test, 1-way ANOVA, 2-way ANOVA, Point Multiserial Correlation Coefficient, and the Pearson Product-Moment Correlation Coefficient. Instrumentation included a checklist with which to measure the degree of success attained by families, an interview survey instrument for gathering socio-demographic data from families, an anomie scale, and instruments to ascertain the technicians' knowledge and attitudes.²

The socio-demographic variables of age, number of rooms, number in household, home ownership, level of income and level of education were significantly related to the degree of success that families attained in the program. The number of rooms, number in household and the level of income were three variables that proved to be predictors

¹Suzanne Hurt Peery, "Factors Affecting Degree of Success Attained by Families in a Pilot Educational Housing Program" (unpublished Ed.D. dissertation, Virginia Polytechnic Institute and State University, 1976).

²Ibid., pp. 32-41.

of success on a limited basis. Overcrowding and low income were restricting influences on a family's success in an educational housing program.¹

In 1976, Thomas W. Whipple² did a study entitled "A Multidimensional Analysis of Home Buying Decision-Making." This was a case study based on pre-purchase and post-purchase dissimilarity and preference data, with objectives identified as:

. . . (1) to develop a procedure and evaluate its usefulness for scientific solicitation, analyses, determination, and segmentation of home buyers' preference structures with respect to housing dimensions and features, and (2) to gain an understanding of the complex decision process, over time, for the most highly priced consumer durable good. . . . The general methodological objective was to use newly developed methodology and research tools in analyzing a complex marketing decision process.³

A significant limitation of the Whipple study was the few number of home buyers interviewed. While fifty-one families were contacted, only fourteen agreed to be interviewed. Of the fourteen pre-purchasers interviewed, only seven actually made a home purchase and these seven all had homes built for them. The value of the study lies in the development of a multidimensional analysis technique.⁴

The National Association of Home Builders has conducted studies on the "Profile of a New Home Buyer." The 1977 study involved a stratified random sample of 1,926 new home buyers registered in the NAHB's

¹Ibid., pp. 61-66.

²Thomas W. Whipple, "A Multidimensional Analysis of Home Buying Decision-Making" (unpublished Ph.D. dissertation, State University of New York at Buffalo, 1971).

³Ibid., p. 4.

⁴Ibid.

HOW Program during the period from July 1, 1976 to June 20, 1977.¹

One of the areas studied was "How Home Buyers First Learned About This Subdivision."²

The NAHB report identified the following methods used by buyers in learning about the subdivision where they eventually purchased a home:³

Driving Around	31.4%	Relative	6.4%
Realtor	22.0%	Other	4.5%
Newspaper Ad	16.7%	Billboard	2.5%
Friend	15.7%	Radio/TV Ads	0.8%

There were significant variations in the sources of information used by home buyers in different price ranges. Of the home buyers in the sales price range of \$70,000 and more, 42.7% learned about their subdivision while driving around compared with 20.3% of the home buyers of homes with sales prices of less than \$30,000.⁴

There were also significant variations in the sources from which home buyers obtained information among regions and the distance of the move made by the home buyer. The report stated:

There are significant regional variations in the source from which home buyers learned about their subdivision. "Newspaper ad" was the source for 25.5 percent of the home buyers in the Northeast and 12.4 percent in the West. "Driving around" was the source of information for 36.6 percent of the buyers in the North Central region compared to 28 percent in the West.

Long distance and local movers differed significantly in their source of information. "Realtors" was the source for 14.8 percent of the local movers compared to 41.8 percent of the long distance movers.⁵

¹Michael Sumichrast, Robert Sheehan, and Gopal Ahluwalia, Profile of a New Home Buyer, Survey of New Home Owners, (Washington, D. C.: Economics Department, National Association of Home Builders, 1978).

²Ibid., p. 25.

³Ibid.

⁴Ibid.

⁵Ibid.

Significant variations in the numbers of times the subdivisions were visited were also observed. Only 28.9 percent of the home buyers of homes with sales prices of \$70,000 and over visited their subdivision once or twice before buying their home, compared with 55.2 percent of the home buyers of homes with a sales price of less than \$30,000. The most frequent number of visits was three times, made by 28.2 percent of all respondents in the study.¹

No regional variations in the number of times home buyers visited the subdivision in which they purchased a home were identified; however, there were some variations between local movers and long-distance movers. Only 11.8 percent of the long-distance movers visited their subdivisions five or more times compared to 21.6 percent of the local movers.²

One of the questions asked the consumers in the survey was whether or not they were satisfied with their new home. Responses for both surveys were included in the 1977 report, as follows:³

	<u>Very Satisfied</u>	<u>Somewhat Satisfied</u>	<u>Neither Like or Dislike It</u>	<u>Somewhat Dissatisfied</u>	<u>Not at All Satisfied</u>
7/75-6/76	58.5%	31.5%	1.4%	6.4%	2.2%
7/76-6/77	56.0%	34.2%	2.0%	6.3%	1.5%

No questions were asked about how satisfaction might have been increased, or dissatisfaction decreased. The NAHB study did report, however, that:

Homeowners with higher priced homes were evidently more satisfied as compared to home owners in lesser priced homes. . . . No significant regional difference in consumer satisfaction with new homes was observed. . . . Local movers are a little more satisfied compared to long distance movers.⁴

¹Ibid., p. 24.

²Ibid.

³Ibid., p. 50.

⁴Ibid., p. 23.

Higher satisfaction of local movers over long distance movers may be a result of factors unrelated to the physical aspects of the property. Local movers are in a better position to maintain contacts with relatives and friends, and probably have no change at all in their business relationships. Hoover says that most moves are relative short distance moves, permitting movers to maintain these close contacts.¹

The Oklahoma Natural Gas Company prepared a profile of Oklahoma Home Buyers² during the fall of 1977, from a survey made among recent home buyers in Oklahoma City, Tulsa, Enid, Muskogee, Ponca City, Stillwater, and Shawnee. Oklahoma City and Tulsa home buyers comprised about 80 percent of the survey sample.³

"Realtors" and "driving by" are the most important aids to prospective home buyers, according to those surveyed. Nearly half of pre-owned and a third of new home buyers first learned about their home through realtors. Approximately three out of ten in each group found their homes while out driving.⁴

One-fourth of new home buyers learned of the home from the builder. Also mentioned by both buyer groups were friends or relatives and newspaper ads.⁵

The old American dream of "wanting to own a home" was the most common reason for purchasing a home given by the survey respondents.

¹Hoover, Economics, p. 188.

²Profile: Oklahoma Home Buyers (Tulsa, Okla.: Market Research Department, Oklahoma Natural Gas Company, 1977).

³Ibid., p. 1.

⁴Ibid., p. 2.

⁵Ibid.

This response was given by one-third of new home buyers and nearly half of pre-owned home buyers.¹

The survey implies some failures of buyers to make "satisfactory decisions," in that buyers were asked to list items they wanted but didn't get in their home purchase. The items buyers listed (in most frequently mentioned order) were as follows:²

<u>New Homes</u>	<u>Pre-Owned Homes</u>
1. Larger rooms	1. A second bath
2. Appliance extras (Microwave, trash compactor, smoke alarm, intercom)	2. Central heat/air
3. Larger closets/ storage space	3. Larger closets/ storage space
4. Landscaped yard	4. Two-car garage/ door opener
5. Storm windows/doors	5. Family room

Both the Haney and Kane studies found that employment accessibility were insignificant variables of housing values. These findings are probably not as much in disagreement with economic theory as first thought might indicate.

Hoover's explanation of the density gradient may explain the difference between the Haney and Kane studies and traditional economic theory, in stating:

Perhaps the most elementary aspect of an urban pattern is the way in which intensity of land use varies with distance from the center, assuming a symmetrical circular pattern. Implicit here is the concept of a city as a multitude of space-occupying location units seeking close contact. If these location units are affected by more or less the same kind of access attraction (as, for example, households are affected by the desire to shorten the journey to work), and have some leeway in the amount of space they occupy, we should expect their density (intensity

¹Ibid.

²Ibid., p. 6.

of space use) to be at a peak at the center (the optimum total-access point) and to fall off in all directions with increasing distance from the center. Such a tendency can be described by a density gradient, where density is a negative function of radial distance. . . . the decline of density with distance depends (1) on the rate at which the area's noncentral activity units (households, in a purely residential journey-to-work model) are willing to trade off spaciousness of home sites against a quicker or cheaper journey to the center, and (2) on the time and money cost of transport. Obviously, a variety of circumstances--such as better transport in some directions than in others and variations in site quality--can complicate this neat symmetrical picture in the real world.¹

None of the research studies reviewed dealt with the knowledge gained by home buyers during the home-buying process. The studies by Shaw and Everard were the most pertinent to this study in that they dealt with knowledge needed and the uses of information sources by home buyers. VandeBerg addressed the question of the educational needs of home buyers.

The "walking or riding around" identified by Shaw as the third most frequently used source of obtaining information relates to the "driving around" identified as the most frequently used source of learning about new properties purchased by individuals from members of the National Association of Home Builders.

The preferences and attitudes of home buyers formed the basis of the studies by Klein, Obenberger and Peery, while Kain and Quigley, Haney and Kane studied the determinants of value. The decision-making process was addressed by Whipple, Bernhardt, and Barnes. The conveyance process was addressed by Payne. All of the studies reviewed were closely interrelated, although not dealing directly with the knowledge gained by home buyers.

¹Hoover, Economics, pp. 307-08.

Consumer Education

Consumer education is as old as mankind. The earliest records we have of educational philosophers, including Aristotle and Plato, contain instructions about how to teach the young to be knowledgeable consumers. An example of this is given in The Educated Man, by Nash, Kazamias, and Perkinson:

From the archaic Homeric period to the flowering of the classical civilization, the Greeks explicitly sought through education to train the young in the skills and values necessary for participation in the society and for attainment of what they conceived to be ideal manhood. . . .¹

Through the centuries, consumer education has traditionally been concentrated in the home. As a part of our formal educational systems, consumer education is relatively new. The "consumer" movement is a product of our Twentieth-Century industrialized society.

The consumer movement in America gathered momentum after 1962, when President Kennedy issued his "Bill of Rights" for the consumer. In a message to Congress in March, 1962, President Kennedy spelled out what he believed were the basic rights of all consumers: (1) the right to safety; (2) the right to be informed; (3) the right to choose; and (4) the right to be heard.²

New rules and laws have been passed by every Congressional Session since 1962, each one designed to "protect the consumer." More attention has been given to "protecting" the consumer than has been

¹Paul Nash, Andreas M. Kazamias, and Henry J. Perkinson, The Educated Man: Studies in the History of Educational Thought (New York; John Wiley & Sons, Inc., 1965), p. 1.

²Walter W. Perlick and Raymond V. Lesikar, Introduction to Business (Dallas, Texas: Business Publications, Inc., 1972), p. 536.

given to "educating" the consumer. How much better it might be if we could educate the consumer so that he could "protect" himself in our market economy, the ideal economy for any free enterprise system.

Consumer education has centered in the Home Economics area of our public schools, for the most part. Gradually, some of it has spilled over into the business area, and most colleges now offer courses in "Consumer Economics" or "Personal Finance." Many states even require such courses at the secondary level.

The nearest that Oklahoma has come to requiring a course in "Consumer Economics" below the college level is a law passed in 1970, Oklahoma Statute 70 § 1210.251, requiring that the teaching of Economics must be integrated with the teaching of other courses. A discussion by the author with school teachers from various areas of the state indicates that little effort has been made to fulfill the intent of this law.

The consumer movement has not concentrated upon the housing industry. Perhaps the fact that the housing industry is made up of numerous small firms rather than a few large firms has left the consumer advocates at a loss as to the proper "target."

Some attention has been given to the housing industry, however, by the Federal Trade Commission. An example is the recent Kaufman & Broad, Inc., case.¹ The Los Angeles-based company and its subsidiaries were charged with misrepresenting the quality of its housing, the quality of the lots on which the houses were built, taxes, community facilities and other matters, and with failing to honor its warranties. Defects charged included cracked and poorly water-proofed foundations,

¹Editorial, Wall Street Journal, July 7, 1978, p. 6.

inadequately supported walls, sagging floors, leaking roofs, badly installed plumbing and insufficient insulation in some rooms.

The Kaufman & Broad, Inc. company signed a consent order, without admitting any law violation, agreeing to inform original owners of houses built by them since 1972 that it will pay for repairing major defects. The housing industry defines major defects as "actual damage to the load-bearing portion of the home." The company also agreed to pay for repairs to the electrical, plumbing, heating and cooling systems that did not comply with approved standards. The consent order also bars the company from unfair or deceptive practices in advertising, sale and construction of residential housing.¹

As "consumerism" has grown, many books on consumer economics have been written. Usually, however, no more than a chapter or so is devoted to housing consideration.

In their book on Personal Finance, Hastings and Mietus² devote a chapter to the housing decision. The chapter is entitled "Your Home--whose roof over your head?" To help the reader decide between buying and renting, Hastings and Mietus group the relevant factors into two broad categories: (1) style of living, and (2) cost of living. The reader is led through a series of lifestyle descriptions to help determine whether they would prefer renting or buying. The following is a summary of the lifestyle descriptions to be considered by the reader:³

¹Ibid.

²Paul Guilder Hastings and Norbert Mietus, Personal Finance (New York: McGraw-Hill Book Company, 1977), pp. 195-226.

³Ibid., p. 199.

Better to rent if:

1. You want to be free to move on short notice.
2. You loathe maintenance chores around the house.
3. For you, compact quarters liberate rather than confine.
4. You prefer a predetermined and relatively fixed cost for housing, albeit only for the duration of the lease.
5. You have no children, or they are adults and have left home.
6. You like "wall-to-wall" proximity to other people.
7. You prefer to invest your savings in more liquid media.
8. You want to avoid possible foreclosure.
9. You are prepared to move if the landlord or other tenants become troublesome.
10. You lack the necessary down payment or cannot qualify for a loan.¹

Better to buy if:

1. You regard you home as your castle.
2. You enjoy puttering around your home and garden.
3. You need elbow room.
4. You buy only what you can afford. And you know a tenant eventually pays the full cost of the rented housing, including a profit to the landlord.
5. You have children and their welfare is your paramount concern.
6. You prefer privacy and quiet.
7. You regard a house of your own as an excellent variable dollar investment medium. Every house payment includes some savings added to your equity; the renter gets only receipts. You enjoy the government subsidy permitted by deduction of interest and property taxes in figuring income taxes. Through wise selection and proper maintenance, your investment remains reasonably liquid.
8. You manage your finances prudently and avoid a forced sale.
9. You want to be free from arbitrary or capricious actions of landlord or co-tenants: rent boosts, nuisances, limits--on pets, children, guests, redecorating, entertaining.
10. You have the necessary down payment and can qualify for a loan.²

The financial considerations involved in deciding between buying and renting are handled in much the same way. An example of a typical family is given, with the result being that the cost of buying is \$510 monthly compared with \$413 for renting. Hastings and Mietus make the observation that although it appears to cost more to buy than to rent,

¹Ibid.

²Ibid.

lower income taxes will be paid (if property taxes and interest payments are itemized as deductions in one's income tax return) and the new home has more space as well as a yard. They also point out that the owners are "building an equity in real property, a very desirable form of investment"--rather than a collection of rent receipts.¹

The rationale offered by Hasting and Mietus is often used by buyers in purchasing a larger home than they can afford or one in a location particularly desirable to them. Other textbooks and articles on consumer economics approach housing from an economic viewpoint. Troelstrup states: "You must figure the maximum amount that you can expend for shelter and still leave adequate income for other aspects of family living before you allow your dreams to plunge you into debt."² Miller is more realistic in his statement:

What we are buying is not the house itself, but how much pleasure we get out of living in it month in and month out. And that pleasure is a function of its size, the conveniences it has, how pretty the view is, what the neighborhood is like, and everything else that can contribute to our happiness when we are at home. Generally, the reason there is "no place like home" is because all of us try to make our homes as special as possible so that we get the greatest amount of utility or services from them. That is why, also, it is important to realize that when we buy a \$50,000 house, we are getting a larger flow of services per month than if we had bought a \$20,000 house.³

Some efforts are being made to educate prospective home buyers. Typical of such efforts was a four-session course offered by the University of Wisconsin-Extension (UWEX) in Madison in the Spring of

¹Ibid., p. 203.

²Troelstrup, The Consumer, p. 340.

³Miller, Economic Issues, pp. 206-07.

1977 entitled, "Questions to Ask When Buying, Building or Selling Your Home."¹ This course was a part of their real estate consumer education program, and was presented over the Educational Telephone Network (a private telephone network linking over 180 different locations in the state). The ETN is the delivery system of the University of Wisconsin-Extension and is available to all extension departments. The cost of reaching students is kept to a minimum by the use of this media.²

The first three sessions covered "Buying a Home," "Selling a Home," "Building a Home," in that order. The final session was an open session, combining a review of the materials presented earlier and a discussion of topics suggested by class members.³

A critique of the course by students was obtained in a questionnaire at the end of the course. Their comments and suggestions were grouped into several general areas, and reported as:

1. Time problems. Several students suggested that more time be spent on various topics. Time was limited and not everyone's special interest was covered in depth.
2. Geographical differences. The course audience included people throughout the state, in widely differing housing marketing areas, each with its own characteristics. Not all of them could be covered in detail.
3. Different levels of real estate sophistication. The real estate experience of the audience differed widely; some of the students felt that the material was too elementary, while others felt that it was presented too quickly.
4. Technical problems. Some listening posts had difficulties with the equipment.
5. Guest speakers. Several students suggested that the inclusion of a lender, a builder and an attorney would enhance the course.⁴

¹Adena Spohn Moore, "Education for the Homebuyer," Real Estate Today, February, 1978, pp. 50-53.

²Ibid.

³Ibid.

⁴Ibid.

The critique demonstrates some of the problems encountered in presenting such a program, and the difficulties therein explain why more such programs have not been offered. For education to be effective, the students must be receptive. One of the problems of teaching consumers about housing is that most people do not feel a need to learn about home purchasing until they are ready to enter the market themselves. Courses such as the one offered by UWEX are usually not immediately available!

Not only are consumers faced with the problem of finding available information at the time they are "receptive" (usually when the decision to purchase is imminent), but the variety of "products" are a major problem. Real property has the economic characteristic of being heterogeneous! In discussing this variety of products, Thorelli, Becker, and Engledow¹ state:

Information may well be the most important single "product" of an affluent economy based upon open markets. Without sources of information that are both available and accurate, there is little hope that the buyer will find his way through the maze of preoffered products and services toward products which best serve his wants and needs. . . .

.
Regardless of the merit of products available, the buyer is likely to make poor decisions if he has poor information or utilizes it poorly. It is not surprising, then, that the adequacy of current market information has become a topic of widespread interest and debate in both the United States and other nations with advanced consumer economies.²

On an international level, we have the Organization for Economic Co-Operation and Development (OECD), which was set up under a Convention

¹Hans B. Thorelli, Helmut Becker, and Jack Engledow, The Information Seekers, An International Study of Consumer Information and Advertising Image, published in cooperation with Consumer Research Institute, Inc. (Cambridge, Mass.: Ballinger Publishing Co., 1975).

²Ibid., p. 3.

signed in Paris on December 14, 1960. OECD has the responsibility of promoting policies designated as follows:

. . . --to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;

--to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;

--to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.¹

The members of OECD are Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Greece, Iceland, Portugal, and Turkey were formerly members of OECD.

Annual reports are issued by the organization. The 1972 report issued by OECD, in part, states:

Consumer education can be distinguished from consumer information, which consists in providing them with facts, . . .

.
In practice, however, information and education are complementary. Education enables consumers to derive greater benefit from information by enabling them to absorb and understand it more fully; at the same time information is of help to education, as it is on the basis of data given by the information services that educational services can arouse interest, mold judgment and make action possible. . . .

.
In most member countries the consumer education given in schools is not yet very developed. Either it is too general, and pays too little attention to the practical problems with which the

¹"Consumer Policy in Member Countries," Report by the Committee on Consumer Policy, Organization for Economic Co-operation and Development. Paris, 1972., p. 2.

individual as a consumer will be faced in daily life, or it is incomplete and confined to subjects such as domestic science and economy, or else it does not exist at all. It should be noted that in many member countries, especially in the Nordic countries, household affairs have been taught to both girls and boys for some years. In addition, more specific education in consumer affairs has been or is being introduced into other school subjects, such as mathematics and civic affairs.¹

Five years later, in the 1977 report, Australia reported that ". . . In Victoria greater emphasis is being given to consumer education with the appointment of an Education Officer in the Consumer Affairs Bureau."² Finland reported that their ". . . Consumer education carried out by schools was boosted by public authorities through a supply of educational material on advertising and on rational consumption."³

The report from Ireland stated:

. . . consumer education continued to play an important role in secondary school level education. There was an increased demand from adult groups and young married couples for more information on consumerism. The Consumer Education Committee already referred to will make recommendations on how to cope more effectively with the need for consumer education at both school and adult levels. . . .⁴

The report from the United States, in part, stated:

To help promote consumer education in the schools and in the community, the Office of Consumer Affairs (OCA) is working with a joint committee of interested business leaders to establish a business-sponsored Foundation for Consumer Education of the United States.⁵

¹Ibid., p. 13.

²"Annual Reports on Consumer Policy in OECD Member Countries, 1977," Report by the Committee on Consumer Policy, Organization for Economic Co-operation and Development. Paris, 1977, p. 22.

³Ibid., p. 36.

⁴Ibid., p. 49.

⁵Ibid., p. 112.

Theoretically, in a market economy, the consumer is king. Economic price theories¹ tell us that the buyer determines what is to be produced, how much, at what price, and for whom. These decisions are made in the marketplace in a pure market economy. Unfortunately, the housing market does not operate as a pure market economy. There are many constraints on both the buyers and sellers.²

Sellers attempt to supply what the buyer wants, subject to the constraints of cost, technology, and the availability of raw materials, labor and capital. They face the problem of supplying housing that is desirable to consumers at a price the consumer can afford, after paying the factors of production: land, labor, capital, and entrepreneurship.³

The buyer, or consumer, finds his choice influenced by the price of the good, the price of other comparable goods, his income, his wealth, and his or his family's taste (the latter being the most difficult to determine). Buyers, particularly the low-income and/or unknowledgeable ones, are often forced to accept whatever housing is available, be it desirable or undesirable.⁴

Even consumers with sufficient funds may not be knowledgeable consumers. Taste is difficult to determine. Not only does it vary among families, but it may vary a great deal within families. Reconciling those differences in individual tastes is an important part of the home-buying decision.

Society has attempted to ease the problem of housing for the low-income by providing subsidized housing. Recipients of such

¹James E. Hibdon, Price and Welfare Theory (New York: McGraw-Hill Book Company, 1969), pp. 333-58.

²Ibid.

³Ibid.

⁴Ibid.

housing, however, do not have full freedom of choice. Many in our society propose a guaranteed minimum income as a way of allowing the low-income consumer more freedom of choice. Teaching consumers how to make intelligent choices may help ensure the maximum returns to society from such transfer payments.

Helping consumers develop good decision-making skills is one of the basic premises of consumer education. What pleases one family will not necessarily be the same as that which pleases other families, and a free society should allow each family to choose housing that pleases them. Van Hooft expresses this aspect of consumer education with the statement ". . . consumer education does not have as its purpose that of directing consumer choices. . . . Neither is it the function of consumer education to indoctrinate values. . . ."1

Virginia H. Knauer, Assistant to President Nixon for Consumer Affairs, made the statement that:

It is important that one understand why one buys what he buys. . . . so that he will be able to make consumer choices in a marketplace where things are constantly changing. . . . An effective consumer understands the economic system in which he lives and the effects of his consumer decision on his family, community, and nation. He should also understand how to make his voice heard so he can contribute to forming the kind of marketplace and society in which he would like to live. . . . The consumer must develop his process for consumer decision-making. He also must understand the need to manage his consumer decisions and in doing so to investigate all his alternatives. . . ."2

¹Gordon E. Van Hooft, "The New Approach to Consumer Education," ERIC 1968 ED 048 078.

²Virginia H. Knauer, "Consumer Education in the Business Program," Business Education Forum, March, 1971, pp. 8-10.

Consumer education has not concentrated on housing, although it has been concentrated in the home economics departments of educational institutions. Interest in educational programs is usually the highest when the recipients recognize an imminent need for the program. Programs on housing have not been in great demand because the need for such education is not recognized by the majority of secondary school students nor by many college students. When the need is imminent, the educational programs are not readily available.

Even when available, the consumer education programs on housing leave much to be desired. Helping prospective home buyers develop good decision-making skills may be the best that consumer educators can hope to accomplish.

Summary

This chapter has included a review of marketing theories, research studies, and consumer education as related to housing. No comprehensive body of knowledge with tested theories about housing from a buyer's perspective has yet been developed.

The psychological and sociological theories of consumer behavior are discussed in the section on marketing theories, with most attention being given to psychological theories because they are concerned with the actions and behavior of individuals. Psychological theories include both psychoanalytical theories and learning theories. The psychoanalytical theories used in marketing research have centered on motivational theory, and relate to marketing in the free enterprise system much more than do the learning theories.

The research studies most closely related to the research involved in this study are reviewed in the section on research studies. Three studies on the preferences and attitudes of home buyers were reviewed, three studies on the determinants of value were reviewed, three studies on the decision-making process were reviewed, one study on the conveyance process, one study on the educational needs of home buyers was reviewed, and two studies on the knowledge needed and the uses of information sources by home buyers were reviewed. In addition, two unscientific studies were reviewed--one by the National Association of Home Builders and the other by Oklahoma Natural Gas Company. Both studies were on the profile of a new buyer. While all of the studies reviewed were interrelated, none of the studies dealt directly with the knowledge gained by home buyers during the home-buying process.

The development of consumer education is reviewed in this chapter, with particular attention being given to programs on housing. Programs on housing have been concentrated in the home economics departments, with the emphasis being placed on home decoration and living arrangements. Within the last few years, programs on consumer economics have been developed in the business and economics departments. The programs on consumer economics are also rather limited on housing, with no more than one chapter in a text being devoted to the topic of housing costs.

A review of marketing theories, research studies, and consumer education as related to housing reveals little research in which the home-buying consumer himself has been asked about the decisions involved in home-purchasing. The knowledge needed before making home-purchasing decisions has not yet been identified.

CHAPTER III

METHODOLOGY

The methodology for this study is discussed under the following sections: definition of terms, data collection, and design of study.

Definition of Terms

For the purpose of this research, the following definitions were established:

Attorney	A qualified legal agent appointed by another to transact business for him, particularly in the examination of the title to the property being purchased.
Broker	An agent who negotiates contracts of purchase and sale of real property; one who acts as an intermediary.
Buyer Dissatisfaction	A buyer who feels and reports that he is in the state of being dissatisfied, discontented, displeased, annoyed, offended, feeling a restless aspiration for improvement.
Buyer Satisfaction	A buyer who feels and reports that he is in the state of contentment, pleasure, satisfaction, gratification, and happiness.
Closing Costs	The costs incurred by the buyer in closing the purchase of his new home, including loan-closing costs.
Consumer	One who consumes economic goods; the home owner and/or his/her family.
Decision to Buy	The act of deciding on the specific property to be purchased.
Decision-making Process	The process of making a decision, including the consideration of all alternatives and the selection of a certain option.

Financing	The process of borrowing funds to complete the purchase of one's home; long-term loans secured by mortgages.
Good Decision	A conclusion or determination arrived at after consideration that results in satisfaction, contentment, and pleasure for the individual making the decision.
Home-buying Consumer	An individual or family who purchases a residential property to be used as a home for the purchaser and/or the purchaser's family.
Home-buying Process	Any, or all, of the processes, such as legal, financial, or searching, which an individual or family utilizes in gaining ownership of real property.
Housing	Dwellings provided for people; shelter; lodging.
Knowledge	The fact or condition of knowing something with familiarity gained through experience or association; being aware of something; cognizance; the range of one's information or understanding; the body of truth, information, and principles acquired by mankind.
Knowledgeable Consumer	A consumer who has knowledge gained through experience, association, or education; also, a consumer who acts in an intelligent manner.
Knowledgeable Decision	A decision that enables a consumer to be satisfied with his decision--a decision made with full knowledge of his needs, desires, and ability to pay.
Lifestyle Needs	The needs of an individual or family unit necessary for the maintenance of their typical way of life.
Living Area	The area in a home normally used for relaxation, visiting, and entertainment; usually called the living room, family room, den, or recreation room.
Living Space	The heated interior floor space of a residence, excluding the garage.
Maintenance Costs	The costs of maintaining a residence in order to prevent deterioration; painting, repairs, etc..
Mortgage Payments	The amount required to repay a loan with interest thereon; usually amortized loans with equal monthly payments.
Neighborhood	A section or region distinguishable by the individuals who live therein, the residences in the area, the terrain of the area, or some other unique characteristic.

Prepurchase Home Buyer	An individual, or family, currently searching for an acceptable house to be purchased for use as a home for the individual and/or his/her family.
Postpurchase Home Buyer	An individual, or family, having made the purchase of a home within 12-24 months of the time interviews were conducted.
School System	The overall administration of education for an area, including the school or schools serving the residence of the home buyer; usually identified as a certain school district.
Settlement Costs	The cost of completing the transaction of purchasing a home, including sale-closing and loan-closing costs, sometimes referred to simply as "closing costs."
Utility Costs	The cost of energy and convenience supplied to a residence; electricity, water, gas, sewage service, etc.
Zoning Laws	The rules established by a governmental agency (usually a city) for the purpose of regulating the use of property.

Data Collection

The data used in this study were obtained from a sampling of the home-buying consumers who purchased homes in the three major counties of the Oklahoma City SMSA during the month of August, 1977. The area was chosen because it is often used for sampling marketing projects by marketing experts and because of its easy accessibility. The month of August is considered a typical month by those in the housing industry.

The home-buying consumers who made their purchase in August, 1977, had owned their property more than one year at the time this study was conducted. One year's ownership and occupancy was considered sufficient time for the home-buying consumer to have formed an opinion about the correctness of the home-purchase decision.

The sample was defined from the listings in Guffey's Journal.¹ During August, 1977, Guffey's Journal reported a total of 1,996 deeds recorded in the three major counties of the Oklahoma City SMSA, Oklahoma County, Cleveland County, and Canadian County. The Oklahoma City SMSA also includes the counties of McClain and Pottawatomie; however, these counties were not included in the sample.

Each listing in Guffey's Journal was entered at random. The chosen entry, and each fourth entry thereafter, were recorded for the sample. When the end of the listing was reached, recordings were continued at the first of the listing until the beginning entry was reached.

Information from the entries chosen were recorded on 3 x 4 index cards. Included were the name(s) of the grantee(s), legal description, and the amount of documentary stamps purchased. The legal descriptions were recorded for possible use in sorting the cards by additions within the county, should it be necessary in the process of analyzing the data. The amount of documentary stamps purchased was used to calculate the purchase price of the home.

The mailing addresses of the home buyers were obtained from the metropolitan Oklahoma City telephone directory issued in April, 1978. The phone number was also recorded for follow-up purposes. Some of the grantees had unlisted phone numbers. For the grantees with unlisted phone numbers, the public records of the County Assessor's office were searched for the mailing address of the home owner.

¹Guffey's Journal is a bi-weekly newspaper directed toward the real estate industry in the Oklahoma City SMSA and Tulsa SMSA. Only the issues for the Oklahoma City SMSA were used in defining the samples.

The letter shown in Exhibit 1 and the questionnaire shown in Exhibit 2 of Appendix A were sent to the grantees chosen for the sample. A stamped return envelope was enclosed for the recipient's convenience. Providing the return envelope and paying the postage were intended to encourage home owners to complete and return the questionnaire. Four hundred ninety-three letters and questionnaires were mailed.

Two weeks after the letter and questionnaire were mailed, a follow-up card was sent to all who had not responded. A copy of the card is shown in Exhibit 3 of Appendix A. Three hundred sixty-two cards were mailed.

Design of Study

This study was designed to collect many relevant facts, group the data, analyze the data where appropriate, and report the findings. The discussion focuses on parametric and nonparametric statistical techniques.

Mathematical Techniques for Nonparametric Statistics

The data relevant to Research Objective I and Research Objective II were subjected to nonparametric statistics.

Chi-square is perhaps the most useful of all the nonparametric statistics. The Chi-square technique is of the goodness-of-fit type in that it may be used to test whether a significant difference exists between an observed number of objects or responses falling in each category and an expected number of objects or responses.¹

¹Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, 1956), p. 43.

The Chi-Square distribution is a theoretical model based upon the following assumptions:

1. The sample involved is a random sample drawn from the population about which inference is to be made.
2. Observations are independent of each other.
3. Observed frequencies will be distributed normally about expected frequencies.¹

The Chi-Square (χ^2) test may be used to determine the significance of differences between two independent groups when the data consist of frequencies in discrete categories. The general formula for calculating Chi-Square is:

$$\chi^2 = \sum_j \frac{(o_j - e_j)^2}{e_j}$$

The Chi-Square Tests of Independence (also known as Chi-Square Test on Frequencies of Two Classes) were used for testing the hypotheses relating to Research Objective I.

The Chi-Square testing of bivariate frequency distributions require the use of contingency tables. A sample contingency table looks something like the following:

	I	II	III	Totals
A	a_1	a_2	a_3	N_A
B	b_1	b_2	b_3	N_B
C	c_1	c_2	c_3	N_C
Totals	N_1	N_2	N_3	N

¹Minium, Statistical Reasoning, pp. 384-85.

The degree of relationship between the classifications in the contingency tables can be obtained by calculating a Coefficient of Contingency from the Chi-Square value. The formula for the Coefficient of Contingency is:

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}}$$

Downie and Heath discuss the characteristics of the contingency coefficient, C , in their book, Basic Statistical Methods:

The contingency coefficient, C , does not have 1 as an upper limit, the upper limit being related to the number of categories. For a table made up of an equal number of columns and rows, K by K , the upper limit is $\sqrt{(K - 1) / K}$. Thus, for a 3×3 table, the upper limit is $\sqrt{2/3} = .82$, for a 4×4 table, $\sqrt{3/4} = .87$, and so on. When the number of columns and rows differ, as in 3×4 , the upper limit follows that of the smaller number.¹

The contingency coefficient, C , does have a few limitations. Siegel discussed the assumptions and limitations of C in the following manner:

The wide applicability and relatively easy computation of C may seem to make it an ideal all-round measure of association. This is not the case because of several limitations or deficiencies of the statistic. . . . it cannot attain unity. . . . Two contingency coefficients are not comparable unless they are yielded by contingency tables of the same size. . . . the data must be amenable to the computation of χ^2 . . . C is not directly comparable to any other measure of correlation. . . . In spite of these limitations, the contingency coefficient is an extremely useful measure of association because of its wide applicability. The contingency coefficient makes no assumptions about the shape of the population of scores, it does not require underlying continuity in the variables under analysis, . . . Because of this freedom from assumptions and requirements, C may often be used to indicate the degree of relation between two sets of scores to which none of the other measures of association which we have

¹N. M. Downie and R. W. Heath, Basic Statistical Methods (4th ed.; New York: Harper and Row Publishers, Inc., 1974), p. 203.

presented is applicable. . . . Because of its nature and its limitations, we should not expect the contingency coefficient to be very powerful in detecting a relation in the population. However, its ease of computation and its complete freedom from restrictive assumptions recommend its use where other measures of correlation may be inapplicable. Because C is a function of χ^2 , its limiting power distribution, like that of χ^2 , tends to 1 as N becomes large (Cochran, 1952).¹

The strength of relationship or association between the classifications in the contingency tables can be obtained by calculating a Correlation of Attributes. The formula for calculating the Correlation of Attributes is:

$$r = \sqrt{\frac{\chi^2}{N(k - 1)}}$$

where r is the correlation coefficient between attributes and classifications, lying between 0 and 1. N is the number of observations, and K is the number of rows and columns. The larger the value of r , the stronger the degree of association or correlation.

Both a Correlation of Attributes and a Contingency Coefficient were calculated for the data relating to Research Objective II.

Mathematical Techniques for Parametric Statistics

The data relevant to Research Objective III were subjected to both a Multiple Discriminant Analysis (MDA) and a Factor Analysis (FA).

Multiple Discriminant Analysis

Discriminant analysis is an appropriate statistical technique for testing the hypothesis that the group means of the groups are equal.

¹Siegel, Nonparametric Statistics, pp. 200-01.

The use of MDA is particularly appropriate when the dependent variable is categorical (nominal or nonmetric) and the independent variables are metric.¹

Hair, Anderson, Tatham, and Grablowsky give the mathematical equation for MDA in their book, Multivariate Data Analysis:

Discriminant analysis involves deriving the linear combination of the two (or more) independent variables that will discriminate best between the a priori defined groups. This is achieved by the statistical decision rule of maximizing the between-group variance relative to the within-group variance--this relationship is expressed as the ratio of the between-group to within-group variance. The linear combinations for a discriminant analysis are derived from an equation which takes the following form:

$$Z = W_1X_1 + W_2X_2 + W_3X_3 + \dots + W_nX_n$$

where

Z = the discriminant score

W = the discriminant weights

X = the independent variables²

The assumptions of Multiple Discriminate Analysis are:

1. Multivariate normality of the distributions.
2. Unknown (but equal) dispersion and covariance structures for the groups.
3. When classification accuracies are determined, we must also assume (a) equal costs of misclassification, equal a priori group probabilities, and known dispersion and covariation structures.³

The objectives of Multiple Discriminate Analysis are:

1. Determining if statistically significant differences exist between the average score profiles of the two (or more) a priori defined groups.
2. Establishing procedures for classifying statistical units (individuals or objects) into groups on the basis of their scores on several variables.
3. Determining which of the independent variables account most for the differences in the average score profiles of the two or more groups.⁴

¹Joseph F. Hair, Jr., Rolph E. Anderson, Ronald L. Tatham, and Bernie J. Grablowsky, Multivariate Data Analysis with Readings (Tulsa, Okla.: The Petroleum Publishing Company, 1979), p. 85.

²Ibid., p. 85.

³Ibid., pp. 86-87.

⁴Ibid., p. 90.

The usefulness of the classification matrix procedure for MDA can be related to the concept of an R^2 in regression analysis. With MDA, the hit-ratio (percentage correctly classified) is analogous to regression's R^2 . While R^2 indicates how much variance the regression equation explains, the hit-ratio reveals how well the discriminant function classified the statistical units. The Chi-Square test of significance in discriminant analysis is analogous to the F-Test for statistical significance of the R^2 .¹

If the statistical test indicates that the MDA function discriminates significantly, classification matrices may be developed to provide a more accurate assessment of the discriminating power of the function. A cutting score must be determined before a classification matrix can be constructed. The cutting score is the criterion against which the individual's discriminate score is judged to determine into which group the individual should be classified.²

The optimum cutting score is also referred to as a critical Z value. For groups of equal size, the optimal cutting score will be halfway between the two group centroids. The cutting score is therefore defined as:

$$Z_{CE} = \frac{\bar{Z}_A + \bar{Z}_B}{2}$$

where Z_{CE} = critical cutting score value for equal group sizes

$\bar{Z}_A$ = centroid for group A

$\bar{Z}_B$ = centroid for group B

For groups of unequal size, a weighted average of the group centroids will provide an optimal cutting score, calculated as follows:

¹Ibid., pp. 97-98.

²Ibid.

$$Z_{CU} = \frac{N_B \bar{Z}_A + N_A \bar{Z}_B}{N_A + N_B}$$

where

- Z_{CU} = critical cutting score value for unequal group sizes
 N_A = number in group A
 N_B = number in group B
 $\bar{Z}_A$ = centroid for group A
 $\bar{Z}_B$ = centroid for group B

Both formulas assume that the distributions are normally distributed and that the group dispersion structures are known.¹

The costs of misclassification are another consideration of determining the optimal cutting score. When the costs of misclassifying an individual are approximately equal, then the optimal cutting score will be the one which will misclassify the fewest number in all groups. If the misclassification costs are unequal, then the optimum cutting score will be the one which minimizes the costs of misclassification.²

The level significance for the classification accuracy may be determined by a t-test. The formula for a two group analysis (equal sample size) is:

$$t = \frac{p - .5}{\sqrt{\frac{.5(1 - .5)}{N}}}$$

where

- p = proportion correctly classified
 N = sample size

The formula can be adapted for use with more groups and unequal sample sizes.³

¹Ibid.

²Ibid., p. 98.

³Ibid., p. 101.

Factor Analysis

"Factor analysis is a method for determining the number and nature of the underlying variables among large numbers of measures."¹ In effect, factor analysis helps determine what tests or measures can be added and studied together rather than separately. A factor is a hypothetical entity that is assumed to underlie tests and test performance.² Factor analysis can also be thought of as a device for ordering and simplifying correlations between related variables. In his book on The Essentials of Factor Analysis, Dennis Child stated:

The primary aim of factor analysis is the discovery of these common factors. The techniques for extracting the factors generally endeavour to take out as much common variance as possible in the first factor. Subsequent factors are, in turn, intended to account for the maximum amount of the remaining common variance until, hopefully, no common variance remains.³

The equation that expresses sources of variance in a measure (or test) can be written as:

$$V_t = V_{co} + V_{sp} + V_e$$

where

V_t = total variance of a measure

V_{co} = common factor variance

V_{sp} = specific variance

V_e = error variance⁴

Common factors, or general factors, include significant loadings from most if not all the variables in the analysis. A specific factor

¹Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), p. 650.

²Ibid.

³Dennis Child, The Essentials of Factor Analysis (New York: Holt, Rinehart and Winston, Inc., 1976), p. 33.

⁴Kerlinger, Behavioral Research, p. 655.

contains only one significant loading for a particular variable. An error factor is the error variance, or unreliability, of the imperfections of measurement. ". . . factor analysis does not discriminate between specific and error variance, . . ."¹

The assumptions of Factor Analysis are:

1. The total variance of a test may be regarded as the sum of three kinds of component variances: (a) that contributed by one or more common factors, common because they appear in more than one test; (b) that unique to the test itself and to its equivalent forms; and (c) error variance.²
2. The correlation between two experimental variables (such as tests and criteria) is equal to the sum of the cross products of their common-factor loadings.³

In equation form, assumption 1 may be stated as:

$$S_t^2 = S_a^2 + S_b^2 + \dots + S_q^2 + S_s^2 + S_e^2$$

where

$$\begin{aligned} S_t^2 &= \text{total variance of a test} \\ S_a^2, S_b^2, \dots, S_q^2 &= \text{variances in common factors A, B, . . . , Q} \\ S_s^2 &= \text{variance specific to the test} \\ S_e^2 &= \text{error variance}^4 \end{aligned}$$

In equation form, assumption 2 may be stated as:

$$r_{jx} = a_j a_x + b_j b_x + \dots + q_j q_x$$

where

$$\begin{aligned} a_j \text{ and } a_x &= \text{loadings of factor A in criterion J and test X,} \\ b_j \text{ and } b_x &= \text{loadings of factor B in criterion J and test X,} \\ &\text{etc.}^5 \end{aligned}$$

The objectives of Factor Analysis are:

¹Child, Factor Analysis, p. 34.

²J. P. Guilford and Benjamin Fruchter, Fundamental Statistics in Psychology and Education (6th ed.; New York: McGraw-Hill, Inc., 1978), p. 439.

³Ibid., p. 442.

⁴Ibid., pp. 439-40.

⁵Ibid., p. 442.

1. Identification of the underlying structure of the interrelationships expressed in a correlational matrix. The Factor Analysis procedure estimates the minimum number of separate variables or factors necessary to provide the information contained in a correlational matrix.¹
2. Determination of which and how many variables explain the underlying structure of the interrelationships.²

Fox discusses the use of Factor Analysis in his book, The Research Process in Education, in the following statement:

Factor analysis typically involves a five-step process, in which the middle two steps involve complex computation almost always done by computer, . . . The first stage is to identify the variables to be studied, . . . The second step is to develop the correlational matrix expressing the correlation between each pair of variables, . . . The third step is to put this matrix through the first computational process of factor analysis which produces what is called an unrotated matrix of principal components, from which the minimum number of separate factors required to account for the data can be identified. . . . The fourth step in factor analysis, a step referred to as rotation, producing the rotated matrix . . . The contents of this second matrix consist of what are called the factor loadings. . . . The fifth and final step in factor analysis is for the researcher to name or label the factor which is operating in the situation. . . .³

Both the Multiple Discriminant Analysis and the Factor Analysis used in this study were taken from the Statistical Analysis System (SAS) Package. Both programs were run on a 370-158 IBM Computer at the University of Oklahoma.

Summary

This chapter has presented the terms, methods of data collection, and the design of the study. A description of the statistical procedures used for testing the hypotheses has also been presented.

¹David J. Fox, The Research Process in Education (New York: Holt, Rinehart and Winston, Inc., 1969), p. 216.

²Ibid., pp. 216-17.

³Ibid.

The definitions of terms were prepared for use in this study. The terms are unique to this study, and may not agree with the definition found in most dictionaries.

The data collection section describes the defining of a sample for this study. The sample was defined from the home-buying consumers whose deeds were recorded during the month of August, 1977, in the counties of Oklahoma, Cleveland, and Canadian, in the state of Oklahoma. August is considered to be a typical month for home-buying by those in the housing industry. The sample was defined from Guffey's Journal. All home-buying consumers included in the sample had owned their home more than one year at the time of the study.

The design of the study included both nonparametric statistics and parametric statistics. The nonparametric statistics used in this study were the Chi-Square Tests of Independence (also known as Chi-Square Test on Frequencies of Two Classes) and the Chi-Square Tests for Correlation. Both a Correlation of Attributes and a Contingency Coefficient were calculated for the data subjected to the Chi-Square Tests for Correlation.

The data relevant to Research Objective I were submitted to the Chi-Square Tests of Independence. The data relevant to Research Objective II were submitted to the Chi-Square Tests for Correlation.

The parametric statistics used in this study were a Multiple Discriminant Analysis and a Factor Analysis. The data relevant to Research Objective III were submitted to both a MDA and a FA.

CHAPTER IV

RESULTS OF STUDY

Introduction

The data of this research study are the survey responses (completed questionnaires) recapitulated in Appendix B. The data were studied and analyzed to determine the knowledge gained by home buyers during and after their home-buying experience that could have been beneficial to them as prepurchase knowledge.

In order to give the best presentation of the findings resulting from an analysis and interpretation of the information contained in the survey responses, this chapter is divided into the following seven major sections:

1. Demographic information about the 142 survey respondents.
2. Prepurchase knowledge of the survey respondents.
3. Purchase experience knowledge gained.
4. Postpurchase knowledge gained.
5. Statistical analyses relating to Research Objective I.
6. Statistical analyses relating to Research Objective II.
7. Statistical analyses relating to Research Objective III.

One hundred forty-two usable completed questionnaires were returned. The completed questionnaires constitute the sample used in this study. The sample of 142 is 7.11% of the population of 1,996.

Selltiz, Wrightsman, and Cook discuss the importance of the sample size in their book, Research Methods in Social Relations:

Much work has been done on the problem of designing samples in such a way that they yield accurate information with a minimum amount of research effort. . . . Rowntree (1941), in his classic study of poverty in York, England, investigated every working-class household. To check the accuracy of sampling methods, he selected, according to a systematic procedure, every tenth interview schedule and compared the results obtained thereby with those obtained from all the cases. Similar calculations were based on samples of one in twenty, one in thirty, one in forty, and one in fifty. . . . It is apparent that the various samples, regardless of their size, gave results fairly close to those found for all the households in each income class. . . . For no income group does the figure shown by the sample based on one family in fifty differ by more than 2 percentage points from that shown by the complete survey. . . .¹

Demographic Information

The personal data presented in this section were secured from the completed questionnaire returns of the survey respondents.

Age and Marital Status

The mean age of the survey respondents was 38.39 years, ranging from 21 to 69. The median age was 35, and there were five modes (8 each), 28, 30, 32, 34 and 39. Of the 142 survey respondents, 128 were married, seven were divorced, six were single, and one was widowed. Details are shown in Table 1.

Educational Attainment

The majority (71%) of the survey respondents had at least one college degree. Forty-three of the 142 respondents had at least some

¹Claire Selltiz, Lawrence S. Wrightsman, and Stuart W. Cook, Research Methods in Social Relations (3rd ed.; New York: Holt, Rinehart and Winston, 1976), p. 106.

TABLE 1

AGE AND MARITAL STATUS

Age	Single	Survey Respondents		Widowed	Total
		Married	Divorced		
61 +		5			5
56-60		6			6
51-55		10	2		12
46-50		10			10
41-45		14	2	1	17
36-40	1	20			21
31-35	1	30	2		33
26-30	1	25	1		27
25 +	<u>3</u>	<u>8</u>	—	—	<u>11</u>
	6	128	7	1	142

graduate work and 59 had a bachelor's degree. Eleven of the respondents had only a high school education. Three of the respondents had less than a high school education. While a detailed report of the educational programs followed by the survey respondents was not obtained, it can be assumed that those 102 respondents with at least one college degree had had a minimum of six college credit hours of Economics. Many of them volunteered the information that they had had a course in Real Estate, also. Those with degrees in Business would have had a minimum of one course in Marketing. Details of the educational characteristics are shown in Table 2.

Income and Employment

The average income of the survey respondents was \$34,085.72, while the median and mode were both \$30,000, and the incomes ranged from \$3,600 (Social Security income) to \$100,000. A majority of the

TABLE 2

FORMAL EDUCATION

Years	Survey Respondents
21	4
20	7
19	9
18	8
17	15
16	59
15	6
14	14
13	6
12	11
11+	<u>3</u>
	142

survey respondents represented families with only one income. Eighty of the respondents reported only one income per family, fifty-four reported two incomes per family, two reported three incomes per family, and six reported no earned income (four of the six were students and the other two were retirees). Details of the income and employment characteristics are shown in Table 3.

Housing Costs

The mean housing cost for the survey respondents was \$6,893.14. The median and mode housing costs were both \$6,000.

As a percentage of the family income, the housing costs consumed from 14% to 42% of the family income. The average housing cost was 21% of the family income, while the median and mode were both 20%. The ratios of housing costs to income are shown in Table 4.

TABLE 3

INCOME AND NUMBER OF FAMILY MEMBERS EMPLOYED

Income	Survey Respondents				Total
	0	1	2	3	
\$90,001 to \$100,000			1		1
\$80,001 to \$90,000			1		1
\$70,001 to \$80,000		3			3
\$60,001 to \$70,000		3	2		5
\$50,001 to \$60,000		2	1		3
\$40,001 to \$50,000	1	9	6		16
\$30,001 to \$40,000		15	12	2	20
\$20,001 to \$30,000	2	30	29		61
\$10,001 to \$20,000	1	25	2		28
\$10,000 and less	<u>2</u>	<u>3</u>	—	—	<u>5</u>
	6	80	54	2	142

TABLE 4

RATIO HOUSING COSTS/INCOME

Percentage	Survey Respondents
46 +	1
41-45	2
36-40	2
31-35	4
26-30	17
21-25	49
16-20	41
11-15	20
10 +	<u>6</u>
Total	142

Prepurchase Knowledge

The prepurchase knowledge of the respondents was subdivided into three areas: (1) formal education, (2) other education, and (3) experience from previous home purchases.

As stated in the section on demographics, the majority of the survey respondents had one or more college degrees and 90% of them had at least one year of college. Of the 142 survey respondents, 65 reported having had a course in personal economics, 102 reported a course in other economics, 46 reported some financial education, and 53 reported at least one course in marketing.

Additional education was reported by the survey respondents as having been received from: (1) family, 48, (2) friends, 40, (3) government, 13, and (4) industry, 24.

Of the survey respondents, 107 had prior experience in home purchasing, while 35 were reporting on their first experience. Forty-eight of the survey respondents were reporting on their second experience, 16 on their third experience, 20 on their fourth experience, and 23 on their fifth or more purchase. Details of the prepurchase knowledge of the survey respondents are shown in Table 5.

Purchase Experience Knowledge

The purchase experiences of the survey respondents are presented under the following headings: Broker and Attorney Representation, Home Search Periods, Visits to Prospective Home, Influence Outside Immediate Household, Deciding Feature, Financial Constraints, and Purchase Knowledge Gained.

TABLE 5

PREPURCHASE KNOWLEDGE

Knowledge Source	Survey Respondents*
<u>Formal Education</u>	
Personal Economics	65
Other Economics	102
Financial Courses	46
Marketing Courses	53
Real Estate	6
<u>Other Sources</u>	
Family	48
Friends	40
Government	13
Industry	24
<u>Previous Homeownership</u>	
1	48
2	16
3	20
4	23

*Totals do not balance. Many respondents are counted in more than one classification.

Broker and Attorney Representation

Of the 142 survey respondents, 109 utilized the services of a real estate broker while only 28 utilized the services of an attorney. Twenty of the 28 who employed an attorney utilized the services of a real estate broker and an attorney. Twenty-five of the survey respondents made their purchase without the aid of either a broker or an attorney. Details of the broker and attorney representation utilized by the survey respondents are shown in Table 6.

TABLE 6

BROKER AND ATTORNEY REPRESENTATION

Representation	Survey Respondents
Broker Only	89
Broker and Attorney	20
Attorney Only	8
Neither Broker nor Attorney	<u>25</u>
	142

Home Search Periods

Seventy-one (50%) of the survey respondents reported search periods of one month or less, another 33 (22%) reported search periods of 2-3 months, while 18 (13%) spent one year or more in their search for a home. Forty-four reported being under some pressure in making their decision to purchase a home. Details of the home search periods are shown in Table 7.

TABLE 7

HOME SEARCH PERIODS

Time Period	Survey Respondents Pressure to Move		Total
	Yes	No	
1 week or less	13	18	31
2-3 weeks	10	10	20
1 month	7	13	20
2-3 months	10	23	33
4-5 months	1	10	11
6 months	1	9	10
12 months	1	10	11
13-18 months		1	1
19-24 months	<u>1</u>	<u>4</u>	<u>5</u>
	44	98	142

Visits to Prospective Home

Thirty-one (more than 21%) of the survey respondents made their purchase decision after only one visit to their prospective home. Another 48 (33%) made two visits, 41 (28%) made three visits to their prospective home, and the remaining 22 (18%) made four or more visits before making their purchase decision. Details of the number of visits to prospective homes are shown in Table 8.

TABLE 8

VISITS TO PROSPECTIVE HOME

Number of Visits	Survey Respondents
1	31
2	48
3	41
4 or more	<u>22</u>
	142

Influence Outside Immediate Household

Twenty-one (15%) of the survey respondents reported some influence from those outside their immediate household in their decision-making process. Most of this influence, however, came from parents (in the case of young couples) and from married children (in the case of older couples and individuals). Only two reported being influenced by friends. Details of the influence from outside the immediate household are shown in Table 9.

TABLE 9

INFLUENCE OUTSIDE IMMEDIATE HOUSEHOLD

Influence Source	Survey Respondents
None	121
Parents	11
Married Children	7
Brothers/Sisters	1
Friends	<u>2</u>
	142

Deciding Feature

Many of the survey respondents did not restrict their answer to one deciding feature or situation. Two or more features or situations were frequently given, with two being the average. Nine respondents reported that there was no deciding feature or situation involved in their decision. The other 133 respondents reported a total of 271 deciding features or situations, for an average of 2.04 per respondent.

The survey responses to the question about the deciding feature or situation were grouped into three classifications: (1) as they related to the property, (2) as they related to the lifestyle of the respondents, and (3) as they related to finances. Of the 271 deciding features and/or situations reported, 136 related to the property, 55 related to the lifestyle of the respondent, and 80 related to the finances of the respondent. Details of the responses are shown in Exhibit 1, of Appendix B.

The location of the property was reported 72 times as the deciding feature. Of the 72, 47 reported "location" per se, 12 reported

"neighborhood," and 13 reported "setting." Responses involving the house included such features as "size" (19), "space" (8), "floor plan" (16), "condition" (6), and "quality of construction" (6). These responses reflect somewhat the lifestyle of the respondents, as well as the needs of those respondents, and could perhaps be classified with the lifestyle responses instead of the property responses.

The responses classified as relating to the lifestyle of the respondents included style of home (10), schools (11), proximity to work (6), appearance (6), charm of home (5), and aesthetics (5). The number of responses mentioning schools was low (only 11 out of 142, or 7.7% of the total survey respondents). Again, those who listed size, space, floor plan, condition, and quality of construction may have been saying something about their lifestyles in a rational fashion.

Finances were listed as a deciding situation in 80 responses. Of the 80 responses, "price" was listed 36 times, "investment" 16 times, and "inflation" five times.

Financial Constraints

The effects of financial constraints upon the purchase decisions of the survey respondents are listed in Exhibit 2 of Appendix E. The first six effects listed were listed choices in the questionnaire, requiring only a check mark by the respondents. The other 23 listed effects were all written in--under the heading of "other."

In addition to the 40 who would have purchased "more living space" had funds been available, 27 reported they would have purchased "another living area," 25 "another bedroom," 26 "another bathroom,"

22 "a separate dining room," 21 "a larger kitchen." The most written-in item was "larger acreage," reported by 10 (7%) of the survey respondents.

Purchase Knowledge Gained

The knowledge gained during the process of purchasing a home was a major objective of this research. This question, however, was only a portion of the data analyzed to determine the knowledge gained.

The knowledge gained during the purchase process, as reported by the survey respondents, included: (1) influence of location upon value, (2) financing regulations (including interest rates and the availability of mortgage funds, and (3) changes in lifestyles. Details of the knowledge gained during the purchase process, as reported by the survey respondents, is shown in Exhibit 3 of Appendix B.

Postpurchase Knowledge Gained

Several questions on the questionnaire related to postpurchase knowledge gained. One was an open-ended question about knowledge gained, while two other questions related to ways the decision-making process might have been improved and areas of dissatisfaction. The postpurchase knowledge gained by the survey respondents are presented under the following headings: Knowledge Gained, Recommendations for Improvement in Decision-Making Techniques, and Areas of Dissatisfaction.

Knowledge Gained

Sixty (42%) of the survey respondents reported no postpurchase knowledge gained. Thirteen (9%) reported only minor problems that were unavoidable. Fifteen (11%) reported that the property should have been

inspected carefully before closing. No other response received more than 6% consistency. The details of the postpurchase knowledge gained by the survey respondents are shown in Exhibit 4 of Appendix B.

Recommendations for Improvement in Decision-Making Techniques

"What do you know now that you would like to have known before making the decision to buy (i.e., hindsight is usually better than foresight)?" was the most important open-ended question on the questionnaire. Responses to the question were grouped into three major areas relating to: (1) the property, (2) the lifestyle of the respondents, and (3) finances. Details of the responses are shown in Exhibit 5 of Appendix B.

The responses relating to the property were grouped into four areas: inspections, construction, repairs, and maintenance. Thirteen responses related to inspections, including eight who reported that they would have been wise to have paid for having the property inspected by an expert. A few of the eight mentioned plumbing and air-conditioning; however, most simply wanted a complete inspection of the property by an independent expert representing only the interests of the buyers. Other responses included statements that the property should have been inspected more carefully and viewed in a vacant condition.

Fifteen responses related to construction. Four respondents reported that they should have investigated their builder, two reported that they should have allowed more time than the builder stated, two reported that they should have visited their prospective purchase more often, and two reported that they should not have purchased a total

electric home. Other responses included such recommendations as checking floor plans and employing an architect overseer.

Nine responses related to repairs. Of the nine, six respondents reported that they should have required written statements regarding needed repairs. One respondent related a failure to consider remodeling and repair needs, and two mentioned a failure to obtain a buyer's protection insurance policy.

Seven responses related to maintenance. Three respondents reported a wish that they had asked to see the utility bills. The other four responses related to energy-conservation items. One respondent had purchased a see-through fireplace that had proven extremely inefficient, another had a skylight that lost its appeal during the energy crisis, and two expressed wishes that they had invested in energy-saving features at the time of the purchase.

Thirty-one responses related to lifestyle considerations. Sixteen of the thirty-one respondents reported that their decisions might have been better had they given more consideration to their lifestyle. For example, some reported that they would probably have been happier with one large living area rather than two small areas, while others were concerned about storage space. Nine of the thirty-one respondents felt that their purchase decisions might have been better had they "stretched" beyond their means to purchase a larger, more expensive property better suited to their lifestyle.

The responses classified as relating to finances were subdivided into four areas: mortgage money, purchase cost, maintenance expenses, and resale considerations. Eleven responses related to mortgage money.

Seven of the eleven respondents felt they could have made better decisions if they had been more knowledgeable about shopping for financing. Two would like to have known how to include extras such as storm windows and fencing in the mortgage financing, and one would have found knowledge about interim financing helpful.

Seventeen responses related to purchase cost. Six of the seventeen respondents reported that too much faith was placed in the broker, three expressed regret that they had not known how to negotiate on the sales price, and another three reported a wish that they had withheld part of their purchase funds as leverage. Two respondents were sorry that they had not used an attorney to represent them in the transaction, and the other responses related to methods of determining values.

Only two responses referred to maintenance expenses. One reported a failure to get good insurance on the property and the other felt his decision might have been better had he compared property taxes.

Eight responses related to resale considerations. Several mentioned tax breaks, but five of the eight felt that they should have given more consideration to the effects of future inflation. One simply reported that his decision might have been better had he considered the "resale value."

Factors that might have led to a more satisfying decision as rated by the survey respondents are listed in Exhibit 6 of Appendix B. They are listed in ranked order in Table 10.

A "more thorough inspection" was ranked as the most important recommendation by 31 (21%) of the survey respondents. No other single factor received more than 10% consistent ranking by the survey respondents.

TABLE 10

WAYS THE DECISION-MAKING PROCESS MIGHT
HAVE BEEN IMPROVED - RANKED
IN ORDER OF IMPORTANCE

Possible Means of Improvement	Order of Importance		
	1	2	3
More Thorough Inspection	31	11	6
Better Information Regarding Financing	12	14	10
Measurement for Furniture	11	6	6
Lifestyle Needs Considered	10	9	10
Better Understanding with Broker	9	7	4
More Shopping for Finances	6	11	12
Tour of Neighborhood	6	11	8
Visit to School System	5	7	6
Family Conferences	2	9	8

Areas of Dissatisfaction

The areas of dissatisfaction, as reported by the survey respondents, were grouped into three subdivisions: (1) location, (2) property, and (3) financing. The responses of the survey respondents are reported in Exhibit 7 of Appendix B. The most frequently reported areas of dissatisfaction are shown in Table 11.

In the location classification, 34 respondents expressed dissatisfaction with traffic, 29 listed their neighborhood, 23 listed zoning laws, and 15 expressed dissatisfaction with their schools and churches. Seventy-three (51%) of the survey respondents reported no dissatisfaction with their location.

In the property classification, 53 respondents expressed dissatisfaction with room sizes, 43 listed inferior construction, 36 listed appliances, 34 listed room arrangements, 27 listed poor traffic flow,

TABLE 11

AREAS OF DISSATISFACTION

Dissatisfaction Source	Number of Responses
<u>Location</u>	
Traffic	34
Neighborhood	29
Zoning Laws	23
Schools	15
Churches	15
<u>Property</u>	
Room Sizes	53
Inferior Construction	43
Appliances	36
Room Arrangements	34
Poor Traffic Flow	27
Poor Insulation	12
<u>Financing</u>	
Maintenance Costs	57
Utilities	50
Settlement Costs	33
Taxes	25
Insurance Premiums	24
Mortgage Payments	23

and 12 listed poor insulation. Fifty-one (36%) of the survey respondents reported no dissatisfaction with their property.

In the financing classification, 57 respondents expressed dissatisfaction with maintenance costs, 50 listed utilities, 33 listed settlement costs, 25 listed taxes, 24 listed insurance premiums, and 23 listed mortgage payments. Sixty-six (47%) of the survey respondents reported no dissatisfaction with their financing arrangements.

Statistical Analyses Relating to Research Objective I

A Chi-Square value was calculated from the data relating to each of the five hypotheses relating to Research Objective I. The Chi-Square Test of Independence was applied to each hypothesis.

The statistical analyses for Hypotheses 1 to 5 inclusively, all relating to Research Objective I, are shown in detail in Appendix C. A summary of the results are shown in Table 12.

TABLE 12
SUMMARY OF χ^2 TESTS OF INDEPENDENCE

Ho	χ^2	Critical Value		Accepted/Rejected
		$\alpha = .01$	$\alpha = .05$	
1	103.55	16.81	12.59	reject at both levels
2	25.16	27.69	22.36	reject at .05 level cannot reject at .01 level
3	13.68	27.69	22.36	cannot reject at either level
4	9.99	27.69	22.36	cannot reject at either level
5	4.05	27.69	22.36	cannot reject at either level

Hypothesis No. 1

Hypothesis No. 1 was stated as:

There is no significant difference in the knowledge of the home-buying consumers in their prepurchase status and their postpurchase status.

Chi-Square Test of Independence was used for the analysis of the first hypothesis. The resultant χ^2 value was 103.55, indicating a high degree of significance. The required values for significance were 16.81 at the .01 level and 12.59 at the .05 level of significance.

The Null Hypothesis No. 1 was rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 1 can be stated as being true:

There is a significant difference in the knowledge of home-buying consumers in their prepurchase status and their postpurchase status.

Hypothesis No. 2

Hypothesis No. 2 was stated as:

There is no significant difference in the amount of knowledge gained by experienced home-buying consumers and inexperienced home-buying consumers.

Inexperienced home buyers were defined as those purchasing their first home. All others were classified as experienced home buyers because they had owned one or more homes prior to the one involved in this study.

A Chi-Square Test of Independence was used for the analysis of this hypothesis also. The resultant χ^2 value was 25.16, indicating significance at the .05 level (22.36 required) but not at the .01 level (27.69 required) of significance.

At the .05 level of significance, the Null Hypothesis No. 2 can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 2 can be stated as being true:

There is a significant difference in the amount of knowledge gained by experience home-buying consumers and inexperienced home-buying consumers.

Hypothesis No. 3

Hypothesis No. 3 was stated as:

There is no significant difference in the amount of knowledge gained by male home-buying consumers and female home-buying consumers.

Only six of the 142 survey respondents were female, and five of those reported six or fewer types of knowledge gained.

Again, a Chi-Square Test of Independence was used. The resultant χ^2 value was 13.69, much too small to be significant. The required values for significance were 22.36 at the .05 level and 27.69 at the .01 level of significance.

Based on the results of the Chi-Square Test of Independence, Hypothesis No. 3 as stated in the null form cannot be rejected at either the .05 level or the .01 level of significance. Therefore, it is accepted as being true.

Hypothesis No. 4

Hypothesis No. 4 was stated as:

There is no significant difference in the amount of knowledge gained by home-buying consumers who were under pressure to move and those who were under no pressure to move.

The Chi-Square Test of Independence was used in the analysis of the data relating to Hypothesis No. 4. The resultant χ^2 value was 9.99 much too small to be significant. The required values for significance were 22.36 at the .05 level and 27.69 at the .01 level of significance.

Based on the results of the Chi-Square Test of Independence, Hypothesis No. 4 as stated in the null form cannot be rejected at either the .05 level or the .01 level of significance. Therefore, it is accepted as being true.

Hypothesis No. 5

Hypothesis No. 5 was stated as:

There is no significant difference in the amount of knowledge gained by home-buying consumers who employed a real estate broker and those who did not employ a real estate broker.

The Chi-Square Test of Independence was used in the analysis of the data relating to Hypothesis No. 5. The resultant χ^2 value was 4.05, much too small to be significant. The required values for significance are 22.36 at the .05 level and 27.69 at the .01 level of significance.

Based on the results of the χ^2 Test of Independence, Hypothesis No. 5 as stated in the null form cannot be rejected at either the .05 level or the .01 level of significance. Therefore it is accepted as being true.

Research Objective I was concerned with the knowledge gained by different groupings of the respondents. Hypotheses 1 through 5 were formulated as being relevant to Research Objective I.

Significant differences were found in home-buying consumers before and after their purchase and in the amount of knowledge gained by experienced and inexperienced home-buying consumers. No significant differences were found between male and female home-buying consumers, consumers who were under pressure to move and those who were under no pressure, or consumers who employed a real estate broker and those who did not employ a broker.

Statistical Analyses Relating to Research Objective II

Research Objective II was concerned with the relationship of certain characteristics of the respondents to the knowledge gained by

the respondents. Ten hypotheses, No. 6 to No. 15 inclusively, were formulated as being relevant to Research Objective II.

Contingency Tables were prepared for the data relevant to each hypothesis, and a χ^2 value was calculated from each Contingency Table. From the χ^2 values, Coefficiency of Contingency values were calculated. An r value, known as a Correlation of Attributes, measuring the strength of correlation was also calculated. The statistical analyses for Hypotheses 6 to 15 inclusively, all relating to Research Objective II, are shown in detail in Appendix D. A summary of the χ^2 Tests for Correlation results are shown in Table 13.

TABLE 13
SUMMARY OF χ^2 TESTS FOR CORRELATION

Ho	χ^2	C	Max C	% C/max C	r
6	14.03	.2999	.8944	33.43	.1572
7	20.72	.3569	.8944	39.90	.1910
8	18.05	.3358	.8944	33.59	.1783
9	11.91	.2782	.8660	32.12	.1672
10	31.80	.4278	.9258	46.20	.1932
11	5.91	.1999	.8660	23.09	.1178
12	2.94	.1424	.8124	17.53	.1017
13	56.82	.5346	.8944	59.77	.3163
14	10.16	.2585	.8944	28.90	.1338
15	14.48	.3042	.8944	34.01	.1596

Hypothesis No. 6

Hypothesis No. 6 was stated as:

There is no relationship between the education of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 14.03. From the χ^2 value of 14.03, a Coefficient of Contingency was calculated to measure the correlation between education and knowledge gained. The calculated Contingency Coefficient was .2999, which was 33.43% of the maximum C value of .8944. The strength of the correlation, as measured by r , was .1572.

Albeit small, there is an inverse relationship between education and the amount of knowledge gained. The higher the level of education, the lower the amount of knowledge gained.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 6 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 6 can be stated as being true:

There is a relationship between the education of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 7

Hypothesis No. 7 was stated as:

There is no relationship between the age of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 20.72. From the χ^2

value of 20.72, a Coefficient of Contingency was calculated to measure the correlation between age and knowledge gained. The calculated Contingency Coefficient was .3569, which was 39.90% of the maximum C value of .8944. The strength of the correlation, as measured by r , was .1910.

The C and r values indicate some correlation between age and knowledge gained, although it is not a high degree of correlation. The older the individual, the less knowledge gained, indicating an inverse relationship.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 7 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 7 can be stated as being true:

There is a relationship between the age of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 8

Hypothesis No. 8 was stated as:

There is no relationship between the price of the home purchased by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 18.05. From the χ^2 value of 18.05, a Coefficient of Contingency was calculated to measure the correlation between the price of the home purchased and the knowledge gained. The calculated Contingency Coefficient was .3358, which was 37.55% of the maximum C value of .8944. The strength of the correlation, as measured by r , was .1783.

The C and r values indicate some correlation between the price of the home purchased and the knowledge gained. The greater the price of the home purchased, the less knowledge gained, indicating an inverse relationship.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 8 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form Hypothesis No. 8 can be stated as being true:

There is a relationship between the price of the home purchased by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 9

Hypothesis No. 9 was stated as:

There is no relationship between the marital status of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 11.91. From the χ^2 value of 11.91, a Coefficient of Contingency was calculated to measure the correlation between marital status of the respondent and the knowledge gained. The calculated Contingency Coefficient was .2782, which was 32.12% of the maximum C value of .8660. The strength of the correlation, as measured by r , was .1672.

The C and r values indicate a small degree of correlation between the marital status of the respondent and the knowledge gained.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 9 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form Hypothesis No. 9 can be stated as being true:

There is a relationship between the marital status of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 10

Hypothesis No. 10 was stated as:

There is no relationship between the home-buying consumer's position in the family life cycle and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 31.80. From the χ^2 value of 31.80, a Coefficient of Contingency was calculated to measure the correlation between the family life cycle position and the knowledge gained. The calculated Contingency Coefficient was .4278, which was 46.2% of the maximum C value of .9258. The strength of the correlation, as measured by r , was .1932.

The C and r values indicate some correlation between the family life cycle position and the knowledge gained.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 10 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form Hypothesis No. 10 can be stated as being true:

There is a relationship between the home-buying consumer's position in the family life cycle and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 11

Hypothesis No. 11 was stated as:

There is no relationship between the job classification of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 5.91. From the χ^2 value of 5.91, a Coefficient of Contingency was calculated to measure the correlation between job classification and knowledge gained. The calculated Contingency Coefficient was .1999, which was 23.09% of the maximum C value of .8660. The strength of the correlation, as measured by r , was .1178.

The C and r values indicate some small correlation between job classification and knowledge gained. Both values were next to the lowest of all the values calculated for the hypotheses relevant to Research Objective II.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 11 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 11 can be stated as being true:

There is a relationship between the job classification of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 12

Hypothesis No. 12 was stated as:

There is no relationship between the number of homes previously owned by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 2.94. From the χ^2 value of 2.94, a Coefficient of Contingency was calculated to measure the correlation between previous home ownership and knowledge gained.

The calculated Contingency Coefficient was .1424, which was 17.53% of the maximum C value of .8124. The strength of the correlation, as measured by r , was .1017.

The C and r values indicate a very small degree of correlation between previous home ownership and knowledge gained. Both values were the lowest of all the values calculated for the hypotheses relevant to Research Objective II. The null hypothesis cannot be accepted, however, because it states no relationship.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 12 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 12 can be stated as being true:

There is a relationship between the number of homes previously owned by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 13

Hypothesis No. 13 was stated as:

There is no relationship between the degree of satisfaction/dissatisfaction the home-buying consumer has with his/her new home and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 56.82. From the χ^2 value of 56.82, a Coefficient of Contingency was calculated to measure the correlation between the degree of satisfaction/dissatisfaction knowledge gained. The calculated Contingency Coefficient was .5346, which was 59.77% of the maximum C value of .8944. The strength of the correlation, as measured by r , was .3163.

The C and r values indicate a strong degree of correlation between the degree of satisfaction/dissatisfaction and knowledge gained. Both values were the highest of all the values calculated for the hypotheses relevant to Research Objective II.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 13 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 13 can be stated as being true:

There is a relationship between the degree of satisfaction/dissatisfaction the home-buying consumer has with his/her new home and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 14

Hypothesis No. 14 was stated as:

There is no relationship between the length of time the home-buying consumer spent looking for a home and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 10.16. From the χ^2 value of 10.16, a Coefficient of Contingency was calculated to measure the correlation between the home-search period and the knowledge gained. The calculated Contingency Coefficient was .2585, which was 28.9% of the maximum C value of .8944. The strength of the correlation, as measured by r , was .1388.

The C and r values indicate a very small degree of correlation between the home-search period and the knowledge gained. Albeit small, some degree of relationship does exist.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 14 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 14 can be stated as being true:

There is a relationship between the length of time the home-buying consumer spent looking for a home and the amount of knowledge gained as a result of the home-buying process.

Hypothesis No. 15

Hypothesis No. 15 was stated as:

There is no relationship between the number of visits made to the prospective home by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

The Chi-Square value calculated from the Contingency Table prepared from the data relevant to this hypothesis was 14.48. From the χ^2 value of 14.48, a Coefficiency of Contingency was calculated to measure the correlation between the number of visits and the knowledge gained. The calculated Contingency Coefficient was .3042, which was 34.01% of the maximum C value of .8944. The strength of the correlation, as measured by r , was .1596.

The C and r values indicate a degree of correlation between the number of visits and the knowledge gained.

Based on the results of the χ^2 Tests for Correlation, Hypothesis No. 15 as stated in the null form can be rejected. Rewritten in the Alternative Hypothesis form, Hypothesis No. 15 can be stated as being true:

There is a relationship between the number of visits made to the prospective home by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

Research Objective II was concerned with the relationship of certain characteristics of the respondents to the knowledge gained by the respondents. Hypotheses 6 through 15 were formulated as being relevant to Research Objective II.

Some degree of correlation was found for all the hypotheses relating to Research Objective II. All of the null hypotheses were rejected. Rewritten in the alternative form, all were accepted.

The highest correlation was found for Hypothesis No. 13, and the lowest correlation was found for Hypothesis No. 12. Listed in the order of the degree and strength of their correlation, in descending order, the hypotheses are:

1. Ho₁₃ Satisfaction/dissatisfaction
2. Ho₁₀ Family life cycle position
3. Ho₇ Age
4. Ho₈ Price bracket
5. Ho₁₅ Visits to prospective home
6. Ho₆ Education
7. Ho₉ Marital status
8. Ho₁₄ Time spent in search
9. Ho₁₁ Job classification
10. Ho₁₂ Previous home ownership

Statistical Analyses Relating to Research Objective III

Research Objective III was concerned with the interrelationships of the characteristics of the respondents as determinants of the knowledge gained, and with the identification of the subsets of characteristics with the best predictive ability of the knowledge gained.

Two hypotheses, No. 16 and No. 17, were formulated as being relevant to Research Objective III.

The data relevant to Hypothesis No. 16 were submitted to Multiple Discriminant Analysis and the data relevant to Hypothesis No. 17 were submitted to Factor Analysis. Both MDA and FA utilized programs in a SAS package and were run on a 370-158 IBM Computer at the University of Oklahoma. Details of the MDA and FA computer runs, both relating to Research Objective III, are shown in Appendix E.

Hypothesis No. 16

Hypothesis No. 16 was stated as:

The group means of the characteristics of those home-buying consumers who gained knowledge during the home-buying process and the group means of the characteristics of those home-buying consumers who gained no knowledge during the home-buying process are equal.

The linearized discriminant functions calculated by MDA are shown in Exhibit 2 of Appendix E. Listed in descending order, the coefficients of the independent variables for the most knowledge gained are:

1. Pressure to move	11.14456542
2. Marital status	6.44405840
3. Use of a broker	3.46411059
4. Education	2.86246913
5. Age	2.82469224
6. Number of visits to property	2.68148618
7. Price	2.18489457
8. Satisfaction/Dissatisfaction	2.11845628

9. Job classification	1.38152134
10. Time spent shopping	1.05466251
11. Previous home ownership	-0.44815426
12. Family life cycle	-0.54760736

The coefficients of the discriminating variables show the relative importance of each of the variables. The higher the value of the coefficient, the greater the importance of the variable. The predictive accuracy of the discriminant function is measured by the hit-ratio (percentage correctly classified) of the independent variables.

The hit-ratio was obtained from the classification matrix prepared as part of the MDA. Details of the classification matrix are shown in Exhibit 3 of Appendix E. Ninety-nine (69.8%) of the 142 respondents were improperly classified in the classification matrix. The hit-ratio (percentage correctly classified) was 30.2%.

The hit-ratio was too low to attempt to interpret the discriminant functions for the purpose of developing group profiles. Only when the percentage of correct classifications is significantly larger than would be expected by chance, can the discriminant functions be interpreted meaningfully. Correct classifications by chance would have given a probable hit-ratio of .50. The actual hit-ratio of 30.2% was much lower--too low for interpretation purposes.

Based on the results of the Multiple Discriminant Analysis, Hypothesis No. 16 was accepted. The discriminant functions calculated by MDA were unable to discriminant between those home-buying consumers who gained knowledge during the home-buying process and those home-buying consumers who gained no knowledge during the home-buying process.

The group means of the characteristics of the two groups, therefore, can be assumed to be equal.

Hypothesis No. 17

Hypothesis No. 17 was stated as:

There is no significant difference in the predictive ability of the subsets of characteristics in the prediction of the amount of knowledge gained.

The results of the Factor Analysis are shown in Exhibit 4 of Appendix E. Five significant factors were established by the Factor Analysis. The variables "loaded" (had significant values of $\pm .30$)¹ highest on Factor 1 were:

1. Age	.83490
2. Previous home ownership	.73618
3. Family life cycle position	.72568

The loading of these three variables on Factor 1 indicated that Factor 1 could be "experience." By virtue of having lived a certain number of years, having had some previous home ownership experience and having moved through the family life cycle positions, one would likely have had "experience" in home purchasing and the process involved therein. All three variables "loaded" significantly higher on Factor 1 than on any of the other four factors.

On Factor 2, the following variables "loaded" highest:

1. Education	-.69665
2. Job classification	-.58646

¹Hair, Anderson, Tatham, and Grablowsky, Multivariate Data Analysis, p. 236.

The loading of these two variables on Factor 2 indicated that Factor 2 could be "previous knowledge." Both variables had negative values. The more education one has, the better job one is likely to have, and the less knowledge one might gain through the process of home purchasing. Both variables "loaded" significantly higher on Factor 2 than on any of the other four factors.

On Factor 3, the following variables "loaded" highest:

- | | |
|-----------------------------------|----------|
| 1. Pressure to move | - .80160 |
| 2. Visits to prospective purchase | .54184 |

The loading of these two variables on Factor 3 indicated that Factor 3 could be "visits to property." There appears to be an inverse relationship between "pressure to move" and "knowledge gained." The respondents who were under pressure to move made fewer visits to their prospective purchases and therefore gained less knowledge. The loading of "visits to prospective purchase" on Factor 3 indicated some knowledge gained through visiting the property. Both variables "loaded" significantly higher on Factor 3 than on any of the other four factors.

On Factor 4, the following variables "loaded" highest:

- | | |
|---------------------------------|--------|
| 1. Time spent shopping for home | .55535 |
| 2. Use of a broker | .55169 |

The loading of these two variables on Factor 4 indicated that Factor 4 could be "broker-assisted shopping." Apparently, knowledge is gained from both brokers and shopping.

On Factor 5, the following variables "loaded" highest:

- | | |
|---------------------------------|--------|
| 1. Marital status | .60810 |
| 2. Time spent shopping for home | .54089 |

The loading of these two variables on Factor 5 indicated that Factor 5 could be "family-shopping." The "time spent shopping for home" variable "loaded" on both Factors 4 and 5. The value of the "marital status" variable for Factor 4 was also relatively high at .46670. Some communality appeared to be present between Factors 4 and 5.

Communality estimates for all variables were computed as a part of the factor analysis. Communality is the amount of variance a variable shares with all other variables in the analysis. Listed in descending value order, the final communality estimates were:

1. Age	.814742
2. Family life cycle position	.744486
3. Pressure to move	.699330
4. Education	.685043
5. Previous home ownership	.672625
6. Time spent shopping	.662823
7. Marital status	.646350
8. Job classification	.629183
9. Satisfaction/dissatisfaction	.595787
10. Knowledge gained	.557856
11. Number of visits to property	.536505
12. Price	.518185
13. Use of broker	.451468

Based on the results of the Factor Analysis, Hypothesis No. 17 as written in the null form cannot be accepted. Rewritten in the alternative form, it can be accepted as being true:

There is a significant difference in the predictive ability of the subsets of characteristics in the prediction of the amount of knowledge gained.

The factors (subsets of characteristics) that appear to have the most predictive ability of "knowledge gained" are: (1) experience, (2) previous knowledge, (3) visits to property, (4) broker-assisted shopping, and (5) family shopping.

Summary

Chapter IV has presented the results of the study. Statistical analyses of the data collected in this research project were presented in this chapter. The demographic characteristics of the survey respondents were presented in this chapter, as well as the prepurchase, purchase experience, and postpurchase knowledge of the respondents.

The statistical testing of the hypotheses relating to Research Objective I are summarized in Table 13. Hypothesis No. 1 was rejected at both the .05 and .01 levels of significance. Hypothesis No. 2 was rejected at the .05 level of significance, but could not be rejected at the .01 level. Hypotheses 3, 4, and 5 could not be rejected at either level.

The statistical testing of the hypotheses relating to Research Objective II are summarized in Table 14. Some degree of correlation was found for Hypotheses No. 6-15, inclusively, all relating to Research Objective II; therefore, all 10 hypotheses were rejected. Rewritten in the alternative form, all were accepted. The highest degree of correlation was found for Hypothesis No. 13 (satisfaction/dissatisfaction) and the lowest was found for Hypothesis No. 12 (previous home ownership).

Hypothesis No. 16 was accepted and Hypothesis No. 17 was rejected. Both hypotheses related to Research Objective III.

The MDA used to test Hypothesis No. 16 was unable to produce a discriminant function that could discriminate between those home-buying consumers who gained knowledge during the home-buying process and those who gained no knowledge during the home-buying process. The group means of the characteristics of the two groups, based on classifications established by MDA, were assumed to be equal and Hypothesis No. 16 was accepted.

Factor Analysis used to test Hypothesis No. 17 produced five factors that appeared to have predictive ability for "knowledge gained." Hypothesis No. 17 was therefore rejected. Rewritten in the alternative form, it was accepted.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V presents a summary of the study, the conclusions drawn from the study, and recommendations for further research.

Summary

This study involved the identification and evaluation of the knowledge acquired by home-buying consumers as a result of the home-buying process. The sample was defined as 142 usable completed questionnaires obtained from a population defined as 1,996 home purchasers whose deeds were recorded with the Registrars of Deeds in Oklahoma, Cleveland, and Canadian counties in Oklahoma, in August, 1977.

For the purpose of this study, the problem was stated as: "What knowledge do home-buying consumers acquire during the home-buying process that would have been valuable as prepurchase knowledge?"

This was a complex problem, and three research objectives were identified for the study. Research Objective I related to the knowledge gained by different groupings of the respondents. Research Objective II related to the relationship of certain characteristics of the respondents to the knowledge gained by the respondents. Research Objective III was concerned with the interrelationships of the characteristics of the respondents as determinants of the knowledge gained,

and identification of the subsets of characteristics with the best predictive ability of the knowledge gained.

Seventeen null hypotheses were formulated for this study. Five of the hypotheses related to Research Objective I, ten related to Research Objective II, and two related to Research Objective III. The hypotheses were tested by applying statistical analyses to the data.

The Chi-Square Test of Independence was used for testing Hypotheses No. 1-5, inclusive, all relating to Research Objective I. The Chi-Square Tests for Correlation, utilizing χ^2 values, Coefficient of Contingency values and Correlation of Attributes values, were used for testing Hypotheses No. 6-15, inclusive, all relating to Research Objective II. Multiple Discriminant Analysis was used to test Hypothesis No. 16 and Factor Analysis was used to test Hypothesis No. 17, both relating to Research Objective III.

From the results of the tested hypotheses, Multiple Discriminant Analysis and Factor Analysis, conclusions were drawn relative to the knowledge acquired by home-buying consumers as a result of the home-buying process. The conclusions drawn are reported in the next section.

Conclusions

From the results of this investigation, conclusions were drawn that:

1. There is a significant difference in the knowledge of home-buying consumers in their prepurchase status and their postpurchase status, at both the .05 and .01 levels of significance.
2. There is a significant difference in the amount of knowledge gained by experienced home-buying consumers and inexperienced

home-buying consumers at the .05 level of significance, but not at the .01 level of significance.

3. There is no significant difference in the amount of knowledge gained as indicated by the sex of the home-buying consumer, by the use or nonuse of a broker, or by the pressure the family was under to obtain housing.

4. There is a correlation between the amount of knowledge gained and the satisfaction/dissatisfaction, family life cycle position, age, cost of home purchased, number of visits to prospective home, education, marital status, home search period, employment, and previous home ownership of the survey respondents in this study. The variables are listed in descending order by the degree of correlation as determined by the statistical analyses performed in testing the hypotheses.

5. The independent variables identified in this study are not accurate determinants of the amount of knowledge gained as a result of the home-buying process.

6. The factors (subsets of characteristics) that appear to have the most predictive ability of "knowledge gained" are: (1) experience, (2) previous knowledge, (3) visits to property, (4) broker-assisted shopping, and (5) family-shopping.

7. Communality among the independent variables is very high. Variables with the highest communality values are: (1) age, (2) family life cycle position, (3) pressure to move, (4) education, and (5) previous home ownership.

8. The knowledge gained by the survey respondents of this study are almost equally grouped into three major areas relating to:

(1) property, (2) finances, and (3) lifestyle of the respondents. Approximately half of the survey respondents in this study reported little, if any, knowledge gained as a result of their home purchase.

9. The purchase of a home and the resulting satisfaction/dissatisfaction is a very complex, personal experience. The variables involved are numerous and difficult to isolate.

In addition to the conclusions stated above, the following generalized statements were made:

1. Home-buying consumers do not give sufficient time, thought and consideration to home purchasing in proportion to its importance when compared to other purchases, such as automobiles, furniture, clothing and food. Decisions are frequently made on an emotional basis, rather than a rational basis.

2. The wealthier, better-educated home-buying consumers are more likely to be pleased with their purchase. They are also in a better position to correct or overcome any mistakes they might make than the less-wealthy, less-educated home-buying consumers.

3. A home is one of the most personal consumer goods with a "used" market. The mobility of our society and the "filtering down" process almost assures some dissatisfaction, as individuals are forced to choose their housing from properties built to someone else's specifications.

Recommendations

From the findings and conclusions of this study, the researcher recommends that:

1. A study be made of home purchasers as they progress through the selection, purchase, and occupancy of their home. This

would necessitate a research period of at least two years, and would require several interviews with each home purchaser. Such a study might best utilize a case study approach.

2. A study be made to compare the home purchase experiences of individuals already living in an area with the experiences of individuals moving into the area from out-of-state, where practices might differ.

3. A study be made to compare the consumer education being taught in the Business Education programs with that being taught in the Home Economics programs.

4. A study be made to determine home buyers' satisfaction/dissatisfaction with the home purchase process versus the product itself.

5. A study be made to determine why home buyers in America place such value upon space. Such a study might compare the desire for space itself with better utilization of space.

While this study has provided some insight into the knowledge gained by home-buying consumers, the studies recommended would add to the limited body of knowledge now available about the home-purchasing process. Hopefully, the information in this study will prove beneficial to future home-buying consumers, home builders, real estate brokers, mortgage lenders, housing counselors and consumer educators.

BIBLIOGRAPHY

Books

- Arndt, Johan, ed. Insights Into Consumer Behavior. Boston, Mass: Allyn & Bacon, Inc., 1968.
- Best, John W. Research in Education. 2nd ed. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970.
- Best, John W. Research in Education. 3rd ed. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977.
- Beyer, Glenn H. Housing and Society. New York: The MacMillan Co., 1965.
- Bliss, Perry, ed. Marketing and the Behavioral Sciences. Boston, Mass.: Allyn & Bacon, Inc., 1967.
- Boyd, William, and King, Edmond. The History of Western Education. 10th ed. New York: Harper & Row Publishers, Inc., 1972.
- Britt, Stewart Henderson, ed. Consumer Behavior and the Behavioral Sciences. New York: John Wiley & Sons, Inc., 1966.
- Case, Frederick E. Modern Real Estate Practice. New York: Allyn & Bacon, Inc., 1956.
- Chou, Ya-lun. Statistical Analysis with Business and Economic Applications. New York: Holt, Rinehart and Winston, Inc., 1969.
- Child, Dennis. The Essentials of Factor Analysis. New York: Holt, Rinehart and Winston, Inc., 1976.
- Clawson, Joseph. "Lewin's Psychology and Motives in Marketing." Perspectives in Consumer Behavior. Edited by Harold H. Kassarian and Thomas S. Robertson. Glenview, Illinois: Scott, Foresman, and Company, 1968.
- Cox, Donald F. "The Measurement of Information Value: A Study in Consumer Decision Making." Emerging Concepts in Marketing. Edited by William S. Decker. Chicago, Illinois: American Marketing Association, 1962.

- Dean, Robert D.; Leahy, William H.; and McKee, David L. Spatial Economic Theory. New York: The Free Press, 1970.
- Dernburg, Thomas F., and McDougall, Duncan M. Macroeconomics, The Measurement, Analysis, and Control of Aggregate Economic Activity. 4th ed. New York: McGraw-Hill Book Company, 1972.
- Downie, N. M., and Heath, R. W. Basic Statistical Methods. 4th ed. New York: Harper & Row Publishers, Inc., 1974.
- Dropkin, Stan; Full, Harold; and Schwarcz, Ernest. Contemporary American Education: An Anthology of Issues, Problems, Challenges. 3rd ed. New York: MacMillan Publishing Co., Inc., 1975.
- Ferguson, C. E., and Gould, J. P. Microeconomic Theory. Homewood, Illinois: Richard D. Irwin, Inc., 1975.
- Fox, David J. The Research Process in Education. New York: Holt, Rinehart and Winston, Inc., 1969.
- Friedman, Milton. A Theory of the Consumption Function. Princeton, New Jersey: Princeton University Press, 1957.
- Gibbons, Jean Dickinson. Nonparametric Methods for Quantitative Analysis. New York: Holt, Rinehart and Winston, 1976.
- Guilford, J. P., and Fruchter, Benjamin. Fundamental Statistics in Psychology and Education. 6th ed. New York: McGraw Hill, Inc., 1978.
- Haemmel, William G.; George, Barabara C.; and Bliss, James J. Consumer Law. St. Paul, Minn.: West Publishing Company, 1975.
- Hair, Joseph F., Jr.; Anderson, Rolph E.; Tatham, Ronald L.; and Grablowsky, Bernie J. Multivariate Data Analysis with Readings. Tulsa, Oklahoma: Petroleum Publishing Company, 1979.
- Hastings, Paul Guiler, and Mietus, Norbert. Personal Finance. New York: McGraw-Hill Book Company, 1977.
- Hess, Nancy R. The Home Buyer's Guide. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976.
- Hibdon, James E. Price and Welfare Theory. New York: McGraw-Hill Book Company, 1969.
- Hoagland, Henry E. Real Estate Principles. New York: McGraw-Hill Book Company, 1949.

- Hoagland, Henry E., and Stone, Leo D. Real Estate Finance. Homewood, Illinois: Richard D. Irwin, Inc., 1973.
- Hoover, Edgar M. An Introduction to Regional Economics. 2nd ed. New York: Alfred A. Knopf, 1975.
- Kerlinger, Fred N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, 1964.
- Kerr, Robert S. Land, Wood, and Water. New York: Fleet Publishing Company, 1960.
- Keynes, John Maynard. The General Theory of Employment, Interest, and Money. New York: Harcourt, Brace, Inc., 1935.
- Lancaster, H. O. The Chi-Squared Distribution. New York: John Wiley & Sons, Inc., 1969.
- Lange, Gerald M., Moomaw, Ronald L., and Warner, Larkin. A Profile of Oklahoma Economic Development 1950-1975. Oklahoma City, Oklahoma: Frontiers of Science Foundation of Oklahoma, Inc., 1977.
- Leahy, William H.; McKee, David L.; and Dean, Robert D. Urban Economics. New York: The Free Press, 1970.
- Leedy, Paul D. Practical Research: Planning and Design. New York: MacMillan Publishing Co., Inc., 1974.
- Mao, James C. T. Quantitative Analysis of Financial Decisions. London: The MacMillan Company, Collier-MacMillan Limited, 1969.
- Maslow, Abraham H. Motivation and Personality. New York: Harper & Row Publishers, Inc., 1954.
- Miller, Roger Leroy. Economic Issues for Consumers. St. Paul, Minn.: West Publishing Company, 1975.
- Minium, Edward W. Statistical Reasoning in Psychology & Education. New York: John Wiley & Sons, Inc., 1970.
- Morris, William, ed. The American Heritage Dictionary of the English Language. Boston: American Heritage Publishing Co., Inc. and Houghton Mifflin Company, 1969.
- McKee, David L.; Dean, Robert D.; and Leahy, William H., editors. Regional Economics: Theory and Practice. New York: The Free Press, 1970.
- Nash, Paul; Kazamias, Andreas M.; and Perkinson, Henry J. The Educated Man: Studies in the History of Educational Thought. New York: John Wiley & Sons, Inc., 1965.

- Nickerson, Jack W., Jr. Economics and Social Choice. 2nd ed. New York: McGraw-Hill Book Company, 1974.
- Pederson, Carlton A., and Wright, Milburn D. Selling Principles and Methods. 6th ed. Homewood, Illinois: Richard D. Irwin, Inc., 1976.
- Perlick, Walter W., and Lesikar, Raymond V. Introduction to Business. Dallas, Texas: Business Publications, Inc., 1972.
- Ring, Alfred A. The Valuation of Real Estate. 2nd ed. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970.
- Ring, Alfred A., and North, Nelson L. Real Estate: Principles and Practices. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967.
- Roberts, Roy W. Vocational and Practical Arts Education: History, Development, and Principles. 3rd ed. New York: Harper & Row, 1971.
- Rose, Jerome G. The Legal Advisor on Home Ownership. Boston: Little, Brown and Company, 1964.
- Russell, Frederick A.; Beach, Frank H.; and Buskirk, Richard H. Salesmanship. New York: McGraw-Hill Book Company, 1974.
- Schreiber, Arthur F.; Gatons, Paul K.; and Clemmer, Richard B. Economics of Urban Problems. 2nd ed. Boston: Houghton Mifflin Company, 1971.
- Selltiz, Claire; Wrightsman, Lawrence S.; and Cook, Stuart W. Research Methods in Social Relations. 3rd ed. New York: Holt, Rinehart and Winston, 1976.
- Siegel, Sidney. Nonparametric Statistics: For the Behavioral Sciences. New York: McGraw-Hill Book Company, 1956.
- Smith, Adam. An Inquiry Into the Nature and Causes of the Wealth of Nations. 1776. New York: The Modern Library, 1937.
- Smith, Len Young, and Roberson, G. Gale. Business Law. 2nd ed. St. Paul, Minn.: West Publishing Co., 1966.
- Smith, Halbert C.; Tschappat, Carl J.; and Racster, Ronald L. Real Estate and Urban Development. Homewood, Illinois: Richard D. Irwin, Inc., 1973.
- Spencer, Milton H. Contemporary Economics. 2nd ed. New York: Worth Publishers, Inc., 1974.

- Stanton, William J. Fundamentals of Marketing. 3rd ed. New York: McGraw-Hill Book Company, 1971.
- Stanton, William J. Fundamentals of Marketing. 4th ed. New York: McGraw-Hill Book Company, 1975.
- Stockton, John R., and Clark, Charles T. Introduction to Business and Economic Statistics. 5th ed. Cincinnati: South-Western Publishing Co., 1975.
- Troelstrup, Arch W. The Consumer in American Society: Personal and Family Finance. 5th ed. New York: McGraw-Hill Book Company, 1974.
- Tull, Donald S., and Hawkins, Del I. Marketing Research: Meaning, Measurement, and Method. New York: MacMillan Publishing Co., 1976.
- Turabian, Kate L. A Manual for Writers of Term Papers, Theses, and Dissertations. 3rd ed., rev. Chicago, Illinois: The University of Chicago Press, 1967.
- Unger, Maurice A. Real Estate: Principles and Practices. 5th ed. Cincinnati, Ohio: South-Western Publishing Co., 1974.
- Veblen, Thorstein B. The Theory of the Leisure Class. New York: The MacMillan Company, 1899.
- Wendt, Paul F., and Cerf, Alan R. Real Estate Investment Analysis and Taxation. New York: McGraw-Hill Book Company, 1969.
- Woelf, Henry Bosley, editor-in-chief. Webster's New Collegiate Dictionary. Springfield, Mass.: G. & C. Merriam Company, 1976.
- Wright, John S.; Warner, Daniel S.; and Winter, Willis L., Jr. Advertising. 3rd ed. New York: McGraw-Hill Book Company, 1971.

Periodicals

- Armstrong, Jan, and Uhl, Joseph N. "Survey of Consumer Education Programs in the United States." Journal of Home Economics, Vol. 63, No. 7 (October, 1971), pp. 524-30.
- Armstrong, Jan, and Uhl, Joseph N. "Survey of Consumer Education Programs in the United States." Journal of Home Economics, Vol. 63, No. 8 (November, 1971), pp. 591-95.

- Coleman, Larry D. "Consumer Education Needed in Business Teaching Programs." Business Education Forum, December, 1971, pp. 32-35.
- Forshee, Frederick H. "Let's Stop Turning Out Consumer Lambs!" Journal of Business Education, February, 1972, pp. 195-96.
- Kain, John F., and Quigley, John M. "Measuring the Value of Housing Quality." Journal of the American Statistical Association, Vol. 65, No. 330 (June, 1970), pp. 532-48.
- Knauer, Virginia H. "Consumer Education in the Business Program." Business Education Forum, March, 1971, pp. 8-10.
- Moore, Adena Spohn. "Education for the Homebuyer." Real Estate Today, February, 1978, pp. 50-53.
- Payne, John C. "101 Home Buyers: The Consumer, the Conveyancing Process, and Some Questions of Professional Conduct." Alabama Law Review, Spring, 1964, pp. 322-32.

Published Research Studies

- Sumichrast, Michael; Sheehan, Robert; and Ahluwalia, Gopal. Profile of a New Home Buyer. Survey of New Home Owners, 7/76-6/77. Washington, D. C.: Economics Department, National Association of Home Builders, 1978.
- Thorelli, Hans B.; Becker, Helmut; and Engledow, Jack. The Information Seekers. International study of consumer information and advertising image. Cambridge, Mass.: Ballinger Publishing Co., 1975.
- Profile: Oklahoma Home Buyers. Survey Report. Tulsa, Oklahoma: Market Research Department, Oklahoma Natural Gas Company, 1977.

Unpublished Research Studies

- Barnes, Cora McKown. "Social Factors Relating to Housing Selection." Unpublished Ph.D. dissertation, University of Missouri, 1972.
- Bernhardt, Kenneth Lee. "Husband-Wife Influence in the Purchase Decision Process for Houses." Unpublished Ph.D. dissertation, University of Michigan, 1974.
- Everard, Kenneth Eugene. "Identification of Areas of Knowledge About Which Home Buyers Need Understanding." Unpublished Ed.D dissertation, University of Indiana, 1962.

- Haney, Richard Lee, Jr. "Some Determinants of the Value of Housing Services." Unpublished D.B.A. dissertation, Indiana University, 1974.
- Kane, James Alexander. "Analysis of Determinants of Housing Value with Special Attention to Employment Accessibility and Locational Externalities." Unpublished Ph.D. dissertation, University of Pittsburgh, 1972.
- Klein, Karla C. "Housing Style Preferences and Personality." Unpublished Ph.D. dissertation, Illinois Institute of Technology, 1975.
- Obenberger, Robert W. "Ultimate Consumers' Attitude Toward Property Ownership: Conceptual and Empirical Foundations." Unpublished Ph.D. dissertation, Louisiana State University, 1974.
- Peery, Suzanne Hurt. "Factors Affecting Degree of Success Attained by Families in a Pilot Educational Housing Program." Unpublished Ed.D. dissertation, Virginia Polytechnic Institute and State University, 1976.
- Shaw, John Joseph. "Use of Types of Information Sources by Pre-Purchase and Post-Purchase Home-Buying Consumers." Unpublished D.B.A. dissertation, University of Oklahoma, 1973.
- VandeBerg, Loyd Wallace. "Educational Needs of Prospective Home Owners Concerning the Acquisition and Ownership of a House." Unpublished Ed.D. dissertation, University of Missouri, 1955.
- Whipple, Thomas Walton. "Multidimensional Analysis of Home-Buying Decision-Making." Unpublished Ph.D. dissertation, State University of New York at Buffalo, 1971.

Other Sources

- Annual Reports on Consumer Policy in OECD Member Countries, 1977. Report by the Committee on Consumer Policy, Organization for Economic Co-operation and Development. Paris, 1977.
- Board of Governors of the Federal Reserve System. Regulation Z of Truth-In-Lending. (12 CFR 226), 1969.
- Consumer Policy in Member Countries. Report by the Committee on Consumer Policy, Organization for Economic Co-operation and Development. Paris, 1972.
- Guffey's Journal. August 1, 15, and 29, 1977.
- United States Savings and Loan League. What You Should Know Before Buying A Home, 1972.

- U. S. Department of Housing and Urban Development. Wise Home Buying. HUD Publication HUD-321-F (3), 1973.
- U. S. Senate Committee on Banking, Housing, and Urban Affairs. Mortgage Settlement Costs: Reports of the Department of Housing and Urban Development. 92nd Congress, 2nd Session, 1972.
- U. S. Veterans Administration. Home-Buying Veteran. VA Pamphlet 26-6, revised, 1973.
- Van Hooft, Gordon E. "The New Approach to Consumer Education." ERIC Document No. ED 048 078, 1968.
- Wall Street Journal. July 7, 1978.

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APPENDIX A

Exhibit 1

Date _____

Dear Homeowner:

As a student at the University of Oklahoma and as an instructor at Oscar Rose Junior College, I have a strong interest in the problems of the consumer. As you know, consumerism is big news today! Everyone seems to have advice for the consumer. Yet, who is really better qualified to advise the consumer than another consumer who has recently been through the same process?

Recent home purchasers, such as yourself, are certainly in a better position to advise prospective home purchasers than anyone else. For this reason, I have chosen to do a survey of recent home purchasers as a part of my doctoral program at the University of Oklahoma. The purpose of the survey is to determine from recent purchasers what they learned during the purchase of their property that might help prospective home buyers make wiser decisions. In other words, what knowledge do you now have that would have been helpful to you prior to making your purchase? Is hindsight better than foresight? The results of the survey should be particularly helpful to consumer educators.

Will you please give a few minutes of your time to help with this survey? Ten or fifteen minutes of your time will be sufficient, and the results may be invaluable. Simply complete the enclosed questionnaire and return the completed form in the enclosed postage-paid return envelope.

If you have any questions about the research project, please call me at 737-6611, x 470 or x 340. Since I teach, I may be unavailable when you call; however, if you will leave your number, I'll get back to you. Your help will certainly be appreciated.

The findings of this research will be shared with you, if you wish. Just indicate your mailing address in the space provided below.

Please help make this survey a success by taking a few minutes of your time to complete the enclosed form.

Sincerely,

Voncille Winter, Instructor
Oscar Rose Junior College
6420 S. E. 15th Street
Midwest City, Oklahoma 73110

____ Yes, I would like a copy of your research report. Please send it to:

Name _____

Address _____

Exhibit 2Demographic CharacteristicsHead of Household: Age _____ Sex M FHighest Year of Education
Completed _____

Marital Status:

 Married Single DivorcedNumber of family members employed
full-time _____Annual Family Income
\$ _____ (approximately)

Occupation(s) _____

Annual Housing Cost
\$ _____ (including
utilities)Home PurchaseWas this your first home purchase? _____ 2nd? _____ 3rd? _____ 4th? _____
5th or more? _____

Was the purchase made through a real estate broker? _____ Yes _____ No

Did you employ an attorney to represent your interest? _____ Yes _____ No

Were you under any pressure to move? _____ Yes _____ No

How long did you search for a home? _____

How did you first learn of the property you purchased? _____

How many times did you visit the property before your purchase? _____

What was the deciding feature or situation that "triggered" your decision
to purchase your home? _____

Was anyone outside your immediate family involved in your decision?

_____ Yes _____ No

If so, what is their relationship? _____ Parents _____ Children

_____ Brother/Sister _____ Friend _____ Other Relative _____

Knowledge of Home BuyingWhat knowledge did you have about buying a home prior to making your
purchase?

Where was your knowledge obtained?

1. Formal Education:

Personal Economics? _____

Other Economics? _____

Financial Education? _____

Marketing Education? _____

2. Other Sources of Education:

Family? (relationship?) _____

Friends? _____

Government? _____

Industry? _____

3. Experience from previous home purchases? _____

What knowledge did you gain while buying your home?

1. Relating to the property? _____
2. Relating to your lifestyle? _____
3. Relating to financing? _____

What knowledge do you now have that would have been beneficial to you in making the decision to buy? (i.e., is hindsight better than foresight?)

Looking back to the purchase of your home, what do you now feel might have made the decision-making process easier for you and/or the result more satisfactory? Please rank the following items in order of importance (1, 2, 3, etc.). Enter a zero (0) by any items that were unimportant to you or inapplicable to your decision. Anything not listed that was important to you may be added in the blank spaces.

_____ A more thorough inspection of the house

_____ Measurement for furniture placement

_____ More or longer family conferences

_____ More consideration of lifestyle needs

_____ A tour of the neighborhood

_____ A visit to the school system

_____ Better information about financing

_____ More shopping for financing

_____ Better understanding with my broker

_____ Nothing

What would you have purchased additionally had finances been available?

_____ More living space

_____ More bedrooms

_____ Larger kitchen

_____ An additional living area

_____ Another bath

_____ Separate dining area

Other _____

Areas of Dissatisfaction (Rank the items in each area in order of importance of dissatisfaction; i.e., most dissatisfactions - 1, second in dissatisfaction - 2, third - 3, etc. Enter a zero by any item wherein there was no dissatisfaction. Anything not listed may be added in the blank spaces.)

Location

____ Neighborhood
 ____ Schools
 ____ Churches
 ____ Traffic
 ____ Zoning Laws

Property

____ Traffic flow within house
 ____ Room Sizes
 ____ Room Arrangement
 ____ Appliances (Which ones?)

 ____ Inferior Construction
 Describe:____

Financing

____ Settlement costs and/or closing expenses were more than anticipated.
 ____ Mortgage payments were higher than expected.
 ____ Taxes were higher than expected.
 ____ Insurance premium was higher than expected.
 ____ Maintenance costs and/or utilities costs have been higher than expected

Exhibit 3

The response to my survey of home owners has been good, but not complete enough to allow a conclusive analysis of the data. Have you returned the questionnaire sent to you about two weeks ago? If not, please take a few minutes to complete the questionnaire and return it to me. I would like to make this research meaningful for future home buyers. Your help will be appreciated.

If you have already mailed your questionnaire, please disregard this card and accept my thanks for your participation.

Sincerely,

Voncille Winter

APPENDIX B

1

Exhibit 1

DECIDING FEATURE OR SITUATION

I. Property

Location

Location	47
----------	----

Neighborhood	12
--------------	----

Setting	13
---------	----

Home itself

Size	19
------	----

Floor Plan	16
------------	----

Space	8
-------	---

Condition	6
-----------	---

Quality of Construction	6
-------------------------	---

Age of Home	3
-------------	---

Landscaping	2
-------------	---

Pool	2
------	---

Trees	<u>2</u>
-------	----------

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II. Lifestyle

Schools	11
---------	----

Style of Home	10
---------------	----

Proximity to Work	6
-------------------	---

Appearance	6
------------	---

Aesthetics	5
------------	---

Charm of Home	5
---------------	---

Loved Home	4
------------	---

Suited Lifestyle	3
Shopping	2
Convenience in Home	1
Pride of Ownership	1
Wanted "out"	<u>1</u>
	55
III. Finance	
Price	36
Investment	16
Quick Possession	7
Finances	5
Inflation	5
Cost per square foot	5
Incentive Offered	4
Potential of Property	<u>2</u>
	80
IV. None	<u>9</u>
	280

Exhibit 2

EFFECT OF FINANCIAL CONSTRAINTS

"Would Have Purchased Had Finances Been Available"

More Living Space	40
Another Living Area	27
Another Bathroom	26
Another Bedroom	25
Separate Dining Area	22
Larger Kitchen	21
Larger Acreage	10
Fireplace	4
Pool	4
Storm Windows	4
Central Heat/Air	3
Extra Insulation	3
Larger Utility Room	3
More Storage Space	3
Larger Closets	2
Larger Garage	2
2-car Garage	2
Fence	2
Landscaping	2
More Energy Saving Features	1
Lani	1
Gas Line (in lieu of electric)	1
Walk-In Closet	1

Higher Pitch Roof	1
Covered Patio	1
Wooden Windows	1
More Entry Tile	1
Better Neighborhood	1
Inside Laundry Room	1

Exhibit 3

PURCHASE PROCESS KNOWLEDGE GAINED

I. Relating to Property

Septic tank inadequate	1
Value of location	12
Value of inspections	5
Value of good construction	3
Value of good contractor	1
Need for a survey	2
Need for adequate-sized lot	2
Trust broker	1
Relatively inexpensive	1
Enlargement possibilities	1
Consider resale potential	4
Warranty items	1
Effect of easements	1
Maintenance requires time	3
Check neighborhood zoning	1
Consider flooding and drainage	2
Energy considerations	2
Cost of extras	1
Value of an appraisal	1
Hidden defects	1
Assessing real and perceived value	1
Determination of market value	1
Inflated worth	2

Oil and gas rights	1
Local building practices	1
Trust your own judgment	1
Traffic in area important	1
Space costs	1
Restrictive covenants	1
Taxation principles	1
None	81

II. Relating to Lifestyle

Determination of needs	3
Homeownership better than renting	7
Social benefits of nice neighborhood	1
Space needs of family	14
Match lifestyle with property	4
Should have stayed on 40 acres	1
Trust broker	1
No changes necessary	1
Improves with each move	2
Growing family needs	3
Recreation in home important in Oklahoma	1
Buy based on husband's income only	1
Better home, less cash for extras	1
Neighborhood visiting important	1
Family's desire for country living	2
No more 2-story homes	1

Value of privacy	4
School District consideration	1
Relaxed lifestyle is great	1
None	90

III. Relating to Financing

Closing costs are expensive	1
Tax advantages of homeownership	4
Variety of financing methods available	9
Shops for financing	16
Bargain on price	1
Ethics and honesty have deteriorated	1
Ease of financing	6
Investment considerations	2
Trust broker	1
Consider carefully before committing	3
Seller carried note	1
Have independent appraisal made	2
Government 3% Home Improvement Loans not worth hassle	1
Having attorney present at closing	2
Prejudice regarding unmarried woman	1
How to make additional principal payments	1
Learned about "points"	1
Selling own property is difficult	1
Interest rates	9

Legal paperwork involved	1
How to deal with brokers	1
Similar to other states	2
Time involved	2
Keep equity low	1
None	65

Exhibit 4

POSTPURCHASE KNOWLEDGE GAINED

Minor problems only	13
Should have considered financing more carefully	9
Should have used an attorney	4
Should have "stretched" purchasing power	7
Should have installed storm windows	2
Should have had builder put in lawn	1
Should not have relied on broker so much	2
Realtor's advice very good	1
Inspect carefully before closing	15
Should have bought sooner	2
Visit prospective home as often as possible	1
Negotiate	4
Choose builder with care	5
Extra cost of architect overseer money well spent	4
Property does not match lifestyle	5
Do not make changes after construction starts	1
Country living excellent	1
Property values continue to increase	2
Experience helpful	8
Value of good construction	3
Value of good location	2
Consider maintenance requirements	1
Should have withheld some funds from builder	2

Buyer Protection Insurance a ripoff	3
Cannot rely on city planners	2
Should keep equity low	1
Total Electric home was bad buy	1
Buy during off season	1
None	60

Exhibit 5RECOMMENDATIONS FOR IMPROVEMENTS
IN DECISION-MAKING TECHNIQUES

A. Relating to Property

1. Inspections

Inspect property carefully	1
See the house when it is vacant	1
Do not be influenced by poor decorating	1
Pay for inspections	8
Consider location carefully	2

2. Construction

Investigate the builder	4
Do not buy total electric	2
Check floor plan with architect	1
Visit prospective purchase often	2
Employ an architect overseer	1
Do not change anything after construction starts	1
Allow more time than builder states	2
Have builder put in lawn and landscaping	1
Major appliances furnished are inferior	1

3. Repairs

Require written statement regarding repairs	6
Consider remodeling and repair needs	1
Get buyer's protection insurance	1

Get insurance against house defects	1
4. Maintenance	
Ask to see utility bills	3
Invest in energy-saving features	1
Buy storm windows right away	1
Avoid sky-lights	1
Avoid see-through fireplaces	1
5. Miscellaneous	2
B. Relating to Lifestyle	
1. Experience best teacher, but lesson can be costly	6
2. Stretch beyond your means	9
3. Consider lifestyle	6
4. Consider decision carefully	4
5. Consider projected increased earnings	2
6. Visit with neighborhood owners regarding problems	2
7. Consider general public opinion of neighborhood and area	2
8. Put the situation in the Lord's hands	1
C. Relating to Finance	
1. Mortgage money	
a. Shop for financing	4
b. Learn about financing	3
c. Write everything possible into mortgage - storm windows - fence	2
d. Take a first mortgage -- not a wrap-around	1
e. Sell home before purchasing another	1

2. Purchase cost

- a. Negotiate on sale price 3
- b. Do not buy during peak time
of year (spring and summer) 1
- c. Have independent appraisal made 1
- d. Check costs on recently sold homes 1
- e. Withhold funds for leverage 3
- f. Use an attorney 2
- g. Don't put too much faith in
broker 6

3. Maintenance expenses

- a. Compare property taxes 1
- b. Get good insurance on house 1

4. Resale considerations

- a. Consider future inflation 3
- b. Consider appreciation of
property 1
- c. Consider investment 1
- d. Consider tax breaks 2
- e. Consider resale value 1

Exhibit 6

WAYS THE DECISION-MAKING PROCESS MIGHT
HAVE BEEN MADE EASIER AND/OR
RESULTS MORE SATISFACTORY

	RATINGS									
	1	2	3	4	5	6	7	8	9	Total*
1. More Thorough Inspection	31	11	6	4	3	-	-	1	-	56
2. Measurement for Furniture	11	6	6	7	-	1	-	-	2	33
3. Family Conferences	2	9	8	1	2	-	2	-	-	24
4. Lifestyle Needs	10	9	10	3	3	-	1	-	-	36
5. Tour of Neighborhood	6	11	8	5	1	6	-	-	-	37
6. Visit to School System	5	7	6	-	1	1	-	2	-	22
7. Better Information Regarding Financing	12	13	10	2	5	1	-	-	-	43
8. More Shopping for Financing	6	11	12	1	3	1	1	-	1	36
9. Broker	9	7	4	2	-	2	-	1	-	25

*only includes information reported. Does not balance.

Exhibit 7

AREAS OF POSTPURCHASE DISSATISFACTION

I. Location

None	73
Traffic	34
Neighborhood	29
Zoning Laws	23
Schools	15
Churches	15
Street maintenance	4
Shopping	3
City Fathers	2
Homeowner's Association	- 1
Distance from work	1
No parks	1
Ham radio interference	1
Nearby auto race track	1
Utility easements	1

II. Property

None	51
Room sizes	53
Inferior construction	43
Appliances	36
Room arrangement	34
Poor traffic flow	27
Poor insulation	12

Poor plumbing	6
Interior decorations	6
Inadequate heating systems	5
Ineffective fireplace	3
Utility area	3
Inadequate air-conditioning system	2
Concrete driveway and patio	2
Exterior finish	2
Inadequate electric wiring	1
No storm windows	1
Water pressure	1
Septic tanks	1
Kitchen too dark	1
Inferior paint	1
Location of utilities	1
Driveway too steep	1
Aluminum windows	1
Slab foundation	1
Fan in bathroom	1
Skylights	1
Small garage	1
Lawn	1
Home too large	1
No intercom	1

III. Financing

None	66
Maintenance costs	57
Utilities	50
Settlement costs	33
Taxes	25
Insurance premiums	24
Mortgage payments	23
Inept handling by mortgage company	3

APPENDIX C

Exhibit 1

H_{o1} : There is no significant difference in the knowledge of home-buying consumers in their prepurchase status and their postpurchase status.

HYPOTHESIS NO. 1

Knowledge Gained	Prepurchase	Postpurchase	Totals
0	2	1	3
1	21	1	22
2	78	17	95
3	41	33	74
4	0	32	32
5	0	42	42
6	<u>0</u>	<u>16</u>	<u>16</u>
Totals	142	142	284

$$\chi^2 = 103.5484374$$

Decision Rules: $\alpha = .01$ $df = 6$ χ^2 Critical Value = 16.81

$\alpha = .05$ $df = 6$ χ^2 Critical Value = 12.59

Decision: Reject H_{o1} at both .05 and .01 levels of significance.

Exhibit 2

H_{o2} : There is no significant difference in the amount of knowledge gained by experienced home-buying consumers and inexperienced home-buying consumers.

HYPOTHESIS NO. 2

Knowledge Gained	Experienced	Inexperienced	Totals
0	14	3	17
1	19	3	22
2	17	1	18
3	7	4	11
4	14	4	18
5	13	5	18
6	7	1	8
7	2	4	6
8	2	2	4
9	3	4	7
10	1	2	3
11	2	2	4
12	3	1	4
13	<u>0</u>	<u>2</u>	<u>2</u>
Totals	104	38	142

$$\chi^2 = 25.15904696$$

Decision Rules: $\alpha = .01$ $df = 13$ χ^2 Critical Value = 27.69

$\alpha = .05$ $df = 13$ χ^2 Critical Value = 22.36

Decision: Reject H_{o2} at .05 level of significance.

Accept H_{o2} at .01 level of significance.

Exhibit 3

H_{o3} : There is no significant difference in the amount of knowledge gained by male home-buying consumers and female home-buying consumers.

HYPOTHESIS NO. 3

Knowledge Gained	Male	Female	Totals
0	17	0	17
1	22	0	22
2	17	1	18
3	10	0	10
4	17	1	18
5	16	2	18
6	7	1	8
7	6	0	6
8	4	0	4
9	7	0	7
10	2	1	3
11	5	0	5
12	4	0	4
13	<u>1</u>	<u>1</u>	<u>2</u>
Totals	136	6	142

$$\chi^2 = 13.68313599$$

Decision Rules: $\alpha = .01$ $df = 13$ χ^2 Critical Value = 27.69

$\alpha = .05$ $df = 13$ χ^2 Critical Value = 22.36

Decision: Cannot reject H_{o3} at either .05 or .01 levels of significance.

Exhibit 4

H_{o4} : There is no significant difference in the amount of knowledge gained by home-buying consumers who were under pressure to move and those who were under no pressure to move.

HYPOTHESIS NO. 4

Knowledge Gained	Pressure	No Pressure	Totals
0	3	14	17
1	6	16	22
2	6	12	18
3	2	8	10
4	5	12	17
5	6	13	19
6	5	3	8
7	2	4	6
8	0	4	4
9	1	6	7
10	1	2	3
11	3	2	5
12	1	3	4
13	<u>1</u>	<u>1</u>	<u>2</u>
Totals	42	100	142

$$\chi^2 = 9.985944617$$

Decision Rules: $\alpha = .01$ $df = 13$ χ^2 Critical Value = 27.69

$\alpha = .05$ $df = 13$ χ^2 Critical Value = 22.36

Decision: Cannot reject H_{o4} at either .05 or .01 levels of significance.

Exhibit 5

H_{05} : There is no significant difference in the amount of knowledge gained by home-buying consumers who employed a real estate broker and those who did not employ a real estate broker.

HYPOTHESIS NO. 5

Knowledge Gained	Broker	No Broker	Totals
0	11	6	17
1	17	5	22
2	13	5	18
3	6	4	10
4	15	3	18
5	13	5	18
6	5	3	8
7	4	2	6
8	4	0	4
9	5	2	7
10	2	1	3
11	4	1	5
12	3	1	4
13	<u>2</u>	<u>0</u>	<u>2</u>
Totals	104	38	142

$$\chi^2 = 4.053771178$$

Decision Rules: $\alpha = .01$ $df = 13$ χ^2 Critical Value = 27.69

$\alpha = .05$ $df = 13$ χ^2 Critical Value = 22.36

Decision: Cannot reject H_{05} at either .05 or .01 levels of significance.

APPENDIX D

Exhibit 1

H₀₆: There is no relationship between the education of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 6

Knowledge Gained	Education					Totals
	12+	13-14	15-16	17-18	19+	
12+	1	0	5	0	1	7
9-11	1	3	7	4	0	15
6-8	2	4	8	0	3	17
2-5	4	7	20	10	5	46
0-2	<u>6</u>	<u>6</u>	<u>25</u>	<u>9</u>	<u>11</u>	<u>57</u>
Totals	14	20	65	23	20	142

$$\chi^2 = 14.03335845$$

$$C = \frac{\sqrt{\chi^2}}{\sqrt{\chi^2 + N}} = \frac{\sqrt{14.03335845}}{\sqrt{14.03335845 + 142}} = 2.998969722$$

$$r = \frac{\sqrt{\chi^2}}{\sqrt{N(k-1)}} = \frac{\sqrt{14.03335845}}{\sqrt{142 \cdot 4}} = .1571833865$$

$$\max C = \sqrt{(k-1) / k} = \sqrt{4 / 5} = .894427191$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2) (k - 1)}$$

$$.1571833865 = .2998969722 / \sqrt{(1 - .0899381939) \cdot 4}$$

Exhibit 2

H_{07} : There is no relationship between the age of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 7

Knowledge Gained	Age					Totals
	25+	26-35	36-45	46-55	56+	
12+	2	1	2	1	0	6
9-11	1	9	1	4	0	15
6-8	3	7	5	1	2	18
3-5	4	22	11	7	2	46
0-2	<u>1</u>	<u>21</u>	<u>19</u>	<u>9</u>	<u>7</u>	<u>57</u>
Totals	11	60	38	22	11	142

$$\chi^2 = 20.7220935$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{20.7220935}{20.7220935 + 142}} = .3568564518$$

$$r = \sqrt{\frac{\chi^2}{N(k-1)}} = \sqrt{\frac{20.7220935}{142 \cdot 4}} = .1910040811$$

$$\max C = \sqrt{(k-1) / k} = \sqrt{4 / 5} = .894427191$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2) (k - 1)}$$

$$.1910040811 = .3568564518 / \sqrt{(1 - .1273465272) \cdot 4}$$

Exhibit 3

H₀: There is no relationship between the price of the home purchased by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 8

Knowledge Gained	Price					Totals
	Up to \$30,000	\$30,001 to \$50,000	\$50,001 to \$70,000	\$70,001 to \$90,000	Above \$90,000	
12+	0	3	2	0	1	6
9-11	1	7	5	1	1	15
6-8	1	10	4	3	0	18
3-5	5	18	15	5	3	46
0-2	<u>4</u>	<u>9</u>	<u>22</u>	<u>14</u>	<u>8</u>	<u>57</u>
Totals	11	47	48	23	13	142

$$\chi^2 = 18.04894521$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{18.04894521}{18.04894521 + 142}} = .3358145469$$

$$r = \sqrt{\frac{\chi^2}{N(k-1)}} = \sqrt{\frac{18.04894521}{142 \cdot 4}} = .1782591147$$

$$\max C = \sqrt{(k-1) / k} = \sqrt{4 / 5} = .894427191$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2) (k - 1)}$$

$$.1782591147 = .3358145469 / \sqrt{(1 - .1127714248) \cdot 4}$$

Exhibit 4

H₀: There is no relationship between the marital status of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 9

Knowledge Gained	Marital Status				Totals
	Married	Widowed	Divorced	Single	
12+	4	0	1	1	6
8-11	16	0	0	3	19
4-7	44	1	3	2	50
0-3	<u>64</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>67</u>
Totals	128	1	7	6	142

$$\chi^2 = 11.91173606$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{11.91173606}{11.91173606 + 142}} = .2781965004$$

$$r = \sqrt{\frac{\chi^2}{N(k - 1)}} = \sqrt{\frac{11.91173606}{142 \cdot 3}} = .167217887$$

$$\max C = \sqrt{(k - 1) / k} = \sqrt{3 / 4} = .8660254038$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2) (k - 1)}$$

$$.167217887 = .2781965004 / \sqrt{(1 - .0773932938) \cdot 3}$$

Exhibit 5

Ho₁₀: There is no relationship between the home-buying consumer's position in the family life cycle and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 10

Knowledge Gained	Family Life Cycle						Totals
	A	B	C	D	E	F	
12+	1	1	0	2	1	0	6
10-11	1	4	1	1	1	0	8
8-9	1	5	0	2	2	1	11
6-7	1	4	4	2	1	1	14
4-5	3	5	10	10	2	3	36
2-3	1	5	9	10	2	1	28
0-1	<u>1</u>	<u>2</u>	<u>15</u>	<u>6</u>	<u>8</u>	<u>3</u>	<u>39</u>
Totals	9	26	39	33	17	9	142

$$\chi^2 = 31.80355089$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{31.80355089}{31.80355089 + 142}} = .4277681874$$

$$r = \sqrt{\frac{\chi^2}{N(k-1)}} = \sqrt{\frac{31.80355089}{142 \cdot 6}} = .193204843$$

$$\max C = \sqrt{(k-1) / k} = \sqrt{6 / 7} = .9258200998$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2)(k-1)}$$

$$.193204843 = .4277681874 / \sqrt{(1 - .1829856222) \cdot 6}$$

Exhibit 6

Ho₁₁: There is no relationship between the job classification of the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 11

Knowledge Gained	Job Classification				Totals
	A	B	C	D	
12+	1	13	24	13	51
8-11	0	9	19	13	41
4-7	2	6	12	13	33
0-3	<u>0</u>	<u>2</u>	<u>9</u>	<u>6</u>	<u>17</u>
Totals	3	30	64	45	142

$$\chi^2 = 5.908144197$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{5.908144197}{5.908144197 + 142}} = .1998616641$$

$$r = \sqrt{\frac{\chi^2}{N(k - 1)}} = \sqrt{\frac{5.908144197}{142 \cdot 3}} = .1177662222$$

$$\max C = \sqrt{(k - 1) / k} = \sqrt{3 / 4} = .8660254038$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2) (k - 1)}$$

$$.1177662222 = .1998616641 / \sqrt{(1 - .0399446848) \cdot 3}$$

Exhibit 7

Ho₁₂: There is no relationship between the number of homes previously owned by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 12

Knowledge Gained	Previous Homes			Totals
	0-1	2-3	4-5	
10+	10	3	1	14
5-9	25	11	7	43
0-4	<u>42</u>	<u>28</u>	<u>15</u>	<u>85</u>
Totals	77	42	23	142

$$\chi^2 = 2.939510184$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{2.939510184}{2.939510184 + 142}} = .1424111816$$

$$r = \sqrt{\frac{\chi^2}{N(k-1)}} = \sqrt{\frac{2.939510184}{142 \cdot 2}} = .1017368565$$

$$\max C = \sqrt{(k-1) / k} = \sqrt{2 / 3} = .8124038405$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2)(k-1)}$$

$$.1017368565 = .1424111816 / \sqrt{(1 - .0202809447) \cdot 2}$$

Exhibit 8

Ho₁₃: There is no relationship between the degree of satisfaction/dissatisfaction the home-buying consumer has with his/her new home and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 13

Knowledge Gained	Satisfaction/Dissatisfaction					Totals
	Very Dissatisfied 1	Dissatisfied 2	Neither Satisfied Dissatisfied 3	Satisfied 4	Very Satisfied 5	
12+	1	0	3	1	1	6
9-11	0	4	2	7	2	15
6-8	0	1	5	11	1	18
3-5	0	3	10	26	7	46
0-2	0	2	6	22	27	57
Totals	1	10	26	67	38	142

$$\chi^2 = 56.81893459$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{56.81893459}{56.81893459 + 142}} = .5345861118$$

$$r = \sqrt{\frac{\chi^2}{N(k - 1)}} = \sqrt{\frac{56.81893459}{142 \cdot 4}} = .3162804698$$

$$\max C = \sqrt{(k - 1) / k} = \sqrt{4 / 5} = .894427191$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2)(k - 1)}$$

$$.3162804698 = .5345861118 / \sqrt{(1 - .2857823109) \cdot 4}$$

Exhibit 9

Ho₁₄: There is no relationship between the length of time the home-buying consumer spent looking for a home and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 14

Knowledge Gained	Time Spent Looking					Totals
	1 mo.+	1-3 mo.	3-6 mo.	6 mo.-1 yr.	1 yr.+	
12+	2	1	1	1	1	6
9-11	6	4	4	1	0	15
6-8	7	6	3	2	0	18
3-5	22	12	7	3	2	46
0-2	<u>34</u>	<u>9</u>	<u>6</u>	<u>4</u>	<u>4</u>	<u>57</u>
Totals	71	32	21	11	7	142

$$\chi^2 = 10.16451859$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{10.16451859}{10.16451859 + 142}} = .2584560538$$

$$r = \sqrt{\frac{\chi^2}{N(k-1)}} = \sqrt{\frac{10.16451859}{142 \cdot 4}} = .133773238$$

$$\max C = \sqrt{(k-1)/k} = \sqrt{4/5} = .894427191$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2)(k-1)}$$

$$.133773238 = .2584560538 / \sqrt{(1 - .0667995317) \cdot 4}$$

Exhibit 10

H_{015} : There is no relationship between the number of visits made to the prospective home by the home-buying consumer and the amount of knowledge gained as a result of the home-buying process.

HYPOTHESIS NO. 15

Knowledge Gained	Visits to Prospective Home					Totals
	1	2	3	4	5	
12+	0	2	2	1	1	6
9-11	4	5	3	2	1	15
6-8	0	11	3	3	1	18
3-5	9	12	17	5	3	46
0-2	<u>18</u>	<u>18</u>	<u>16</u>	<u>3</u>	<u>2</u>	<u>57</u>
Totals	31	48	41	14	8	142

$$\chi^2 = 14.47563967$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = \sqrt{\frac{14.47563967}{14.47563967 + 142}} = .304155388$$

$$r = \sqrt{\frac{\chi^2}{N(k-1)}} = \sqrt{\frac{14.47563967}{142 \cdot 4}} = .1596411009$$

$$\max C = \sqrt{(k-1) / k} = \sqrt{4 / 5} = .894427191$$

$$\text{Proof: } r = C / \sqrt{(1 - C^2)(k-1)}$$

$$.1596411009 = .304155388 / \sqrt{(1 - .0925105) \cdot 4}$$

APPENDIX E

Exhibit 1

CODINGS FOR RAW DATA

Variable	Classification	Code
Education	12 or less years	1
	13-14	2
	15-16	3
	17-18	4
	19 or more years	5
Age	25 or younger	1
	26-35	2
	36-45	3
	46-55	4
	56 or older	5
Price	\$30,000 or less	1
	\$30,001 - \$50,000	2
	\$50,001 - \$70,000	3
	\$70,001 - \$90,000	4
	\$90,001 or more	5
Marital Status	Single	1
	Married	2
	Divorced	3
	Widowed	4
Family Life Cycle	Bachelor	1
	Newly married, 30 or less	2
	Full nest, 31-45, married and 1 employed	3
	Full nest, 31-45, married and 2 employed	4
	Empty nest, 46-60, married and 1 employed	5
	Empty nest, 46-60, married and 2 employed	6
	Retired or Empty nest, 61 or older, married or single	7
Job Classification	Unskilled	1
	Skilled and white collar clerical	2
	Managerial and marketing	3
	Professional and education	4

CODINGS FOR RAW DATA--Continued

Variable	Classification	Code
Pressure to Move	Yes	1
	No	2
Previous Home Ownership	None	0
	1	1
	2	2
	3	3
	4	4
	5 or more	5
Satisfaction/ Dissatisfaction	Very Dissatisfied	1
	Dissatisfied	2
	Neither Satisfied or Dissatisfied	3
	Satisfied	4
	Very Satisfied	5
Broker	Yes	1
	No	1
Time	1 month or less	1
	More than 1 but less than 3 months	2
	More than 3 but less than 6 months	3
	More than 6 months but less than 1 year	4
	More than 1 year	5
Visits	0	0
	1	1
	2	2
	3	3
	4	4
	5	5
	6	6

Exhibit 2

RAW DATA

Respondent	Knowledge	Education	Age	Price	Marital Status	Family Life Cycle	Job Classification	Pressure to Move	Previous Home Ownership	Satisfaction/Dissatisfaction	Broker	Time	Visits
1	1	3	5	3	2	5	6	2	4	4	2	1	1
2	3	3	2	3	2	4	4	2	2	3	1	2	1
3	10	3	4	3	2	5	2	1	4	2	1	1	1
4	6	1	3	2	2	3	3	1	3	4	1	1	2
5	4	4	2	2	2	2	7	2	0	3	2	1	1
6	8	2	1	2	1	2	3	2	0	3	1	4	4
7	6	2	3	4	4	1	7	1	2	4	2	1	4
8	1	2	2	3	2	3	3	2	2	5	1	1	3
9	1	2	2	3	2	3	4	2	1	4	1	1	2
10	5	3	1	3	1	1	4	2	0	4	2	2	4
11	2	3	3	4	2	4	3	2	2	4	1	5	3
12	2	3	2	4	2	3	6	2	2	4	1	4	2
13	7	5	2	2	2	3	6	2	1	5	1	5	2
14	4	5	2	4	2	3	4	2	1	4	1	4	2
15	1	1	3	3	2	2	4	2	0	4	1	2	1
16	9	2	2	3	2	2	2	2	4	5	1	2	3
17	0	5	4	4	4	7	6	1	1	4	1	1	3
18	3	3	4	4	2	5	4	1	1	4	1	3	2
19	5	3	3	3	2	1	6	1	5	3	1	1	3
20	5	2	4	4	2	6	7	1	4	4	1	2	3
21	5	4	2	1	2	4	6	2	2	3	2	2	1
22	7	3	2	2	2	2	7	1	0	4	1	2	2

RAW DATA---Continued

Respondent	Knowledge	Education	Age	Price	Marital Status	Family Life Cycle	Job Classification	Pressure to Move	Previous Home Ownership	Satisfaction/Dissatisfaction	Broker	Time	Visits
23	3	3	2	3	2	4	5	2	2	4	2	5	3
24	1	5	2	4	2	3	6	2	1	5	1	3	1
25	1	3	2	3	2	4	7	2	1	5	1	2	1
26	4	3	5	3	2	7	7	2	3	4	1	1	2
27	0	1	5	1	2	7	8	2	0	4	2	1	1
28	1	5	2	3	2	2	6	2	0	4	1	1	2
29	1	3	3	4	2	4	7	2	0	4	2	1	1
30	1	2	5	2	2	6	4	2	3	5	2	1	1
31	9	1	4	4	2	6	4	2	4	4	1	2	3
32	6	3	4	2	2	6	4	2	4	2	1	1	2
33	3	3	2	2	2	4	7	1	0	2	2	2	1
34	1	3	3	3	2	3	7	1	1	4	1	1	4
35	7	5	5	3	2	5	5	1	4	4	2	2	4
36	5	4	3	2	4	7	7	2	1	4	1	1	2
37	2	3	2	1	4	1	5	2	1	4	1	4	1
38	2	5	2	3	2	2	6	1	1	4	1	1	3
39	7	3	2	4	2	2	4	1	0	4	1	2	2
40	0	3	3	5	2	4	7	1	1	5	1	1	3
41	1	3	4	3	2	5	7	2	3	5	1	1	5
42	4	5	2	5	2	4	6	2	0	4	1	1	2
43	0	2	2	5	2	3	4	2	4	5	1	1	1
44	5	3	2	3	2	2	6	1	3	4	1	1	2

RAW DATA--Continued

Respondent	Knowledge	Education	Age	Price	Marital Status	Family Life Cycle	Job Classification	Pressure to Move	Previous Home Ownership	Satisfaction/Dissatisfaction	Broker	Time	Visits
45	12	3	3	2	4	7	6	2	2	3	1	5	3
46	9	4	3	3	1	1	5	2	0	2	1	5	2
47	12	3	3	3	2	4	5	2	1	3	1	5	7
48	4	3	5	1	2	6	7	2	4	5	1	3	3
49	9	3	2	2	2	4	2	2	0	5	2	3	1
50	2	5	2	5	2	3	6	1	1	5	1	1	2
51	0	2	2	4	2	4	6	2	1	5	1	5	2
52	5	3	3	3	2	4	2	2	1	4	1	3	3
53	1	3	3	2	2	3	6	1	2	4	1	1	3
54	1	4	4	4	2	6	5	2	2	5	1	4	1
55	1	5	5	3	2	5	6	2	4	5	1	4	4
56	1	5	3	3	2	3	6	2	3	3	1	1	2
57	0	3	4	2	2	5	4	2	3	5	1	2	3
58	4	5	3	3	2	3	6	1	3	3	1	1	3
59	1	3	3	3	2	6	2	2	1	4	1	5	1
60	0	4	3	5	2	4	6	2	3	5	2	1	1
61	7	1	5	3	2	7	8	2	1	4	1	5	2
62	3	2	1	2	2	2	4	2	0	4	1	1	3
63	2	5	2	3	2	3	6	2	1	4	2	1	1
64	13	3	1	2	1	1	5	2	0	3	1	4	2
65	1	4	3	3	2	4	6	1	1	3	1	1	2
66	2	1	1	1	2	2	3	2	1	3	1	1	2

RAW DATA--Continued

Respondent	Knowledge	Education	Age	Price	Marital Status	Family Life Cycle	Job Classification	Pressure to Move	Previous Home Ownership	Satisfaction/Dissatisfaction	Broker	Time	Visits
67	4	2	3	2	2	4	3	1	1	3	1	2	5
68	11	3	2	2	2	2	4	2	0	4	1	3	3
69	8	3	2	2	2	2	4	2	2	3	1	3	2
70	2	4	2	3	2	4	6	2	0	3	2	0	5
71	11	2	2	1	2	2	3	1	0	3	1	2	4
72	5	1	2	2	2	4	3	1	1	2	1	2	2
73	1	3	3	2	2	3	3	1	4	4	2	2	4
74	4	4	2	2	4	3	2	2	0	4	1	4	3
75	6	3	2	2	2	4	4	2	0	4	2	1	3
76	0	3	2	1	2	2	5	2	0	4	1	4	2
77	0	3	4	3	2	5	3	2	7	4	1	1	2
78	2	5	2	2	2	3	6	2	1	4	1	1	3
79	4	3	2	2	2	4	5	2	1	4	1	1	2
80	5	4	1	3	2	2	7	2	0	4	1	3	2
81	6	3	2	2	2	2	6	2	1	4	1	1	2
82	5	2	3	3	2	3	4	2	2	4	1	1	2
83	8	1	3	2	2	3	7	2	1	5	1	4	3
84	3	5	2	2	2	2	6	2	0	4	1	2	1
85	4	2	4	3	2	5	2	1	2	5	1	5	3
86	2	4	3	5	2	3	7	1	3	5	1	2	2
87	4	3	2	3	2	3	4	1	4	4	1	2	4
88	1	3	2	2	4	1	3	2	0	3	1	2	2

RAW DATA--Continued

Respondent	Knowledge	Education	Age	Price	Marital Status	Family Life Cycle	Job Classification	Pressure to Move	Previous Home Ownership	Satisfaction/Dissatisfaction	Broker	Time	Visits
89	4	1	4	1	2	5	2	2	1	4	1	2	3
90	4	2	3	3	2	3	7	1	3	4	1	1	3
91	1	3	3	4	2	3	4	2	1	5	2	5	2
92	0	3	4	3	2	5	6	2	4	5	1	3	3
93	4	1	3	3	2	3	6	2	3	5	2	5	3
94	0	5	5	4	2	5	6	2	3	5	1	5	1
95	12	3	1	2	2	2	3	2	0	5	2	2	4
96	10	2	2	2	2	2	2	2	0	4	2	2	3
97	4	3	2	2	2	2	2	1	1	3	1	1	3
98	3	4	3	5	2	4	7	1	2	5	1	3	3
99	10	4	1	5	1	1	4	2	0	2	1	2	1
100	6	2	2	2	2	4	4	1	1	4	1	5	3
101	5	4	4	2	4	7	4	2	3	2	1	2	1
102	9	3	2	2	2	2	4	2	0	5	1	3	2
103	5	3	3	2	2	4	2	2	2	4	1	3	3
104	6	5	3	4	2	3	6	1	2	4	1	2	2
105	5	3	4	5	2	6	2	2	2	3	2	1	4
106	0	3	5	5	2	6	4	2	5	5	2	3	3
107	0	3	5	3	2	7	8	2	2	5	1	1	1
108	0	1	3	2	2	3	4	2	5	5	1	2	3
109	11	4	2	2	2	4	7	1	1	4	1	2	4
110	6	3	3	3	2	3	7	1	2	4	1	2	9

RAW DATA--Continued

Respondent	Knowledge	Education	Age	Price	Marital Status	Family Life Cycle	Job Classification	Pressure to Move	Previous Home Ownership	Satisfaction/Dissatisfaction	Broker	Time	Visits
111	12	3	4	5	2	5	4	1	3	4	1	1	2
112	8	2	1	1	2	2	3	2	0	3	1	2	2
113	5	3	2	1	2	4	2	2	1	4	1	3	2
114	1	4	3	5	2	3	7	1	3	4	1	1	1
115	2	5	2	4	2	4	6	2	1	5	1	1	3
116	1	3	3	5	2	3	4	2	3	5	1	5	2
117	2	3	3	4	2	3	4	1	1	5	1	1	2
118	4	4	2	2	2	3	7	2	3	4	2	2	3
119	9	3	4	3	2	5	4	2	4	4	2	1	2
120	0	1	4	3	2	5	2	2	3	5	1	1	2
121	2	2	2	3	2	3	1	2	2	2	1	1	2
122	2	4	2	2	2	4	4	2	1	4	2	3	3
123	4	3	2	4	2	3	4	2	1	4	1	2	1
124	5	3	2	3	2	4	1	2	0	4	2	2	1
125	11	3	2	3	2	2	3	2	0	4	1	3	2
126	9	4	4	3	2	5	5	1	4	2	1	1	5
127	4	4	2	1	1	1	7	2	0	4	1	5	1
128	3	1	4	4	2	5	4	2	2	4	2	1	6
129	2	1	4	3	2	6	1	2	4	4	1	1	3
130	5	3	2	2	2	2	7	0	5	2	5	6	6
131	5	3	2	3	2	4	2	2	1	3	1	2	4
132	5	5	1	2	2	2	6	1	0	5	1	1	3

RAW DATA--Continued

Respondent	Knowledge	Education	Age	Price	Marital Status	Family Life Cycle	Job Classification	Pressure to Move	Previous Home Ownership	Satisfaction/Dissatisfaction	Broker	Time	Visits
133	3	4	2	2	2	3	7	2	0	4	1	2	2
134	2	3	2	3	2	4	6	1	1	4	1	1	2
135	7	3	1	3	2	2	4	2	0	3	2	4	2
136	13	5	3	3	2	4	6	1	0	1	1	3	3
137	2	5	3	4	2	4	5	1	4	5	2	1	0
138	0	3	3	3	2	3	7	2	4	4	1	3	3
139	0	3	3	4	2	3	7	1	4	5	2	1	3
140	11	3	2	2	2	3	5	1	3	3	1	1	2
141	2	4	2	3	2	3	7	2	2	4	2	1	0
142	3	2	2	2	2	2	2	2	1	4	1	2	4

Exhibit 3DISCRIMINANT ANALYSIS - LINEARIZED
DISCRIMINANT FUNCTION

Variables	0	1	Knowledge 2	3	4
Constant	-60.52117793	--54.29893011	-51.06938408	-49.94437148	-49.86073163
Education	2.09176084	2.49784581	2.68911125	2.17817426	2.50303397
Age	2.51582909	3.24483533	1.52683579	1.89796112	2.57852463
Price	2.31557536	2.32662162	2.41769488	2.39396856	1.76662113
Marital Status	9.17483613	9.13396554	9.22876733	8.80228987	8.78565927
Family Life Cycle	- 0.38737528	-- 0.83693207	- 0.25696509	- 0.18870977	- 0.50448629
Job Classi- fication	1.51020781	1.24273847	1.16318418	1.37412371	1.27221041
Pressure to Move	13.63426890	12.66573960	12.34930946	12.89479430	12.28201393
Previous Home Ownership	1.19158748	0.39098281	0.65329950	0.19399224	0.49393489
Satisfaction/ Dissatisfaction	6.79005974	6.11313310	5.75549097	5.27230997	5.75772295
Broker	4.66626891	4.87620275	5.23431643	5.00897413	4.42272370
Time	0.08973749	0.10880503	- 0.10623808	0.02065808	0.22699393
Visits	2.54623672	2.50915706	2.58412671	2.98053422	2.80427534

DISCRIMINANT ANALYSIS - LINEARIZED
DISCRIMINANT FUNCTION
continued

Variables	Knowledges				
	5	6	7	8	9
Constant	-47.61700501	-48.87285055	-49.62140317	-42.36629590	-47.42439918
Education	2.44222026	1.99439534	2.39850626	1.50454434	2.50054060
Age	1.32676473	2.51013335	3.40912998	1.55663892	3.43631165
Price	2.06668168	2.00851878	2.24761918	1.51528580	2.08228169
Marital					
Status	9.21894219	9.82594599	8.67023368	7.85002750	8.11779205
Family					
Life Cycle	0.06643471	- 0.72984573	- 0.69757035	- 0.61486302	- 0.86210116
Job Classi-					
fication	1.06515501	1.37958397	1.43834264	1.47619198	0.84447762
Pressure to					
Move	11.97280395	11.49420237	12.03000728	13.41293172	12.92204749
Previous Home					
Ownership	0.70121853	0.41230400	- 0.27173709	0.63935227	0.32881895
Satisfaction/					
Dissatisfaction	4.92732095	5.42287295	4.95834821	4.78963815	5.16081939
Broker	5.41723930	4.66533214	5.10276336	3.40455109	5.07314826
Time	0.14669631	- 0.11268374	0.45423093	0.63654038	0.22591527
Visits	2.78402965	3.17964364	2.60395856	2.97356148	2.54106569

DISCRIMINANT ANALYSIS - LINEARIZED
DISCRIMINANT FUNCTION
continued

Variables	Knowledges			
	10	11	12	13
Constant	-37.73235710	-40.85124157	-58.87520877	-36.63491973
Education	2.47079181	2.39421325	2.30964936	2.86246913
Age	3.14285257	1.91561210	1.13097693	2.82469224
Price	3.03222323	1.39570266	2.60382946	2.18489457
Marital				
Status	7.64581125	8.57989768	10.57296938	6.44405840
Family				
Life Cycle	- 1.05727640	- 0.47443701	0.48580002	- 0.54760736
Job Classi-				
fication	0.41819862	1.08968422	1.24113820	1.38152134
Pressure to				
Move	11.88644067	10.45759615	12.92006893	11.14456542
Previous Home				
Ownership	0.10955876	0.16462986	0.41129103	- 0.44815426
Satisfaction/				
Dissatisfaction	3.34355281	5.34811328	5.16791286	2.11845628
Broker	5.50503461	3.79732476	4.55813410	3.46411059
Time	- 0.03965355	0.17993548	0.66533589	1.05466251
Visits	2.05553009	2.98587169	3.80735236	2.68148618

Exhibit 4

DISCRIMINANT ANALYSIS
CALABRATION DATA
CLASSIFICATION

Respondents	From Knowledge	Classified into Knowledge
1	1	0*
2	3	5*
3	10	10
4	6	6
5	4	7*
6	8	8
7	6	6
8	1	2*
9	1	3*
10	5	3*
11	2	9*
12	2	7*
13	7	7
14	4	2*
15	1	1
16	9	9
17	0	12*
18	3	1*
19	5	6*
20	5	0*
21	5	5
22	7	11*
23	3	12*
24	1	2*
25	1	0*
26	4	0*
27	0	7*
28	1	2*
29	1	7*
30	1	0*
31	9	0*
32	6	5*
33	3	13*
34	1	6*
35	7	1*
36	5	12*
37	2	6*
38	2	11*
39	7	3*
40	0	1*

DISCRIMINANT ANALYSIS
CALABRATION DATA
CLASSIFICATION
continued

Respondents	From Knowledge	Classified into Knowledge
41	1	0*
42	4	2*
43	0	0
44	5	6*
45	12	12
46	9	13*
47	12	12
48	4	0*
49	9	2*
50	2	2
51	0	12*
52	5	9
53	1	6*
54	1	1
55	1	4*
56	1	2*
57	0	0
58	4	6*
59	1	9*
60	0	0
61	7	7
62	3	3
63	2	2
64	13	8*
65	1	7*
66	2	8
67	4	11*
68	11	11
69	8	8
70	2	12*
71	11	11
72	5	11
73	1	5*
74	4	12*
75	6	3*
76	0	8*
77	0	0
78	2	4*
79	4	3*
80	5	3*

DISCRIMINANT ANALYSIS
CALABRATION DATA
CLASSIFICATION
continued

Respondents	From Knowledge	Classified into Knowledge
81	6	4*
82	5	1*
83	8	8
84	3	4*
85	4	9*
86	2	1*
87	4	6*
88	1	6*
89	4	9*
90	4	6*
91	1	1
92	0	0
93	4	0*
94	0	1*
95	12	2*
96	10	9*
97	4	11*
98	3	1*
99	10	10
100	6	11*
101	5	5
102	9	4*
103	5	9*
104	6	1*
105	5	10*
106	0	0
107	0	0
108	0	0
109	11	11
110	6	12*
111	12	1*
112	8	8
113	5	11*
114	1	1
115	2	2
116	1	0*
117	2	1*
118	4	0*
119	9	0*
120	0	0

DISCRIMINANT ANALYSIS
CALABRATION DATA
CLASSIFICATION
continued

Respondents	From Knowledge	Classified into Knowledge
121	2	10*
122	2	5*
123	4	2*
124	5	10*
125	11	9*
126	9	6*
127	4	8*
128	3	12*
129	2	0*
130	5	5
131	5	12*
132	5	11*
133	3	3
134	2	11*
135	7	5*
136	13	13
137	2	2
138	0	0
139	0	0
140	11	11
141	2	2
142	3	11*

* Misclassified Observation

Exhibit 5

FACTOR PATTERN

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Knowledge	-0.54280	0.35332	0.33747	-0.13827	0.07335
Education	0.03476	<u>-0.69665</u>	0.27818	-0.24252	0.24963
Age	<u>0.83490</u>	<u>0.33234</u>	0.01858	-0.04420	0.07021
Price	<u>0.47847</u>	-0.39524	0.08046	0.15297	-0.32577
Marital Status	0.21263	0.11043	-0.03669	-0.46670	<u>0.60810</u>
Family Life					
Cycle	<u>0.72568</u>	0.35481	-0.11956	-0.19298	0.20110
Job Classi-					
fication	0.28052	<u>-0.58646</u>	0.31130	0.05304	0.32685
Pressure	-0.15120	<u>0.05708</u>	<u>-0.80160</u>	0.07982	0.15581
Previous Homes	<u>0.73618</u>	0.22505	<u>0.23613</u>	0.08273	-0.13196
Satisfaction/					
Dissatis-					
faction	0.46350	-0.26457	-0.42835	0.35330	-0.05151
Broker	0.04359	0.00342	0.28100	<u>0.55169</u>	0.25735
Time	-0.19444	0.10251	-0.11630	<u>0.55535</u>	<u>0.54089</u>
Visits	-0.00852	0.40504	<u>0.54184</u>	0.28069	-0.00019

Exhibit 6

FINAL COMMUNALITY ESTIMATES

Independent Variables	Communality Values
Knowledge	0.557856
Education	0.685043
Age	0.814742
Price	0.518185
Marital Status	0.646350
Family Life Cycle	0.744486
Job Classification	0.629183
Pressure to Move	0.699330
Previous Home Ownership	0.672625
Satisfaction/Dissatisfaction	0.595787
Broker	0.451468
Time	0.662823
Visits	0.536505
