AN ASSESSMENT OF HOME COMPUTER USE

AMONG HOME ECONOMISTS IN BUSINESS

by

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A THESIS

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Statement of the Problem

Each year in the decade of the 80's, millions of households will purchase a microcomputer for personal and home use (Warden, 1983), This indicates that families have turned their attention toward the computer revolution in household technology.

The home computer, introduced as a consumer product in the 1960's, has primarily been accepted by consumers as a means of a video games playing machine (Malloy, 1983). The capacities of micro-computers surpass this usage (McWilliams, 1983). As yet, it is unclear what factors influence computer applications for home management tasks and the consumers' decisions to purchase home computers as housekeeping helps.

Need for the Study

Some researchers are beginning to develop testable hypotheses on the potential impact home computers may have on families, with less effort being directed toward investigating the factors which limit the use of home computers in household managerial activities (Dede, 1984). A recent study at the University of New Mexico (Olson, 1985) indicated that, once a family has a computer, the greatest use may come from the least expected source, home management. Forty-five percent of the families surveyed reported already using the computer for home

management related activities, and others reported a willingness to use the computer in management related tasks.

Home Economists in Business, due to their employment status, are more likely to be exposed to computer use. As home economists, they also have a greater home management knowledge background than the average consumers, with the increased time pressure resulting from employment. This study proposed to examine certain attitudes and behaviors in relation to computer use of a population assumed to be already exposed to computers.

The results of the study could serve as a tool for researchers in socioeconomic areas or extension education services to help understand the reasons preventing people from using computer assistance programs for household activities. The results also may help marketing people to improve their software design for home use packages by focusing on major reasons for their limited use.

Purpose of the Study

The purpose of this study is to determine the current usage of microcomputers at home, to examine the actual and desired use of home management software, to discover the reasons which limit software use for home management activities among Home Economists in Business, and to examine characteristics of microcomputer ov/ners and non-owners.

Objectives of the Study

To accomplish the above purpose, the following specific objectives are developed:

1. To determine various characteristics of computer owners among Home Economists in Business.

2. To determine what computer software is presently being used to assist home management tasks.

3. To determine what computer application is desired for home use.

4. To discover the reasons which limit use of computer for household activities.

5. To discover the reasons which prevent people from purchasing a microcomputer.

6. To determine the intention to purchase a home computer.

7. To examine the reasons for a microcomputer purchase.

8. To examine present major use of the microcomputer.

Hypotheses

The following hypotheses will be tested:

1. There is no significant difference in characteristics of owners and non-owners of computers on the following variables:
   a. age;
   b. education level;
   c. total family income.
2. There is no significant relationship in characteristics of owners and non-owners of microcomputers on the following variables:
   a, self-perception;
   b. marital status;

c. having children living at home;

d. computer experience;

e. professional association.

Owners

3. There is no significant relationship between the reason for purchasing a home computer and each of the following variables:

a. age;

b. education level;

c. total family income;

d. self-perception;

e. marital status;

f. having children living at home;

g. computer experience;

h. professional association.

4. There is no significant relationship between desire to purchase another computer and:

a. the satisfaction level of computer capability;

b. length of time of ownership;

c. use of computer potential.

5. There is no significant relationship between major use of home computer and:

a. age;

b. education level;

c. total family income;

d. self-perception;

e. marital status;

f. having children living at home;

g. computer experience;

h. professional association.

6. There is no significant relationship between satisfaction level of home computer use and:

a. length of time of ownership;

b. use of computer potential.

Non-Owners

7. There is no significant relationship between the reason for not purchasing one microcomputer and:

a. age;

b. education level;

c. total family income;

d. self-perception;

e. marital status,

f. having children living at home;

g. computer experience;

h. professional association.

Definition of Terms

The following terms were defined for the purposes of the study as follows:

Demographic data: basic vital statistics such as age, sex, family income, and educational level used as a means of describing a group or characterizing the behavior of a group.

Household activity: also known as household responsibility or

home management activity. Nonpaid productive activity occurring primarily in the home or performed for direct use in home (Nickell, 1967). Home management activity consists of purposeful behavior which involves the creation and use of resources to achieve family goals. These resources include not only time, energy, money, and material goods, but also knowledge, interests, abilities, skills, attitudes and interaction of family members (Gross, Crandall, and Known, 1973).

Microcomputer: also known as home computer or personal computer,. A computer built around a microprocessor, using semiconductor memory. Microcomputers are available under a variety of names such as home computers, personal computers, desktop computers, and small business computers. By providing additional internal storage, auxiliary storage, and peripheral devices, a full microcomputer system can be somewhat similar to a minicomputer, with the main difference being price, size, speed of execution, and computing power (Sippl, 1980),

Response rate: percentage obtained by dividing the number of completed questionnaires returned by the number mailed.

Software package: the programs and subroutines that have been written by and are available from the computer or software manufacturer (Ralston, 1983),

Software package for home management: a specially designed software package which will benefit routine home management tasks. See applications on questionnaire item 18, Appendix B,

Systematic sampling: random selection of a starting point and a sampling interval from a population. Select every subject by adding

the sampling interval to the starting point until the sample is drawn. Systematic sampling method is considered equal to the random procedure (Wimmer and Dominick, 1983),

CHAPTER II

REVIEW OF LITERATURE

The review of literature focused on the four major issues relevant to the study. The first section covers the topic of development of the home computer. The second section deals with potential uses of computer technology in the home. The third section documents research concerning microcomputer ownership, while the fourth section deals with the impact of computer technology on the family.

Development of Home Computers

Personal computing as a mass movement has existed only since 1975. Prior to that, there were several hundred to a thousand or more computer hobbyists who built and/or owned their own computers. Without the availability of very inexpensive, highly reliable microcomputer electronics components, it was simply not viable, economically or technically, to offer computers as consumer products for the intelligent layperson (Gray, 1984).

The first microprocessors were marketed by semiconductor manufacturers in the early 1970s. There is a major difference between a sample microprocessor kit and a usable computer that includes memory, data storage devices, terminals, and software. In 1974, a small manufacturer named MITS decided to offer a microcomputer in the form of a kit for the electronics hobbyist market. The hardware design was poor and unreliable; the documentation verged on

being unintelligible; and the kit initially included no software at all, but the notion of a computer for the layperson, available at modest prices, caught the fancy of a considerable number of people (Sippl, 1980).

As the product gained attention, a number of other companies quickly began to address the same market. Computer stores selling inexpensive computers and related products opened all over the nation, particularly in the high-technology metropolitan areas along the east and west coasts (Sippl, 1980),

By 1975, a hundred or more local computer hobbyist clubs had been formed around the U.S. Some of them had as many as several thousand members and met several times per month, consistently drawing three or four hundred attendees or more to each meeting (Gray, 1984).

Many of the companies addressing the newly founded personal computer market were created specifically for that market. The other companies that first served that market were small computer or electronics firms. None of the traditional major computer or electronics manufacturers initially made any attempt to enter the personal or hobbyist computer market.

Finally, in 1977, Commodore—a major manufacturer of hand-held calculators—announced that it would make a personal computer, calling it the Pet. Before Commodore could begin significant production of the Pet, the Tandy Company, which operates the Radio Shack chain of electronics retail store, announced that it would also offer a microcomputer, the TRS-80 (Gray, 1984). Apple II was introduced in 1977.

There were two major differences between most of the previously available units and the new offerings from Commodore and Tandy. First, the new computers were completely assembled, ready-to-use microcomputers. Second, in the case of the Commodore and Tandy, they were offered by relatively large consumer electronics manufacturers, both having established distribution networks for their products (Sippl, 1980).

Because of the difficulty of assisting customers who built these complex kits, and because there was a much larger market for fully assembled computers, most companies stopped manufacturing or marketing computer kits, preferring to offer ready-to-use systems comparable to the Pet and TRS-80 (Gray, 1984).

The companies that have survived, for the most part, have grown rapidly into solid, successful organizations offering equipment and support comparable to that found in most other consumer electronics manufacturing. And there remains considerable room for the innovative enterpreneur, programmer, or engineer to create a new company and offer a new product, particularly in the areas of software, peripherals, and services (Sippl, 1980).

Potential Uses of Computer Technology in the Home

In this section, discussion will be focused on the ways computers are used in the home.

Data Management

Software can assist the household to organize information. The electronic filing capabilities of a data base management program can

assist the user in maintaining mailing addresses, telephone numbers, special days, appointments, recipe storage, as well as personal possessions inventory. A good software package can make updating, sorting and selectively retrieving records a very simple task (Campbell, 1983; Vail, 1980). The possibilities are limited only by the time and effort family members are willing to spend typing data into the computer (Nance, 1983).

Family Financial Management

The typical family financial management software can range from fairly simple chores such as tracking the household budget or checkbook balancing to more complex tasks like projecting yields on investments or determining what changing economics factors will do to a present financial position (Robin, 1984), A computer can also help with tax planning, A tax preparation program helps with actual taxes, and some of the software will print out the information in a form acceptable to the IRS. A tax planning program helps plot out the best options available to limit how much money will need to be paid for tax in the future (Freifeld, 1984). But computers won't think, and they won't necessarily make a good manager or recordkeeper out of a poor user. It is the user's responsibility to put the correct data into the computer and make sure it is kept up to date (Nance, 1983),

Entertainment and Leisure

A computer may offer games, puzzles, and mind teasers for an individual to play alone or with another person (Squires, 1984).

Games such as variations of space wars, mazes, and different levels of chess that require no programming knowledge or skill are available in commercial software. Games may be solely for entertainment or for education. As thought amplifiers, computers allow the learner or player to accomplish mental feats impossible to the unaided brain (Woodwell, 1983).

Computer games have been one of the more common personal computing applications. Many households purchased a game playing computer without considering its more functional capabilities. Consequently, many computer owners have been frustrated by their own lack of foresight and poor consumer shopping skills. Although many games are the exciting, colorful, but mindless type found in arcade video games, new entries on the market will challenge the critical thinking skills of the player(s). Often, what appears to be an entertaining and exciting game of considerable complexity may actually be subtly and significantly educational by being a reasonably accurate simulation of some real-world situation, e.g., business investments, earth resources management, flight simulation, etc. (Campbell, 1983).

A home computer can become a focus of a home music center; a sport fan's best tracking tool for favorite teams; an artist's can enjoyment of computer graphics; and a puzzle-solver's fantastic games (Woodwell, 1983).

Decision Assistance

Computer programs have been developed to help make decisions. The computer requests information on all courses of action the user

might take, and these factors influence the final decision choice. Such programs allow the user to weigh several courses of action, and the best alternative is indicated, based on the criteria supplied. It is easy to change the variables and create other solutions.

Microcomputers are also analysts in dealing with such data as energy consumption, tax information and records, mortgages and amortization schedules, diets, stock market reports, investment gains and losses, car maintenance and depreciation, and much more (Clayton, 1984).

Word Processor

A computer can be used to compose letters, reports, and other printed materials. Some computers have excellent editing capabilities, A printer can produce hard copy such as form letters, for example, that can be printed quickly and easily in large numbers all alike or with sections individualized (Woodwill, 1983). However, some educators have been concerned that because such programs allow students to rearrange text while writing, the students may not learn to organize their thoughts before they start writing. There is also some concern that children's handwriting may not develop sufficiently if much of their writing is done with word processors (Nance, 1983).

Home Security and Energy Control

A home computer can perform many different control functions in the home. The advantage of using the home computer is that the centralized control and system operation will be in one location.

Lights can be programmed to turn on and off in different rooms to give the illusion of someone being in the house; heat or air conditioning can be set via the computer's control of the thermostat; the security system can be programmed to call the local police department if an intruder enters the home. All these physical control applications are readily available for the computer. The heme computer can become a live-in custodian and security guard if the house is wired to connect all the sensors, thermostat, lights, and the computer (Woodwell, 1984; Vail, 1980).

Despite the fact that an electronic home with household equipment can be monitored and controlled by a central computer, Clayton (1984) stated the possible problem:

> ...Only a small percentage of microcomputer owners actually use their computers for this purpose. In the first place, there are few hardware and software products available from retail computer stores which support this application. Special wiring may also be needed if the owner wants to bring all household equipment under the control of a single computer. A major hindrance of this type of application is that most microcomputers can only do one task at a time, so if your computer is monitoring your security system, it can't also be used to update budget records at the same time.
>
> In order to solve the problem, Clayton suggested:
>
> A far more prevalent application of computer technology for home control is the use of special-purpose microprocessors in much household equipment. Such tiny pre-programmed "computers" can be found in our microwave ovens, laundry appliances, timed thermostats, and automobiles. Their use may turn out to be a more reasonable application of computer technology for home control than a single central system.

Information and Communications

Information services transmit data from a central computer to a

standard video display terminal or microcomputer monitor, either over telephone lines or cable TV line. These services often called "on-line" data bases, permit the user to gain access to information, wide varieties of both consumer and business information.

Such electronic data bases have educational uses, too. The phone number of the database service can be dialed and a request for information made to an on-line encyclopedia. The response can be as complete as in the reference library, but it is faster and very concise. Investment information such as closing prices of stocks, bonds, mutual funds, and options are also available from the same electronic libraries. News, weather, and the latest sports scores are also available (Campbell, 1983),

Access to a computer network also permits interactive use such as in-home banking, shopping, and travel or service scheduling (Chin, 1984; Church, 1985), It also allows for person-to-person communication through electronic mail to pass electronic messages to friends across miles or across the country and bulletin boards where messages can be electronically posted for other interested readers (Collins, 1982; Diebold, 1969).

One of the major problems of telecommuting is a sense of isolation from colleagues. Employees report missing the informal intercommunication of the office. Other obstacles to telecommuting relate to logistics. Although some new housing construction includes computer centers in their designs, most current housing is not designed to provide good work space for computing. There is also the question of how to handle motivation, communication, management.

supervision, and group decision-making within a telecommuting framework (Nance, 1983).

Research Concerning Microcomputer Ownership

Several studies have been conducted to determine characteristics of households who have purchased microcomputers. A study conducted by Merchandising Magazine, using a sample of 1,733 consumers, showed 15.3 percent of the respondents currently owned a computer and an additional 13.4 percent were planning to purchase one in the next 12 months. As for why people are purchasing microcomputers, the results indicated the largest reason given was for word processing (25.4%); the next widely used task was education (19.3%); working at home was third (16,9%); home management fourth (16,5%); and playing games was fifth, with 7.5 percent of the total. The survey also revealed why consumers did not own a personal computer and why they did not plan to purchase one in the next 12 months, "No Need" was the most popular reason (71.1%) and "Too expensive" was the next popular reason (27,3%) (Cavaliere, 1984).

A study by Consumer Reports ("How Our", 1984) found, for each application, the percentage of respondents who intended to use the computer for the purpose, and the percentage actually using it as intended was: games (intended: 65%, actual: 69%); learning about computers (intended: 68%, actual: 63%); word processing (intended: 58%, actual: 59%); home accounting (intended: 58%, actual: 45^ó); technical calculations (intended: 36^:, actual: 34%); general education (intended: 41%, actual: 34%); business accounting (intended: 28",

actual: 25%); telecommunication (intended: 32%, actual: 24%); and writing programs for sale (intended: 21%, actual: 18%).

Another study conducted by Merchandising Magazine in January, 1983, in four major cities--New York, Cincinnati, Minneapolis and Los Angeles--found that 28.2 percent of the 535 individuals interviewed had a computer at home. An additional 14.8 percent were planning to purchase a computer before the end of 1983, and 17.6 percent of all the computer owners were planning to purchase another one. In this study, Apple was the most popular brand, followed by IBM, Radio Shack, Kaypro, Epson, and Sanyo. The majority (90%) of computer owners were satisfied with their computers. This survey also showed the highest rates of ownership occurred in those household having higher income, two-person household, and no children (Book et al., 1984).

A recent study of home computer impact on the family at the University of New Mexico, (Olson, 1985) consisted of 30 volunteer home computer owners derived from a population of computer user group members. The families surveyed had owned their computers for an average of 16 months, and 96 percent reported complete satisfaction with their system. Olson reported that the majority of the time with. the computer was spent in business related activities (54%). Entertainment was the second (21%), followed by school work (13/ŏ) and home management (12%). Home computer use for home management activities was summarized for this study as follows:

> However, once a family has a microcomputer, the greatest use may come from the least expected source, home management. Many families reported already using the computer for home management activities. Given a list of 14 home management related activities, ranging from opening and shutting

windows to control for energy efficiency to diet analysis, at least 3 percent of the families reported already using the computer for each activity and as many as 45 percent of the families reported using the computer to aid in recording some aspect of the family budget. In most cases, an equal number of families indicated a willingness to use the microcomputer as management tool.

Nation's Business funded a reader survey of computer use. Of the total sample, 27 percent of the home computer group owned an Apple, which was the most popular brand, followed by Radio Shack, Texas Instruments, and Commodore. Atari and Timex/Sinclair tied for fifth place, followed by IBM and Osborne. Sixty-nine percent of home computer owners were reported being *wery* satisfied with their system. Only around two percent reported being not at all satisfied (Warden, 1983). The survey also showed that 50,3 percent of those who have microcomputers in their businesses also have computers at home, whereas only 31.6 percent of those who do not have small office computers have home computers. Warden concluded that there is a direct relationship between having or using a computer at work and having one at home.

The Impact of Computer Technology on the Families

Computers have had and will continue to have an impact on households and families. According to Toffler (1980), in his book. The Third Wave, the computer is a major factor in the changing world. He wrote that the "first wave" of change for man was that of the agricultural revolution of 10,000 years ago; the "second wave" was the industrial revolution of 300 years ago; and the "third wave" will bring many opportunities for a better life for people. He believes

that the computer will revolutionize homes in a number of ways. It will permit a decentralization and de-urbanization of production. It will change the character of work and the location of work, shifting jobs out of factories and offices back to where they originally came from, the home. The computer will make possible a return to cottage industry on a new electronic basis and, with it, a new emphasis on the home as the center of society.

The first advantage to the family with a computer is the time saving feature (Mowry, 1985; Nikolaieff, 1970). Mowry also suggested more advantages as: working at home might eliminate the high cost of transportation, not only the individual worker's time and auto costs, but also for society, in terms of traffic congestion, air pollution, and energy comsumption. Moreover, the plant itself could be reduced the overhead costs of heating, cooling, and maintenance. The worker also would gain increased leisure time to spend with his/her family.

The potential for computers to pull families together does exist (Nance, 1983). Nance believes that the key to the positive influence of computer use at home is to be alert for those subtle effects on the communication and interaction of family members, choosing to maximize the benefits computers can offer while paying attention to the continuing need for family interaction and communication.

The potential problems of changes due to computer technology are many. As the computer becomes a more dominant tool in shopping, banking, and communicat-inq outside the home, the risk of invasion of privacy is increased (Mowry, 1985), Also, in addition to the initial investment costs of the computer, there will be operating costs and

additional property insurance, plus the unmeasurable human resource investment of time and effort involved in learning how to use the computer (Bailey, 1982),

Psychologist Craig Brod has labeled the phenomenon "technostress" which he defines as the inability to adapt to computer technology (Nance, 1983). According to Brod, technostress can be manifest in two ways: the user either becomes totally overwhelmed by the technology or achieves total identification with it. Both responses are inappropriate and can lead to a distancing between people. Symptoms of technostress include a decline of interest in interpersonal interaction; acceleration of impatience with, and the expectation of perfection from, spouse and children; and the inability or diminishing ability to read material that involves attention to detail.

Social isolation is another possible crisis. Campbell (1983) stated: "A person can cut themselves off from other social activity and stare for hours at the monitor." Later she concluded: "Children are being drawn to one-on-one, person vs. machine rather than human interaction play. Parents need to concentrate on minimizing the negative effect of human relations resulting from long-term use of computer,"

CHAPTER III

METHODOLOGY

The major purpose of the study was to obtain computer ownership information from Home Economists in Business and to examine their attitudes and concerns about home use of computers. In order to carry out the study as described in Chapter I, development of the instrument, selection of the sample, data collection and treatment of the data were necessary. The methods and procedures used in accomplishing these tasks are reported in this chapter.

Development of the Instrument

The specific research instrument chosen for the study was a questionnaire designed to obtain data regarding certain demographic characteristics of Home Economists in Business, to measure attitudes toward home computer use for microcomputer owners, and to determine needs and concerns of both owners and non-owners of microcomputers (see Appendix B). All of the questions were constructed as check-list types for the convenience of the respondents and for ease in tabulating the responses (Dillman, 1978).

Items selected for the questionnaire were divided into four categories. The first section obtained data from microcomputer owners concerning the type of microcomputer the respondent owned, the date of purchase, reason for purchase, major use of the computer, use of the computer potential, the major user at home, and reasons limiting

software use for home management activities. In addition, respondents were questioned concerning their spouses' interests about microcomputer use and their plan to purchase another computer in the future.

In the second section of the questionnaire, information was requested about non-owners of microcomputers, their reasons for not having purchased a microcomputer and their plan to purchase one in the future.

The third section requested both owners and non-owners to respond to questions about theapplications they would like to receive help from a microcomputer in family management related activities and what help owners are currently receiving from their microcomputers. In addition, respondents were questioned in regard to the conditions that would promote the use of a microcomputer for home management responsibilities. The final section of the instrument requested demographic data including age, family income, number of children living at home, marital status, level of education and occupation.

The instrument was administered May 17-19, 1985 as a pilot study in Amarillo, Texas, to 24 Home Economists in Business not included in the population sample. Based on an analysis of the statistical data and questionnaire reliability, the questionnaire was revised, A total of 29 questions was included in the revised questionnaire. These items were structured to allow clear and efficient decoding and measurement.

The final questionnaire was printed on both sides of two single-folded eleven- by fourteen-inch sheets of paper. A professional

appearance was desired in order that respondents might be favorably attracted to the questionnaire and, therefore, eagerly respond. A specially designed title page was used to create a pleasant appearance and achieve positive response (Dillman, 1978).

General instructions were printed on the inner page of the first sheet of paper. The letter accompanying each questionnaire (see Appendix A) explained the importance of the study, emphasized the importance of each person's response, and assured confidentiality of each response.

Selection of the Sample

The population for this study consisted of all Home Economists in Business (HEIB) listed in the 1985 HEIB directory. Home Economists in Business is a professional section of the American Home Economics Association (AHEA). Applicants for membership in HEIB are required to belong to AHEA before they are eligible for membership in HEIB. Only home economists employed by a profit making establishment in business may belong; free-lance HEIB must prove active employment for eight months each year (Parker, 1980). Approximately 3,100 members are listed in the 1985 HEIB directory, A total of 1,200 names, about one-third of the population, were chosen for the population sample by systematic sampling method. Sample members received a code number based on their consecutive listing in the directory. Using such a coding system enabled the researcher to determine when sample members had returned questionnaires and facilitated follow-up procedures.

Data Collection

In order to collect the data, a coded survey questionnaire with an accompanying cover letter, and postage-paid return envelope were mailed to each sample member in June, 1985, Following the first mailing of the questionnaire, 403 responses (34.6%) were received by July 14, from the total sample (N=1200) with 95 microcomputer owners by. No follow-up was sent out for additional responses since there were enough numbers in each cell to be tested statistically.

By the end of July, 1985, a total of 468 instruments were collected for a response rate of 39%. Of this number, 453 were used in the final analysis. Fifteen instruments were eliminated because of insufficient responses.

There were 732 nonrespondents, representing 61% of the sample. Forty-eight questionnaires (4.0%) were returned as undeliverable.

Treatment of the Data

Each sample member of microcomputer owners was asked to respond to 26 items on the questionnaire, whereas the non-owner of a micro-computer was asked to respond to 16 items. Responses were coded onto coding forms for transfer to a computer program. A total of 71 variables, including demographic data, were coded for measurement and analysis. Appendix C contains a list of the variables and coding used in the cross-tabulation analysis.

For all statistical tests, hypotheses 1, 2, 7, and 8 were to be rejected at the .01 level of significance. The .01 level significance was selected as a control for large sample size. Hypotheses for

microcomputer owners only, hypotheses 3, 4, 5, and 6, the .05 level of significance was deemed indicative of significant relationships (Blankenship, 1943). The data were analyzed as follows:

1. Descriptive statistics including frequencies and percentages, were used to summarize the demographic data and characteristics of the participants.

2, The independent *t*-test was employed to determine the significance of differences between microcomputer owners and non-owners and (a) age, (b) educational level, and (c) family income.

3. Chi-square was used to test the statistical independence of the variables, that is, to determine whether the observations were significantly different from what was expected according to the null hypothesis, Chi-square is appropriate for analysis with variables measured at the nominal level (Champion, 1970). In hypothesis 2, the dependent variable of ownership of microcomputers was analyzed using Chi-square analysis with the independent variables of marital status, self-perception, computer experience, professional groups, and having children living at home,

4, Kendall's Tau *(X)* coefficient of association was used to examine hypotheses 3 to 6. When the data were organized by scores of several individuals on the two dimensions, Kendall's Tau was used to access the degree of association which exists between these two ordinal-level variables by ranking the variables, A primary advantage of Kendall's Tau is that it is appropriately used when a large number of ties is present within ranks (Champion, 1970).

Data analysis was completed by using the Statistical Analysis System (SAS, Version 82.4) (SAS, 1982; King and Julstrom, 1982) at the Texas Tech University Computer Center, Lubbock, Texas.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF THE DATA

The data were collected from a sample of Home Economists in Business who responded to a questionnaire designed to obtain information about home computer use and selected demographic variables. T-test, Chi-square analysis, and Kendall's correlations were used to analyze the testing of hypotheses. The data obtained were studied and reported under the following headings in this chapter: (1) Descriptive Analysis and (2) Testing of Hypotheses.

Descriptive Analysis

Demographic Aspects of the Sample

Analysis of selected demographic data through frequencies and percentages is presented in Table 1. Data are categorized by age, family income, education level, children living at home, marital status, self-perception and professional group. Totals in this section, and in subsequent sections, may not equal one hundred or base due to nonresponse.

As summarized in Table 1, responses to the questionnaire indicate that all of the 453 (100%) respondents were female. Age of the respondents ranged from 21 to 80, with an average 39,34, Almost two-third of the respondents, 61,28 percent, were married, and 38.72 percent were either single, widowed, separated or divorced. About one-third of the respondents, 31.74 percent, had children living at home.

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Table 1. Summary of Demographic Data of Respondents

Independent Variables	Number (N=453)	Percentage
Sex		
Male	0	0
Female	453	453
Age		
Under 24	8	1,77
25-34	184	40,80
35-44	131	29.05
45-54	73	16,18
55-64	45	9.98
65 +	10	2,02
Educational Level		
Attended college	6	1,33
Graduated college	225	49,67
Post graduate study	114	25,17
Masters degree	104	22.96
Doctoral degree	4	0.88
Family Income		
Not currently employed	4	0.90
Under $19,999	37	8.37
$20,000-$29,999	71	16,06
$30,000-$39,999	68	15,39
$40,000-$49,999	80	18,10
Over $50,000	182	41.18
Children Living at Home		
Yes	148	32,74
No	304	67.26
Marital Status		
Single	111	24.56
Married	277	61,28
Widowed	13	2,88
Separated	6	1,33
Divorced	45	9,96
Self-perception		
Conservative	34	7,70
Conservative to moderate	155	35,15
Moderate	148	33.56
Moderate to liberal	92	20.86
Liberal	12	2.72

Table 1. continued

Independent Variables	Number (N=453)	Percentage
Professional Group		
Free lance consultants	70	16.20
Agencies, associations. manufacturers	166	38.43
Publications, radio & TV	28	6.48
Utilities	92	21.30
Other	76	17.59

The majority of the respondents, 98.67 percent, had attained a college degree. A masters degree had been earned by 104 respondents (22,96%), while four had received a doctorate (0,88%),

Of the respondents surveyed, 41.18 percent, had family incomes of over $50,000; 18.10 percent had incomes ranging from $40,000 to $49,999; 16.06 percent had incomes of $20,000 to $29,999; 15.39 percent had incomes of $30,000 to $39,999.

The largest number of respondents, 35.15 percent, reported themselves to be conservative to moderate; 33.56 percent reported moderate. Respondents employed by a professional group of agencies, associations, or manufacturers, were in the majority, 38,43 percent; the remainder of the employment groups and percentages were: utilities, 21.30 percent; free lance consultants, 16,20 percent; publications, radio and TV, 6,48 percent.

Informative Characteristics of the Sample

Data pertaining to microcomputer ownership of the respondents are reported in Table 2. As the data indicated, 23,84 percent of the respondents were microcomputer owners; 76.16 percent were non-owners.

Table 2. Microcomputer Ownership

Ownership	Number (N=453)	Percentage
Owners	108	23,84
Non-owners	345	76.16

Table 3 shows the types of microcomputers the respondents used. Analysis of the data obtained from questionnaire item 2 is presented by frequency total and percentages. The data indicate that the first and second most frequently owned computers were Apple (29,63%) and IBM (17.59%), The other brands not listed but owned by 15% of the respondents included Zenith, Kaypro, Xerox, Olivetti, and Gavlin. Half of the respondents, 50.96 percent, owned a microcomputer for 1-3 years; 45.19 percent owned for less than 1 year; only 3.85 percent owned more than 3 years (see Table 4).

Analysis of the data obtained from questionnaire item 4 is presented by percentages in Table 5. Forty-five percent of the respondents reported business was the most important reason for purchasing a microcomputer. Almost one-fourth, 24,07 percent, of the respondents reported word processing was the most important reason. Twenty-four percent of respondents reported word processing as the second most important reason for purchase; 15.74 percent reported

Table 3. Type of Microcomputer Owned

Type of computer	Number (N=108)	Percentage
Apple II/II Plus/Ill Macintosh	32	29.63
Atari	7	6,48
Commodore	12	11.11
Dec Rainbow	2	1.85
IBM PC/Compatible	19	17,59
Osborne	2	1.85
Radio Shack	5	4.63
Texas Instruments	14	12.96
Other brands	15	13,89

Table 4. Length of Ownership

Length	Number (N=104)	Percentage
Less than 1 year	47	45.19
1-3 years	53	50.96
More than 3 years	4	3.85

family finance/management aid as the third most important; while 50.00 percent did not include entertainment as one of the reasons for purchasing a microcomputer. For a further synopsis of purchase reason, refer to Table 5.

As Table 6 indicates, 30.56 percent of the sample reported business as the major use for home computer; 25.00 percent reported word processing as the second major use. Almost half of the respondents reported neither entertainment, family finance/manage aid, nor education aid was one the major use for home computers.

Table 5. Percentage Distribution: Owners' Purchase Reason in Order of Importance

Reason Rank	Education Aid	Family finance/ management aid	Enter- tainment	Business	Word processing
1	20.37	17.59	7.41	45.37	24,07
2	9.26	6.48	16.67	10.19	24.07
3	14.82	15.74	6.48	2.78	12.96
4	8.33	8.33	11.11	2.78	4,63
5	3.70	4.63	8.33	3.70	2.78
0	43.52	46.30	50.00	35,17	31.48

Table 6. Percentage Distribution: Owners' Major Use of Home Computer

Reason Rank	Education Aid	Family finance/ management aid	Enter- tainment	Business	Word processing
1	11.11	14.81	15.74	30.56	25.93
2	12.96	14.81	12.04	14.82	25.00
3	12.04	8.33	11.11	10.19	12.04
4	9.26	7.41	6.48	4.63	3.70
5	7.41	6.48	2.78	2.78	2,78
0	47.22	48.15	50.93	37.04	30.56

Of the respondents who owned a microcomputer at home, 36.45 percent reported saving time was the major advantage; 31.78 percent reported better records was (see Table 7).

Table 7. Major Advantages of Using Microcomputers for Work at Home

Advantages	Number (N=107)	Percentage
Saving time	39	36.45
Saving money	3	2,80
Better information	9	8,41
Better records	34	31.78
More accurate and attractive items	16	14,95
Other	6	5.61

Table 8 reports the data obtained from questionnaire items 7-14, Data reported in Table 8 provides a summary of characteristics of microcomputer owners. Over half of the owners, 57.01 percent, reported using only the minimum potential of their computers. Slightly less than three-fourths of the owners, 74,29 percent, used very little of the computers potential for help with home management activities. Forty-two percent of the respondents reported the spouse was the major user of the microcomputer; 32.65 percent reported the respondents theirfeelves were the major user; 24.49 percent reported their children were.

Over three-fourths of the respondents were satisfied with their home computers.

Thirty-eight percent of the respondents planned to purchase another microcomputer in three to five years, and 31 percent of them were planning to use the additional microcomputer for business.

Table 8. Characteristics of Microcomputer Owners

Characteristics	Number* (N=108)	Percentage
Extent of computer use		
Maximum use	6	5.61
Moderate use	36	33.65
Minimum use	61	57.01
Use of microcomputer for home management activities		
Great extent	6	5.71
Moderate	14	13.33
Very little	78	74.29
Major user at home		
Yourself	32	32.65
Spouse	42	42,86
Children	24	24,49
Satisfaction level of microcomputer		
Very satisfied	32	30,19
Satisfied	46	43,40
Unsure	19	17,92
Dissatisfied	5	4,72
Very dissatisfied	4	3.77
Spouse's degree of interest		
No spouse	14	13,21
Very much	69	65.10
Neutral	9	8.49
Not much	8	7.55
No interest	6	5.66
Plan to purchase another computer within:		
Next 12 months	8	7,92
1 - 3 years	19	18,81
3 - 5 years	39	38.61
Sometime in the future	12	11.88
Never expect to purchase another one	21	20.79

Table 8. continued

Characteristics	Number* (N=108)	Percentage
The major use of another microcomputer		
Education aid	17	15.04
Home finance/management aid	22	19,45
Entertainment	9	7.96
Business	35	30.97
Word processing	30	26.55

*The number varied depending upon the response to the question.

Reasons which limited the owner's use of microcomputer for home management activities are summarized in Table 9, Almost two-thirds of respondents reported "do not have time to get familiar with the software."

Table 9. Factors Limiting the Use of Microcomputer for Home Management Activities

Factors	Number (N=108)	Percentage
The price of the software is too high	23	21,50
The manual is too vague to understand	16	14,95
Computer doesn't perform desired function	7	6,54
Do not have time to get familiar with the software	70	65,42
Do not save enough time	23	21,50
Do not save money	2	1,87
Not aware of possible uses	26	24.30
Have no computer experience	26	24.30
Do not have proper peripherals with the hardware	13	12,15
Not interested	15	14.0?
Other	2	1.87

As indicated by analysis of nonowners of microcomputer characteristics data in Table 10, almost one-half of the respondents reported the reason for not having purchased one microcomputer was because of the high price. Forty-five percent planned to purchase one in three to five years, and for 33.25 percent of the respondents, the major use would be home finance and management aid.

Table 10. Characteristics of Non-owners of Microcomputers

Characteristics	Number (N=345)	Percentage
Reason for not purchasing one yet		
The price is too high	157	46.04
Have no confidence in microcomputers	8	2.35
Have no interest	42	12.32
Have no uses for it	108	31.67
Have no time to learn to use one	36	10.56
Plan to purchase a microcomputer within		
Next 12 months	13	3.93
1 - 3 years	87	26.28
3 - 5 years	148	44.71
Sometime in the future	8	2.42
Never expect to purchase one	71	21.45
Proposed major use of microcomputer		
Education aid	54	13.81
Home finance/management aid	130	33.25
Entertainment	10	2.56
Business	104	26.60
Word processing	93	23.79

Data pertaining to the actual and intended use of home software applications by microcomputer owners are summarized in Table 11, Almost one-third of the respondents, 31,48 percent, were using phone/mailing list. The next highest actual uses reported were for tax planning preparation and personal possessions inventory, 20.37 percent and 19.44 percent, respectively.

Table 11. Actual and Intended Use of Home Software Applications by Microcomputer Owners*

Applications	Actual		Iritended	
	Number (N=108)	Percentage	Number (N=108)	Percentage
Home shopping	2	1.85	28	22.93
Menu planning	3	2.78	35	32.41
Recipes storage	10	9.30	48	44.44
Phone/Mailing lists	34	31.48	51	47.22
Budgeting	25	23.14	44	40.74
Checkbook balancing	13	12.07	46	42.59
Home banking	3	2.78	38	35.11
Home security	2	1.85	23	21.30
Energy control	2	1.85	19	17.60
Tax planning and preparation	22	20.37	54	50.00
Personal possessions inventory	21	19.44	55	50.93
Time management	5	4.63	13	12.04
Diet analysis	8	7.41	29	26.85
Electronic libraries	7	6.48	27	25.00
Decision making	5	4,63	15	13.89
News and information	7	6.48	23	21.30
Electronic mail	6	5.57	24	22.22
Other	3	2.79	3	2.78

•Respondents were allowed to choose more than one category.

Data further indicate that about 50 percent of the microcomputer owners would like to use software for tax planning/preparation and personal possessions inventory; 47.22 percent would intend to use phone/mailing lists; 44.44 percent intended using recipe storage; 42.59 percent would like to use checkbook balancing.

Table 12 shows the intended use of home software applications by nonowners of microcomputers. The largest number, 74.49 percent, of respondents intended to use tax planning/preparation; 71,26 percent, personal possessions inventory; 68,62 percent; phone/mailing list;

59.82 percent, budgeting; 56.01 percent, checkbook balancing; 55.43 percent, recipe storage.

Table 12. Intended Use of Home Software Applications by Non-owners of Microcomputers

Applications	Number* (N=341)	Percentage
Home shopping	101	29.62
Menu planning	104	30.50
Recipe storage	189	55,43
Phone/Mailing lists	234	68,62
Budgeting	204	59.82
Checkbook balancing	191	56.01
Home banking	119	34.90
Home security	101	29.62
Energy control	78	22.87
Tax planning and preparation	254	74,49
Personal possessions inventory	243	71,26
Time management	80	23,46
Diet analysis	90	26.39
Electronic libraries	58	17.01
Decision making	44	12.93
News and information	78	22.87
Electronic mail	61	17.89
Other	9	2.64

*The number varied depending upon the response to the question.

Data reported in Table 13 indicate 63.59 percent of respondents would consider using a home computer for household responsibilities if the computer would "get better records"; "save time" (56.45%); or if "price of computer and software is cheaper" (40,32%).

Table 13. Conditions Promoting Use of Home Computer for Household Responsibility

Conditions	Number* (N=434)	Percentage
Save time	245	56.45
Save money	146	33.64
Provide useful information	211	48.62
Get better records	276	63.59
Price of computer and software is cheaper	114	26.27
Have time to get familiar with computer and software	175	40,32
Other	5	1,15

*The number varied depending upon the response to the question.

Testing of Hypotheses

Hypothesis 1: There is no significant difference in characteristics of owners and non-owners of computers on the following variables:

a. age;

b. education level;

c. total family income.

Hypothesis 1(a) and 1(c) were rejected at the .001 level of significance.

For hypothesis 1(a), Table 14 presents data congruent to testing this hypothesis. A highly significant difference was observed between the two groups and the hypothesis was rejected. It appears that owners of microcomputers are older than non-owners.

Table 14. T-test Comparing Age and Microcomputer Ownership

Ownership	Mean	Standard Deviation	t	F value	P
Owner	40.04	8.45	-0,85	1,98	0.0001
Non-owner	39,24	11.89	-0,71		

Table 15 illustrates the testing of hypothesis 1(b). The derived F-value between group means revealed that the two groups did not differ significantly. Hypothesis 1(b) was accepted.

Table 15. T-test Comparing Education and Microcomputer Ownership

Ownership	Mean	Standard Deviation	I^	F value	^
Owner	2.93	0.91	-2.82	1.19	0,2532
Non-owner	2.65	0.83	-2.95		

*t value is computed with weighted average (see Appendix D).

As indicated in Table 16, microcomputer owners' family income level significantly differed from non-owners' family income level. The hypothesis 1(c) was rejected. The data suggests that the respondents with higher family income are more likely to own a microcomputer than those with lower family income.

Table 16. T-test Comparing Family Income and Microcomputer Ownership

Ownership	Mean	Standard Deviation	T*	F value	£
Owner	5.23	1.09	-5.72	1.75	0.0009
Non-owner	4.47	1.45	-4.95		

*t value is computed with weighted average (see Appendix D).

Hypothesis 2: There is no significant relationship in characteristics of owners and non-owners of microcomputers on the following variables:

a. self-perception;

b. marital status;

c. having children living at home;

d. computer experience;

e. professional association.

Table 17 presents the results of chi-square analysis comparing microcomputer ownership and the independent nomimal level demographic variables.

Table 17. Chi-square Table Comparing Microcomputer Ownership and Demographic Characteristics

Characteristics	x^	d.f.	Significance Level
Marital status	29.08	1	0.0001
Self-perception	15,59	4	0,0036
Having children living at home	25,53	1	0.0001
Computer experience	H.20	1	0,0105
Professional association	7.29	4	0.1213

Hypotheses 2(d) and 2(e) were accepted. Hypotheses 2(a), 2(b), and 2(c) were rejected at .001 level of significance. The results of the chi-square analysis determined there was a highly significant relationship between microcomputer ownership and marital status, self-perception and having children at home. Further examination of the data revealed that married people, or people who perceive themselves as liberal, or people who have children living at home, had a higher degree of microcomputer ownership. Based on these findings, computer experience and professional association did not reveal a significant relationship on microcomputer ownership.

Owners

Hypothesis 3: There is no significant relationship between the reason for purchasing a home computer and each of the following variables:

a. age;

b. education level;

c. total family income;

d. self-perception;

e. marital status;

f. having children living at home;

g. computer experience;

h. professional association.

Table 18 presents the correlation matrix for the Kendall's correlation analysis between the dependent variable, reasons for purchasing a microcomputer and the independent demographic variables. Hypothesis 3 was partially rejected. Marital status (f = -.186, p^.OS)

Table 18. Kendall's Correlation: Reasons for Purchase and Characteristics of Microcomputer Owners

Characteristics	Education Aid	Home Finance/ Management Aid	Entertainment	Business	Word Processing
Age	-.067	-.063	-.143*	-.057	-.142*
Education	-.071	-.083	-.167*	.022	.035
Family Income	.13	.054	.[illegible]3	.108	.234**
Self-perception	.04[illegible]	.027	.055	.0[illegible]1	.113
Marital Status	.038	-.186*	-.048	-.066	-.058
Having children living at home	-.033	-.034	-.048	.143	.036
Computer Experience	-.033	.064	.004	.168	.0[illegible]8
Professional Association	.036	-.015	-.023	-.123	-.065

*p <.05

**p <.005

was negatively correlated with purchasing for home finance/management aid. Age (t = -.149, p<.05), and education (*t* = -.161, p<.05) were negatively correlated with purchasing for entertainment. Family income (T = .234, p<.005) and age (T = -.142, p<.05) were correlated with purchasing for word processing use.

Based on these findings, it appears that married people were less likely to purchase for home finance/management aid; younger people, and people with less graduate education tended to purchase more for entertainment; a higher income, and a young age was associated with a higher tendency to purchase a microcomputer as a word processor.

Hypothesis 4: There is no significant relationship between desire to purchase another computer within next 12 months and:

a. the satisfaction level of computer capability;

b. length of time of ownership;

c. use of computer potential.

Table 19 presents the results of the Kendall's correlational analysis between dependent variable of intention to purchase another microcomputer with owners' characteristics.

Table 19. Kendall's Correlation: Intention to Purchase Another Microcomputer and Characteristics of Microcomputer Owners

Characteristics	Intention
Satisfaction level	.019
Length of ownership	-.038
Use of computer potential	.200*

*P<.05

Hypotheses 4(a) and 4(b) were accepted, only hypothesis 4(c) was rejected. The results indicated that the use of microcomputer potential (T= .200, p<.05) is correlated with intention to purchase another microcomputer. The positive correlation between these two variables indicates that higher use of the microcomputer's potential is associated with higher intention to purchase another one. The results also indicated the microcomputer owner's satisfaction level and length of ownership were not correlated with the intention to purchase another microcomputer.

Hypothesis 5: There is no significant relationship between major use of home computer and:

a. age;

b. education level;

c. total family income;

d. self-perception;

e. marital status;

f. Having children living at home;

g. computer experience;

h. professional association.

Kendall's correlation analysis presented in Table 20 was performed on the independent variable of major use of microcomputer at home and the various dependent demographic characteristics. Only two portions of the correlation matrix of hypothesis 5 were rejected.

Having children living at home was related with major use as education aid ('^= ,252, p .005) and with major use as entertainment (T = .168, p<,05). The positive correlation results indicated not

Table 20. Kendall's Correlation: Major Use of Microcomputer at Home and Demographic Characteristics

Characteristics	Education	Computer Courses Taken/ Avoid	Entertainment	Age	Word Processing
Age	-.080	-.001	-.143	-.008	.001
Education	-.080	-.059	-.188	-.084	.054
Family Income	.116	.001	.107	.051	.188
Self-Education	-.081	.004	.088	.059	.034
Marital Status	.110	-.030	.030	-.019	.000
Having children living at home	.130**	-.060	.100*	-.046	.007
Computer Experience	.000	.000	.000	-.145	.088
Professional Association	.034	-.100	.001	.058	.081

*.05

**.01

surprisingly that having children at home is associated with a higher tendency to use the microcomputer for education aid or entertainment.

Hypothesis 6: There is no significant relationship between satisfaction level of home computer use and:

a. length of time of ownership;

b. use of computer potential.

Correlation analysis was conducted on those dependent variables: (a) length of ownership, and (b) use of microcomputer potential, and the independent variable of microcomputer satisfaction level.

Hypothesis 6(a) was accepted. Hypothesis 6(b) was rejected at .001 level of significance. The results (see Table 21) indicated that the use of microcomputer's potential ("t = .462, p<.001) is correlated with satisfaction. The positive correlation revealed that the more use of the microcomputer's potential is related to a higher satisfaction level.

Table 21. Kendall's Correlation: Satisfaction Level of Present Microcomputer and Characteristics of Microcomputer Owners

Characteristics	Satisfaction
Length of ownership	.098
Use of computer potential	.462*

*P<,001

Non-Owners

Hypothesis 7: There is no significant relationship between the reason for not purchasing one microcomputer and:

a. age;

b. education level;

c. total family income;

d. self-perception;

e. marital status;

f. having children living at home;

g. computer experience;

h. professional association.

Table 22 presents the results of chi-square analysis comparing non-owners' reasons for not having purchased a microcomputer and the independent at least nominal level demographic variables. As the results indicated, hypothesis 7 was accepted.

Table 22. Chi-square Table Comparing Non-owners' Reasons for Not Having Purchased a Microcomputer and Various Demographic Characteristics

Characteristics	x^	d.f.	P
Age	11.54	12	.4826^
Education	4.46	4	.3469
Family Income	18.02	20	,5861^
Having children living at home	9.15	4	.0576
Marital Status	6.22	4	.1834
Self-perception	7,61	8	,4725
Computer Experience	7,35	4	,1186
Professional Association	10.48	16	.8406^

[a]Chi-square statistics were invalid due to inadequate cell size.

The results of the chi-square analysis determined there was no significant relationship between the reasons for non-owners' not having purchased a microcomputer and various demographic characteristics.

Due to inadequate cell size, chi-square statistics were not valid for three of the independent variables: age, family income, and professional association. Consequently, Table 23 presents the Kendall's correlation analysis between non-owners' reasons for not having purchased a microcomputer and these three variables. The results indicate only age ft = .109, p<.01) was correlated with the reason for not having purchased a microcomputer.

Table 23. Kendall's Correlation: Non-owners' Reasons for Not Having Purchased a Microcomputer and Various Demographic Characteristics

Characteristics	Reasons
Age	.109*
Family Income	.019
Professional Association	-.037

*P<.01

CHAPTER V

SUMMARY AND CONCLUSIONS

The chapter is divided into the following four sections: summary, findings, conclusions and recommendations for further study. The summary consists of an overview of the study. The findings are based on results obtained through analysis and interpretation of data pertaining to the study. The conclusions are drawn from the findings and recommendations are given for further investigation in areas related to the study.

Summary of the Study

The study was concerned with home computer use by Home Economists in Business. Purposes of the study were to determine the current usage of microcomputers at home, to discover the reasons limiting software use for household activities, and to examine characteristics of microcomputer owners and non-owners.

It was anticipated that the findings of the study would contribute to researchers in socioeconomic areas or to extension education programs related to home computer use. In addition, the study was undertaken to secure information which would be of value to computer companies in order to help improve design and market software of home computer use.

To accomplish the purposes of the study, an instrument was designed to obtain demographic data and to measure selected attitudes,

preferences, and intentions. A twenty-nine-item questionnaire was developed in order to obtain the necessary data. A twelve hundred person sample was randomly chosen from the Home Economists in Business Directory 1985. Each member of the sample was mailed an explanatory letter, a printed questionnaire and a postage-paid return envelope.

Responses to questionnaire items were transferred to coding sheets and then to the SAS program for analysis by computer. Treatment of the data involved descriptive statistics, T-tests, Chi-square tests, and Kendall's correlations.

Findings of the Study

Findings of the study resulting from the analysis of data were as follows:

1. All of the respondents were female. Over three-fourths were in the age range of 25 to 44. Forty-one percent of the respondents had an annual family income over $50,000. Almost one-fourth held a master's degree. Over two-thirds of the respondents had no children living at home, while 61 percent were married. Twenty percent of the respondents were home computer owners, while 76 percent of the respondents had not yet purchased one.

2. There was a significant difference when microcomputer ownership was analyzed in relation to age and total family income. Mean scores of both age and total family income were higher for microcomputer owners than non-owners.

3. There was a significant relationship between microcomputer ownership and marital status, self-perception and having children living at home.

4. There was a significant relationship between microcomputer purchasing for home finance/management aid and marital status.

5. There was a significant relationship when purchasing microcomputer for entertainment was analyzed in relation to age and education.

6. There was a significant relationship when purchasing a microcomputer for word processing was analyzed in relation to family income and age.

7. There was a significant relationship between the intention to purchase another microcomputer and the present use of the computer's potential.

8. There was a significant relationship between the microcomputer's major use for education and having children living at home.

9. There was a significant relationship between the microcomputer's use for entertainment and having children living at home.

10. There was a significant relationship between the satisfaction level of home computer's use and the present use of the computer's potential.

11. There was a significant relationship between the reason for not having purchased a microcomputer and age.

Conclusions

The following can be concluded based on the finding of the study:

1. Ownership of a microcomputer was affected by age, total family income, marital status, self-perception and having children at home.

2. The reasons for purchasing a microcomputer were influenced by age, education level, and family income. As the age and education level decreased, the respondents were less apt to purchase for entertainment. In addition, as annual family income increased and/or age decreased, the respondents were more apt to purchase for word processing.

3. For microcomputer owners, the intention to purchase another microcomputer was not significantly affected by satisfaction level of microcomputer capability or length of ownership, but by extent of the use of the computer's potential.

4. The major use of microcomputer at home was significantly different depending on whether children lived at home or not. The respondents who had children living at home were more apt to use the microcomputer for education or entertainment,

5. The satisfaction level of microcomputer capability was significantly affected by the extent of use of the computer's potential, but not by the length of ownership,

6. The reason for non-owners' not having purchased a microcomputer was positively affected only by age.

Recommendations for Further Study

The findings and conclusions of the study suggest the need for further investigation in the following areas:

1. Investigating home computer use of other professional groups.

2. Investigating effects of advertising on home computer purchase and use.

3. Investigating the differences between the reasons for purchasing a microcomputer and actual uses.

4. Investigating and comparing specific family types comprising the population of microcomputer owners, such as single parent families, dual career families, and young married families.

5. Analyzing specific financial aspects of microcomputer purchase and use.

6. Determining specific advantages and disadvantages of using microcomputer for household activities.

7. Investigating the factors which affect decisions about type and frequency of computer use.

SELECTED BIBLIOGRAPHY

Bailey, A.W. (1982, March/April). The impact of computer technology on the family. Illinois Teacher of Home Economics, pp. 199-202.

Blankenship, A. B. (1943). Consumer and opinion research. New York: Harper & Brothers.

Book, S., Esguerra, M.S., Jagbandhansingh, P., and Weil, R. (1984, April). Mass merchandiser is to get more computer pie. Merchandising, pp. 41-44.

Campbell, H. (1983). Bits, bytes, and nibbles. Unpublished manuscript. Texas A&M University. Texas Agricultural Extension Service. College Station.

Cavaliere, F. (1984, July). Computer ownership leaps as consumers enter mid-range market. Merchandising, pp. 21-22.

Champion, D. J. (1970). Basic statistics for social research. New York: Harper & Row.

Chin, K. (1984, July). Home banking still in experimental phase. InfoWorld, pp. 33-38.

Church, W. (1985, March 19). Shopping at home. American Way, pp. 27-31.

Clayton, M. S. (1984, February). Microcomputer applications for the home. Unpublished manuscript. Texas A&M University. Texas Agricultural Extension Service. College Station.

Collins, E. M. (1982). Personal computer ownership-A major decision. Journal of Home Economics, 74(2), 14-17.

Dede, C. (1984, Winter). Computers: impact on families. J. C. Penney Forum. New York: J. C. Penney.

Diebold, J. (1969). Man and the computer. New York: Frederick A. Praeger.

Dillman, D. A. (1978). Mail and telephone surveys: The total design method. New York: Wiley,

Freifeld, K. (1984, January). Staying ahead of the IRS. Personal Computing, pp, 110-115,

Gray, S. B. (1984, November). The early days of personal computers. Creative Computing, pp. 6-14.

Gross, I. H., Crandall, E. W., and Knowll, M. M. (1973). Management for modern families (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

How our readers are using computers. (1983, September). Consumer Reports, pp. 470-471.

King, R. S., and Julstrom, B. (1982). Applied statistics using the computer. Sherman Oaks, CA: Alfred Publishing.

Malloy, R, (1983, July). Commentary: Personal computers and videotex. Byte, pp. 114-129.

McWilliams, P. A. (1983). The personal computer book. Los Angeles, CA: Prelude Press.

Mowry, L. (1985, Spring). The computer's impact on the family. The Candle, pp. 23-24.

Nance, M. C. (1983). Effects of computer technology on the family and society. Unpublished manuscript. Texas A&M University. Texas Agricultural Extension Service. College Station.

Nickell, P., and Dorsey, J. M. (1967). Management in family living (4th ed.). New York: John Wiley & Sons.

Nikolaieff, G. A. (Ed.). (1970). Computers and society (Vol. 41). New York: H. W. Wilson.

Olson, P. N. (1985). The impact of the home computer on the family: Interaction and time use. Manuscript submitted for publication.

Parker, F. J. (1980). Home economics: An introduction to a dynamic profession. New Yorkl Macmillan Publishing.

Ralston, A. (Eds.). (1983), Encyclopedia of computer science and engineering. (2nd ed,). New York: Van Nostrand Reinhold.

Robin, C. (1984, January). Software that helps you manage your money. Personal Software, pp. 55-58.

SAS Institute. (1982), SAS user's guide: Basic (1982 ed,), Cary, NC: Author.

SAS Institute, (1982). SAS user's guide: Statistics (1982 ed.), Cary, NC: Author.

Sippl. C. J., and Sippl, R. J. (1980), Computer Dictionary & Handbook. Indianapolis, Indiana: Howard W. Sams,

Squires, D. R. (1984, June). The newest member of the family. Black Enterprise, pp. 235-242.

Toffler, A. (1981). The third wave. New York: Bantam Books,

Vail, H. (1980, December). The home computer terminal: Transforming the household of tomorrow. Futurist, pp. 52-58.

Warden, S. P. (1983, December). A rousing vote for computers. Nation's Business, p. 63.

Wimmer, R. D., and Dominick, J. R. (1983). Mass media Research. Belmont, CA: Wadsworth Publishing.

Woodwel 1, D. R. (1983). How to get the most out of your home computer. New York: Tribeca Communications.

APPENDICES

APPENDIX A

COVER LETTER

Texas Tech University

College of Home Economics
Deparlmeni of family Management, Housing, and Consumer Science

June U, 1985

Dear HEIB Member:

Microcomputers have given rise to many innovative and creative uses for the home. However, very little research is available on the extent to which computers are actually being used or on the reasons which prevent people from using computers for household activities.

As a Home Economist in Business, your familiarity with computers in business added to time pressures of a working homemaker, make your response to the enclosed questionnaire valuable information in relation to computer use at home.

The results of this research will be made available not only to the researchers in socio-economics areas, but also to computer companies in order to help improve design and market software of home computer use.

This study is a part of a graduate student's research and you can be assured that you will not be contacted by any computer salesman or retailer.

Please take a few minutes to complete the questionnaire and return it to us in the envelope provided within two weeks after you receive it.

I would be most happy to answer any quesitons you might have. Please write or call. The telophone number is (806) 74^-7077,

Your cooperation is greatly appreciated.

Sincerely,

Hilary Wang

Hilary WaVg
Graduate Student

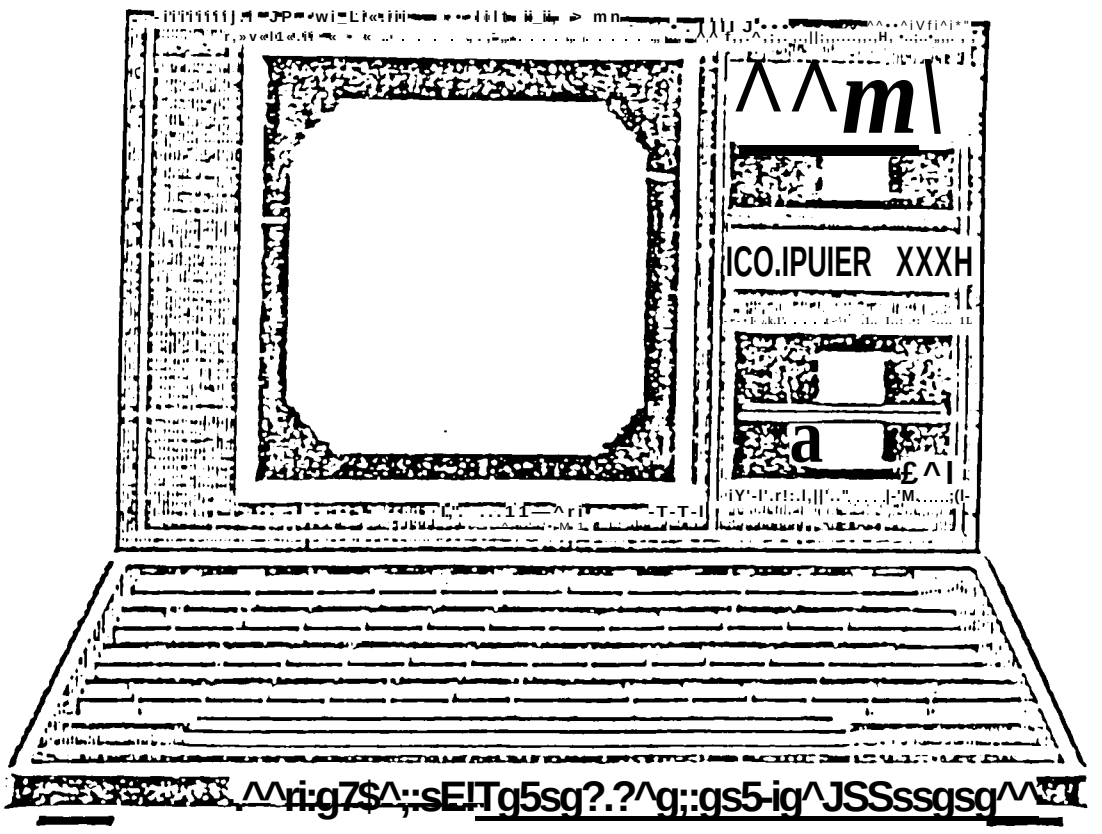
E. Carolyn Ater
Associate Professor

Bo. 4170/lubbocl>, Tens 79409-417Cl (fl06) "42-3153

APPENDIX B

QUESTIONNAIRE

HOME ^C0^
OF
COMPVS"^^



College of Home Economics

Texas Tech University

General Instructions

The purpose of this questionnaire is to gain information about owners and non-owners of home computers.

It is important that you answer the following questions regardless of the ownership of home computers. Please answer the first box (questions 2-14) if you are a microcomputer owner. The second box (questions 15-17) is for the non-owner of a microcomputer. Also, there are questions for both owners and non-owners in the remainder of the questionnaire.

Please DO NOT put your name on the questionnaire. All answers will be kept confidential and used only for statistical purposes.

If you would like a report of the results, please indicate your name and mailing address below.

NAME _____

ADDRESS _____

1. Do you have a microcomputer at home?

_____Yes
_____No (Please go to question #15 on next paqe, skip question #2-14)

2. What type of computer do you have?

_____Apple II/II Plus/III/Macintosh
_____Atari
_____Commodore
_____Dec Rainbow
_____IBM PC/Compatible
_____Osborne
_____Radio Shack
_____Texas Instruments
_____Other (please indicate)_____

3. Date of purchase or received as a gift:

_____

4. What was your reason for purchase of home computer?
Please identify, in order of importance, the factors which were instrumental in the major use of your home computer (1= the most important factor)

_____Education aid
_____Home finance/management aid
_____Entertainment
_____Business
_____Word Processing
_____ Other _____

5. Which is the major use of your home computer?
Please identify in order of importance, the major use of your home computer (1= the most important use)

_____Education aid
_____Business
_____Home finance/management aid
~~~2 Entertainment
~~^ Word Processing
_____ Other _____
~~~

6. What are the advantage(s) of using the computer for your work at home?
Please identify, in order of importance, the advantages of your home computer (1= the most advantageous advantage)

_____ Saving time
_____ Saving money
_____ Better information
_____ Better records
_____ More accurate and attractive items
_____ Other _____

7. To what degree are you using the potential of your computer?

_____ Maximum use
_____ Moderate use
_____ Minimum use

8. To what extent do you use your home computer for home management activities?

_____ Great extent
_____ Moderate
_____ Very little

9. What are the possible reasons which limit your use of computer for home management activities?

_____ The price of the software is too high
_____ The manual is too vague to understand
_____ Computer doesn't perform desired function
^ [^ ^ Do not have time to get familiar with the software
_____ Do not save enough time
_____ Do not save money
_____ Not aware of possible uses
_____ Have no computer experience
_____ Do not have proper peripherals with the hardware
~^ Not interested
_____ Other _____

10. Who is the major user at home?

_____ Yourself
_____ Spouse
_____ Children
_____ Other _____

11. To what degree is your spouse interested in microcomputer use?

_____ No spouse
_____ Very much
_____ Neutral
_____ Not much
_____ No interest

12. What is your level of satisfaction regarding the capabilities of your computer?

_____ Very satisfied
_____ Satisfied
_____ Unsure
_____ Dissatisfied
_____ Very dissatisfied

13. Do you plan to purchase another computer within. . . . .?

_____ Next 12 months
_____ 1 - 3 years
_____ 3 - 5 years
_____ Never expect to purchase another one

14. What will be the use of another microcomputer?

_____ Education aid
_____ Home finance/management aid
_____ Entertainment
_____ Business
_____ Word Processing
_____ Other _____

15. What is the possible reason you have not purchased a home computer yet?

_____ The price is too high
_____ Have no confidence in microcomputers
_____ Have no interest
_____ Have no uses for it
_____ Other _____

16. Do you plan to purchase one computer within. . . . .?

_____ Next 12 months
_____ 1 - 3 years
_____ 3 - 5 years
_____ Never expect to purchase one

17. What will be the use of that computer?
Please identify, in order of importance, the use of the computer (1= the most important use)

_____ Education aid
_____ Home finance/management aid
_____ Entertainment
_____ Business
_____ Word Processing
_____ Other _____

FOR OWNERS AND NON OWNERS

18. What help from a computer are you currently receiving (actual) or would like to receive (intended) in management related activities at home?

Applications	OWNERS Actual	OWNERS Intended	NON-OWNERS Intended
Home shopping	_____	_____	_____
Menu planning	_____	_____	_____
Recipe storage	_____	_____	_____
Phone/Mailing lists	_____	_____	_____
Budgeting	_____	_____	_____
Checkbook balancing	_____	_____	_____
Home banking	_____	_____	_____
Home security	_____	_____	_____
Energy control	_____	_____	_____
Tax planning and preparation	_____	_____	_____
Personal possessions inventory	_____	_____	_____
Time management	_____	_____	_____
Diet analysis	_____	_____	_____
Electronic libraries	_____	_____	_____
Decision making	_____	_____	_____
News and information	_____	_____	_____
Electronic mail	_____	_____	_____
Other _____	_____	_____	_____

19. Under what conditions would you consider using a computer for home management responsibilities?

_____ Save time
_____ Save money
_____ Provide useful information
_____ Get better records
_____ Price of computer and software is cheaper
_____ Have time to get familiar with computer and software
_____ Other _____

INFORMATION, PLEASE!

20. Are you.....?

_____ Male
_____ Female

21. Your age?

_____

22. What is the highest level of education you have completed?

_____ Attended college
_____ Graduated college
_____ Post graduate study
_____ Masters degree
_____ Doctoral degree
_____ Other _____

23. What is your total annual family income?

_____ Not currently employed
_____ Less than $10,000
_____ $10,000 to $19,999
_____ $20,000 to $24,999
_____ $25,000 to $29,999
_____ $30,000 to $34,999
_____ $35,000 to $39,999
_____ $40,000 to $44,999
_____ $45,000 to $49,999
_____ $50,000 or over

24. Number of children living at home in each age group. (If none, write "0")

_____ no children
_____ under 5 years of age
_____ 5 to 13
_____ 14 to 18
_____ 19 to 24
_____ 25 and over

25. What is your marital status?

_____ Single
_____ Married
_____ Widowed
_____ Separated
_____ Divorced

26. Which do you consider yourself to be?

_____ Conservative
_____ Conservative to moderate
_____ Moderate
_____ Moderate to liberal
_____ Liberal

27. What is the average time you spend with computer?

At home:_____hours
At work:_____hours

28. Does your current employment include the use of a computer?

_____Yes
_____ No

If yes, what type of computer is it?

_____Apple II/II Plus/III/Macintosh
_____Atari
_____Commodore
_____Dec Rainbow
_____IBM PC/Compatible
_____Osborne
_____Radio Shack
_____Texas Instruments
_____Other (please indicate) _____

29. Which professional group do you belong to?

_____Free lance consultants
_____Agencies, associations, manufacturers
_____Publications, radio and TV
_____Utilities
_____ Other _____

APPENDIX C

CODING OF VARIABLES FOR CHI-SQUARE ANALYSIS

Item Number on Questionnaire	Variable	Coding
3	Length of ownership	(1) less than 1 year (2) 1-3 years (3) more than 3 years
7	Use of computer potentiality	(1) Maximum (2) Moderate (3) Minimum
8	Use of computer for home manage-- ment activities	(1) Great extent (2) Moderate (3) Very little
10	Major user at home	(1) Yourself (2) Spouse (3) Children
21	Age	(1) Under 30 (2) 30-45 years (3) 46-60 years (4) 60+
22	Education	(1) Graduate college (2) Post graduate study
23	Family income	(1) Not currently employed (2) $19,999 or less (3) $20,000-$29,999 (4) $30,000-$39,999 (5) $40,000-$49,999 (6) $50,000 or over
24	Children living at home	(1) Yes (2) No
25	Marital status	(1) Not married (2) Married
26	Self-perception	(1) Conservative (2) Moderate (3) Liberal
27	Computer Experi- ence	(1) Zero hour at work (2) Non-zero hour at work

APPENDIX D

COMPUTATION OF WEIGHTED AVERAGE

COMPUTATION OF WEIGHTED AVERAGE

Example:

Independent Variable	Rank	Frequency
Attended college	1	6
Graduated college	2	225
Postgraduate study	3	114
Masters degree	4	104
Doctoral degree	5	4
		453

$$\text{Weighted average} = \frac{\text{rank} \times f}{f}$$

$$= \frac{1x6 + 2x225 + 3x114 + 4x104 + 5x4}{6 + 225 + 114 + 104 + 4}$$

$$= 2.72$$

Weighted average will be close but not the same as mean computed on interval data. Ranking indicates a relationship of increasing levels of education.