CONSUMER BEHAVIOR: MICROCOMPUTER SELECTION AND USE

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CHAPTER I

INTRODUCTION

It has been predicted that, by the 21st century, computers will be as common in the American home as television sets are today (Consumer Reports, September 1983). Families will use computers to perform a variety of tasks such as budgeting, home management, word-processing, education, and entertainment. Telephones will link computers together to widen a family's scope of information. This telephone-computer link will give access to central data banks containing information found today in newspapers, periodicals, encyclopedias, and libraries. Families will use computers in the same way that businesses do today.

Many American families are already exploring the complex world of computers. Once the decision is made to purchase a computer, other, more difficult decisions surface. What type of computer is needed? Where should the family buy the computer? How much money should be spent? What does the family want the computer to do?

Answers to these questions can take many forms. Computers can be used as learning tools with strickly educational applications. They can perform business

functions in much the same way many businesses use larger computers. Other computers are considered general-purpose and offer families a wide choice of applications (Consumer Reports, September 1983). When a family is choosing a home computer, they need to consider which applications they will need.

Computers can be purchased in a variety of places. Consumer Reports has found home computers being sold in mail-order catalogs, department stores, office-equipment stores, specialized computer showrooms, and discount stores. Prices of computers range from approximately $100.00 to $3000.00 (September 1983). A consumer with poor information could easily become confused and purchase a machine that would not meet his or her needs.

The needs of the computer user are many and varied. Some families may need help with family budgeting and financial record keeping for tax purposes. Another may be interested in home management or energy management. Word-processing and filing are important for those interested in operating a small business. Children may influence a need for education/tutoring applications or entertainment programs. Deciding what needs the family has can become a complex process.

Many marketers and consumer educators have recognized the role of decision-making in purchase planning. Engel and Blackwell (1982) define the process of answering purchasing questions as "search." The initial step in the search

process is an "internal search." Internal search takes place within the consumer's memory as he or she determines if enough is known to permit some kind of choice. Often one brand is strongly preferred over others due to past experience. If this is true, a decision may be made quickly and no other search is necessary. A business person who was worked with computers for many years may be familiar with a certain brand, choose it, and end the search process.

Not all families can use internal search as their only information source. They must turn to external search for additional information. The extent of external search differs among consumers and is governed by the balance between expected gains and the costs of time, energy, and financial outlay that must be expended (Engel and Blackwell, 1982).

Statement of the Problem

The purpose of this study was to investigate consumer behavior related to microcomputers. Particular areas of interest were consumers' perceptions of consumer information sources and other areas involving microcomputer selection and use. Microcomputers are a fairly recent technological development. Unless a consumer has experience with larger mainframe or mini-computers, it is unlikely the search process will end with internal search. Therefore, the presence of helpful consumer information is necessary. For

several years, numerous research studies has looked at the effect of consumer information on various consumer goods. However, because microcomputers are such a recent development, little research has concentrated on microcomputers or the consumer information available for pre-purchase use. In order for microcomputer consumers to make adequate decisions, information sources must be available.

Hypotheses

Based on literature regarding consumer behavior, information sources, and characteristics of microcomputer owners the following null hypotheses are stated:

H_{O_1} : There are no statistically significant relationships between consumers' perception of the quality of the following consumer information sources:

- Print Advertising
- Radio/Television Advertising
- Computer Owners
- Trying Several Computers
- Computer Salespeople
- Product-Rating Articles
- Point-of-Sale Information
- Consumer Agencies

H_{O_2} : There are no statistically significant relationships between socio-demographic characteristics of respondents and consumers' perceived quality of consumer information sources.

H_{O_3} : There are no statistically significant relationships between socio-demographic characteristics of respondents and use of consumer information sources.

H_{O_4} : There is no statistically significant relationship between the amount of memory in a microcomputer system and the consumers' perception of the quality of consumer information sources.

H_{O_5} : There is no statistically significant relationship between the influence of previous training in purchasing a microcomputer and use of consumer information sources.

H_{O_6} : There is no statistically significant relationship between purchasing the microcomputer trained on and use of consumer information sources.

H_{O_7} : There is no statistically significant relationship between previous training as an influence to purchase a microcomputer, purchasing or not purchasing the computer trained on, and use of consumer information

sources.

H_{O_8} : There is no statistically significant relationship between microcomputer owners in regard to influence to purchase a microcomputer by previous training, buying the microcomputer they had trained on and use of consumer information sources.

H_{O_9} : There are no statistically significant relationship between socio-demographic characteristics of the respondent and the amount of memory in the micocomputer system.

$H_{O_{10}}$: There is no statistically significant relationship between the date the computer system was purchased and the amount of memory in the purchased microcomputer system.

$H_{O_{11}}$: There is no statistically significant relationship between occupation of the respondent and previous training influencing the purchase of a microcomputer.

$H_{O_{12}}$: There are no statistically significant relationship between ownership status of the respondent and socio-demographic characteristics of the respondent.

$H_{O_{13}}$: There is no statistically significant relationship between ownership status of the respondent and use of consumer information sources.

$H_{O_{14}}$: There are no statistically significant relationships between socio-demographic variables.

OBJECTIVES

The objectives of this study are:

1) To survey the kinds of consumer information sources available to consumers.
2) To compare consumers' perceived quality of various information sources available to microcomputer purchasers.
3) To measure consumers' perceived quality of consumer information sources available for microcomputers.
4) To identify and compare the types of consumer information sources used by consumers investigating microcomputer use or purchase.
5) To identify and compare socio-demographic characteristics of microcomputer owners and non-owners.
6) To investigate possible relationships between socio-demographic characteristics of computer users and their perceived quality of consumer information sources regarding microcomputers.
7) To investigate potential relationships among the following four groups of computer owners:

1) those who say they were not influenced in purchasing a microcomputer by training and did not buy the microcomputer they trained on;
2) those who say they were not influenced in purchasing a microcomputer by training, but did purchase the microcomputer they trained on;
3) those who say they were influenced in purchasing a microcomputer by training, but did not purchase the microcomputer they trained on;
4) those who say they were influenced in purchasing a microcomputer by training and purchased the microcomputer they trained on;

and their perceived quality of consumer information sources for microcomputers.

8) To investigate potential relationships among the above mentioned groups of computer owners and the types of microcomputer consumer information sources used.

LIMITATIONS AND ASSUMPTIONS

The limitation which may affect the results of this study is the following: the population from which the sample was drawn is limited to readers of the Tulsa World Newspaper.

It is assumed that respondents are representative of Tulsa citizens who have an interest in microcomputers. It is further assumed that the respondents were able to understand and accurately answer the questionnaire.

Definitions

The following definitions clarify terms used in this study.

Byte: a sequence of binary digits generally eight digits long. One byte translates into one typed character.

Kilobyte: 1000 bytes, generally refers to the amount of memory a system has.

Mainframe computer: a large computer costing at least several hundred thousand dollars, which has to be kept in a specially constructed building and has a large staff of operators, programmers, and analysts. A mainframe computer has large computing power.

Microcomputer: a small computer system built around a microprocessor but having all the necessary capabilities to link with other computers and store information.

Mini-computer: a medium sized computer of the kind which might be used by a medium sized company to keep records, calculate payroll, stock control, etc. Midway between a "micro" and a "mainframe" computer.

Memory: the part of a computer that stores information for quick retrieval and use.

Summary

This chapter has introduced the basic concepts of this research study. The problem has been stated, hypotheses have been made and objectives have been set. The sample was identified to be readers of the Tulsa World Newspaper. Several definitions were stated to explain technical terms used in the study. Chapter II presents pertinent literature discussing consumer behavior and the selection and use of microcomputers.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Since 1975, the American public has slowly become acquainted with the microcomputer (Datapro, 1980). Microcomputers have infiltrated nearly every aspect of society, they can be found in homes as well as businesses. In addition to routine calculations and word processing, microcomputers are regulating environmental controls in homes, providing security, tutoring children (Issaacson, 1978), aiding the handicapped (Bodner and Hoelen, 1978), and connecting individuals to important information sources (Datapro, 1980).

The basic microcomputer consists of:

> . . . a general purpose, standalone, microprocessor-based system that relies on conversational interaction between it and its operator . . . The system is usually supplied with a keyboard and a limited configuration of peripherals (Datapro, 1980, p. SC10-100-101).

In 1978 and 1979, the microcomputer industry "broke wide open" (Datapro, 1980, p. SC10-100-101). Dozens of small and large firms brought systems to the market. Vendors introduced a huge array of low-cost products of every type.

There are now scores of microcomputers available in the marketplace. With the introduction of lower-cost microcomputers, computerization became available to a larger portion of society. Purchasing a microcomputer became a goal for many families.

Along with the goal of purchasing a microcomputer, families found several problems. There were many microcomputers to choose from. Which microcomputer was the best choice? Microcomputers were very expensive, so families could not afford to make a mistake. Many families found themselves confronted with a major consumer decision.

In 1910, John Dewey theorized steps to explain the process an individual goes through in arriving at a decision. Engel and Blackwell (1982) have adapted these steps to define five important phases of consumer decision-making behavior. These phases are also referred to as extended problem solving.

1. Problem recognition. What happens to initiate the process?
2. Search. What sources of information are used to help arrive at a decision and what is the relative influence of each?
3. Alternative evaluation. What criteria are used by the consumer to assess alternatives?
4. Choice. What selection is made from among the available alternatives?
5. Outcomes. Is choice followed by satisfaction or doubt that a correct decision was made? (Engel and Blackwell, 1982, p.23)

Extended problem solving occurs only under high involvement conditions. Engel and Blackwell (1982) define high involvement as

> . . . the activation of extended problem solving behavior when the act or purchase of consumption is seen by the decision maker as having high personal importance or relevance (p.24).

Characteristics of high involvement include products perceived as reflecting one's self image; products which are costly; products having high perceived risk of a wrong decision; and products with reference group pressure to comply.

A microcomputer possesses many characteristics of high involvement. Individuals who own a microcomputer may feel they reflect an image of high intelligence or innovation. Microcomputers reflect high technology, thus owners may be seen as being a part of fast paced technological change. Although the price of a microcomputer has been dropping, the purchase is still a large investment. Purchasing the wrong machine for the consumer's needs could result in a large loss of money as well as time devoted to learning how to operate a computer. Among many social and business groups, owning a micrcomputer is almost mandatory to "fit in." Because keeping up with technology is highly stressed in today's society, non-computer owners may feel left behind. Another interesting development is the guilt pressure placed on parents by the computer industry. Several advertisements have suggested children who do not have a computer at home are being deprived of necessary educational stimulation. All these characteristics reinforce the importance of choosing the right microcomputer.

Problem Recognition

The first step in any type of consumer decision process is problem recognition. This occurs when an individual perceives a difference between an ideal and the actual state of affairs at any given point in time. It can be activated by arousal of motives or by new information (Engel and Blackwell, 1982). Motives determine to a large degree the ideal state for an individual at any point in time. New information often serves to reveal the extent to which present circumstances deviate from this ideal.

Recognizing a need for a microcomputer could be triggered by several stimuli. One popular motivation today is the idea of keeping up with technology. The motive to keep up with current technology could cause an individual to want a microcomputer, to learn about computers, and to prepare for the future. If consumers use a computer at work, they might desire a home computer to manage their household chores in the same manner they handle their business work. Consumers exposed to the educational system may observe the many computer applications in the schools and want a computer at home to enhance their learning. Finally, many consumers operate small businesses from their homes and may see a microcomputer as an excellent bookeeping and secretarial tool.

Search

After the problem is recognized (a need for a microcomputer), the consumer must decide what to do. Search is the logical second step in the consumer decision-making process. Engel and Blackwell (1982) define search as "motivated exposure to information with regard to a given alternative" (p.321). It results when existing information, beliefs, and attitudes are found to be inadequate.

Search can be seen as internal or external (Engel and Blackwell, 1982). Internal search occurs when the consumer scans his or her memory for stored information regarding a product. If the consumer lacks suitable stored information, he or she is motivated to engage in active external search.

External search represents a "motivated and completely voluntary decision to seek new information" (Engel and Blackwell, 1982, p.323). The length or degree of external search is dependent on individual values. The consumer must decide how much he or she can gain in comparison with the cost of obtaining and using that information. Another factor that influences length or degree of external search is the quality and quantity of stored information in memory. Newman and Staelin (1972) report,

> While amount of information seeking was positively related to decision time, the data also showed that

> experienced buyers were able to collect a substantial amount of information in a short time (p.250).

Because microcomputers have only been on the market since 1975, few consumers are experienced in purchasing them. Consumers purchasing their second microcomputer are very rare at this date. Because of lack of experience, it can be deducted that consumers need more pre-purchasing information regarding microcomputers. The novice microcomputer consumer can easily become confused and frustrated by microcomputer shopping.

In researching the background of written information dealing with the external information search involved in purchasing a microcomputer, two distinct areas became apparent. Although information sources were many, each source could be catagorized as either a marketer-dominated source or a non-marketer-dominated source.

Marketer-Dominated Sources

For the purpose of this study, marketer-dominated sources shall be limited to: print advertising, radio-television advertising, personal selling, and point-of-sale information. Marketer-dominated sources are very simply, information regarding a product or service distributed by a marketer. While these sources are informative, most are also geared to sell a particular product. Of course, there are some types of

marketer-dominated sources that are strictly informational. Marketers are very aware of the information-seeking behavior of consumers. Newman and Staelin (1972) emphasize this awareness by reporting,

> Knowledge of information seeking is fundamental to understanding buyer behavior and planning marketing communications and retail distribution (p.49).

Advertising can change beliefs and attitudes, assuming that the information provided is relevant in terms of the consumer's evaluative criteria (Engel and Blackwell, 1982). Print advertising is believed to be the most effective form of advertising for high involvement products. Because extended problem solving involves the left brain, it is believed printed information is processed more deeply and can be stored and recalled more easily (Engel and Blackwell, 1982). Marketing through print advertising allows the marketer to elaborate on essential brand differences and selling points which are not possible through electronic advertising. Many microcomputer advertising campaigns use print advertising to inform consumers. Through the printed word, it is possible to inform consumers of many attributes of a particular brand. Printed advertising is also easier to remember and recall since it is presented in a tangible form that can be referred to often.

Radio and television advertising has the potential to reach the largest mass of the population. Often initial awareness of a product is stimulated by television (Engel,

Blackwell, and Kegerreis, 1969). This awareness, coupled with problem recognition, will generally make consumers receptive of advertising they previously might have ignored. It has been established by Engel, Blackwell, and Kegerreis (1969) that the consumer often becomes aware of a product through advertising, but depends on more personal sources as he or she moves from the awareness stage to the trial stage. From previous studies, it is evident that media advertising provides some information to consumers, but is rarely the only information source.

A third marketer-dominated source is personal selling. This type of selling usually occurs inside the store by a salesperson. How effective personal selling is depends on the product being purchased. Stafford and Greer (1965) report consumers "expect a salesman to vary the aggressiveness of his sales presentation according to the type of product he is selling" (p.33). The study by Stafford and Greer indicated that there is only a "slightly favorable preference for aggressiveness in a salesman" (p.32). Interestingly, the study found women intensely disliked a salesperson who was aggressive in any way, but men were slightly favorable toward an aggressive salesperson.

Engel and Blackwell (1982) list salesmen second only to personal contacts in information effectiveness. Obviously, information obtained from salespeople is an important contribution in a consumer's information search. Consumer Reports (1983, p.485) advises, "You can get sound advice

from salespeople, though that's more likely to be true of those who work at a computer store than of department store clerks." Another point from Consumer Reports reminds consumers that computer stores only deal in a small number of brands and every salesperson can not be intimately familiar with every brand of computer.

In an unpublished study reviewed by Engel and Blackwell (1982), nearly one-third of the prospective buyers of major appliances interviewed at the retail level expressed a need for more information. Although information varies among products, package labeling and other point-of-sale information can be very helpful. Capon and Burke (1977) have found

> . . . consumers appear to act rationally in selecting more information the greater the degree of risks, and in being more selective in choosing information the more is made available (p.115).

Capon and Burke's study also has found

> . . . information sequence highlights the critical importance of making information available in a form which allows the use of attribute processing (p.115).

Non-Marketer-Dominated Sources

Consumers obtain information about products and services from other people; particularly family members, friends, and neighbors. Engel and Blackwell (1982) call this exchange of information between consumers interpersonal communication. Interpersonal communications are frequently influential in

purchasing decisions. Types of non-marketer-dominated sources include: personal sources, experience, and general media sources such as product-rating agencies, and consumer oriented agencies.

Consumer Reports (1983) suggests the best approach when buying a microcomputer is to ask friends and user groups to recommend stores especially good at helping novices. Other studies also indicate consumers find personal sources most helpful in acquiring credible information (Engel and Blackwell, 1982). Engel, Blackwell,and Kegerreis (1969) found word-of-mouth, another personal source, to be the most important information source of consumers adopting an innovative service. Cunningham (1964) found that consumers felt they reduced perceived risk in purchasing a product by seeking information from others. An additional finding of Cunningham was high-risk products were the subject of more word-of-mouth activity than low-risk products.

Experience with a product is another source of information. Consumer Reports (1983) suggested trying out several combinations of microcomputer equipment and software before purchasing. They stressed the importance of becoming familiar with the product before purchasing it. The theory of perceived risk also carries over into product experience. Cunningham (1964) found that consumers often bought a product they had previously used instead of puchasing an untried, although perhaps lower cost, product. This suggests that computer purchasers may choose a specific

brand of microcomputer because they have experience using this brand at work or school. This type of information reinforces the practice of companies donating microcomputers to schools. If a student has learned to operate a certain brand at school, he or she may purchase this brand to avoid relearning to operate a different system.

General media sources can be divided among product-rating agencies and consumer-oriented agencies. Product-rating sources have a special quality and nature that should be mentioned. Most users of product-rating sources have high market power, because of their higher incomes and ownership of expensive durables. Users of this information source are often looked to by other consumers for information because it comes from a neutral source and is based upon rational (performance-rated) criteria (Engledow, Anderson, and Becker, 1979). Product information may be easier to trace through the influence process than advertising and personal sources because of its relatively pure nature. It is normally used in overt, rather than casual, search because of its high-effort, structured nature (Engledow, Anderson, and Becker, 1979).

When studying the effect of product-rating on consumers, Weinberger and Dillon (1980) state the following:

> In general, unfavorable product rating tended to have a greater impact on purchase intention than did favorable ratings . . . it was found that unfavorable product information received from an independent testing agency . . . had a relatively stronger effect on purchase intentions than did similar information communicated by trade and

> professional associations. Furthermore, under the unfavorable information treatment conditions the independent testing agency had the strongest effect on purchase intentions (p.531).

An excellent example of a product-rating source is Consumer Reports, which has published product-rating information on several types of microcomputers.

Examples of consumer-oriented agencies are the Better Business Bureau and other similar consumer/business-oriented groups. Usually groups of this sort do not rate products, but only handle complaints. The main function of these groups is to keep a file of complaints that consumers have against businesses. A consumer can contact a consumer-oriented agency to determine if a company is considered reputable (Troelstrup and Hall, 1978).

Alternative Evaluation

Once search has been completed, the consumer must evaluate competing alternatives and arrive at a purchase intention. Alternative evaluation begins with evaluative criteria (Engel and Blackwell, 1982, p.27). These are the specifications and standards used by the consumer to evaluate products and brands. These criteria have been defined during the search process. When searching for consumer information, evaluative criteria surface. Evaluative criteria discovered during the search process for a microcomputer might be: amount of memory the computer has, software that is

available, reputation of the manufacturing company, or price compared to physical attributes of the computer.

In high-involvement decision making, the consumer next compares the information gained through the search process against these evaluative criteria. Which microcomputer best meets the evaluative criteria? The outcome is formation of beliefs -- "whatever the individual believes to be true about the various alternatives in terms of the standards being utilized" (Engel and Blackwell, 1982, p.27). Once these beliefs have been formed or changed, attitudes toward the act of purchasing a given alternative also will change. A purchase intention is formed, and a particular brand or product is tentatively chosen.

Choice and Its Outcomes

Choice is the outcome of two determinants: (1) intentions and (2) unanticipated circumstances. Intentions have been formed during alternative evaluation. In the case of purchasing many high involvement products, choice of a dealer or retail outlet is also formed during alternative evaluation. Often a criterion that has been defined is the reputation of the dealer in the chance that any warranty work must be performed or other assistance is needed.

Many unanticipated circumstances may arise that could change the purchase intention formed in alternative

evaluation. The list of possible unanticipated circumstances could be endless, but a few will be stated. A common problem might be lack of funds at the moment, which could result in the purchase being delayed or a brand substitution being made. There are also many in-store influences such as exposure to another new alternative, price reductions of an alternative, and out-of-stock conditions. In the case of a decision in purchasing a microcomputer, out-of-stock conditions might not be as influencial in changing a purchase intention as the other in-store influences. Due to the large cost involved, microcomputers are not always kept in stock and must be routinely ordered.

The high-involvement decision process is completed by looking at the outcomes of choice: (1) satisfaction and (2) dissonance. Both outcomes can have a strong effect on future behavior.

Satisfaction with a purchase is a crucial factor to the business world. The numbers of complaints about low quality and poor performance have finally caused manufacturers to place a premium on quality. In the past few years, satisfaction or dissatisfaction is a subject which has received a great deal of attention from academic researchers. The reason, according to Day (1980), is the recognition that those concerned with governmental regulation and punitive action resulting from complaint behavior required an empirical basis for their actions.

Satisfaction is defined as "an evaluation that the

chosen alternative is consistent with prior beliefs with respect to that alternative" (Engel and Blackwell, 1982, p.501). Dissatisfaction would naturally be the outcome when this does not prove to be the case. The implication of this definition is that satisfaction implies a conscious and deliberate evaluation of outcomes (Swan and Trawick, 1979). Outcomes might be evaluated in several ways. Previous experience is a factor in that consumers expect a new product to operate in the same manner that the previous one did (Latour and Peat, 1980). Perceived personal competence is also a factor in that greater satisfaction is voiced by those with low or medium levels of competence in comparison with those with higher levels (Westbrook and Newman, 1978). Finally, it is believed that some relationship of purchase satisfaction with overall life satisfaction exists, but has not been developed extensively (Westbrook, 1980).

It is generally agreed that confirmation of expectation is the key to satisfaction. If information after purchase confirms this expectation, the consumer is satisfied. When the expectation is rejected, dissatisfaction occurs. Dissatisfaction is often accompanied by complaint behavior. Consumers active in the comsumerism movement often complain and seek redress (Barnes and Kelloway, 1980). Specific information about complaint behavior varies widely in the research, hence, little can be generalized.

The second outcome of choice is post-decision dissonance, which is defined as "post-choice doubt motivated

by awareness that one alternative was chosen and the existence of beliefs that unchosen alternatives also have desirable attributes" (Engel and Blackwell, 1982, p.505). Dissonance occurs when two beliefs do not fit together, and the result is a state of psychological discomfort. The consumer is aware that he or she purchased the microcomputer, but is worried by the favorable attributes of the other computers evaluated. Consumers can reduce dissonance by (1) reevaluating the desirability of the chosen alternatives in favor of the choice made or (2) search for information to confirm his or her choice (Engel and Blackwell, 1982).

Research suggests that post-decision dissonance is most probable when:

1. A certain minimum level of dissonance tolerance is surpassed. Individuals live with inconsistency in their lives until this point is reached (O'Keeke, 1971).
2. The action is irrevocable (Engel and Blackwell, 1982).
3. Unchosen alternatives have desirable features (Greenwald, 1969).
4. A number of desirable alternatives are available (Brehm and Cohn, 1959).
5. The individual is committed to the decision because of its psychological significance (Brehm and Cohn, 1959).
6. Each alternative has desirable unique features (Brehm and Cohn, 1959).
7. Beliefs are formed as a result of free will. When a consumer is forced to accept a belief little dissonance occurs (Cohn, Terry, and Jones, 1959).

Summary

This chapter has provided the conceptual framework for

the study by examining previous research that addresses both microcomputers and the high-involvement decision process. Involvement was defined as the extent to which a purchase decision has high personal relevance. The purchase of a microcomputer was seen to be a high-involvement process.

A complex part of the high-involvement decision process is the search process. Search refers to the process whereby the consumer seeks information to learn about the advantages and disadvantages of the various alternatives to satisfy a problem that has been recognized. Whether search will occur or not and the extent to which it occurs depends on the consumer's perceptions of the benefits and costs involved. The perceived benefit will be affected by the amount and appropriateness of existing information, the ability to recall that information, the type and degree of risk seen to be accompanying the purchase, and confidence.

The information sources chosen vary from individual to individual and from one situation to next. In general, it can be said that marketer-dominated sources (advertising, personal selling, and point-of-sale influence) are important in providing information in earlier stages of decision processes, but personal sources (word-of-mouth advertising) are most important in terms of effectiveness.

Another element of the high-involvement decision process is the outcome of choice which can be satisfaction or dissatisfaction and post-decision dissonance. The growth of dissatisfaction has been a major incentive for the rise of

the consumerism movement, and has caused manufacturers to improve consumer relations. Post-decision dissonance occurs when a consumer doubts a purchase decision. Dissonance can be reduced by reevaluating the alternatives of the choice and searching for information to confirm the choice.

CHAPTER III

METHOD AND PROCEDURE

Introduction

The previous chapter discussed the types of information generally available when purchasing consumer goods and described the importance of adequate consumer information in reducing cognitive dissonance. Relevance, hypotheses and objectives of the study have been presented. Chapter III explains the study's research methods and procedures. It further describes the population from which the sample is derived and includes the method of sample selection, instrumentation, data collection, and data analysis.

Type of Research

The author chose a descriptive type of research. Descriptive research is nonexperimental and deals with relationships between nonmanipulated variables (Best, 1981). This study is descriptive because it reviews conditions that have already taken place. The study deals with the relationship of variables such as computer ownership,

perceived quality of information sources, amount of memory in the microcomputer system, and socio-demographic information.

Description of the Population

The population for this study consisted of both owners and non-owners of microcomputers in the Tulsa metropolitan area. However, since the questionnaire was published in the Tulsa World Newspaper, January 29, 1984, the population was specifically comprised of those people who either purchased or subscribed to this newspaper at that time. The distribution of the Tulsa World Newspaper totals 220,000 which was the population for this research study.

Selection of the Sample

A nonprobablity sampling procedure was used for the study because it was seen as the most effective method of collecting the information. Due to limited funds and the cooperation of the Tulsa World Newspaper staff this method of data collection was feasible. The sample consists of all the people who voluntarily completed and returned a questionnaire to the Center for Consumer Services at Oklahoma State University. Using this sampling technique the possibility of a biased sample may result and may limit the generalizations applicable to other groups. Best (1981), states that

> ...volunteers are not representative of a total population, for volunteering results in a selection of individuals who are different and who really represent a population of volunteers (p. 13).

Instrumentation

The literature search revealed no other reported research paralleling this study. It was, therefore, neccessary to develop a questionnaire unique to this study. Through careful definition of the objectives outlined in Chapter 1, several questions were developed to describe the characteristics of owners and non-owners of microcomputers and to compare consumer ratings of various information sources available to consumers.

Another major source of concern was the clarity and length of each question. Babbie (1979, p.152) advises that

> You should assume that respondents will read items quickly and give quick answers; therefore . . .provide clear, short items that will not be misinterpreted under those conditions.

After completing several drafts of the questionnaire, a pilot study was conducted using ten participants familiar with microcomputers in the College of Home Economics at Oklahoma State University. Comments from this pilot group concerning the outline and content of the questionnaire were considered before completing a final copy.

The instrument was sent to the Business and Oil editor of the Tulsa World Newspaper for consideration. Upon

his suggestion, the questionnaire was shortened. Revisions were made and the final questionnaire was compiled and delivered to the Tulsa World Newspaper for publication (Appendix A).

Data Collection

The questionnaire appeared in the Business and Oil section of the Tulsa World Newspaper (Appendix B) January 29, 1984. The completed questionnaires were sent to the Center for Consumer Services and were received over approximately four weeks. The researcher compiled the results and sent a copy to the Tulsa World Newspaper. The Tulsa World Newspaper is expected to publish, in the late spring of 1984, follow-up articles based on these results.

Variable Identification and Data Analysis

To properly understand the variables used in this study variables need to be identified. Identification of variables includes a description of each variable and an explanation of how the variables might be used. An understanding of each variable will aid in description of the analysis of data in future chapters.

Upon receiving each questionnaire, the respondent was given an identification number. Indentification numbers

ranged from 001 to 271.

In order to determine the ownership status of each respondent, the respondents were asked which of the following statements best reflected their current ownership/usage status.

1) I do not own or use a micro at the present time.
2) I do not own a micro, but I use one that is located in my office or home.
3) I own and use a micro.

Based on this question three subsamples were identified.

1) Respondents who do not own or use a microcomputer.
2) Respondents who use, but do not own a microcomputer.
3) Respondents who own a microcomputer.

Respondents who did not own or use a microcomputer at the present time were instructed to skip questions pertaining to ownership/usage and complete the remainder of the questionnaire. Respondents who owned or used more than one microcomputer system were instructed to respond according to the system they used most.

To learn how recently respondents had purchased a microcomputer, the sample was asked to indicate the month and year they had purchased their microcomputer. This information also indicated when the respondents had searched for a microcomputer and thus how recent their knowledge of consumer information was.

The amount of memory in the microcomputer was asked in order to learn the size and capability of each microcomputer. Memory was measured in kilobytes.

The number of individuals using the computer was asked, as well as the ages of those using the microcomputer. Any individuals over age 18 were considered adults. Children were catagorized as: under age six, between ages six and twelve, and between ages thirteen and eighteen.

Respondents were asked if they read or subscribed to any computer publications. Responses to this question were either yes or no.

Methods used in learning to operate a microcomputer were surveyed. Respondents indicated the following methods of learning to operate a microcomputer.

1) User's manual
2) Self-taught
3) Trial and error
4) School
5) Work
6) Books or magazines
7) Computer specialists or friends
8) Tutorial software

Respondents were allowed two responses to this question.

Respondents were asked if they had been influenced in purchasing a microcomputer by previous training or use availability. A similar question asked if they had purchased the microcomputer they had trained on. Responses

to these questions were either yes or no.

To further investigate the effect of previous training and purchasing the computer trained on, a crosstabular table was constructed. The following groups were formed:

1) Respondents who say they were not influenced to purchase a microcomputer by previous training and did not buy the microcomputer they trained on (not influenced/did not buy);
2) Respondents who say they were not influenced to purchase a microcomputer by previous training, but did buy the microcomputer they trained on (not influenced/did buy);
3) Respondents who say they were influenced to purchase a microcomputer by previous training, but did not buy the microcomputer they trained on (influenced/did not buy);
4) Respondents who say they were influenced to purchase a microcomputer by previous training and did buy the microcomputer they trained on (influenced/did buy).

Other variables which measured influence to purchase a microcomputer were open-ended questions. One question was asked microcomputer owners and a separate question was given nonowners. Microcomputer owners gave nine different criteria. The nine criteria given by owners were:

1) Business needs
2) Characteristics of the microcomputer

3) Specific application needed

4) Interest and curiosity

5) Keeping up with technology

6) Price

7) Education for self or children

8) Salesperson or other individual

9) Other.

Nonowners listed six different criteria that would influence them to purchase a microcomputer. The six criteria are:

1) A definite value to the consumer

2) Lower price or more finances available

3) Simplified computer

4) More information available

5) Specific needs

6) Other.

All respondents were asked to rate eight consumer information sources on a scale from 1 = poor source to 4 = excellent source. The eight consumer information sources were:

1) Print advertising

2) Radio/Television advertising

3) Computer owners

4) Trying several computers

5) Computers salesperson

6) Product-rating articles

7) Point-of-sale information

8) Consumer agencies.

After rating the perceived quality of each source, respondents were then asked to indicate which of these sources they had personally used. The use of each source was coded yes or no.

Respondents were also asked to mention any other consumer information sources they had used, but were not mentioned in the questionnaire. The following nine sources were added:

1) Trade magazines
2) Internal search
3) Experiences with computers
4) Reputation of the computer company
5) Special shows or exhibits in the Tulsa area
6) Computer consultants
7) Information direct from the company
8) 90-day trial period
9) Other.

The remaining portion of the questionnaire was devoted to collecting socio-demographic data. Respondents were asked to state their age in actual years. They were asked to indicate if they were male or female.

Respondents were asked to give their actual occupation which was coded into ten categories. The divisions of occupation were:

1) Professional and technical workers
2) Manager and officials

3) Self-employed businessman

4) Clerical and salesworkers

5) Craftsmen and foremen

6) Operatives

7) Unskilled laborer and service worker

8) Farmers and farm managers

9) Miscellaneous; Armed Forces; Protective Services; not applicable

0) Inappropriate; unemployed; retired; permanently disabled; housewife; student.

The majority of the sample fell into three groups and were thus recoded:

1) Professional and technical workers

2) Inappropriate; unemployed; retired; permanently disabled; housewife; student

3) All others.

Respondents were given a list of nine catagories of educational level. The nine catagories were:

1) Less than high school

2) High school

3) Vocational training

4) Bachelor's degree

5) Attended graduate/professional school

6) Master's degree

7) Doctoral degree

8) Professional degree.

To eliminate empty cells when performing a Chi-Square test,

the educational levels were reduced to:

1) Less than high school
2) High school graduate
3) College graduate
4) Advanced degree.

The quesionnaire listed five catagories of marital status. These were:

1) Single/Never married
2) Married
3) Separated
4) Divorced
5) Widowed.

These catagories also left empty cells in a Chi-Square test and were reduced to:

1) Married
2) Unmarried.

The final question asked respondents to indicate the category indicating their total family income. The income catagories were:

1) Under $10,000
2) $10,000 - $14,999
3) $15,000 - $19,999
4) $20,000 - $29,999
5) $30,000 - $39,999
6) $40,000 - $49,999
7) $50,000 - $74,999
8) $75,000 - $99,999

9) Over $100,000.

The researcher analyzed the data with frequencies, means, percentages, correlations, Chi-Square tests, and Analysis of Variance. The results reflect the differences between types of information sources available to microcomputer purchasers and consumers' use of these sources. The analyses also reveal differences in owners and non-owners of microcomputers.

Summary

The type of research and method of data collection were determined by the researcher's intellectual interest in microcomputers, consumer behavior and marketing techniques used by microcomputer manufacturers and distributors. The researcher reviewed books on questionnaire design and sought the knowledge of experienced researchers in order to develop an effective instrument.

The questionnaire for this study was published in the Business and Oil section of the Tulsa World Newspaper. The population consists of all those people who either purchased or subscribed to the Tulsa World Newspaper at the time of this study. From this population, the sample includes all the people who voluntarily completed and returned the questionnaire. A total of 271 questionnaires were returned over a four week period.

CHAPTER IV

DESCRIPTIVE ANALYSIS OF DATA

Introduction

In this chapter the researcher presents the descriptive data analysis for this study. Statistical procedures used for this descriptive analysis include means, frequencies, and percentages. The study surveyed the kinds of information sources available to microcomputer consumers and compared consumer ratings of these sources. The study further compared the relationship between microcomputer owners and non-owners in the Tulsa metropolitan area.

Characteristics of the Sample

A total of 271 individuals responded to the questionnaire over a period of approximately 4 weeks. As shown in Table I, 225 (83.03%) of the respondents owned and used a microcomputer (owners). Thirty-one did not own or use a microcomputer (nonowners/nonusers) and fifteen (5.53%) used a computer but did not own one (nonowners/users).

TABLE I

SELECTED SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

Characteristics	Ownership Status: Do not Own or Use N = 31	Use, Do Not Own N = 15	Own and Use N = 225	Total Sample N = 271
Mean Age in Years	46.03 N = 31	41.86 N = 14	42.88 N = 224	43.19 N = 269
Gender				
Male	46.67%	57.14%	83.26%	77.74%
Female	53.34%	42.86%	16.74%	22.26%
	100.00% N = 30	100.00% N = 14	100.00% N = 221	100.00% N = 265
Occupation				
Professional	34.48%	53.85%	65.18%	61.28%
Student-Home Retired	31.01%	7.69%	12.95%	14.66%
Other	34.48%	38.46%	21.87%	24.00%
	100.00% N = 29	100.00% N = 13	100.00% N = 224	100.00% N = 266
Education				
< High School	3.23%	0.00%	2.21%	2.21%
High School Graduate	29.03%	50.00%	29.65%	30.63%
College Graduate	48.39%	28.57%	34.96%	36.16%
Advanced Degree	19.36%	21.43%	33.19%	30.99%
	100.00% N = 22	100.00% N = 14	100.00% N = 225	100.00% N = 271
Marital Status				
Married	67.74%	64.28%	84.00%	81.11%
Unmarried	32.26%	35.71%	16.00%	18.89%
	100.00% N = 31	100.00% N = 14	100.00% N = 225	100.00% N = 271

When only computer owners were considered, the mean age was 42.88. This age was similar to the average age range of 35 - 45 years found by Dickerson and Gentry (1983) in their research. Of the computer owners, 83.26% (184) were male and 65.18% (146) held professional occupations. Dickerson and Gentry also found a high percentage of respondents to be professional (73.2%). The second highest occupation category included students, housewives, and retired individuals (12.95%). Several respondents were age 18 and under, or over age 65. This suggested that several respondents were either students or retired.

As found in previous research (Dickerson and Gentry, 1983), owners of computers have a high educational level. Of the owners of microcomputers, 68.15% had a college degree or higher. This percentage can be compared with the users, who are not owners of microcomputers, which only had 50.00% of its respondents with a college degree or higher. Owners had the highest percentage of individuals with advanced degrees (33.19%), while users/nonowners had the largest percentage of college graduates.

Eighty-four percent of computer owners were married. This percentage greatly contrasts the noncomputer owners. Of the nonusers/nonowners, 67.74% were married and 64.28% of the users/nonowners were married. Slightly more (1.84% difference) nonuser/nonowners were single/never married than users/nonowners. More users/nonowners (8.53%) were divorced than nonusers/nonowners. Dickerson and Gentry (1983) found

72.2% of computer owners were married.

TABLE II

TOTAL FAMILY INCOME OF RESPONDENTS IN EACH OWNERSHIP STATUS

	Ownership Status			
Income	Do not Own or Use N = 31 (11.44%)	Use, do not Own N = 15 (5.53%)	Own and Use N = 225 (83.03%)	Total Sample N = 271 (100.00%)
Under $10,000	3.23%	0.00%	.46%	.76%
$ 10,000 - $14,999	9.68%	0.00%	2.73%	3.40%
$15,000 - $19,999	6.45%	7.14%	5.00%	5.28%
$20,000 - $29,999	22.58%	14.29%	16.36%	16.98%
$30,000 - $39,999	12.90%	28.57%	20.46%	20.00%
$40,000 - $49,999	22.58%	14.29%	27.27%	26.04%
$50,000 - $74,999	16.13%	21.43%	14.55%	13.59%
$75,000 - $100,000	3.23%	0.00%	5.46%	4.91%
	100.00%	100.00%	100.00%	100.00%

Total family income was divided into nine catagories (Table II). The largest majority of the sample had a total family income of between $30,000 - $49,999. Slightly more

computer owners also fell into the $30,000 - $49,999 bracket (47.73%). Computer owners also had a higher percentage of families in the over $100,000 category (5.46%) than did nonowners/nonusers (3.23%) or users/nonowners (0%). Overall, the income of the entire sample was quite high, 73.59% of all respondents had yearly incomes above $30,000.

Consumer Information Sources

Respondents were given eight consumer information sources to rate regarding their perceived quality as an information source. They were also asked to indicate which sources they had personally used. They were encouraged to list any other sources they had used. Of the eight information sources listed (Table III), 60.89% (n = 165) of the respondents indicated they had used a computer owner as an information source. The information source used least often was the consumer agency (18.82%).

Although consumer agency was grouped with product-rating agency in the literature, it was interesting that of the consumers who responded, 42.07% (n = 114) indicated they had used a consumer agency. One explanation for this difference could be that Consumer Reports has recently (September 1983) begun rating computer hardware and software and is more visible to consumers.

TABLE III

USE OF INFORMATION SOURCES WITHIN EACH OWNERSHIP STATUS (PERCENTAGE DISTRIBUTION)

Source[a]	Ownership Status: Do not own or Use N = 31	Use, Do Not Own N = 15	Own and Use N = 225	Total Sample N = 271
Print Advertising	58.07%	50.00%	50.44%	51.29%
Radio/TV Advertising	32.26%	14.29%	28.76%	28.41%
Computer Owners	51.61%	64.29%	61.95%	60.89%
Try Several Computers	16.13%	14.29%	30.53%	28.04%
Computer Salesperson	12.90%	28.57%	38.50%	35.06%
Product-rating Articles	41.94%	21.43%	43.36%	42.07%
Point-of-sale Information	9.68%	14.29%	27.43%	24.72%
Consumer Agencies	9.68%	14.29%	20.35%	18.82%

[a] More than one option could be chosen within each ownership category.

Ratings of the eight consumer information sources ranged from one (poor source) to four (excellent source). The only information source which received a majority of excellent ranks (Table IV) was talking with computer owners (60.08%). This finding emphasizes the fact that consumers seriously considering purchase of a product turn to non-marketer oriented sources. Word-of-mouth has been found by various researchers to be a popular source of information for consumers.

Two sources that resulted in very low ratings by the respondents were radio/television advertising (mean = 1.75) and computer salespersons (mean = 2.09). Several respondents added comments that they considered computer salespersons very poorly informed. Other individuals commented that some salespersons were well-informed while others were not.

When the information sources were divided by ownership status, several differences were observed. Respondents who owned and used a microcomputer rated radio/television advertising much lower than the other two groups, non-owners and users who do not own.

Radio/television advertising has a major purpose as an information source in introducing consumers to a product and intitiating problem recognition. It is possible that computer owners did not need this type of information source and hence rated it lower.

TABLE IV

MEAN SCORE GIVEN EACH INFORMATION SOURCE WITHIN EACH OWNERSHIP STATUS

Source[a]	Ownership Status: Do Not Own or Use N = 31	Use, Do Not Own N = 15	Own and Use N = 226	Total Sample N = 271
Print Advertising	2.55 N = 31	2.77 N = 13	2.54 N = 219	2.56 N = 263
Radio/TV Advertising	2.19 N = 31	2.23 N = 13	1.65 N = 217	1.75 N = 261
Computer Owners	3.23 N = 31	3.15 N = 13	3.47 N = 219	3.43 N = 263
Try Several Computers	2.79 N = 29	3.00 N = 12	3.06 N = 212	3.03 N = 253
Computer Salesperson	2.31 N = 29	1.92 N = 12	2.06 N = 214	2.09 N = 255
Product-rating Articles	2.94 N = 31	2.82 N = 11	3.05 N = 213	3.03 N = 255
Point-of-sale Information	2.62 N = 29	2.30 N = 10	2.30 N = 211	2.34 N = 250
Consumer Agencies	2.56 N = 30	2.50 N = 10	2.19 N = 201	2.25 N = 241

[a] more than one option could be chosen within each ownership catagory

Consumers who did not own or use a microcomputer did not rate trying several computers as highly as users and owners did. Because they were not as familiar with computers, they

might not have felt as capable of knowing what to look for when trying out a computer. Nonowners/ nonusers also lack the interest to try to learn to use a microcomputer.

When asked to list other information sources they had used, respondents mentioned eight specific areas (Table V). The source mentioned most often was trade magazines and journals (36.0%). This source was also mentioned as a method of learning to operate a microcomputer. Other sources included various aspects of internal search such as past experiences with a computer. Some respondents stated they did not use any source but what they already knew or their own "common sense." Other sources listed included special shows or exhibits in the Tulsa area and special consultants.

TABLE V

OTHER INFORMATION SOURCES INDICATED BY RESPONDENTS

Source	N = 50
Trade Magazines	36.0%
Internal Search	14.0%
Experiences with a Computer	9.0%
Reputation of the Company	8.0%
Special Shows/Exhibits in Tulsa	4.0%
Consultant	12.0%
Direct Mail Information from the Manufacturer	4.0%
90-day trial	2.0%
Other	2.0%
Total	100.00%

The respondents were asked several questions that were open-ended. The first question was "How did you learn to operate a micro?" Responses to this inquiry were grouped into eight categories (Table VI). The most popular response given (24.56%) was the manual that accompanies the microcomputer. Every microcomputer owner should have access to this form of instruction. Other learning methods included being self-taught, using trial and error, and learning at school or work.

TABLE VI

RESPONSES TO QUESTION #7
"HOW DID YOU LEARN TO OPERATE A MICRO?"

Response	N = 338
Manual	24.56%
Self Taught	16.57%
Trial and Error	7.99%
School	17.16%
Work	13.02%
Books/Magazines	9.17%
Specialists/Friends	9.17%
Tutorials	2.36%
Total	100.00%

The majority of the microcomputers were purchased in 1983 (56.0%). When considering both the month and year purchased, 9.96% of the computers were purchased in December

of 1983 while 8.12% were purchased in November of 1983. Two individuals reported they had purchased their microcomputers in January of 1977. These were the oldest systems in use.

Amount of memory ranged from 3 kilobytes to 800 kilobytes. The mode for memory in the system was 64 kilobytes. Systems with 64 kilobytes of memory were owned by 39.93% (91) of the respondents. The mean was 106 kilobytes. This information stresses the variety of systems on the market and the difficulty consumers could encounter in choosing a microcomputer to purchase.

Respondents were asked how many adults and children used the microcomputer and the ages of the children. The mode of adults and children were two individuals each. Mean scores indicated 2.64 adults per family and 1.72 children per family used the microcomputer. Ages of the children were divided into three groups. Eighteen children under the age of six used a family computer. Between ages six and twelve, sixty-three children used the computer and sixty-six children between thirteen and eighteen were involved in computer use. Of the total sample, 41.70% of the respondents indicated that children used the microcomputer. This figure includes ten children under age eighteen who responded to the questionnaire.

Both owners and nonowners had an opportunity to indicate which factors they felt had or would influence them to purchase a microcomputer. The questions were open-ended and a variety of responses were received. Microcomputer

owners listed nine separate influences (Table VII), These influences take the form of both problem recognition and evaluative criteria. Interest or curiosity about microcomputers (11.28%) and keeping up with technology (10.54%) could be considered forms of problem recognition.

TABLE VII

MAJOR FACTORS THAT INFLUENCED CONSUMERS TO PURCHASE MICROCOMPUTERS

Factor	N = 266[a]
Business Needs	16.54%
Characteristics of the Computer	13.16%
Specific Application Needed	15.04%
Interest/Curiosity	11.28%
Keeping up with Technology	10.54%
Price	13.92%
Education for Self or children	8.28%
Salesperson/other person	9.02%
Other	1.88%
Total	100.00%

[a]Two responses were allowed per questionnaire.

Education for self or children is similar to keeping up with technology, although the mention of education suggests the individual is more serious in learning about computers than perhaps just becoming familiar with them. Of the

respondents, 9.02% (n = 24) indicated a salesperson or another person influenced them to purchase a computer. Perhaps the salesperson provoked problem recognition in the consumer or gave the consumer information that serves as evaluative criteria.

Business needs (16.54%) and other specific application needs (15.04%) could determine evaluative criteria. A consumer was possibly interested in certain types of software which would determine which microcomputer would be best to purchase. Characteristics of the computer also served as important evaluative criteria as did price (13.92%).

Nonowners were also asked to list factors that would influence them to purchase a microcomputer (Table VIII). Seven factors were indicated and 69.76% of the responses were from two areas. Price (39.53%) is an important consideration in purchasing any high risk product. Consumers considering the purchase of a high risk product need to know that the product will be useful to them. Respondents wanted to be sure a microcomputer would be of value to them (30.23%). Other factors indicated consumers wanted more information about computers (4.65%) or were waiting for computers to become more simplified (6.97%). If the respondents had a specific need for a microcomputer, they would be more likely to purchase one.

TABLE VIII

FACTORS THAT WOULD INFLUENCE NONOWNERS TO PURCHASE A MICROCOMPUTER

Factors	N = 43[a]
Value to Consumer	30.23%
Price/Finances Available	39.53%
Simplified Computer	6.97%
More Information	4.65%
Specific Needs	9.31%
Other	9.31%
Total	100.00%

[a]Two responses were allowed for each questionnaire.

Several publications, geared to microcomputer users, are on the market. When respondents were asked if they read or subscribed to any computer publication, 82.0% of the total sample said "yes." Of the computer owners, 84.07% (n = 226), read computer publications compared to 57.14% (n = 14) users/nonowners. Nonusers/nonowners were not asked to answer this question.

Another question only answered by users of microcomputers asked if they were influenced to purchase a microcomputer by previous training or use availability. Of the users, 50.64% (n = 119) answered "yes", while 49.36% (n = 116) replied "no." When asked if they purchased the microcomputer model they were trained on, only 24.46% (n =

45) indicated they had. It had been suggested by research literature that consumers have a preference for a product they are familiar with when purchasing a high risk product. The data from this study suggested prior use is not necessarily a method in predicting or influencing purchase decisions. Possible relationships between purchasing the model trained on will be discussed in Chapter 5.

CHAPTER V

ANALYSIS OF DATA

Introduction

Chapter IV descriptively analyzed the data. Types of information sources were studied, and the rating of the sources by respondents were discussed. Descriptive characteristics of the sample were outlined, as well as, other descriptive information concerning microcomputer systems owned by the sample. Differences among ownership status of the respondents were evaluated.

Chapter V concentrates on an analytical scrutiny of the data to investigate relationships between variables. Hypotheses will be stated. Statistical significance will be noted. Statistical procedures used for these analyses will include Pearson's Correlation, Chi-Square, and Analysis of Variance.

Statistical Correlation Between Selected Variables

Pearson's correlation (r) is used to test relationships between interval level data. To accurately use this

statistical procedure, only variables using interval level data were included. Assigning values between one (poor source) and four (excellent source) to the various consumer information sources created interval level data that could be analyzed by Pearson's correlation.

H_{0_1} : There are no statistically significant relationships between consumers' perception of the quality of the following consumer information sources.

Print Advertising
Radio/Television Advertising
Computer Owners
Trying Several Computers
Computer Salespersons
Product-Rating Articles
Point-of-Sale Information
Consumer Agencies

Several relationships were observed among consumer information sources (Table IX). Print advertising was positively correlated ($r = 0.45$) with radio/television advertising at a statistically significant level. One possible explanation for this correlation is the similarity between the two sources. Both are readily available sources of advertising. This correlation indicated that as ratings of print advertising increase, ratings of radio/television advertising increase.

The use of a computer owner was positively correlated to

TABLE IX

CORRELATION MATRIX OF CONSUMER INFORMATION SOURCES AND SELECTED SOCIO-DEMOGRAPHIC VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Print Advertising		.416*	-.002	-.102	.096	.053	.059	-.043	-.006	-.136*	-.169*	-.093	-.039
2. Radio/TV Advertising			-.105	-.089	.131*	-.009	.135*	.070	-.175	-.191	-.193	.010	.009
3. Computer Owners				.275*	.117	.205*	.132*	.140*	.082	-.029	.088	.023	-.005
4. Try Several Computers					.258*	.245*	.173*	.261*	.080	.138*	.063	-.069	-.043
5. Computer Salesperson						.175*	.467*	.092	-.032	.084	-.032	-.021	-.071
6. Product-Rating Articles							.200*	.388*	-.126	.088	.108	-.060	.020
7. Point-of-Sale Information								.149*	-.177	-.005	.094	-.019	-.073
8. Consumer Agencies									-.177*	-.005	.094	-.019	-.025
9. Amount of Memory										.139*	.140*	-.016	.132*
10. Total Family Income											.234*	.052	-.116
11. Education of Respondent												.193*	-.034
12. Age of Respondent													.017
13. Year Computer Purchased													

* Statistically Significant at .05 level using Pearson's Correlation

several other information sources. The sources which were statistically significant include trying several computers (r = .167), product-rating articles (r = 0.193) and consumer agencies (r = 0.149). The highest correlation of these sources was trying several computers. This relationship indicates that as use of a computer owner increases in rating, trying several computers also increases. This relationship could possibly indicate that these two sources are very similar in nature. Both sources are non-marketer dominated and involve word-of-mouth and experience with a product which have shown to be very effective information sources.

Two statistically significant positive correlations were found between salespersons as a source of information and the information sources of trying several computers (r = 0.271) and point-of-sale information (r = 0.467). As ratings of salespersons increase, ratings of trying several computers and point-of-sale information increase. Salespersons often assist consumers in trying out computers and in recognizing point-of-sale information.

Another example of related sources can be found in the positive correlation between product-rating sources and consumer agencies (r = 0.370). This correlation is statistically significant.

These results reject the null hypothesis. There are statistically significant relationships between consumers' perception of the quality of consumers information sources.

H_{O_2} : There is no statistically significant relationship between socio-demographic characteristics of respondents and consumers' perceived quality of consumer information sources.

A Pearson's correlation also identified a negative relationship between print advertising and total family income ($r = -.0215$) which was statistically significant. This relationship suggests ratings of print advertising decrease as total family income increases. Radio/television advertising was negatively related to education ($r = -0.218$) and income ($r = -0.267$). As education and income increase, ratings of radio/television advertising decrease in value. The null hypothesis is rejected.

H_{O_4} : There is no statistically significant relationship between the amount of memory in a microcomputer system and the consumers' perception of the quality of consumer information sources.

Radio/television advertising was found to be negatively correlated with amount of memory in the computer system ($r = 0.176$). This type of advertising decreased in rating as amount of memory increased. This statistically significant relationship requires the null hypothesis to be rejected.

H_{O_9} : There is no statistically significant relationship between socio-demographic

Characteristics of the respondent and the amount of memory in the microcomputer system.

Other significant correlations involved the socio-demographic variables. Education is positively related to amount of memory in the system ($r = 0.155$). This suggests that as education increases, amount of memory purchased also increases. Education is also positively related to age ($r = 0.263$) and income ($r = 0.236$). It is logical that as age increases, education increases. However, this relationship may suggest that these respondents have continued education beyond the normal range. We have already seen in Chapter IV that the sample is highly educated. It is also widely accepted that income increases with education. A sample with an above average income would certainly emphasize this fact.

Amount of memory is positively correlated ($r = 0.143$) to income, as well as education. This correlation is statistically significant. As a consumer shops for a microcomputer, he or she will soon realize that the more memory in a system, the more money the system costs. It appears that individuals with higher incomes tend to purchase computer systems with larger memories. The null hypothesis is rejected.

$H_{0_{10}}$: There is no statistically significant relationship between the date the computer system was purchased and the amount of memory in the purchased microcomputer system.

Memory is also positively correlated with the year the system was purchased. As the year purchased increases, the amount of memory increases. This relationship could be the result of many factors. Possibly consumers are more familiar with computers as time passes and want more memory to be able to perform more functions. Perhaps microcomputers are becoming easier to purchase with added memory. A very probable factor could be the reduction in cost over the past few years of microcomputers and the availability of computers with larger memory for a lower price. A statistically significant relationship exists between these two variables. The null hypothesis is rejected.

Analysis of Nominal Variables Using Chi-Square

Previous training and use of information sources were discussed in Chapter IV. Because respondents could only answer yes or no to these question, the data received is nominal level. Several other variables also use nominal data which requires the use of the Chi-Square statistic. A Chi-Square analysis of the nominal level variables produced several statistically significant relationships (Table X).

H_{0_5} : There is no statistically significant relationship between the influence of previous training in purchasing a microcomputer and use of consumer

TABLE X

TABLE OF CHI-SQUARE VALUES FOR TESTED RELATIONSHIPS BETWEEN SELECTED VARIABLES AND USE OF CONSUMER INFORMATION SOURCES

Source	Respondent's Ownership Status	Computer Owners Groups I-IV	Influenced To Purchase By Training	Bought Micro-Computer Trained On	Respondent's Gender	Respondent's Occupation
Print Advertising*	.207	6.216	4.081	.185	.197	1.091
Radio/TV Advertising*	.147	13.940	9.433	2.339	.010	3.268
Computer Owner	.944	3.167	0.00	1.456	.105	3.598
Try Several Computers*	4.517	8.544	7.429	1.080	4.821	10.539
Computer Salesperson*	7.593	12.872	7.830	3.590	.817	4.397
Point-of-sale Information*	5.714	12.475	4.951	6.255	3.780	9.747
Product-rating Articles	.594	2.592	.787	.451	.415	1.169
Consumer Agencies	2.292	5.112	4.090	1.790	.647	3.319

* Statistically significant at .05 level using Chi-Square

information sources.

When compared to use of various information sources, previous training as an influence in purchasing a microcomputer is statistically significant, related to use of print advertising and use of point-of-sale information. Other sources showing statistical significance at the .05 level were use of radio/television advertising, trying several computers, and use of salespeople as information sources. The analysis shows that relationships between these variables are statistically significant and the null hypothesis is rejected.

H_{O_6} : There is no statistically significant relationship between purchasing the microcomputer trained on and use of consumer information sources.

Another variable which influenced use of information sources was whether the respondents purchased the computers they were trained on. Use of salespeople and use of point-of-sale information were seen to be influenced by the purchase of the microcomputer the respondent trained on. If a consumer purchased the microcomputer he or she was trained to operate, the individual is very likely to be familiar with the machine and feels comfortable to discuss it with salespersons or look for point-of-sale information. It is also possible the information does not actually influence one to purchase the computer because he or she has already decided which computer to buy. This statistically

significant relationship rejects the null hypothesis.

H_{O_3} : There are no statistically significant relationships between socio-demographic characteristics of respondents and use of consumer information sources.

Gender of the respondent and trying several computers, along with gender and using point-of-sale information, were related at the .05 level. Of the 265 respondents which answered both questions, 206 (77.74%) were male. Of those who tried computers, 86.67% were male. A similar result occured when use of point-of-sale information and gender were analyzed.

TABLE XI

Gender of Respondent by Use of Point-of-Sale Information

Gender	Used Source	Did not Use Source
Female N = 59	13.64%	25.13%
Male N = 206	86.64%	74.87%
	100.00%	100.00%

Another statistically significant relationship involved occupation and trying several computers. Occupation was also statistically related to using point-of-sale information at the .05 level. These relationships reject the null hypothesis.

$H_{O_{11}}$: There is no statistically significant relationship between occupation of the respondent and previous training influencing the purchase of a microcomputer.

Occupation showed a statistically significant relationship with several variables. One such relationship was occupation by influence to purchase the microcomputer trained on. This relationship was significant at the .05 level. This variable seemed to indicate that professional respondents were more likely to be influenced to purchase a microcomputer because of previous training. The null hypothesis is rejected.

$H_{O_{12}}$: There is no statistically significant relationship between ownership status of the respondent and socio-demographic characteristics of the respondent.

Occupation also indicated that professional respondents were more likely to be owners of microcomputers. This relationship was significant at the .05 level which rejects the null hypothesis.

$H_{O_{14}}$: There are no statistically significant

relationships between socio-demographic variables.

Professional individuals were also more likely to be married than other respondents (Table XII). This statistically significant relationship rejects the null hypothesis.

TABLE XII

Occupation of Respondents by Marital Status

Occupation	Marital Status Unmarried	Married
Student, Housewife Retired N = 39	36.73%	9.72%
Professional N = 162	46.94	64.35%
Other N = 64	16.33%	25.93%
	100.00%	100.00%

H_{O_8} : There is no statistically significant relationship between microcomputer owners in regard to influence to purchase a microcomputer by previous training, buying the microcomputer they had trained on

and use of consumer information sources.

Literature suggests that previous experience influences consumers to purchase a product they are familiar with. However, data in this study indicated many respondents who were influenced in purchasing a microcomputer by training did not purchase the computer they were trained on. To analyze this relationship, microcomputer owners were divided into four groups. Owners who indicated they were not influenced to purchase a microcomputer by training and did not buy the microcomputer they were trained on (not influenced/did not buy) were Group I. Group II was comprised of owners who were not influenced to purchase a microcomputer by training, but bought the computer they had trained on (not influenced/did buy). Microcomputer owners who indicated they were influenced in purchasing a computer by training, but did not purchase the computer they had trained on (influenced/did not buy) made up Group III. Group IV included owners who were influenced in purchasing a computer by training and had bought the microcomputer they had trained on (influenced/did buy).

The relationship between these four groups of microcomputer owners and their use of consumer information sources was analyzed by the Chi-Square statistic. Several statistically significant relationships were indicated (Table XIII).

TABLE XIII

USE OF CONSUMER INFORMATION SOURCES WITHIN EACH GROUP OF MICROCOMPUTER OWNERS (PERCENTAGE DISTRIBUTION)[a]

Source	Group I Not Influenced Not Buy	Group II Not Influenced Did Buy	Group III Influenced Not Buy	Group IV Influenced Did Buy
Print Advertising	44.44%	33.33%	52.87%	69.23%
Radio/TV * Advertising	15.56%	13.33%	33.33%	53.85%
Computer Owners	66.67%	66.67%	58.62%	76.92%
Try Several * Computers	20.00%	20.00%	36.78%	50.00%
Computer * Salesperson	24.44%	26.67%	42.53%	65.38%
Prod.-Rating Articles	46.67%	33.33%	43.68%	57.69%
Point-of-Sale Information *	15.56%	20.00%	28.74%	53.85%
Consumer Agencies	17.78%	13.33%	21.84%	38.46%

[a] percentage of each group that used each information source.

* statistically significant at the .05 level using X^2.

Group IV (influenced/did buy) reported using the highest percentage of each consumer information source.

Literature has suggested consumers with previous experience largely use internal search. The results of this study do not agree with this theory.

Relationships which were statistically significant include: owner groups with use of radio/TV advertising, trying several computers, computer salespeople, and point-of-sale information. As mentioned previously, computer salespeople, point-of-sale information and trying several computers are all activities which take place in a store setting. The relationships reject the null hypothesis.

$H_{O_{13}}$: There is no statistically significant relationship between ownership status of the respondent and use of consumer information sources.

Use of consumer information sources also differs with ownership status of the respondent. Three variables show statistically significant relationships with ownership status. Trying several computers, use of salespeople, and point-of-sale information are all related to ownership status at the .05 level. Use of these three sources can take place in a store setting, perhaps with the salesperson initiating the trial of a computer or the use of point-of-sale information. The null hypothesis is rejected.

Analysis of Variance

H_{O_7} : There is no statistically significant relationship between previous training as an influence in purchasing a microcomputer, purchasing the microcomputer trained on, and consumers' perception of the quality of consumer information sources.

It has been hypothesized that there is no statistically significant relationship between previous training as an influence to purchase a microcomputer and purchasing the computer trained on with consumers' perception of the quality of consumer information sources. To test this null hypothesis, an Analysis of Variance was performed.

Of the eight consumer information sources tested, only one source, consumer agencies, showed a statistically significant relationship with previous training as an influence to purchase a microcomputer and purchasing the computer trained on. A Duncan analysis indicated that microcomputer owners differed in perception of the quality of consumer agencies when purchasing the microcomputer trained on. Of the respondents which did not purchase the computer trained on, a mean score of 2.27 was given to consumer agencies. Respondents who did purchase the computer trained on rated consumer agencies lower (1.78). There was no difference in the scores given consumer agencies between groups of respondents in regard to training as an influence

in purchasing a microcomputer.

Since only one source indicated a statistically significant relationship with previous training as an influence to purchasing a microcomputer and buying the microcomputer trained on, the null hypothesis could be rejected. However, because the relationships with other consumer information sources were not statistically significant, the researcher is led to fail to reject the null hypothesis. Recommendations for further study of this hypothesis can be found in Chapter VI.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to investigate consumer behavior related to microcomputers. Objectives studied involved types of consumer information available to microcomputer purchasers, consumers' perception of the quality of those information sources, socio-demographic characteristics of microcomputer owners and nonowners and the relationships that occur among these variables.

Descriptive research was used for this study with data collected via a questionnaire published in the Tulsa World Newspaper. From the total Sunday morning distribution of 220,000 issues, 271 questionnaires were returned to the Center for Consumer Services at Oklahoma State University over a period of four weeks. The population sampled consisted of both microcomputer owners and nonowners in the Tulsa metropolitan area who either purchased or subscribed to the Tulsa World Newspaper at the time of this study.

The data were analyzed using means, frequencies, percentages, Pearson's correlations, Chi-Square tests, and Analysis of Variance. A probability of less than or equal to

0.05 is the critical value used to reject or fail to reject the hypotheses tested in this research.

Of the 271 individuals which responded, 225 (83.03%) owned and used a microcomputer. Thirty-one (11.44%) did not own or use a computer and fifteen (5.53%) used a microcomputer, but did not own one. The mean age of the total sample was 43.19, with the mean age of computer owners being 42.88. The computer owners were mostly male (83.26%) and held professional occupations (65.18%). Approximately 65% of the microcomputer owners had a college degree or higher. The highest percentage of the sample with an advanced degree were owners.

Eighty-one percent of the respondents were married; while, among computer owners, eighty-four percent were married. Total family income was divided into nine groups, with the majority of the sample falling in the income range of $30,000 to $49,999.

Respondents were given eight consumer information sources to rate on a four point scale from poor to excellent. They were also encouraged to list any other sources they had personally used. From these questions, 16 consumer information sources were identified. Of these sources, two were used by more than 50.00% of the respondents. Print advertising received a use score of 51.29% while using computer owners as an information source was indicated by 60.89% of the respondents. Of the eight sources listed, consumer agencies were used least (18.82%).

The consumer information source receiving the highest rating was the use of computer owners. This source received a mean score of 3.43 with 4.00 being the upper limit. Research suggests that word-of-mouth information is a source consumers find very useful. Other sources highly rated were trying several computers and product-rating articles.

Pearson's correlations indicated several consumer perceptions of the quality of consumer information sources were statistically significant relationships. Print advertising was positively related to radio/television advertising. Use of computer owners was positively correlated to trying several computers, product-rating articles, and consumer agencies. Use of salespeople was positively correlated with trying several computers and point-of-sale information. Product-rating articles were positively correlated with consumer agencies.

When asked to list other sources used, consumers recommended trade magazines most often (36%). This was reinforced by 82% of the total sample indicating they read or subscribed to a computer publication.

Another source added was experience with a computer. Microcomputer owners were asked if they were influenced to purchase a computer by previous training or use availability. Just over half (50.64%) indicated previous experience had influenced their decision, however, only 24.46% actually purchased the computer they had trained on. Chi-Square analyses indicated in a statistically significant

relationship between previous training as an influence in purchasing a microcomputer and the use of print advertising, as well as, the use of point-of-sale information.

Purchasing the microcomputer trained on was positively correlated with use of salespeople and point-of-sale information. The relationships were statistically significant.

The most popular response to how users learned to operate a microcomputer was the manual which accompanies the computer. A large number also indicated they were self-taught or used trial and error. School and work were also ways microcomputer users learned computer skills.

The majority of the microcomputers were purchased in 1983 (56.0%). A Pearson's correlation revealed that as year the microcomputer was purchased increased, amount of memory increased. Amount of memory ranged from 3 kilobytes to 800 kilobytes, with the mode amount of memory being 64 kilobytes.

The mean number of adults using the microcomputer was 2.64, while the mean number of children was 1.72. Of the total sample, 40.70% of the respondents indicated children used the microcomputer. Ten respondents under age 18 answered the questionnaire.

Owners of microcomputers indicated nine separate factors which influenced them to purchase a microcomputer. Business needs was the most frequent response, followed by interest or curiosity.

Nonowners mentioned seven factors which would influence

them to purchase a microcomputer. The two major responses were a value to the consumer and lower price or finances available to purchase a computer.

When asked if they read of subscribed to any computer publication, 82.0% of the total sample indicated they did. Users of microcomputers were asked if they were influenced in purchasing a microcomputer by previous training. Slightly more than half (50.64%) answered yes. However, only 24.46% indicated they had purchased the microcomputer they had trained on.

Statistically significant correlations involved socio-demographic variables. Education is positively correlated to amount of memory in the computer system, age, and income. Memory in the microcomputer system is positively correlated with income, education, and the year the system was purchased. Gender of the respondent and trying several computers and using point-of-sale information were shown to be statistically related. Occupation showed a statistically significant relationship with several variables. Occupation was related to previous training influencing purchase of a microcomputer, ownership status of the respondent, and marital status. Occupation was also related to the consumer information sources of trying several computers and using point-of-sale information.

Conclusions

The population for this study consisted of both owners and nonowners of microcomputers in the Tulsa metropolitan area who purchased or subscribed to the Tulsa World Newspaper at time the questionnaire was published. Since a nonprobability sampling procedure was used for the study, the possibility of a biased sample may result and may limit the generalizations applicable to other groups.

The study presents several interesting conclusions. The sample concurred with the generalizations presented by Dickerson and Gentry (1983). Computer owners are primarily male. They are largely professional and highly educated. The majority of computer owners are married and have high incomes. Highly educated consumers purchase microcomputers with more memory. Highly educated consumers also have more income.

It can be concluded that consumers with higher income and higher education use more sophisticated information sources that require more time and effort in search when purchasing a microcomputer. When a consumer is seriously interested in a product, he or she will take more time and effort in the search process. Literature suggests consumers who consult product-rating articles do so out of intense search. Because microcomputers are a high involvement product with definite risks involved in purchase, consumers will use more serious search during the decision process.

Microcomputer owners have higher incomes and higher educational levels than nonowners which explains the use of more sophisticated information sources.

Literature suggested that consumers tend to purchase products they have prior experience with. It has also been theorized that consumers will not take part in extensive external search when they have past experience with a product. The concept behind internal search is the use of prior knowledge and experience about a product. Result of this study did not agree with past research. Few microcomputer owners purchased the microcomputer they had trained on. The group of owners who had purchased the microcomputer they trained on used the eight consumer information sources more frequently than the other three groups.

A major question posed by this research study asked why did microcomputer owners not follow the theories of previous experience. One possible explanation suggests the sample of this study was comprised of early adopters or innovators of microcomputers. Because of their uniqueness, a sample of microcomputer owners would not match other studies of general consumers. Engel and Blackwell list some characteristics of innovators which correspond to the characteristics of this sample. Socio-demographic characteristics positively correlated with early adoption are education, literacy, income, and level of living. Attitudinal variable most often correlated with early adoption include aspirations for

children, knowledgeability (awareness that an individual has of the external world and events in general), and attitude toward change. Mental rigidity or satisfaction with life leads to rejection of innovations.

Because microcomputers are still a fairly new innovation, it is probable that microcomputer owners are largely early adopters and innovators. As microcomputers begin to saturate the market, consumers may begin to purchase certain microcomputers due to previous experience. Continued research is needed to further investigate this question.

Many conclusions may be drawn from study of the eight consumer information sources. Computer owners used word-of-mouth information (other computer owners) most often, while consumer agencies were used least often. Consumers perceive word-of-mouth information as the best sources. Other non-marketer-dominated sources such as trying several computers and product-rating articles are also considered high quality sources by consumers. Consumers who rate computer owners as a high quality information source also rate trying computers and product-rating articles highly.

Print advertising is primarily used by low to average income consumers. High income consumers use print advertising less often. Consumers with high incomes and more education use television advertising less often than consumers with lower incomes and less education.

Most respondents seemed to think that radio/television

advertising was a poor source of consumer information regarding microcomputers. Consumers with larger incomes and more education especially regard radio/television advertising as a poor source. Consumers also consider computer salespeople a poor source, although they indicated they had used salespeople as sources.

Consumers who use salespeople as information sources also use trying other computers and point-of-sale information. All these sources can be found in a store which sells computers.

Consumers who purchase the microcomputer they trained on use salespeople and point-of-sale information. They are familiar with the product they are interested in and are capable of discussing it with another person.

Consumers are familiar with product-rating articles, but unfamiliar with consumer agencies. It should be noted that these sources are similar, but do have specific differences.

The consumer information source most often added to the list of eight given sources was trade magazines. The majority of microcomputer owners either read or subscribe to a computer publication.

A popular year to purchase a microcomputer was 1983. Microcomputers being purchased in recent months have more memory than earlier models. This can be explained by the steadily declining price of microcomputers and the consumer awareness of microcomputers. Consumers are aware they need more memory for more complex computer applications and are

able to afford more memory than in the past.

Children of all ages are using microcomputers. Several children under age six are using computers. Some children own their own computer, while others share a family computer.

Consumers use microcomputers for business applications as well as home applications. When purchasing a microcomputer, consumers are aware of the many different characteristics of computers and use these characteristics as criteria in selecting a computer.

Price is also an important criterion when purchasing a microcomputer. Price prevents some consumers from purchasing a microcomputer, while low price allows others to purchase one.

Recommendations

This study of consumer behavior regarding microcomputers presents specific recommendations for further action and research. Several recommendations may be made to those studying consumer behavior. Consumers seem to be unaware of the services of consumer agencies, which, although limited in the microcomputer area, can be very useful to consumers in other areas.

Another information source that is rarely used is point-of-sale information. Manufacturers should be encouraged to prepare informative point-of-sale displays while consumer educators need to inform consumers of the

benefits this type of information can provide.

Most consumers indicated they used the user's manual which accompanied their microcomputer. Manufacturers could find this information helpful in developing future manuals. Computer owners expressed considerable problems in learning to operate a microcomputer which suggests a clearly written user's manual would be useful.

Consumers are purchasing more memory than before. With this added memory, computers often are more complex and more difficult to learn to use. More complex microcomputers definitely need well written user's manuals.

Other methods consumers use in learning to operate a microcomputer are school or work training. However, less than 25% indicate they purchase the microcomputer they trained on. Literature suggests previous experience influences consumers to purchase a product. Further research is needed to explain why consumers tend to not purchase the microcomputer they are trained on.

Microcomputer owners possess definite socio-demographic characteristics. Marketers should be aware of these characteristics in selling microcomputers to the public. It has also been seen that children of all ages are using microcomputers. Some even own their own personal computers. Children are definitely a substantial market for microcomputers. Marketers should consider children in their marketing strategies.

Computer owners listed many factors which influenced them to purchase a microcomputer. In designing future microcomputers, manufacturers could use these criteria. Marketers could also use these factors in selling microcomputers.

Consumers use computer salespeople, although they do not perceive the quality of the information they receive very high. Computer salespeople have the opportunity to provide a great service to the consumer as an informed representative of the company they are employed by. An uninformed salesperson can be a liability just as easily as an informed salesperson can be a asset. Better training of salespeople would benefit the employer as well as the customer.

This study of consumer behavior regarding microcomputer selection and use indicates a great need for further research. A microcomputer has been shown to be a high involvement product which requires considerable consumer information before and after purchase. Improving the consumer awareness of the information available is a challenge to consumer educators. Improving the quality of consumer information to better meet the needs of microcomputer consumers is an important goal to consumer advocates as well as manufacturers and marketers.

A SELECTED BIBLIOGRAPHY

Ahl, David H. Personal Computer Applications: The Myth and the Reality. National Computing Conference '78 Personal Computing Digest, 1978, 71-72.

All About Personal Computers. Delran, New Jersey: Datapro Research Corporation, 1980.

Babbie, Earl R. The Practice of Social Research. Belmont, California: Wadsworth Publishing Co., Inc., 1979.

Best, John W. Research in Education. 4th ed. Englewood CLiffs: Prentice-Hall, Inc. 1981.

Bodner, Michael S. and Guy M. Hoelen. Blissymbolic Utilizing a Modern Microcomputer System or an Interactive Language for the Severely Handicapped. National Computing Conference '78 Personal Computing Digest, 1978, 47-49.

Bradbeer, Robin, Peter DeBono, and Peter Laurie. The Beginners Guide to Computers. Reading, Mass: Addison - Wesley Publishing Company, 1982.

Brehm, J.W. and A.R. Cohn. Re-evaluation of Choice Alternatives as a Function of Their Number and Qualitative Similarity. Journal of Abnormal and Social Psychology, 58, (1959), 373 - 378.

Capon, Noel and Marian Burke. Information Seeking Behavior in Consumer Durable Purchases. 1977 American Marketing Association Proceedings, 1977, 110-115.

Cohn, A.R., H.I. Terry, and C.B. Jones. Attitudinal Effects of Choice in Exposure in Counter-Propaganda. Journal of Abnormal and Social Psychology, 58, (1959), 388 - 391.

Covvey, H. Dominic and Neil Harding McAlister. Computer Consciousness: Surviving the Automated 80's. Reading, Mass: Addison - Wesley Publishing Company, 1982.

Cunningham, Scott M. Perceived Risk as a Factor in Product-Oriented Word-of-Mouth Behavior: A First Step. 1964 American Marketing Association Proceedings, 1964, 229-238.

Day, Ralph L. How Satisfactory is Research on Consumer Satisfaction? Advances in Consumer Research, 7, (1980), 593 - 597.

Dickerson, Mary Dee and James W. Gentry. Characterisitics of Adopters and Non-Adopters of Home Computers. Journal of Consumer Research, 10, (September 1983), 225 - 234.

Engel, James F. and Roger D. Blackwell. Consumer Behavior. 4th Ed. New York: The Dryden Press, 1982.

Engel, James F., Roger D. Blackwell, and Robert J. Kegerreis. How Information is Used to Adopt an Innovation. Journal of Advertising Research, 9, 4, (December 1969), 3 - 8.

Engledow, Jack L., Ronald D. Anderson, and Helmut Becker. The Changing Information Seeder: A Study of Attitudes Toward Product Test Reports - 1970 and 1976. Journal of Consumer Affairs, 13, 1, (Summer 1979), 75-85.

Greenwald, H.J. Dissonance and Relative vs. Absolute Attractiveness of Decision Alternatives. Journal of Personality and Social Psychology, 11, (1969), 328 - 333.

Isaacson, Portia. Low-Cost Computers and Social Change. National Computer Conference '78 Personal Computing Digest, 1978, 1 - 3.

Latour, Stephen A. and Nancy C. Peat. The Role of Situationally-Produced Expectations, Others' Experiences, and Prior Experience in Determining Consumer Satisfaction. Advances in Consumer Research, 7, (1980), 588-592.

Newman, Joseph W. and Richard Staelin. Prepurchase Information Seeking for New Cars and Major Household Appliances. Journal of Marketing Research, 9, (August 1972), 249 - 257.

O'Keeke, M.T. The Anti-Smoking Commercials: A Study of Television Impact on Behavior. Public Opinion Quarterly, 35, (1971), 242 - 248.

Perry, Robert L. Owning Your Home Computer. New York: Everest House Publishers, 1980.

Richards, R. Malcolm, S. Kerry Cooper, and Donald R. Fraser. Personal Finance. Glenview, Illinois: Scott, Foresman and Company, 1984.

Stafford, James E. and Thomas V. Greer. Consumer Preference for Types of Salesmen: A Study of Independence - Dependence Characteristics. Journal of Retailing, (Summer 1965), 27-33.

Swan, John E. and I. Frederick Trawick. Triggering Cues and the Evaluation of Products as Satisfactory or Unsatisfactory. 1979 Educator's Conference Proceedings, (1979), 231 - 234.

Weinberger, Marc G. and William R. Dillon. The Effects of Unfavorable Product Rating Information. Advances in Consumer Research, 7, (1980), 528 - 532.

Westbrook, Robert A. and Claes Fornell. Patterns of Information Source Usage Among Durable Good Buyers. Journal of Marketing Research, 16, (August 1979) 303 - 312.

Where and How to Buy a Computer. Consumer Reports, September 1983, 461 - 488.

APPENDICES

APPENDIX A

PRESENTATION OF QUESTIONNAIRE TO

TULSA WORLD NEWSPAPER

Oklahoma State University

CENTER FOR CONSUMER SERVICES

STILLWATER, OKLAHOMA 74074
HOME ECONOMICS WEST
(405) 624-7084

January 9, 1984

Mr. Reilly Wilson
Business Editor
Tulsa World
315 S. Boulder
Tulsa, OK 74102

Dear Mr. Wilson:

Possibly the largest item on most Christmas lists was a microcomputer. Because of the recent increase of new microcomputer owners, there is a great need for computer information. I would like to offer you assistance in serving your many readers who have an interest in microcomputers. I am a graduate student at Oklahoma State University. My thesis topic involves studying the microcomputer user and the steps that led him/her to select a microcomputer. Readers of the Tulsa World would be an excellent sample for this study.

This research can offer you and your readers an important service. If you would print the enclosed questionnaire within the next few weeks, preliminary results would be available to you within two weeks of the printing, with further analysis and information available at a later date. Hopefully, new microcomputer owners will have a great interest in learning more about computers and will readily respond to the questionnaire. Many marketing studies have shown that talking with other owners is an important information source. This questionnaire would be an excellent tool for sharing information among individual readers.

In the past, the Tulsa World has been very helpful to graduate student's research. In 1982, a housing survey was published that proved very successful. Martin Zook was influential in working with that project and suggested I contact you. Perhaps he could provide you with more details of his involvement with the housing survey.

Please find the questionnaire enclosed for your consideration. For further information or assistance, please feel free to contact me or my thesis advisor, Dr. Claudia Peck. Dr. Peck's office phone number is (405) 624-5048, or she can be reached through the Center for Consumer Services. We would appreciate any thoughts or comments you may have. Thank you for your time.

Sincerely,
Brenda Brodrick

enclosure

Microcomputers (personal computers) can be found all around us. Many individuals use a microcomputer daily in their office or home. The following questionnaire is designed to identify important characteristics of microcomputer users and the computers they are using. Please take a few minutes to complete the questionnaire and mail it to:

Center for Consumer Services
Oklahoma State University
Stillwater, Oklahoma 74078

Results of the questionnaire will be printed within a few weeks.

Please check the appropriate response.

1. Which statement best reflects your current microcomputer (micro) ownership/usage status? (check only one)
   _____ I do not own or use a micro at the present time. (go to #10b and complete remainder of questionnaire)
   _____ I do not own a micro, but I use one that is located in my office or home.
   _____ I own and use a micro.

(If you own or use more than one system, respond according to the system you use most.)

2. When did you purchase your micro system? (month/year)_____

3. Amount of memory in system? _____ K bytes

4. How many individuals use the micro?
   Adults (over 18) _____
   Children _____

5. What are the ages of the children who use the micro? _____

6. Do you read or subscribe to any computer publications? _____yes _____no

7. How did you learn to operate a micro?
   _____

8. Were you influenced in purchasing a micro by previous training or use availability?
   _____ yes _____ no

9. Did you purchase (select to use) the micro you were trained on? _____yes _____no

10a. What was the major factor that influenced you to purchase a micro? (go to #11)
   _____
   _____

10b. If you do not own a micro, what would influence you to purchase one?
   _____
   _____

11. Rate the following consumer information sources regarding information available on the purchase of microcomputers. (circle one value for each)

4 = excellent source, 1 = poor source

Print advertising	4	3	2	1
Radio/TV advertising	4	3	2	1
Computer owners	4	3	2	1
Try several computers	4	3	2	1
Computer salesperson	4	3	2	1
Product-rating articles	4	3	2	1
Point-of-sale information	4	3	2	1
Consumer agencies	4	3	2	1
Other: _____	4	3	2	1

12. Which of these sources have you used?
   _____

Please complete the following information

13. Age: _____ 14. Sex: _____ male _____female

15. Occupation:_____

16. Highest level of formal education:
   ____ Less than high school
   ____ High school
   ____ Vocational training
   ____ Attended college
   ____ Bachelor's degree
   ____ Attended grad./prof. school
   ____ Master's degree
   ____ Doctoral degree
   ____ Professional degree

17. Current marital status:
   ____ Single/never married
   ____ Married
   ____ Separated
   ____ Divorced
   ____ Widowed

18. Total family income:
   ____ Under $10,000
   ____ $10,000 - $14,999
   ____ $15,000 - $20,999
   ____ $20,000 - $29,999
   ____ $30,000 - $39,999
   ____ $40,000 - $59,999
   ____ $75,000 - $99,999
   ____ $100,000 or more

APPENDIX B

QUESTIONNAIRE WHICH APPEARED IN THE TULSA WORLD NEWSPAPER

TULSA WORLD, SUNDAY, JANUARY 29, 1984

Computer Questionnaire

Microcomputers (personal computers) can be found all around us. Many individuals use a microcomputer daily in their office or home. The following questionnaire is designed to identify important characteristics of microcomputer users and the computers they are using. Please take a few minutes to complete the questionnaire and mail it to:

Center for Consumer Services
Oklahoma State University
Stillwater, Oklahoma 74078

Results of the questionnaire will be printed within a few weeks.

Please *check* the appropriate response.

1. Which statement *best* reflects your current microcomputer (micro) ownership/usage status? (check only one)
   _____ I do not own or use a micro at the present time. (Go to # 10b and complete remainder of questionnaire)
   _____ I do not own a micro, but I use one that is located in my office or home.
   _____ I own and use a micro.

(If you own or use more than one system, respond according to the system you use most.)

2. When did you purchase your micro system?
   (month/year)_____
3. Amount of memory in system? _____ kilobytes
4. How many individuals use the micro?
   Adults (over 18) _____
   Children _____
5. What are the ages of the children who use the micro?
   _____
6. Do you read or subscribe to any computer publications?
   ____ Yes ____ No
7. How did you learn to operate a micro?
   _____
   _____
8. Were you influenced in purchasing a micro by previous training or use availability? ____ Yes ____ No
9. Did you purchase (select to use) the micro you were trained on? ____ Yes ____ No

10a. What was the major factor that influenced you to purchase a micro? (Go to #11)

_____

_____

10b. If you do not own a micro, what would influence you to purchase one?

_____

_____

11. Rate the following consumer information sources regarding information available on the purchase of microcomputers. (Circle one value for each)

4 - excellent source, 1 - poor source

Print advertising	4	3	2	1
Radio/TV advertising	4	3	2	1
Computer owners	4	3	2	1
Try several computers	4	3	2	1
Computer salesperson	4	3	2	1
Product-rating articles	4	3	2	1
Point-of-sale information	4	3	2	1
Consumer agencies	4	3	2	1
Other:	4	3	2	1

12. Which of these sources have you used?

_____

_____

Please complete the following information:

13. Age: _____ **14.** Sex: ____male ____female

15. Occupation: _____

16. Highest level of formal education:

____ Less than high school
____ High school
____ Vocational training
____ Attended college
____ Bachelor's degree
____ Attended grad./prof. school
____ Master's degree
____ Doctoral degree
____ Professional degree

17. Current marital status:

____ Single/never married
____ Married
____ Separated
____ Divorced
____ Widowed

18. Total family income:

____Under $10,000
____$10,000 - $14,999
____$15,000 - $20,999
____$20,000 - $29,999
____$30,000 - $39,999
____$40,000 - $49,999
____$75,000 - $99,999
____$100,000 or more

VITA

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Master of Science

Thesis: CONSUMER BEHAVIOR: MICROCOMPUTER SELECTION AND USE

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Biographical:

Personal Data: Born in Miami, Oklahoma, June 19, 1960, the daughter of James W. and Mary Frances Brodrick.

Education: Graduated from Miami High School, Miami, Oklahoma, in May, 1978; received Associate Degree in Home Economics from Northeastern Oklahoma A&M Junior College in May, 1980; received Bachelor of Science Degree in Home Economics in May, 1982; completed requirements for the Master of Science Degree at Oklahoma State University in May, 1984.

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