USE OF THE MICROCOMPUTER IN SELECTED HOMES

By

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CHAPTER I

INTRODUCTION

America as a nation is shifting from reliance on natural and capital resources to an emphasis on informational resources. The Information Era is here. Acquiring information at an ever increasing rate is having a tremendous effect on government, business, and personal decisions. The computer is a powerful tool which offers access of information to a greater portion of the total population.

Americans are experiencing major adjustments as the computer impacts their lives in this new Information Era. "In an information society the object of life is people interacting with other people" (Naisbitt, 1982, p. 19). Involvement with the computer is forced on almost every person. Personal interactive communication with the computer and other people is becoming a standard for conducting transactions. Naisbitt (1982) stated

> The life channel of the Information Age is communication. In simple terms, communication requires a sender, a receiver, and a communication channel. The introduction of increasingly sophisticated informative technology has revolutionized that simple process. The net effect is a faster flow of information through the information channel, bringing sender and receiver closer together, or collapsing the information float - the amount of time information spends in the communication channel (pp. 22-23).

Each year American families purchase and use a home computer. Little by little the Information Era is coming of age. America's most valuable

valuable resource, information, is being utilized by many as compared to the natural and capital resources which were used by relatively few.

Resistance to Microcomputer Use

There has been significant resistance to the use of the computer in our society. This resistance appears to have grown out of individual reaction to rapid change. Individuals have felt threatened and uncertain about losing control over things which impact their lives (Toffler, 1982).

Computer anxiety has been fed by descriptive magazine articles, books, television shows, and advertisements which portray the microcomputer as a supreme wonder with more capabilities than humans could ever possess. People fear this "super intelligent" computer might control them. The computer industry has become aware of this fear expressed by many, and has changed advertising to reflect "user friendly" qualities along with the "power" of the computer.

The fact is that computers are effective tools for processing data. Computers have no capability for thinking; users must do this. The performance and quality of information received from the computer is the user's input of data (Ringer, 1983).

Individuals do have a choice in determining their dependency upon the computer. Almost anything a home computer can do, people can do by some other means. Individuals can be as dependent upon personal computers as they allow themselves to be, or they can use the computer to facilitate living. There does seem to be a psychological limit, however, how much human beings are willing to delegate to machines.

Halfhill stated

> We perceive a fine line between contrivances which grant us more freedom by relieving us of certain tasks, and those which threaten to rob us of freedom by automating some things we want to control ourselves (Halfhill, 1982, p. 28).

Resistance to the use of the microcomputer is decreasing. Increased education and experience in the use of home computers and newly shaped advertising have contributed to the acceptance of the microcomputer in the workplace and in the home. Computer courses, seminars, workshops, and camps are being offered across the nation. Many Americans are apprehensive of being left behind in the work world by not possessing the necessary marketable computer skills needed for many of today's jobs and career advancements.

Computer literacy has been called the "fourth R" in relation to the trio "reading, writing, and arithmetic" (Bell, 1983). The media has bombarded the family with persuasive sales techniques convincing parents that their children must not be without a home computer if they are to survive and advance in this technological society. One magazine article caption read "'Blessed are the young, for they shall inherit the future.' You can help your children prepare for their future with personal computing" (Bell, 1983, p. 63).

Education has become a powerful sales tool used by marketers to persuade families to purchase home computers. (Experience as well as education also provides greater willingness to learn and use the computer.) Actual hands-on experience with the personal computer has lessened the resistance to computer usage.

People have been forced to use microcomputers in the workplace. Once accustomed to the business computer, these same individuals

individuals have purchased computers for personal use. Marketers claim computers can take the drudgery out of many tasks. Efficiency is achieved when the tasks are performed correctly and to the user's satisfaction. When this efficiency is accomplished, the user should then have increased time for other activities.

Schools are providing opportunities for students to become self-confident users of the microcomputer. Children have responded favorably to these opportunities as the computers have made learning fun and challenging (Kohl, 1982).

Schools have provided an excellent avenue for computer manufacturers to further reduce resistance. For a long time computers were designed mainly for the advanced users. It has only been recently that the computer industry has become increasingly interested in the general consumer's needs. Computers, according to marketers, are presently more "user friendly" in terms of both hardware and software. Within limits, computers can now talk, heed our speech, and even read (National Geographic, 1982).

Games have served to make the computer "user friendly" to consumers. They have made the microcomputer fun to use, thus establishing a compatible relationship between computer and user. Once this compatability has been established, the owners have been much more eager to use their computers for educational, business, and professional applications (Stibbens, 1981).

Another friendly aspect of today's computer is the technology available which makes it possible for owners to tie their computers into informational data sources. This accessible information allows consumers to make wiser decisions in a shorter span of time.

Purpose and Objectives

The purpose of this study was to determine how selected Oklahoma families who own microcomputers were using them. The reason for purchasing a home computer and how that computer was being used by each family member was investigated. This study also determined the satisfaction levels these families experienced in the use of their microcomputers.

The specific objectives for this research study included the following:

1. To identify the reasons for the purchase of the home computers by the microcomputer owners.

2. To determine the specific ways the microcomputer owners were using their home computers.

3. To specify the ways the microcomputer owners would like to be able to use their home computers.

4. To analyze the satisfaction levels of the families who own microcomputers as pertaining to the use of their home computers.

5. To determine the amount of time microcomputer owners spent per week on the home computer for general fuctions.

Significance of the Problem

It has only been in these first few years of the 1980's that the home computer market has become a significant market to the computer industry (Uttal, 1981). Very little research has been performed to discover the computer needs and wants of consumers. Most of the data for the research in this area has been collected by, and from, the

marketers themselves. Consumers must be involved in this research. By knowing why families purchase microcomputers, how families would like to be able to use microcomputers, and how satisfied families are with microcomputers, the computer industry can better shape the marketplace to meet these and similar consumer needs.

Limitations and Assumptions

Due to the nature of this particular research problem, the study was limited to selected Oklahoma families who own microcomputers. The research was conducted through the use of mailed questionnaires. The limitations for this study included:

1. The sample size had to be restricted due to the expense of using the mailed questionnaires to collect data.

2. The sample used involved families who were associated with county extension programs.

Extension proved to be the best available avenue to gather data for this study due to the close family contacts. A complete list of Oklahoma families who own microcomputers was not available for use in this study.

In this study, it was assumed that:

1. The families who responded to the questionnaires were representative of the selected sample.

2. Every respondent to the questionnaire owned a home computer.

3. All requested questionnaires sent to the County Home Economists were distributed to computer owners.

Definitions

The following definitions were used for this study:

Microcomputer - A small computer system containing a microprocessor and having all the necessary peripherals and memory to link with the outside world and store information (Bradbeer, DeBono, and Laurie, 1982).

The computer industry does not yet have clear-cut generic definitions for many computer terms including the "microcomputer." The following terms will be used interchangeably throughout the research thesis to refer to the microcomputer: personal computer, home computer, and computer.

Software - The program instructions necessary for the specific operation of the computer hardware. The programs are written in a particular language which the computer can interpret (Indian Meridian Vo-Tech School handout).

Language - An organized way of communicating instructions and information to the computer (Lewis, 1978).

Following are types of machine language:

BASIC - Beginners' All-Purpose Symbolic Instruction Code. It is the most popular high level language for microcomputers because it is flexible and relies on familiar English words as print, read, and data (Bradbeer, DeBono, Laurie, 1982).

COBOL - Common Data Business Oriented Language. It is a high level computer language used for business programming (Indian Meridian Vo-Tech School handout, 1982).

FORTRAN - Formula Translation. This language is used for

complicated calculations. The programming statements are expressed in algebraic forms and symbolic language (Hedberg, 1982).

PASCAL - This language is named for a 17th century French mathematician and philosopher, Blaise Pascal. It is often the choice for business programs because it is more concise than BASIC (Hedberg, 1982).

RPG - Report Program Generator

> A programming language used on some small business computers. It is considered a high level language. In all other languages defined the programmer has to tell the computer how to do a job. With RPG the programmer tells the computer what must be done; the computer then figures out how to do it (Rinder, 1983, p. 125).

Summary

America's most valuable resource is information. The microcomputer has made it possible for many to have access to a wealth of information. The personal computer has been described as a "personal mental assistant that can help people to organize things better, see things better, and compare things better" (Kellam, 1982, p. 6).

The microcomputer is gradually becoming a popular household item. Today the home market has become a primary target of the computer industry. The increasing acceptance of home computers, however, has been met with much resistance. Education and experience with personal computers have successfully contributed to the breakdown of this resistance.

The microcomputer has become a part of the workplace, the classroom, and the home. In this Information Era the microcomputer will

classroom, and the home. In this Information Era the microcomputer will impact every American's life.

CHAPTER II

REVIEW OF THE LITERATURE

The first personal computers were designed for electronic hobbyists; then the focus shifted to the home and entertainment market. During the early 1980's manufacturers have catered more to the business and professional markets.

From the workplace the microcomputer began making its way into the public and private school systems, as well as university and college campuses. Having eased its way into the heart of the classroom, the personal computer also started easing its way, slowly but surely, into the heart of the home (Uttal, 1981). The personal computer is becoming a part of almost every facet of the average American's life.

This can presently be observed in an analysis of the job market. With industrial occupations decreasing, there has been an increasing number of information occupations. Naisbitt (1982) stated

> In 1950, only about 17 percent of us worked in information jobs. Now more than 60 percent of us work with information as programmers, teachers, clerks, secretaries, accountants, stock brokers, managers, insurance people, bureaucrats, lawyers, bankers, and technicians. And many more workers hold information jobs within manufacturing companies. Most Americans spend their time creating, processing, or distributing information (p. 14).

The personal computer is a powerful tool at the user's fingertips that allows for manipulation of concepts, information, images, and sounds (Lavine, 1980). There are hundreds of software programs

on the market. Essentially these programs are divided into eight categories. These categories include office work (accounting and financial management programs), word processing, performing research, learning new skills, playing games, inventorying personal possessions, personal finance, and portfolio management (Field and Kindel, 1982). Even more interesting tasks such as learning to play musical instruments and creating graphic designs can be performed with the microcomputer. Increasing numbers of families are relying on computer technology more than ever before for recreation, shopping, and health care. Many activities can be completed through the use of the computer without ever leaving home (Maloney, 1982).

In 1982 five and one-half million personal computers were sold. Most of these were purchased for business applications (Consumer Reports, 1983). In recent years many more personal computers have been placed in the home. Future sales projections indicate increased sales of home computers. Yet, there is a "matching explosion of classified ads by people wanting to sell their personal computer" (Caldwell, 1982, p. 25). These and other elements raise questions about user satisfaction and whether sales projections are accurate.

Confusion in the Marketplace

The dynamic role of the personal computer in our society has not been accepted as readily as many thought it would be. As long as confusion continues to exist in the marketplace, the advancement of the personal computer will be hindered. The confusion exists for several reasons.

Computer hardware is available in hundreds of brands and models

with many sizes and configurations. There are various types of keyboards, monitors, printers, memory, storage, displays, and processors. Each year new and improved computers are being marketed (Rogers, 1983).

Add to this the problem with software which is the item that unlocks the power of the hardware. Personal computers need three kinds of software: operating systems which specify how the machine moves and manipulates information; languages, or sets of commands that tell it how to perform various functions such as addition or subtraction; and applications programs, which direct the performance of complex tasks, such as budgeting or playing chess (Uttal, 1981). However, the immense volume of software packages are not designed to coordinate with every microcomputer.

Many people have become the proud owners of a computer, only to discover that they will not be able to use it for tasks they intended because the needed software was not available. Not only are software packages obsolete for selected computers, but many of the available software packages are incomplete, poorly organized, and inferiorly written (Collopy, 1983). Finally, add to this the complex computer terminology and the confusion is overwhelming.

Individuals and families are interested in how computers can help them personally in their daily lives. At the same time, they hesitate to plunge into the computer arena due to the vast amount of confusion. In order to clarify user problems, it was appropriate to analyze the purchase and use patterns of selected families who own microcomputers.

The Research

A formal unpublished dissertation study by Mary Dee Dickerson

(1982) completed at Oklahoma State University was found to be excellent background material for this (selected) research study. This study was concerned with characteristics of owners and nonowners of personal computers.

A similar thesis study at Oklahoma State University was completed at the same time as the present study by Brenda Sue Broderick (1984). This study focused on consumer behavior in the selection and use of microcomputers.

No doubt other formal research studies are being conducted at selected universities which relate to consumer use and satisfaction with personal computers. It now appears there is a critical mass of information emerging in the research literature at Oklahoma State University. As the result, however, of extremely limited listings found in the review of literature, the popular, contemporary literature was considered in creating a theory base for this study. For example, several publications were analyzed to gain better insight to the purchase decision process and use of home computers.

It appears a major part of the research, both formal and informal, completed to date, revolves around the marketing of products rather than a consumer perspective which emphasizes reasons for purchase, use, and satisfaction levels. As the result of this heavy emphasis on marketing strategies, it became clear there was a need to develop greater insight from consumers who purchase and use a microcomputer in the home. This study focused, therefore, on the ways selected Oklahoma families who own microcomputers use them, ways they would like to be able to use them, and the satisfaction levels of both hardware and software. Research methodologies were then carefully defined and

presented in Chapter III.

Informal surveys have been performed across the nation by the use of mailed questionnaires, personal interviews, and telephone interviews. Computer owner users and non-owner users were asked to be survey participants. Most of the studies were limited to computer owners.

Data in the home computer usage surveys were concerned with questions such as: Why did the owners purchase their microcomputers? In what ways were owners using their microcomputers? How many hours a week were family members actually involved in using their computers? Questions of this type helped identify reasons for the purchase of home computers by microcomputer owners. They also assisted in determining specific ways microcomputer owners were using their home computers.

Consumers Union conducted one of the most complete nationwide informal studies on the use of the microcomputer (Consumer Reports, 1983). A portion of the survey is found in Table I, prepared by Consumers Union. In the table the intentional uses were compared to the actual usage. In only two of the applications, games and word-processing, did the users actually use the computer for these purposes as much as, or more than, they had intended. Less than 50% of the respondents had intended to use their computer for general educational purposes; 34% actually had used the computer for this purpose. The users had the highest intentions of using the computer for learning about computers and learning to program, yet games were the number one application used.

Apparently these respondents were not asked for "other" intentional or actual applications since these were not shown in the table. For those respondents who already knew how to program and who were only

TABLE I

HOW COMPUTERS ARE BEING USED

Application	Intended	Actual
Games	65%	69%
Learning about computers	68%	63%
Learning to program	68%	61%
Word-processing	58%	59%
Home accounting	58%	45%
Technical calculations	36%	34%
General education	41%	34%
Business accounting	28%	25%
Telecommunications	32%	24%
Writing programs for sale	21%	18%

Consumer Reports study performed by Consumers Union, 1983, p. 471

writing programs for personal use, this was not a relevant application choice. The application choices listed for programming were "learning to program" and "writing programs for sale." Survey participants were not asked to specify the satifaction they experienced with each appli- (Consumer Reports, 1983).

Two recent surveys by the Gallup and Roper organizations showed that games were still out in front as the number one use of the microcomputer (Time, 1983).

In another informal nationwide survey, uses of the computer were divided into three main classes:

Education - This area included everything from teaching preschoolers colors to learning about machine language programming.

Entertainment - This area involved playing video games and programming "home grown" games in BASIC.

Efficiency - This area encompassed tasks such as computing personal finances to using the computer as a tool at work.

Specific uses were not listed. The report stated that "almost all home computer owners seemed to use their machines for all three categories to some extent" (Halfhill, 1982, p. 30). Once again levels of satisfaction were not determined.

Specific ways owners would like to be able to use their home computers could not be found in any of the research studies.

The research studies also did not indicate the specific satisfaction levels for particular users of the computer. Computer owners were asked about the quality of the documentation. One out of every 5 owners stated their instruction manuals were "incomplete, unclearly written, or insufficiently detailed" (Good, 1981, p. 49).

The research reported the average family spent fifteen hours per week with the computer. The "average family" was not defined, and there was no breakdown of the time for each application used.

Children used the computer more than the adults according to the research. Close to 9 out of 10 family members between 5 and 17 years of age used the computer. More than 35% of the children under the age of 5 used the computer. The report did not designate the amount of time the children versus adults spent on the computer. The adults may have been fewer in number but actually spent more time at the computer. This was not mentioned in the report (Consumer Reports, 1983). All of these elements of user concern indicate a definite need for added research in this area.

In addition, a number of other interesting user characteristics were identified in the contemporary literature. For example, reasons for purchasing specific brands of computers were asked to be identified. The general research found no dominant reasons given for buying a specific brand of computer. The most frequent factor mentioned in considering a particular brand was price, followed by software availability and suitability for application. Respondents paid an average of $1926.00 for their personal computers (Marketing and Media Decision, 1982).

In studying demographics, the research stated "personal computer owners and users tend to be well educated, upper income individuals in managerial-professional positions" (Marketing and Media Decision, 1982). This analization of owners and users disregarded the children because they would have brought the educational and occupational levels down to a lower level. This was not just a family survey.

Research presented by Dickerson (1982) found the adoption profile of computer users were similar to that of the adopter of other products - "middle-aged, fairly well educated, higher income opinion leader and information seeker" (p. 233).

Summary

Research on the use of the computer in the home has been very limited. The research that has been done has not been detailed and could become outdated very quickly in the expanding home market. Consumers have valuable insight into computer use based on experience. This valuable wealth of information must be tapped by marketers in the computer industry. The information consumers can offer, if analyzed appropriately, could be used to the advantage of both consumers and marketers.

Information is a valuable resource, but it must be used selectively. To quite Naisbitt (1982):

> We are drowning in information but starved for knowledge. . . . Uncontrolled and unorganized information is no longer a resource in an information society. Instead it becomes the enemy of the information worker. . . . Information technology brings order to the chaos of information polution and therefore gives value to data that would otherwise be useless. . . . The emphasis of the whole information society shifts, then, from supply to selection (p. 24).

CHAPTER III

RESEARCH DESIGN

This research topic addressed the study of the use of microcomputers in selected homes. The study plan included the collection of information from microcomputer owners concerning their home computers. The information collected from the owners consisted of the reasons for purchasing a home computer, the functions family members performed with the computer, and the amount of time families spent per week at the computer performing particular activities. In addition to these items, the families were given opportunities to indicate the satisfaction levels they experienced with their computer hardware and software.

Type of Research

This study correlated with the descriptive research pattern described by Best (1981):

> Descriptive research describes what is. It involves the description, recording, analysis, and interpretation of conditions that exist. It involves some type of comparison or contrast and attempts to discover relationships between existing, nonmanipulated variables (p. 25).

This study was designed to yield descriptive data about the use of the microcomputer in the home. Data gathered for the study was concerned with information that was available from the owners of personal computers in Oklahoma. This research project incorporated both

nonmanipulated qualitative and quantitative variables, thus making this research nonexperimental.

Systematized data collection was made possible by the utilization of a survey questionnaire characterized by closed-ended questions. The mailed survey questionnaires were selected as the most appropiate data-gathering device for this particular research project with purposive sampling. Compton and Hall (1972) described purposive sampling as handpicking the individual elements in keeping with one's needs.

Population and Sample

A complete list of microcomputer owners in Oklahoma was not available for the researcher. Restricted privacy policies were observed very closely by computer dealers which made it impossible to secure complete lists of home computer purchasers. The population for the research study encompassed the families associated with Home Economics Cooperative Extension.

The sample consisted of family owners of microcomputers known to Cooperative Extension District and County Home Economists who were willing to participate in the study. Purposive sampling was designated as the sampling method most appropriate for the study.

Data Collection

The assistance of the State Home Economics Cooperative Extension Staff was sought in view of their close personal contacts with Oklahoma families. The researcher met with the Home Economics State Extension Director and the District Home Economists to present the research

proposal and questionnaire. Their role in the study was then explained. The home economists would assist with the family contacts for the study and help with the distribution of the questionnaires. Permission was granted to proceed with the study with the help of Cooperative Extension due to their genuine interest in the problem under investigation.

The district home economists then met with the respective county home economists to explain the study and ask for their participation. Responding county home economists contacted family owners of microcomputers through their mailing lists. Family owners, in turn, acknowledged their interest in contributing information for the study to the county home economists. The county home economists were contacted by telephone to determine the number of questionnaires needed for their respective counties. The stamped questionnaires were sent to the county home economists who placed mailing labels on them and then placed them in the mail. The questionnaires were returned directly to the researcher.

Instrumentation

An effective data-gathering instrument had to be prepared that would be able to be used to reach all known microcomputer owners associated with Extension who were willing to participate in the study. Due to the foreseen expenditure of a great deal of time and money in travel, the mailed questionnaire was the best data-gathering method available for the study. Because factual information was desired, a questionnaire rather than an opinionaire was developed. See Appendix B for a copy of the study questionnaire, Home Computers.

Surveys prepared by Datapro Research Corporation (1983), Larson and Weber (1983), Law (1983) and Popular Computing (1982) were used as references to design the research questionnaire. Each of the questionnaire items borrowed from the above studies were modified to meet the needs of this study. These needs were assessed by the comparison of the research purpose and objectives to the questionnaire items. Table II presents the location and source of the research topics in the questionnaire.

A pilot study using the final draft of the questionnaire involved three families who owned computers. The families were asked to complete the questionnaires and to make any suggestions that would help improve the format of the questionnaire items and answers. See Appendix A for the letter to the participants of the pilot study. These questionnaires were returned to the researcher and the necessary revisions were made before the questionnaire went to the printers.

The items designed for the questionnaire placed heavy emphasis on purchase reasons, present usage of the computer, satisfaction of the hardware and software, types of software programs desired, and the amount of time spent per week for activities performed on the computer. The responses to most of these questions provided for a systematic quantification of the responses. Other questions were incorporated into the questionnaire to provide background information about the families and their computers which better assisted the researcher in understanding the analysis of the essential data gathered from the questionnaire.

The questionnaire was accompanied by a cover letter describing the research problem and the purposes of the research. This letter

TABLE II

QUESTIONNAIRE ITEMS

Topic	Question Numbers	Source
Ownership	1, 4	Developed for this study
Hardware Description	2, 3	Law (1983)
Hardware Characteristics	5	Datapro Research Corporation (1983)
Computer Education	6	Law (1983) Developed for this study
Purchase Reasons	7	Law (1983)
Functions and Corresponding Satisfaction Levels	8	Popular Computing (1982) Developed for this study
Software Desired	9	Developed for this study
Activity Time	10	Law (1983)
Programming Language	11	Developed for this study
Computer Club	12, 13	Developed for this study
Computer Magazine	14, 15	Datapro Research Corporation (1983) Developed for this study
Residence	16	Bureau of Census (1980)
Family Demographics	17	Larson and Weber (1983)

provided the necessary contact between the researcher and participants since the initial contact was made through Cooperative Extension.

Much thought was given in the design of each item on the questionnaire. Most of the questions had corresponding answers for the respondents to choose from to provide for less ambiguity in the answering process. Careful directions were given throughout the questionnaire to prevent any misunderstanding in the answering of each item and to increase the reliability of responses.

Analysis of Data

Responses to the items on the questionnaire were grouped, recorded, examined, and compared throughout the entire data analysis process. A computer process was used to code and compare some of the statistics of the questionnaire data. The stages in the coding and analysis process.

1. The research objectives were written for the study.

2. A final draft of the questionnaire was prepared and used in a pilot study. Revisions were made and the questionnaires were printed.

3. Two hundred thirty-one questionnaires were distributed to the families through Home Economics Cooperative Extension. Data were gathered for the study.

4. Ninety-one questionnaires were returned. Of these, 72 were completed questionnaires.

5. All completed returned questionnaires were given an identification number from 01 to 72.

6. Every variable on the questionnaire was coded with an assigned

value.

7. The coded variables from each questionnaire were keypunched and fed through a card reader.

8. A printout was received with the coded questionnaires and the requested statistics. For each variable the corresponding information was given: value, frequency, percent, valid percent, cumulative percent, valid cases, missing cases, and the mean.

9. The validity of the statistics given on the computer printout was determined in relation to the research objectives and question items asked the survey respondents.

10. Tables were made for easy summarization and comparison of the frequencies, valid percentages, and means for particular question items.

11. The remaining question items were reported and compared in narrative form.

Summary

Families associated with Home Economics Cooperative Extension who owned microcomputers were asked to complete questionnaires on the Home Computer in an effort to provide information for the improvement of computer hardware and software to the computer industry. Mailed questionnaires were completed and returned to the researcher. Data were examined for levels of satisfaction of computer owners concerning both hardware and software. Data were also gathered concerning the use of the microcomputer by family members. Data were then summarized through the use of tables and narrative discussion.

CHAPTER IV

ANALYSIS OF THE DATA

This study was designed to examine the use of the microcomputer in the selected Oklahoma home. The data presented in this chapter explores the reasons microcomputer owners ranked for purchasing their home computers, the uses of the computer designated by family members, the satisfaction levels experienced by the families of both hardware and software and the amount of time families spend per week on particular applications. The study included a sample size of seventy-two families.

The first section of this chapter explores the demographics of the families and gives basic descriptions about their computers. This demographic information provides a more complete understanding of the participating sample. Correlation of the demographics and the computer descriptions with the research analysis provide a more comprehensive overview of the study. Each of these are dependent upon the other.

The second section investigates the specific comparison of the research objectives to their corresponding question. Statistical comparisons were presented to emphasize findings of the study. Tables were designed to make the data more orderly and easier to compare.

Section three discusses the survey findings concerning the question items with no specific research objectives. These items were

deemed necessary by the researcher to further search for variables that influence consumer use and satisfaction of the personal computer.

Section four presents an overall comparison of research objectives and corresponding question items. The data is further analyzed and emerging patterns are discussed.

There were 231 questionnaires distributed to the families through Cooperative Extension. Ninety-one were returned to the researcher. Of these, seventy-two were answered in regard to computer ownership. The remaining nineteen questionnaires answered "no" in response to ownership of a home computer. There was a thirty-nine percent return rate for this study with thirty-one percent of the total questionnaires being valid.

This chapter presents only the research findings. Chapter V explores the inferences, implications, and conclusions from the research findings.

Demographic Profile

Household Numbers

Seventy-two families made up the purposive sample group for this study. The average household had 3.4 family members. There were only four single household members among the survey participants. One-fourth of the households contained married couples with no children.

In the early stages of the research when the researcher was considering Cooperative Extension as the route for acquiring participant families for the study, it was assumed that almost all of the survey participants would be from rural areas. The questionnaire responses

were designed accordingly. However, in the actual research over one-third of the participant families were from towns with populations greater than 2500. Following in Table III is a summary of the families' residences.

TABLE III

RESIDENCES OF MICROCOMPUTER OWNERS

Residence	Frequency	Percentage
Working Farm	17	24.6%
Nonfarm-Rural Residence	17	24.6%
Small Town	9	13.0%
Other	26	37.8%

n=72

Age

The actual age of each family member was entered into the demographic table on the questionnaire. Ages of the family members were categorized in Table IV and Table V.

Sixty-five percent of the adults (ages 20-70 years) were between thirty and 50 years old. The average age of adults between 20 years of age and 70 was 38.6 years. Most of the family member users of the computers were less than 50 years of age.

TABLE IV

AGES OF CHILDREN

Age in Years	Frequency	Percentage
0 - 9	24	34.0%
10 - 19	46	66.0%

n=70

TABLE V

AGES OF SPOUSES

Age in Years	Frequency	Percentage
20 - 29	20	15.2%
30 - 39	54	42.0%
40 - 49	42	33.0%
50 - 59	5	4.0%
60 - 69	7	5.0%
70 and over	1	.8%

n=129

Educational Level

A similar comparison was repeated with education. The respondents in the questionnaire were asked to record the number of the highest grade completed for each family member. For example, the number "1" represented levels of a college education. Table VI summarizes the

educational levels of the adult family members.

Fifty-eight percent of the spouses had at least acquired a college degree. Eighty-three percent of the adults had at least attended college. Seventeen percent of the adults had only a high school degree. Generally the male spouses had attained a higher level of education than the female spouses.

Table VI

EDUCATION LEVELS COMPLETED BY ADULTS

Educational Levels	Frequency	Percentage
High School Graduate (12 yrs.)	22	17.0%
Undergraduate (13-15 yrs.)	32	24.8%
Bachelor's Degree (16 yrs.)	49	38.0%
Graduate (17-22 yrs.)	26	20.2%

n=129

Occupation

The last variable studied in relation to computer ownership was occupation. Table VII lists general occupational categories and the respective valid percentages of those occupations. Tables VIII through X show a detailed division of the three general categories and corresponding frequencies. Two-thirds of the adult sample were employed in professional or managerial positions.

TABLE VII

PRESENT OCCUPATIONS

General Category	Percentage
Professional/Technical Workers	42%
Managers/Officials/Proprietors	24%
Other	34%

Percent=100

TABLE VIII

PROFESSIONAL/TECHNICAL WORKERS

Position	Frequency
Teaching	23
Engineering	10
Medical Profession	4
Computer Science	3
Administration	2
Attorney	2
Social Work	2
Extension	1
Accounting	1
Higher Education	1
Communications	1
Health Sciences	1

n=51

TABLE IX

MANAGERS/OFFICIALS/PROPRIETORS

Position	Frequency
Farm/Ranch Management	13
Business Management	8
Private Business	6
Protective Services	1
Clergy	1

n=29

TABLE X

OTHER OCCUPATIONS

Position	Frequency
Homemaker	17
Bookkeeper/Secretary	10
Retired	5
Extractive Worker	5
Carpenter	2
Military	1
Public Service	1

n=41

The personal computer owners who were professional/technical workers were employed most frequently in the fields of teacher education and engineering. Farm/ranch management was the number one occupation

in the second division: managers/officials/proprietors. In the "other" category homemakers headed the top of the list. Overall the top five occupations of family adult members using the computers listed in the ranked order were:

1. Teacher Education n=23
2. Homemaker n=17
3. Farm/Ranch Management n=13
4. Engineering n=10
5. Bookkeeper/Secretary n=10

The total frequencies were 121 in the lists of occupations.

Profile of Computers Owned

Computer Background

The respondents owned twelve different brands of computers with a total of twenty-one different models. The two most popular home computers of survey owners were Radio Shack TRS-80 and Apple as indicated by over fifty percent of the participants. Table XI is a summary of the brands of personal computers owned.

Other Hardware

Less than half of the respondents indicated that they owned more hardware than the basic computer terminal. One-third of the respondents owned a color monitor as opposed to the black and white monitor and the monochromatic monitor. The black and white monitor ranked a close second to the color monitor in terms of ownership. Almost six times as many families owned a dot matrix printer versus a letter

quality printer.

Time of Ownership

Over sixty percent of the families had owned their computer for less than a year. Almost seventeen percent of the families had owned their computers for more than two years.

Learning to Use the Computer

Motivation to learn to use the computer among the families was high. A little over forty percent of the family members taught themselves how to use their microcomputers. Thirty percent of the family members learned to use their home computers by attending computer courses. Family members also learned to use their computers by the

TABLE XI

BRANDS OF PERSONAL COMPUTERS OWNED

Brand	Frequency	Percentage
TRS-90	24	33.3%
Apple	15	20.8%
Texas Instrument	12	16.7%
Commodore	10	13.9%
IBM	3	4.2%
Atari	2	2.8%
NEC	1	1.4%
Hewlett Packard	1	1.4%
Sony	1	1.4%
Sinclair	1	1.4%
Osborne	1	1.4%
KayPro	1	1.4%

n=72

use of a private tutor or a co-worker with computer experience. Lessons given by the computer dealer were the least popular way family members gave for learning to use the computer.

Research Objective Questions

Purchase Reasons

Table XII summarizes the purchase patterns of the family members. Each reason on the questionnaire was ranked with numerical answers from zero to seven with one being the highest ranking. Only the first three rankings were shown on the table. The mean shown, however, included all seven rankings given for each of the purchase reasons. The number seven represented the lowest rank.

The number one reason families selected as the reason for purchasing their home computers was education. Thirty-one percent of the families purchased their computers with the intention of using them mainly for education.

According to the statistical means given, entertainment was the most overall popular purchase reason followed closely by word processing. Next to household management, word processing was ranked near the bottom of the list for purchasing a microcomputer.

Two other reasons given by owners for purchasing their home computers were programming and engineering calculations. One family indicated they had been interested in buying a computer to handle the large payroll during harvest.

TABLE XII

REASONS FAMILIES PURCHASED MICROCOMPUTERS

REASON FOR PURCHASING	RANK						MEAN
	First		Second		Third		
	n	%	n	%	n	%	
Entertainment	7	10.0	14	20.0	9	12.9	2.20
Household Management	1	1.4	6	8.7	11	15.9	1.67
Financial Management	10	14.5	10	14.5	8	11.6	1.68
Family/Farm Business	13	18.6	9	12.9	6	8.6	1.43
Educational Purposes	22	31.4	14	20.0	9	12.9	1.90
Word Processing	3	4.3	11	15.7	11	15.7	2.14
Other	13	18.6	1	1.4	2	2.9	.56

n = 72

Satisfaction of Hardware

Computer owners in the questionnaire were asked to rate characteristics of their hardware on a scale of one to four. The rankings were: one=poor, two=fair, three=good, and four=excellent. Table XIII shows a

TABLE XIII

MICROCOMPUTER HARDWARE CHARACTERISTICS

EASE OF OPERATION	RATING								MEAN
	Excellent		Good		Fair		Poor		
	n	%	n	%	n	%	n	%	
Ease of Operation	31	44.9	36	52.2	1	1.4	1	1.4	3.41
Keyboard Visibility	40	58.0	27	39.1	1	1.4	1	1.4	3.54
Monitor Visibility	26	38.8	32	47.8	6	9.0	3	4.5	3.21
Speed of Operation	15	21.7	38	55.1	13	18.8	3	4.3	2.94
Error Recovery	17	25.4	31	46.3	16	23.9	3	4.5	2.93
Reliability	35	50.7	26	37.7	7	10.1	1	1.4	3.34
Availability of Software	24	35.8	24	35.8	14	20.9	5	7.5	3.00

n = 72

comparison of the frequencies, valid percentages, and the means of the hardware characteristics identified by microcomputer owners. At least half of the respondents gave excellent ratings to keyboard visibility and reliability. In the overall satisfaction for each characteristic, according to the means, the two top characteristics that were rated good to excellent were keyboard visibility and ease of operation. The lowest mean scores pertained to speed of operation and error recovery. Availability of software, although having the highest frequency number in the poor rating column, overall was ranked good.

Use Patterns

Item number eight on the questionnaire included two questions. Family members were asked to designate the functions for which they used the computer. Then as a family unit, they were asked to circle the level of satisfaction that best applied to the particular functions. Table XIV compares the use frequencies of family members for each function listed on the questionnaire.

For the mothers the top three used in order were:

1. Learning to use the computer
2. Word processing
3. Budgeting (followed closely by games)

For the fathers the top three uses in order were:

1. Software programming
2. Games
3. Income tax, word processing, learning to use the computer

TABLE XIV

FAMILY MEMBER USAGE OF MICROCOMPUTERS

	Family Members		
Uses	Mother (n)	Father (n)	Children (n)
Budgeting	16	17	0
Income Tax	11	21	0
Investment Analysis	3	12	0
Grocery Lists	5	1	0
Cash Flow Analysis	7	13	0
Insurance	2	5	0
Inventory	8	17	0
Credit Card Records	2	4	0
Homework	2	4	21
Learning Drills	8	4	28
Games	15	25	45
Project Management	3	12	0
Time Analysis	1	0	0
Software Programming	11	26	18
Word Processing	19	21	8
Learning to Use the Computer	29	21	34
Other	3	6	0

For the children the top three uses in order were:

1. Games
2. Learning to use the computer
3. Learning drills

In all of the seventeen categories listed except for four, the father used the computer for more tasks than the mother. Overall games and learning to use the computer were circled more than any other functions for all family members. In considering just the mother and father, these two categories plus word processing were the functions performed most on the computer.

Time analysis was the task performed the least on the microcomputer by both mothers and fathers. Many of the actual finance functions were performed more by the father than by the mother. These financial functions included budgeting, income tax, investment analysis, cash flow analysis, and credit card records. Other functions listed by family members were Morse code, payroll, farm records, and financial statements.

A comparison of the listed uses and purchase reason selections show an overlapping of the uses in each purchase category.

Satisfaction of Software

A summary of the satisfaction level means of functions performed by family members is outlined in Table XV. Owners were not asked about the availability of software programs for their particular computers.

The three tasks, in order, which families deemed most satisfactory were:

1. Games and word processing

2. Learning to use the computer

3. Software programming

TABLE XV

MICROCOMPUTER FUNCTIONS PERFORMED
BY FAMILY MEMBERS

Function	Satisfaction Mean	Function	Satisfaction Mean
Budgeting	3.92	Homework	4.04
Income Tax	3.75	Learning Drills	4.07
Investment Analysis	3.71	Games	4.29
Grocery Lists	3.33	Time Analysis	2.67
Cash Flow Analysis	3.87	Software Programming	4.22
Insurance	3.20	Word Processing	4.29
Inventory	4.00	Learning to Use the Computer	4.24
Credit Card Records	3.00		
		Other	4.00

1 = Highly Dissatisfied
2 = Dissatisfied
3 = Undecided
4 = Satisfied
5 = Highly Satisfied

The use which families found to be the least satisfactory was time analysis. Those functions which were fairly close to being undecided in regard to satisfaction were grocery lists, insurance, and credit

card records. Educational uses which included homework and learning drills were overall rated satisfactory.

Software Desired

Item number nine on the questionnaire asked the survey participants to list the types of software programs they wanted to see designed to be used with their computers. This short response item resulted in several answers, most of which could be categorized into three areas. These areas were education, financial management, and farm/ranch management.

Under the educational heading were pre-school education; spelling checkers; dictionary with a word processor; basic skill drills such as math; and tutorials in calculus, and elementary physics.

Financial management programs wanted by the families included stock analysis, personal income tax programs which are easily updatable, inventory, and cash flow analysis. Although these were listed in the use selection list on the questionnaire, there may not have been software programs available that pertained to these tasks for particular computers. The use of spread sheets on the computer was also indicated as a consumer need.

Farm/ranch management desired software were listed as farm/ranch management in general as well as specific tasks. These tasks included cattle management, farm graphics displays, orchard programs, accounting for farm use, dairy finance programs, and farm records.

Families were also concerned with other specific programs. A minister was interested in church programs for use without hard disks. An engineer was interested in software programs dealing with heat

transfer and finite element stress analysis. Other specific programs named were RTTY (amateur radio), home security, clothing, and a club roster for members and their dues, meal planning, and diet analysis.

Some responses to these questions expressed general concern about software. Families desired easier to use upload and download software, database utilities, better learning packages, computers that talk, and very specialized programs.

Activity Time Per Week

The family units were asked to indicate how much time they spent per week at their computer for general functions. Table XVI presents a summary of this information. For the table one = less than one hour, two = one to two hours, three = three to four hours, and four = five or more hours.

In the category of five or more hours, software programming was marked the most on the questionnaire. Thirty percent of the families spent most of their time on the computer for programming purposes. Games had the next highest frequency number in the five or more hours category. Of those who used the computer for functions pertaining to household management, the families used the computer the least for this function. In education the largest number of family participants spent only one to two hours per week at the computer.

On the average the computer is used less than three hours per week on each of the activities.

TABLE XVI

HOURS PER WEEK SPENT ON MICROCOMPUTER ACTIVITIES

ACTIVITIES	HOURS PER WEEK							
	Less Than 1 Hour		1 to 2 Hours		3 to 4 Hours		5 or more Hours	
	n	%	n	%	n	%	n	%
Games	21	35.0	16	26.7	11	18.3	12	20.0
Education	11	20.4	21	38.9	15	27.8	7	13.0
Business-Data Analysis	14	36.8	12	31.6	5	13.2	7	18.4
Household Management	26	81.3	4	12.5	0	0.0	2	6.3
Financial Management	25	56.8	11	25.0	5	11.4	3	6.8
Word Processing	15	38.5	6	15.4	11	28.2	7	17.9
Software Programming	11	22.0	14	28.0	10	20.0	15	30.0

n = 72

Questions Not Stated in Objectives

Machine Language

Of the five specific languages listed on the questionnaire in item number 11, BASIC was circled 63 times. Less than 5 families circled answers for each of the other specific languages: COBOL, FORTRAN, PASCAL, and RPG. LOGO and PL/I were other machine languages the families used.

Computer Clubs

A little more than 20 percent of the families belonged to a computer club. Over half of this 20 percent felt the computer clubs were either helpful or very helpful.

Computer Magazines

About 60 percent of the respondents indicated they subscribed to computer magazines. With only 42 families subscribing to magazines, thirty-nine different magazines were ordered. The 4 most popular magazines were Personal Computing, Popular Computing, Byte, and TRS-80 News. Other computer magazines listed included Softalk, Family Computing, 80 Micro, Computer News, Computers and Electronics, Creative Computing, Rainbow, and Color Computing.

Summary

This chapter summarized and presented the results from the research data. All answered questions which pertained specifically to

the research objectives were outlined in tables. The study explored purchase patterns, use patterns, satisfaction levels, and a time analysis of the computers. Demographic data and data from the computer profile were analyzed to provide a clearer understanding of the responses selected.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study has examined the use of the microcomputer in the home. Family owners associated with Home Economics Cooperative Extension were the sample for the study. The assistance of Cooperative Extension was sought due to the Home Economists' contacts with families. In the process of performing the study the Extension Home Economists protected the privacy of the extension mailing lists by distributing the research questionnaires themselves.

The objectives of this study were: (1) To identify the reasons for the purchase of the home computers by the microcomputer owners. (2) To determine the specific ways the microcomputer owners were using their home computers. (3) To specify the ways the microcomputer owners would like to be able to use their home computers. (4) To analyze the satisfaction levels of the families who owned microcomputers as pertaining to the use of their home computers. (5) To determine the amount of time microcomputer owners spend per week on the home computer for general functions.

Data were obtained through questionnaires mailed to the extension families by the County Home Economists. Seventy-two families completed the questionnaires for the research study and returned them to the researcher. The closed-response questionnaire was designed to

collect information concerning the research objectives as well as the following information: demographics of respondents, profiles of the personal computers, machine language programming, computer clubs, and computer magazine subscriptions. Both quantitative and qualitative questions were asked. Data from the research items were analyzed for frequencies, valid percentages, and the mean scores.

Major Findings

Research objective number one investigated the home computer purchase patterns of family microcomputer owners. A frequency distribution showed that the number one reason families purchased home computers was for education. According to the statistical means, entertainment was the most popular purchase reason selected followed by word processing.

Research objective two explored the microcomputer use patterns of family members. According to the frequency distributions, most of the family members used the computer for games and learning to use the computer. In analyzing use patterns of only the fathers and mothers, the games, learning to use the computer, and word processing were given most frequently. Specifically, mothers used the computers most often to learn how to use the computer. Fathers used the computer most often for software programming. Children used the computer mostly for games. The father used the computer for more tasks than any other family member. In considering the mothers and fathers, time analysis was the task performed the least on the microcomputers.

Research objective three examined the ways microcomputer owners would like to be able to use their home computers. The three

categorical areas of software in which families expressed the greatest software need were education, financial management, and farm/ranch management. Not only were specific new uses listed in each category, but families indicated they needed software for selected functions particularly in the area of financial management. Other specifically desired software programs named included hobbies, interests, and calculations. Short response comments by family members reflected a need in software for ease of use, better learning packages, and very specialized programs.

Research objective number four analyzed the satisfaction levels the families experienced in the use of the hardware and software. In comparing the hardware characteristics satisfaction frequencies, valid percentages, and mean scores were used. The characteristics which had the highest excellent rating frequency numbers were keyboard visibility and reliability. Ease of operation and keyboard visibility were ranked the highest in a comparison of the means. Ranked lowest in relation to the mean scores were the speed of operation and error recovery. Availability of software using the mean score was ranked good.

In comparing the satisfaction levels of the specific uses, families ranked games, word processing, learning to use the computer, and software programs as the most satisfactory. As families worked with their computers, they found satisfactory uses to be grocery lists, insurance, and credit card records. The educational uses were ranked satisfactory in an analysis of the mean scores.

Research objective five involved a time analysis of the use of the microcomputers in the home. It was determined that on the average

the computer was being used less than three yours per week for each use category. More time was spent on software programming than any other function. Families spent a little more than one to two hours per week on the computer for educational purposes.

Conclusions

Families have indicated a desire to use microcomputers in the home by the increase in the number of home computer sales. As revealed in this study, microcomputers are relatively new to the rural areas of Oklahoma. Most of the participants in this study purchased their home computers within the past year.

The survey response showed a reflection of the distribution of microcomputer ownership in Oklahoma. Through Cooperative Extension, it was anticipated at the beginning of the study that almost all of the respondents would be rural families. One-third of the respondent families were from towns with populations over 2500. Computer ownership, however, is gradually spreading to the rural areas. This increased aspiration of the rural population to become users and owners of microcomputers can be seen from this study.

Not only were the residential areas of interest to the researcher, so were other family demographics. It appears from this study that the more educated households are more willing, and perhaps better able financially, to invest in a home computer. This is reflected in both the educational and occupational levels of the spouses in this study. Eighty-three percent of the adults had at least attended college for one year; 58% of the total adults had obtained at least a college degree. Forty-two percent of the adults were employed as

professional/technical workers.

This finding correlates to Naisbitt's findings stated in Chapter II that information occupations are increasing. In this study most of the microcomputer adult owners were employed in information occupations.

It is interesting to note that the number of homemakers in the study equalled 14% of the total adult sample. Homemakers have busy, productive careers as mothers, wives, financial managers, housekeepers, etc. They are in a position in the home to have increased time opportunities to use the microcomputer. Yet, the fathers working outside the home used the home computer for a greater number of tasks. This does not suggest laziness on the part of the homemakers, nor does it suggest lack of education since one-third of the homemakers had obtained bachelor degrees. What is motivating the father to use the computer for more tasks? Could it be he is involved with the computer on the job and is, therefore, more comfortable with, i.e. more challenged by, the computer?

How computer owners learn to use the computers may affect the satisfaction versus the frustration levels experienced in the use of the microcomputers. Can we expect computer dealers to provide most of the training necessary for owners to be able to use their home computers? In the future, there may be an increasing number of private consultants available to train computer owners how to use their microcomputers effectively. When individuals receive adequate, proper training for a task, they feel more confident at performing that task.

Most of the respondents learned to use the microcomputer by

teaching themselves. Perhaps, as more accessible training is made available, owners will become less frustrated in using the computer.

Education was listed as the number one reason for purchasing the microcomputers. Yet, most respondents indicated they only use the computer for education for less than 2 hours per week. The use patterns also reflected a conflict with the main purchase reason. More time was spent on games than on education. Have marketers through advertisement tried to aim at the soft spot of parents - the education of their children - by using education as a marketing promotion tool to increase sales? Increasing numbers of families are purchasing home computers. Marketers, however, have failed to provide these same families with satisfactory educational programs to be used with the microcomputers.

The top priority use of the microcomputer by the children was games. More time was spent on the computer per week for software programming and games. Education was not the main function performed on the microcomputers.

The families indicated they used their computers less than an average of three to four hours per week. Does this justify the purchase of a microcomputer? Motivation plays a major role in the actual use of the computer. Marketers state that families can use the home computer for such things as balancing a checkbook. Part of the reason why consumers do not keep their checkbooks balanced is because they fail to take the time to record the transactions. The same is true with inventory as a use of the computer (Caldwell, 1983). Will purchasing a home computer necessarily provide the motivational force needed to use it to keep adequate records?

The promotional campaigns of selling microcomputers include the persuasive sales pitch that the use of a microcomputer will make the user's life more time and energy (human energy) efficient. Is the computer at the present time making the consumer's life more efficient when it involves time and frustration to learn to use the computer and to work out the bugs in the software? Users' lives could be more efficient now if they would motivate themselves to implement methods and procedures to perform more efficient tasks. The least used program by the owners was time analysis. Is the reason for this an overall lack of interest in this function? Or do families plan to analyze their time when they get the opportunity and the time?

In the area of finance, credit card records were one of the least satisfactory uses of the computer. With the increased overspending in our greater than ever cashless society, perhaps this is one of the most urgent uses that needs software package improvement. Also needed in the area of finances is easily updatable income tax programs. However, even if the income tax programs are purchased, are the families willing to spend the hours necessary to stay updated on current tax laws so they can use the income tax programs to their benefit?

Program Implications

Increasing numbers of families are purchasing home computers. Every family has particular needs for using the microcomputers. Educators in Cooperative Extension, consumer education programs, computer store owners and sales persons are in positions to help meet these needs. Computer hardware and software designed for family use should be developed to be more user friendly.

This study reflected the variety of microcomputers available to consumers. Twelve different brands of computers were owned by the research families. Improvements should be forthcoming in characteristics of the hardware. Overall, the speed of operation and error recovery were the areas in which computer owners were least satisfied. The software is the power mechanism of the hardware. Whenever the software is improved a correlating improvement should be taking place in the hardware. Gates (1984) stated

> Instead of the emphasis of past years on building better and more powerful machines, the emphasis now is on how to harness the full power of the existing hardware through improved software design (p. 32).

As software programs become better written and documented, consumers will be more apt to experience greater satisfaction with the use of the microcomputer. The answer to much of the dissatisfaction with software would be to develop software that is "machine independent" (Daneliuk, 1984, p. 16).

Increased specificity in software design will be a big boost to the computer market. Just as every individual and family have different needs and strive to meet their needs in various ways, families desire to use their home computer for specific tasks designed to meet their personal needs. These needs must be met by the computer industry.

In the area of software development, the microcomputer owners have expressed the need for:

1. easier to use software
2. increasing availability of software
3. better software recovery

As resistance barriers to the use of the home computers are torn down, more families are purchasing home computers. Greater usable computer educational information and training related need to be offered to these families. The computer is becoming a major purchase in the household. Cooperative Extension Home Economists and various educators need to evaluate the educational methods presently being utilized to provide better educational methods that will enhance computer learning. Computer education courses offered by the schools, vocational-technical institutions, universities, and computer stores should provide beneficial information on the selection and use of home computers to meet consumers' personal needs.

Recommendations for Future Research

Families as computer consumers have an important role to play in the future of the home computer. Their input to the computer industry will have a major influence in this Information Era. The scope of this research was limited; other populations and samples need to be similarly studied for this kind of research to be more reliable in obtaining information. Previously stated in the thesis have been proposals for studies concerning additional consumer computer research. These proposed studies necessitate the investigation of the following:

1. Other studies be designed to determine present availability and future probability of the use of computer consultants. These studies should include the education, experience, and personal qualities needed to be possessed by computer consultants.

2. Studies should be designed to analyze the availability of software for each computer brand.

3. Research studies should be developed to further study how individuals and families are learning to use the computer. It also needs to be determined as to how satisfied the consumers are with their computer education received in the various ways.

4. More time-analysis studies should be designed which will reflect the specific amount of time each family member spends on the computer for particular functions.

5. Studies should be designed to assess the knowledge computer owners possess concerning computers in general. This would include computer terminology, machine language, and availability of software for their particular computers.

6. Analysis studies of computer clubs and their helpfulness to computer owners should be implemented.

7. In the area of education, more in-depth studies should be performed to study the specific educational reasons for which owners intend to use their computers.

8. Studies should be implemented to determine the amount of time computer owners have kept their computers and why they decided to sell them. Along with this, what has the switch-off time been for computer trade-ins?

9. Studies should be performed on the usefulness of computer magazines. There are many computer magazines now on the market. Does more information necessarily indicate the right kinds of information?

10. Further studies should be designed to study which family member had the most influence in the family decision to purchase a

computer and the reasons for this influence.

Summary

This research has been a base from which many other studies could emerge to investigate the needs of the consumers of microcomputers. Research studies like this one can assist organizations such as Cooperative Extension to better prepare educational programs for their clientele. Computer dealers can better assist possible owners in the selection and use of microcomputers which are best suited for them. Greater overall satisfaction is obtained when more people have input into the decision making process.

Marketers in the computer industry and the consumers can work together to increase overall computer satisfaction and to facilitate and enhance the Information Era. Naisbitt stated

> In our new information society, the time orientation is to the future. This is one of the reasons we are so interested in it. We must now learn from the present how to anticipate the future. When we can do that, we will understand that a trend is not destiny; we will be able to learn from the future the way we have been learning from the past (1982, p. 18).

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APPENDIXES

APPENDIX A

CORRESPONDENCE

Oklahoma State University

COLLEGE OF HOME ECONOMICS
Department of Housing, Design and Consumer Resources

STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST BUILDING
(405) 624-5048

5016 West Fifth Place
Stillwater, OK 74074
November 12, 1983

Name
Street Address
City

Name:

I am a graduate student in the area of Consumerism at Oklahoma State University. For partial fulfillment of the requirements for the Master's Degree, I have undertaken a study about home computers. Within the next three weeks questionnaires entitled "Home Computers" will be mailed out to computer owners in Oklahoma.

I understand that you own a home computer. Currently I am in the process of conducting a pilot study concerning the "Home Computer" questionnaire. The comments and recommendations from the pilot study will help to insure that the questionnaire will be more accurate in obtaining the desire information as well as more nonbiased. I need your assistance in this pilot study if at all possible.

Please complete the questionnaire and make any suggestions in regard to (1) the information given in the opening letter (2) the wording of the questions (3) the information desired in the questionnaire (Are the questions too detailed? Are there any other pertinent questions that need to be asked?) (4) the directions for answering the questions (5) the selection of answers (Are the selections adequate?) and (6) the directions in mailing the questionnaire back to me.

If you are interested in seeing the final questionnaire after printing and/or would like to know the results of my final survey, please indicate this on the questionnaire you now have.

I realize your time is valuable. Thank you for your support and cooperation. I need to have the questionnaire returned to me by Monday, November 21, 1983. Ss soon as I receive the pilot study questionnaires, I will take the final draft to the printers to have it reduced and printed. Your immediate response would be sincerely appreciated. Please send your recommendations and comments to:

Sabrina Richardson
5016 West Fifth Place
Stillwater, OK 74074

You may even call me at home after 5:30 p.m. if you so wish. My telephone number is 405-624-3832. A self-addressed, stamped envelope has been enclosed for your convenience. Thank you.

Respectfully,

Sabrina Richardson
Graduate Student
Oklahoma State University

Oklahoma State University

COLLEGE OF HOME ECONOMICS
Department of Housing, Design and Consumer Resources

STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST BUILDING
(405) 624-5048

5016 West 5th Place
Stillwater, OK 74074
January 2, 1984

Name
Extension Home Economist
County Extension Office
Address

Name

Late last November your district home economist contacted you about a computer study being done by an Oklahoma State University graduate student. I am this student.

I understand that you are interested in assisting with the study by distributing the computer questionnaires to computer owners within your county. I appreciate the district home economist's recomendation of using this method of distribution due to the privacy of extension mailing lists.

Now that the new year has begun the questionnaires are ready for distribution. I apologize for not contacting you until now. However, I felt that with December being the Christmas season the survey response would be low.

Enclosed is a copy of the questionnaire for you to examine. Time has become very important in this study. I will be contacting your office on Friday, January 6, 1984 to inquire about the approximate number of questionnaires you will be needing. If you will be out of the office on these days, could you please leave this information with your secretary?

If you have any questions, please call me collect at home. My phone number is 405-624-3832. I teach during the day and am usually not home until 7:00 p.m. You may prefer to call me at Coyle High School during the day. The high school number is 405-466-2242.

Thank you for your assistance with this study. A copy of the results of the survey will be sent to you.

Respectfully,

Sabrina Richardson
Graduate Student
Oklahoma State University

APPENDIX B

QUESTIONNAIRE

HOME COMPUTERS

1. **Do you own a home computer?** (Circle the number)

   1 YES 2 NO

   (If no) Thank you for your interest in this study of home computers. The remainder of the questionnaire, however, will need to be completed by persons owning home computers.

2. **What brand and model is the computer?**

   BRAND: _____ MODEL: _____

3. **What hardware do you have beyond the basic computer terminal?** (Check as many as apply)

   1 MONITOR
   - _____ Color
   - _____ Monochromatic
   - _____ Black and White

   2 PRINTER
   - _____ Dot Matrix
   - _____ Letter Quality

   3 OTHER (Please Specify)

   _____

4. **How long have you owned your home computer?**

   1 LESS THAN 1 YEAR 2 1 TO 2 YEARS 3 OVER 2 YEARS

5. **How would you rate your home computer with respect to:**

	(Circle a number for each)			
	EXCELLENT	GOOD	FAIR	POOR
Ease of Operation	4	3	2	1
Keyboard Visibility	4	3	2	1
Monitor Visibility	4	3	2	1
Speed of Operation	4	3	2	1
Error Recovery	4	3	2	1
Reliability	4	3	2	1
Availability of Software	4	3	2	1

6. **How did you and the other members of your family learn to use a computer?**

	(Circle a number for each)			
	YOU	SPOUSE	CHILDREN	OTHER
Computer Course	4	3	2	1
Self-Taught	4	3	2	1
Taught By Another Family Member	4	3	2	1
Lessons Given By Computer Dealer	4	3	2	1
Other (Please Specify) _____	4	3	2	1

7. **Please rank each of the following items in the order which specifies your reasons for purchasing your home computer.** (Example: 1 WORD PROCESSING, 2 FINANCIAL MANAGEMENT, 3 ENTERTAINMENT)

   - _____ Entertainment
   - _____ Household Management
   - _____ Financial Management
   - _____ Other (Please Specify) _____
   - _____ Family/Farm Business
   - _____ Educational Purposes
   - _____ Word Processing

8. **Beside each function listed below, please circle the members of your family that use the computer for that purpose. Then circle the number that describes the members' overall satisfaction level of each function.**

	FAMILY MEMBERS			LEVEL OF SATISFACTION				
	MOTHER	FATHER	CHILDREN	HIGHLY SATISFIED	SATISFIED	UNDECIDED	DISSATISFIED	HIGHLY DISSATISFIED
Budgeting	M	F	C	5	4	3	2	1
Income Tax	M	F	C	5	4	3	2	1
Investment Analysis	M	F	C	5	4	3	2	1
Grocery Lists	M	F	C	5	4	3	2	1
Cash Flow Analysis	M	F	C	5	4	3	2	1
Insurance	M	F	C	5	4	3	2	1
Inventory	M	F	C	5	4	3	2	1
Credit Card Records	M	F	C	5	4	3	2	1
Homework	M	F	C	5	4	3	2	1
Learning Drills	M	F	C	5	4	3	2	1
Games	M	F	C	5	4	3	2	1
Project Management	M	F	C	5	4	3	2	1
Time Analysis	M	F	C	5	4	3	2	1
Software Programming	M	F	C	5	4	3	2	1
Word Processing	M	F	C	5	4	3	2	1
Learning To Use The Computer	M	F	C	5	4	3	2	1
Other (Please Specify) _____	M	F	C	5	4	3	2	1

9. **Please list types of software programs you would like to see designed to be used with your computer.**

1 _____ 3 _____

2 _____ 4 _____

10. **How many hours per week is your computer used for the following activities?** (Place a checkmark in the blank for the hours you select.)

	LESS THAN 1 HOUR	1 TO 2 HOURS	3 TO 4 HOURS	5 OR MORE HOURS
Games	_____	_____	_____	_____
Education	_____	_____	_____	_____
Business - Data Analysis	_____	_____	_____	_____
Household Management	_____	_____	_____	_____
Financial Management	_____	_____	_____	_____
Word Processing	_____	_____	_____	_____
Software Programming	_____	_____	_____	_____

(Please complete other side.)

11. **If you or other members of your family use the computer for programming, in what computer language is the material programmed?** (Circle the number)

1 BASIC
2 COBAL
3 FORTRAN
4 PASCAL
5 RPG
6 OTHER (Please Specify) _____

12. **Do you or other members of your family belong to a computer club?**

1 YES 2 NO

13. **If so, how helpful is the computer club in regard to the use of your computer?** (Circle the number)

1 VERY HELPFUL
2 SOMEWHAT HELPFUL
3 HELPFUL
4 NOT HELPFUL

14. **Do any members of your family subscribe to any computer magazines?**

1 YES 2 NO

15. **If so, please list the computer magazines to which members of your family subscribe.**

1 _____ 3 _____
2 _____ 4 _____

16. **Which of the following responses describes where you live?**

1 WORKING FARM
2 NONFARM - RURAL RESIDENCE
3 SMALL TOWN (Population under 2,500)
4 OTHER (Please Specify) _____ _____

17. **Demographic Data - Some background information is needed about each person in your household. Please fill in the information in the blanks below for each person in your home.**

SEX	AGE	MARITAL STATUS	EDUCATION	OCCUPATION
1. Male 2. Female	Enter your actual age	1. Single 2. Married	Enter the number of highest grade completed	Indicate the type of job you have
Example: 1 (Father)	34	2 (Married)	16 - College	Manager - TG&Y

Thank you. Please refold this survey so that the return address is exposed, staple, and mail to me.

VITA

Sabrina Dale Gregory-Richardson

Candidate for the Degree of

Master of Science

Thesis: USE OF THE MICROCOMPUTER IN SELECTED HOMES

Major Field: Housing, Design, and Consumer Resources

Biographical:

Personal Data: Born in Enid, Oklahoma, March 5, 1958, the daughter of Wayne and Wynona Gregory.

Education: Graduated from Ames High School, Ames, Oklahoma, in May, 1976; received Bachelor of Science in Home Economics degree with a double major in Vocational Home Economics Education and Food, Nutrition, and Institution Administration from Oklahoma State University, Stillwater, Oklahoma, in May, 1980; completed requirements for the Master of Science degree at Oklahoma State University, Stillwater, Oklahoma, in July, 1984.

Professional Experience: Vocational Home Economics Instructor, Coyle Public School, Coyle, Oklahoma, August, 1980 to May, 1984.

Professional Organizations: American Home Economics Association, Oklahoma Home Economics Association, Home Economics Education Association, American Vocational Association, Oklahoma Vocational Association, National Education Association, Oklahoma Education Association, Phi Kappa Phi.