AN ABSTRACT OF THE THESIS OF

Judith Scheuerman Bricher for the degree of Master of Science in Family Resource Management presented on July 12, 1983

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Abstract Approved: Dr. Geraldine Olson

A home computer revolution is predicted to change America in the next 20 years. If this is to occur, a consumer must perceive the home computer as a technological resource. According to consumer behavior studies, acceptance of a new product is based on internal determinants, which are affected by environmental variables. No research had been conducted on the degree to which environmental variables affect willingness to accept new technology and home computers.

The purpose of this study was to design and test a pilot instrument. The instrument helped determine which environmental variables were related to a person's attitudes toward technology and home computers. Thirty-seven residents of the Eugene/Springfield area tested the pilot instrument. A positive linear correlation between pro technology attitudes and willingness to purchase a home computer was found. In addition, attitudes were related to family, culture and economic environmental influences. However, business and social

environmental influences were not related to attitudes toward either technology or home computers. The demographic profile provided some insight into the general characteristics of those respondents with positive or negative attitudes toward computers. However, the small size of the sample and limited number of responses in each category did not allow any conclusions to be drawn.

From preliminary analysis of data, respondents with incomes under $30,000 and under 39 years of age may be the consumers most likely to purchase a home computer. Sex of the respondent did not seem to be related to attitudes about computers.

Questions on computer advertising and home computer applications desired by the respondents gave additional insight into the respondents attitudes toward computers. The respondents who had seen computer advertisements generally did not think they were too technical. The computer application most desired from choices provided was a medical check up system and the least desired was programming robots for home use.

The researcher suggests the instrument, demographic, advertising, and desired application questions need to be readministered to a larger sample, along with additional questions to balance environmental categories. Also, a larger sample using alternative statistical tools would help provide additional information on consumer attitudes and potential behavior related to home computers.

External Variables that Affect Willingness to Accept Technology as a Resource: A Pilot Project

by

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INTRODUCTION

Problem Statement

Recent History of Home Computers in America

Home computers are prevelent in most American cities. Yet, the first computer store began only eight years ago, in June 1975 (Nelson 1977). These computer stores do not cater to businesses interested in large, main frame computers, but rather they specialize in microprocessors, small computers for the layperson. Home computer sales have steadily increased, since the first computer developers, working in garages and basements, started selling their wares (Staples, 1982). Hobbyists bought many of the first computers as kits in 1977 (Nelson, 1977). Home computers sold in the eighties are often sold as a complete package including a printer, monitor screen and disk drives (Newsweek, February 22, 1982).

External Influences on Consumer Behavior

Generally, consumers' perception of a new product occurs through mass marketing, education and other personal influences. If com-

puters are to be a useful resource for the average consumer, then educators, manufacturers, and marketers must find ways to help people realize the potential of computers in an individual's life. To do this, researchers need to understand what affects an individual's perception of computers.

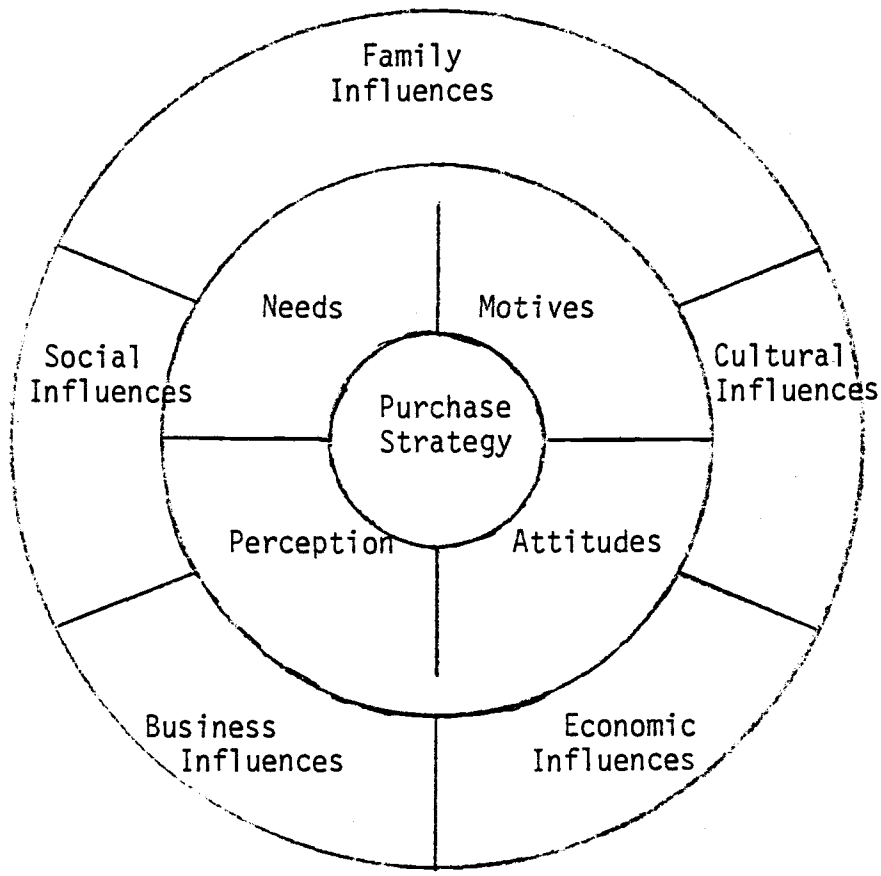
A model is a conceptual system in which a set of elements are coordinated to accomplish a set of goals or emphasize the relationships between parts of the model (Churchman, 1968; Magrabi, 1964, 1965). The model used in this study was an application of Walters and Paul (1970, pp. 16-18) environmental model (Table 1) and disequilibrium model (Table 2). The research model (Table 3) diagrams the relationships between five external environmental influences and four basic determinants. These determinants, acting as a whole, may be hypothesized to influence whether a consumer has a positive or a negative attitude toward technology or home computers. In addition, the model depicts the desired computer utility of pro-technology, pro-home computer consumers.

Consumer Attitudes Toward Technology and Home Computers

Today, consumers hear the innocuous titles, Pet and Apple, to describe a product that intimidates many Americans (Wrege, 1982; Ahl, 1977). Weinberg, Anderson and Zuboff (Wrege, 1982) are researchers who are interested in this phenomena. They have studied individuals' reactions and attitudes toward computers. These researchers found

TABLE 1

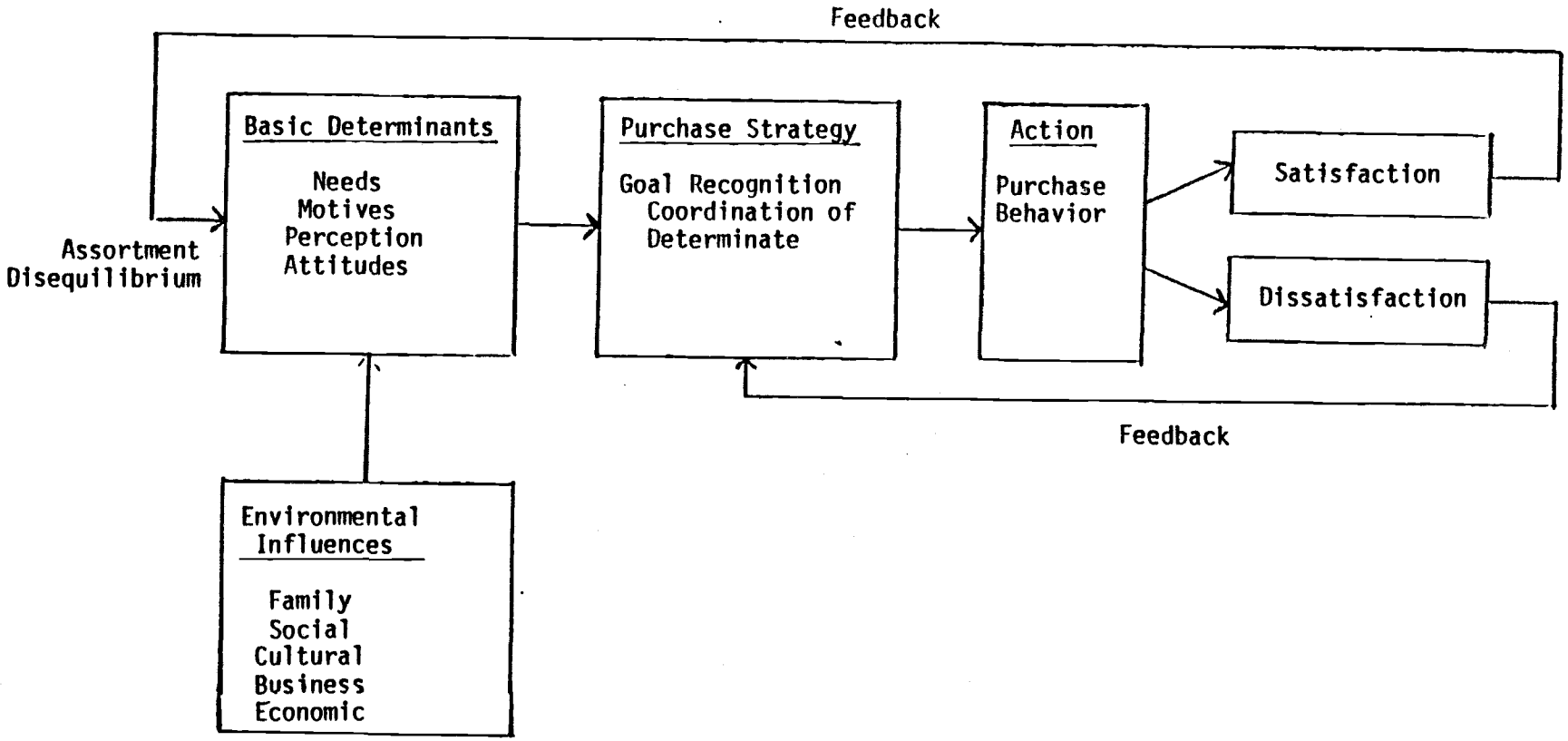
Environmental Influence Model



Walters and Paul, 1970, p. 16.

Table 2

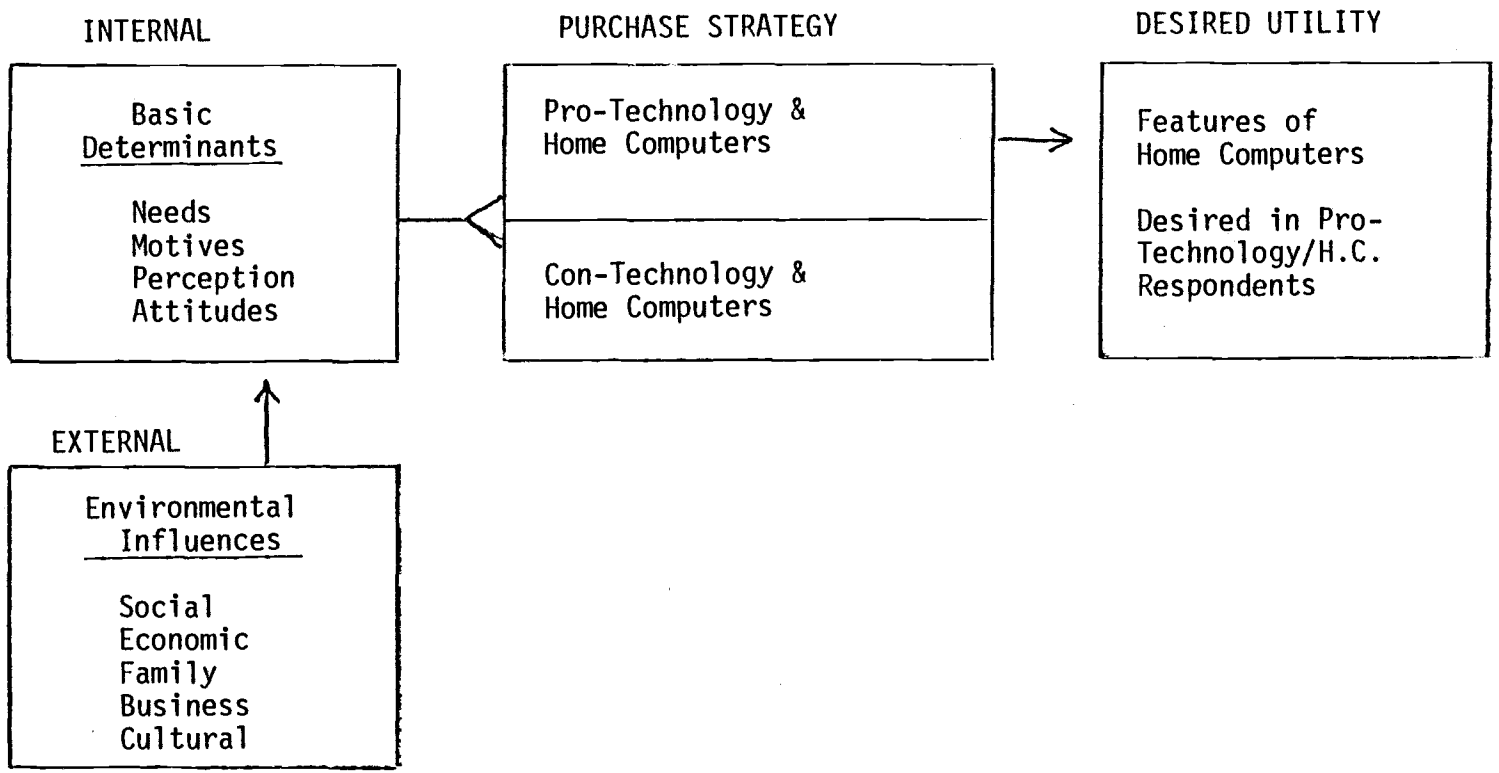
Disequilibrium Model



Walters and Paul, 1970, p. 16.

Table 3

Research Model



that people either feel power over the computer or fear that computers could control their lives.

Home computers are highly dependent on technology and the terms "computer and high tech" are frequently linked in the popular press. It is not known whether or not consumers' attitudes toward technology influence their attitudes toward home computers. Furthermore, the relationships between these attitudes and whether or not a consumer perceives a home computer as a useable resource are unknown. At this time, little is known about the variables which affect the consumers who accept technology and those who do not. In addition, it is not known if the variables that affect attitudes toward technology would also affect attitudes toward home computers in the same direction. If these variables and their relation to attitudes were known, employers, educators and marketers who use or work in the area of computers would be able to aid people in gaining awareness of the possible uses of home computers. This awareness may reduce cyberphobia, improve the development of new computer software and increase computer sales.

Home computer owners may consider computers as a means of achieving a goal. This goal may be developing a new hobby, learning about computers or playing video games. However, if the computer revolution predicted by Nelson (1977) is to occur, more people must perceive that computers can provide significant opportunities for work relief, educational help and entertainment. Any form of tech-

nology, including home computers, must be perceived as useful by an individual if it is to be accepted. Technological products not deemed useful by the individual will be rejected.

The lack of information about what external variables effect a person's decision to accept or reject technology was a problem for the researcher. No consumer profile based on these variables was available. The differences between pro and con technology persons was surmised but not documented.

Purpose of the Study

The purpose of this study was to develop and test the reliability and validity of a research instrument to be used in analyzing consumer attitudes related to technology and, specifically, home computers. The instrument can be used as a base for further research on consumer attitudes toward home computers.

A random sample was used to determine whether or not people who have positive or negative attitudes toward technology would also have this same predilliction toward home computers.

The variables that may affect these attitudes were also researched. A consumer profile was developed from the research findings. The profile establishes a baseline for measuring attitudinal differences toward the use of technology and computers in future years. Also, the data will increase consumer specialists' awareness of individual resource use and the consumer decision process as it

relates to technology and the computer. The data may assist consumer specialists who prepare curricula to assess and develop awareness of home computers as a resource. It is hoped that this study may begin to unfold the reasons people will reject or accept home computers. This information can provide home economists and marketers some direction for the development of educational media that would be aimed at increasing the public's acceptance of a new resource, the home computer. The pilot instrument questions were designed to test the model.

Major Objectives of the Study

Environmental variables affect consumer attitudes and decision making. This study will provide additional knowledge about these environmental variables. The objectives of the study are to:

1. pilot test a research model and instrument for reliability and validity;
2. determine if there is a correlation between pro-technology attitudes and willingness to purchase a home computer;
3. determine the environmental variables that may be related to a person's willingness to accept or reject technology and home computers as a resource;
4. provide information on the specific functions that a consumer would want the home computer to perform; and

5. develop a consumer profile based on acceptance or rejection of home computers by demographic groupings.

Research Hypotheses

Individuals frequently express attitudes through their actions. Decisions are made about resource use based on environmental variables that effect these attitudes. These environmental variables have been identified as family, social, cultural, business and economic influences (Walters and Paul, 1970). The research model and the pilot research project were designed to ascertain the relationship of these variables to technology and home computers.

The research model was tested using the Pearson r correlation coefficient. The three null hypotheses used in the pilot are:

H_1: There is no significant relationship between attitude toward technology and the following environmental variables:

1. Family
2. Social
3. Cultural
4. Business
5. Economic

H_2: There is no significant relationship between attitude toward home computers and the following environmental variables:

1. Family
2. Social

3. Cultural
4. Business
5. Economic

H_3: There is no linear relationship between attitude toward technology and attitude toward home computers.

Limitations of the Study

1. This survey was limited to consumers in Eugene/Springfield, Oregon, who may not be representative of all consumers in Oregon and the United States.
2. This was a pilot project, and priority was given to instrument development rather than to a broad, representative sampling.

Assumptions of the Study

1. It is assumed that the sample is representative of consumers in the city of Eugene/Springfield, Oregon.
2. It is assumed that the respondents gave honest answers to the questionnaire items.

Definitions of Terms

Attitudes - A broad group of innate human feelings or points of view that pattern behavior (Walters and Paul, 1970, p 14).

Basic Determinants - Internal variables which are important to the individual's decision process (Walters and Paul, 1970, p 14).

Business Influences - Direct contact with consumers, either at the store, through personal selling, or through advertising (Walters and Paul, 1970, p 16).

Cognitive Dissonance - A condition in which a state of conflict may occur as a result of multiple options (Walters and Paul, 1970, pp. 243-250).

Computer Revolution - A complete change in American home technology and lifestyle brought about by the consumer acceptance and use of home computers.

Computer System - The total software and hardware apparatus necessary to perform the functions that the consumer desires.

Congenital Primary Drives - Drives that are innate at birth (Walters and Paul, 1970, p. 60).

Congenital Secondary Drives - The innate beliefs and sactions developed over time by the social system (Walters and Paul, 1970, p 60).

Cyberphiles - Compulsive computer users and programmers (Wrege, 1982, p 50).

Cyberphilia - The drive to compulsive computer use (Wrege, 1982, p 50).

Cyberphobes - People who experience tension and physical symptoms when around computers (Wrege, 1982, p 47).

Cyberphobia - Fear of computers (Wrege, 1982, p 47).

Disequilibrium - The result of some unmet needs of an individual.

Economic Influences - The constraints placed upon the consumer by income and economic conditions (Walters and Paul, 1970, p 16).

Family Influences - Influences from relatives or those sharing the same residence (Walters and Paul, 1970, p 16).

Hardware - The electronic, mechanical parts of a computer.

Homeostatis - A tendency toward maintaining a physical, internal stability (Walters and Paul, 1970, p 243).

Knowledge - The fact or condition of being aware of something, a human resource (Deacon and Firebaugh, 1975).

Model - A conceptual framework that graphically depicts behavior.

Motive - An impulse that causes one to do something, to relieve tension (Walters and Paul, 1970, p 14).

Need - The lack of something useful, required or desired (Walters and Paul, 1970, p 14).

Perception - The particular awareness, observation and recognition of objectives or ideas through the medium of the senses (Walters and Paul, 1970, p 14).

Resource - A means of achieving goals or meeting demands placed upon the family by certain events (Deacon and Firebaugh, 1975, p 51).

Resourcefulness - The attribute of being able to recognize viewing a greater variety of resources as a means of achieving goals.

Technology - Knowledge organized for useful purposes (Mesthene, 1979).

Chapter II
REVIEW OF RELATED LITERATURE

Several interrelated consumer concerns will be reviewed in this chapter. The review is based on the research model. The following are discussed in more detail.

1. Resource Research
2. Research Model
3. Basic Determinants and Consumer Research
4. Environmental Influences and Consumer Research
5. Technology as a Resource
6. Home Computers as a Technological Resource
7. Summary

Resource Research

For many years, researchers have been interested in consumer behavior (Davis, 1976; Wasson, et al., 1968; Walters, 1978). One concern has been the identification and utilization of resources by families or individuals (Parker, 1976; Burk, 1968). The identification of socio-economic and environmental influences that affect a person's behavior has also been the concern of social researchers.

The fields of resource management and consumer marketing each have distinctive bodies of knowledge based on theoretical development and research in each area (Engle, Kollat and Blackwell, 1970; Deacon and Firebaugh, 1975; Paolucci, Hall and Axinn, 1977). However, there

is a common body of knowledge that threads throughout both fields. The commonality is that a resource must be perceived before it can be utilized. When specialists in either area study consumer behavior and resource management as a joint effort, there is the possibility of an increased understanding of consumer market behavior in light of resource management decisions. This understanding is especially important today since many consumers are experiencing a decrease in financial and time resources available as a result of rapid changes in the economic environment.

Research Model

Walters and Paul (1970) developed models (Tables 1 and 2) which designate five main environmental areas of influence which effect consumer decisions. The consumers' needs, motives, perception and attitudes are gradually affected by these environmental influences (Walters and Paul, 1970). The unifying factor between the basic determinants and environmental influences is communication (Walters and Paul, 1970; Engle, Kollat and Blackwell, 1970, 1973; Markin, 1974). Table 2 illustrates the consumer's disequilibrium as a result of some unmet need (Walters and Paul, 1970). Studies of the variables that affect consumer decision making related to disequilibrium have been completed in the past. Generally, it has been found that variables related to individual, environmental influences were more clearly defined and distinguishable then were variables defined as

basic determinants (internal) for decision making. The basic determinant variables were so intertwined that it was difficult to separate them for accurate statistical analysis (Engle, Kollat and Blackwell, 1970; Walters and Paul, 1970; Walters, 1978; Foster, 1962; Young, 1961).

Basic Determinants and Consumer Research Needs

Needs

Researchers (Walters and Paul, 1970; Wasson, Sturdivant and McConaughy, 1968; McNeal, 1973) generally define a need as a physical or emotional dissatisfaction caused by some inner tension or emotional disequilibrium that cannot be put off too long. The need warns an individual of a mental or physical condition that requires relief. The term need is closely related to motive.

Men and higher animals have a tendency to maintain a relatively stable psychological and physiological environment. Two terms are often used to describe this state. Homeostasis refers to physical, internal stability. Some scientists, however, classify both physical and psychological balance with this term. Others, including Maslow, use the term cognitive dissonance which refers to the equilibrium conditions of the mind or a condition in which a state of conflict may occur as a result of multiple options (Walters and Paul, 1970).

The principals of homeostatsis and cognitive dissonance refer to both individual and societal activities.

Generally, individuals prefer the status quo. Change occurs only when a person's physical or psychological dissatisfaction becomes intense enough to register as tension. The tension becomes so uncomfortable that change is preferred. Environmental factors influence this tension (Walters and Paul, 1970).

Each person has many types of needs. Psychologists divide these into two basic types: primary and secondary congenital drives. These may further be divided into generic needs, needs of necessity or luxury, primary or secondary needs or physical and emotional needs. No matter what labeling is given, needs caused by intense dissatisfaction will prompt a person to act. Consequently, a consumer researcher must remember that needs must be analyzed in relation to perception, personality, attitudes and motives (Walters and Paul, 1970; Walters, 1978; Engle, Kollat and Blackwell, 1970).

Motives

Engle, Kollat and Blackwell (1968) believe that the study of human motivation has produced more learned discussion and research in the field of psychology and has resulted in the least amount of firm conclusion than any other subject. Further insight into the relationship of needs and motives in the consumer decision process can

provide some understanding of why this plethora of research has produced so few conclusions.

A motive is a reason for action according to Schreier (1975). Kassarjian and Robertson (1968) believe this action is the result of recognition of some source of tension which results from an internal mental state. Three criteria are necessary for motivation to occur:

1. A need creates a condition requiring relief.
2. Tension related to need is recognized.
3. Consumer energies are directed toward relief of tension (Walters and Paul, 1970, pp 260-272).

Britt (1970) found that the greater effort expended by the consumer searching for a product, the higher is the satisfaction rate as compared with a low motivated subject. Motivational strength as well as need criteria may affect consumer action. If only one or two of the three criteria are present, motivation will not occur. Furthermore, Schreier's (1975) definition of a motive does not apply to a consumer without perceived needs or one in a state of equilibrium.

Walters and Paul (1970) describe motives as a "link between consumer needs and actions." There is not an automatic reaction between need and action since a need may be repressed. This internal drive to act is affected by environmental influences. Motives are also effected by learned behavior. Generally, consumer behavior that is not innate is learned behavior. This learned behavior is also affected by environmental influences.

Perception

According to Wasson (1975), the average middle class person is exposed to 600 to 800 different types of advertsing each day. Walters and Paul (1970) believe the number to be higher. Both researchers agree that only a small percentage of these advertisements are seen and brought to a conscious level by the consumer.

Perception begins when some stimulus reaches one or more of the five senses or is sensed internally (Walters and Paul, 1970; Engle, Kollat and Blackwell, 1970; Young, 1961). It is the process of becoming aware or to understand and comprehend. Wasson (1975) believes that people have sensors that filter out from the consciousness the myriad of details bombarding them. He terms this sensor, selective perception.

Walters and Paul state that "consumer attitudes, needs, and motives are conditioned by perception" (1970, p 275). This is a circular effect since perception of needs and motives changes attitudes and attitudes condition the way consumers perceive. They also distinguish the difference between sensation and perception. Sensation is used to designate the awareness associated with the stimulation of the sense organs. The term perception refers to the interpretation of the sensation. "Perception uses both the sensations aroused by the stimuli and the learning gained from past experience" (Meyers and Reyolds, 1967, p 3).

Consumers also perceive selectively as a result of their own needs, motives, values and attitudes (Engle, Kollat and Blackwell 1968). Foster concurs with this premise as he states, "Each person's needs, cultural background, past experiences and motives will cause his perception of the object to differ from that of all other individuals, even though the sensation is the same for all" (Foster, 1962, pp 120-121).

Walters and Paul (1970) suggest that for perception to occur comprehension must take place. However, at any given time a person may not be aware of an object; a person may be insensitive to further stimulation; or a person may respond to stimulation. Perception is greatly affected by the technical factors of the thing perceived, the mental readiness of the person to perceive, past experience, mood and cultural factors.

Attitudes

Engle, Kollat and Blackwell describe attitudes as a "system of evaluative orientations . . . that comprise an important component of one's map of the world" (1968, p 165). Beldo notes "consumer attitudes are potentially one of the most exciting, most valuable and most overlooked subjects for market research" (McNeal, 1965, p 280). Markin Jr. believes attitudes play an important role in consumer behavior because "attitudes are a special kind of cognition" (1974, p 261). Furthermore, behavior is a function of attitudes.

Research concerned with attitudes looks toward the future and the effect, not the past and the cause according to Beldo (McNeal, 1973). The affect of attitudes on the future not past is the ultimate concern of researchers.

Consumer attitudes influence purchase decisions. Attitudes initiate an individual's reaction to consumer products (Walters and Paul, 1970). Selection of products is often simplified by a blanket reaction to a type of product.

Researchers have also stated that consumer attitudes have specific direction, either positive or negative. These attitudes are on a continuum. The intensity of the attitude will predispose an individual to infinite points on this continuum (Walters and Paul, 1970; Engle, Kollat and Blackwell, 1968). Attitudes are interrelated with needs, perception and motives thus the later three concepts will not be directly assessed in this study. All of these factors, however, will be reviewed.

Environmental Variables and Consumer Research

Family Influences

A family is a major environmental influence on consumer decision making. Five main characteristics describe the function of families. These are: economic cooperation, psychological support, sociability, a common residence and, sometimes, reproduction. The major-

ity of goods purchased by consumers are either bought for individuals in a family or for the family as a whole. Family purchase patterns are influenced by six factors: family goals, organization, compatibility, family roles, family life cycle, and family life styles (Walters and Paul, 1970, p 384). Consumer forecasters utilize research to suggest directions for future consumer spending.

The effect of the family on consumer decision making has been studied by many researchers (Wolgast, 1958; Wilkening, 1958; Komarovsky, 1961; Engle, Kollat and Blackwell, 1968; Walters and Paul, 1970; Walters, 1978). Several family decision making concepts were discovered through these studies. Middle income families tend to have a joint decision making style; while low and high income families generally have low joint involvement. Also, the families with longer marriages tend to have a lower joint involvement, and young couples have more involvement. In addition, wives in lower class families have a greater economic influence on decision making. Finally, extended families tend to make group consumer decisions. Nuclear families tend to have decisions made by one or both adults, depending on their income levels.

Family expenditures and family influences on decision making must be considered an influence on consumer behavior based on past research. Evidence of the influence of the family mandates that the family environmental factor be part of a research model.

Social Influences

Zander and Medow (1963) found that reference groups influence immediate behavior, and influence plans for the future aspirations of individuals. "Groups provide the goals for individuals' purchase behavior by acquainting group members with the life styles of others" (Walters and Paul, 1970, p 394).

Products also influence groups. Products have qualities that make people want to be identified with that product. The product is said to have a positive valence (Engle, Kollat and Blackwell, 1968). Conversely, a product may be deemed to have a negative valence because no consumer cares to be identified with the product. Researchers find reference group analysis useful for determining valences that exist for individual products within the social system where a product is marketed. Engle, Kollat and Blackwell (1968) believe there has been a limited application of reference group analysis. They present three reasons why accurate reference group analysis is valuable. First, it may be useful in the determination of product valences within the social system. Second, in the analysis of interpersonal product communication systems, reference analysis helps define consumer behavior. Third, it may be used in the explanation of structural components of consumption systems.

Reference groups and product valence influences must be considered an influence on consumer behavior. The environmental vari-

able, social influence, was a necessary component of the research model based on past research.

Cultural Influences

Wasson describes culture as a "set of attitudes-attitudes about value and values about what is worthwhile and what is worth doing, as well as what is forbidden and not of value" (1975, p 193). Walters and Paul consider culture to be "the total way of life, value orientation and social adaptability of an individual that is handed down from generation to generation" (1970, p 406). Kassajarian, (1968); Engle, Kollat and Blackwell (1970) and Wasson (1975) agree that culture has a direct influence on market behavior. When researching the effect of culture on the decision process, Wasson (1975) found that geographical boundaries generally outline cultural differences. For instance, "Belgium, Netherlands and Germany are next door neighbors, and Belgium and the Netherlands share many interests in common. Yet, Germany and Belgium consume half again as much butter and fats and about four percent more meat per capita than do The Netherlands. "These differences reflect community attitudes, tastes and different standards of approved conduct which can aid or inhibit any sales effort in the area of taste involved" (Wasson, 1975, p 199).

Computer futurists (Nelson, 1977; Staples, 1982) forecast changes in American culture as related to home computers. These futurists believe consumers are not only cognitively accepting but

are buying home computers at an accelerated rate. They predict this purchase rate growth to continue. If their predictions are accurate, consumers will be witnessing a phenomenon of culture change related to technological change.

Business Influences

Companies gear to shifts in consumer spending. For example, Sears, Roebuck and Company emphasizes stable products to be used at home such as televisions and television games, home remodeling and maintenance supplies. They play down sale items that in the past were more popular but are now considered to be luxury items. Wendy's hamburgers is crediting its marketing appeal to the stay-at-home consumer more than to the traveler. These companies are following a trend of selective marketing to survive the economic crunch (Business Week, September 24, 1979).

Surprisingly, despite recessions small computer companies have had an accelerated growth rate during the past 15 years. From 1977 to 1979, the companies have had annual growth rate of 35 percent (Business Week, September 24, 1979). President James Finke of the Commodore Computer Company addressed the issue of consumer demand and the future of computer marketing. At the Boston Computer Society forum on the future of computers in October, 1981, Mr. Finke stated, "This year the personal computer market in the USA is about the same size as the total market for potato chips. If we continue at our

annual 50 percent growth rate, next year in 1982, the personal computer market should be creeping up on panty hose at $3 billion" (Staples, February 1982, p. 78).

Business works hard to produce products that gather attention with a positive product image and which meet various consumer needs at a reasonable price and with a profit margin. Much advertising is not designed to promote immediate sales but to predispose people to buy a specific product at a later time (Britt 1966). Companies with negative product images work to change consumer perception and ultimately buying habits (Winters, June 1977).

Researchers (Belk, 1975; Bennett, 1975; Fleming, 1972) have discovered several concepts related to business and consumer attitudes. Knowledge of these concepts aid the marketer in reaching the consumer and selling a product. These consumer concepts include:

1. Price concept is an indicator of quality.
2. Snob appeal of a product increases sales appeal.
3. Consumers trust higher priced products.
4. High prices, indicating quality, lower consumer stress concerning purchase decision.
5. Price of a product can appeal to prestige or economy (Wheatley and Chiu, 1977; Shapiro, 1973; Britt, 1970).

Each business ascertains the most effective method of reaching their potential customers. Since business affects consumer decision

making, it is essential for this factor to be represented in the research model.

Economic Influences

Changes in income and economic patterns are important when analyzing purchase patterns. The median household income was "$3,031 in 1947, $3,319 in 1950, $5,620 in 1960, and $6,882 in 1965 (Walters and Paul, 1970, p 65). The median income of households was $8,734 in 1970, $10,512 in 1973, $12,686 in 1976, $15,064 in 1978, and $19,074 in 1979 (Statistical Abstract of U. S., 1982-1983). In 1974, America was introduced to the first of a series of inflation spirals. The period from 1974 to 1983 has been an economic transition for many Americans. Unemployment, increase in the divorce rate, recessions and inflation have contributed to changing economic patterns and consumer purchase attitudes. The 1979 median income for a married couple was $21,540, while a female head of household was $10,300. A single person male household income was $10,811, and a woman's was $6,017 (Statistical Abstract of U.S., 1981). The average 1979 four-person household had an annual budget of $25,407, with $5,843 spent for food, and $943 for durable goods (Bacheller, 1983, pp 248-249). The amount spent on durable goods from 1960 to 1979 increased each year, however the amount of durable goods purchased per family went down in 1980. This occurred even though the amount of disposable income increased each year from 1960-1980 (Table 4)..

TABLE 4

1979 Disposable Personal Income/Durable Goods Purchased On a Per Capita Basis

Year	Disposable Personal Income	Durable Goods Purchased	Percentage of Disposable Personal Income
1960	$1947	$238	12.2%
1965	2448	324	13.2%
1970	3390	415	12.2%
1973	4315	582	13.5%
1974	4667	568	12.2%
1975	5075	612	12.1%
1976	5477	719	13.1%
1977	5954	812	13.6%
1978	6571	895	13.6%
1979	7293	943	12.9%
1980	8002	931	11.6%

(current dollars)

Statistical Abstract of the U.S., 1981, p 321

The phenomena of a downturn in the purchase of durable goods was described in a proliferation of business journals and magazines throughout the period of 1979-1983. The general concensus of these writings were the American consumer did not become complacent about the steady increase in inflation and a steady decrease in credit spending and cutting down on essentials was occurring (Wolman and Arneson 1979; Business Week, May 14, 1979, October 4, 1982, and September 20, 1982; Advertising Age, August 9, 1982). Several important concepts dealing with consumer attitudes and behavior were revealed when researchers in dozens of surveys interviewed consumers. Researchers found that people are not buying durable goods because they fear a loss of jobs. This worry was evident in all economic levels. The consumers did not believe inflation was lower because it was not reflected in cost of items. In addition, the Reagan tax cuts did not seem to effect paychecks. All consumers except the young and single were making an extraordinary effort to reduce debt and save money for children's education, homes or retirement. This attitude was reflected in increases in the percent saved from 6.3 percent in 1981 to 7.1 percent in 1982. Also, consumers are doing more comparison shopping and burning credit cards. The consumer cuts are effecting all levels of American society. Many consumers identified the high cost of housing as a primary cause of lowering other household expenditures (Business Week, October 4, 1982; Advertising Age, August 9, 1982).

The affect of the economy on American spending patterns and attitudes toward use of money are prevalent today. This influence necessitates the inclusion of the external, environmental variable economics in the research model.

Technology as a Resource

Knowledge may be viewed as a human resource (Deacon and Firebaugh, 1975). Science is the activity of discovering new knowledge and includes development of prototype inventions. Technology, on the other hand, is the activity which leads to the widespread availability of products based primarily on scientific knowledge (LaPorte and Metlay, 1975). This affirms Mesthene's (1979) belief that knowledge when organized for useful purposes may be defined as technology.

Technological products are a source of external demands upon the consumer (Deacon and Firebaugh, 1975). These demands indirectly affect the consumer decision process. This can occur because of technology's impact on the environmental potential or the impact of the product directly on the consumer's lifestyle.

Benefits from technology have long been predicted. As early as 1830, deTocqueville spoke of the inevitable benefits to come from scientific advancement (LaPorte and Matlay, 1975). Currently technology is rapidly changing. Researchers, LaPorte and Matlay (1975) investigated consumer attitudes toward technology to ascertain if

people were having a problem with these changes. They found that "the public at large does not find the outcomes of scientific activity a problem." Concerns arise from the applications of technology, which in turn, create expectations for regulation of technology. They investigated the pattern of responses to questions probing the degree of alienated attitudes that is held by the public. Their study shows a division in attitudes on the desirability of returning to a more natural state and whether life is too complicated as a result of technology. Only five percent of the sample expressed no disenchantment with technology. However, the majority had no strong alienation to technology.

Benefits from technology are no longer just future predictions. Technological products are being produced to provide the consumer with a gamut of new resources to meet their needs. The attitudes of consumers toward technology will effect their perception and acceptance or rejection of these new products.

The Home Computer as a Technological Resource

Revolution

A far reaching computer revolution is expected during the next few decades (Foote, 1961; Simon, 1977; Lewis, 1978; Moursand, 1978; Albrecth, 1978; Albrecth, 1979; Staples, 1982; Briskin, 1982). "This technological change is comparable to the development of the printing

press, but instead of taking some 400 years to make its effect known, the computer is having a vast effect in something like 20 to 30 years" (Ahl, 1977, p 29). Niles states:

> A dominant fact about contemporary developed societies is that they are rapidly becoming dependent on the information economy. The manipulation of information occupies the working hours of at least half the labor force in the United States and other developed countries. A significant factor is this trend toward the electronic computer (1978, p 29).

Computer futurists envision many home applications for computers and mass marketing of this technological product. Lewis (1978), an Oregon State University computer specialist, emphasizes the possibilities of talking houses and appliances. Nelson (1977), predicted ten million computers in homes by 1979 when he wrote the Home Computer Revoution. In 1982, three million home computers were sold (Hedberg 1982), and a number of these are probably not in homes. The public relations department of Montgomery Wards in 1978 predicted that home computers would be mass marketed in their stores by 1980. Additionally, the company was studying the feasibility of an education program on home computers for home economists. An author writing for Working Women, (October 1978) magazine recognized that home management is one area in which computers will prove most important for women on tight schedules. As Issacson, (Berger, 1978) a Ph.D. fellow, with Electronic Data System Corporation stated, "a major new trend for computer use is education . . . ."

Schossberg (1978), in The Home Computer Handbook suggested 30 different opportunities for home computer usage. These basically fall into the following categories: information retrieval, recreational programs, education and service skills. Service skills would include personal finance management, appliance management (temperature control) and word processing. Yet, in 1977, when these predictions occurred, 95 percent of all computing power was allocated to carrying out large-scale engineering and scientific calculations and keeping financial, production and sales records of business firms and other organization. The remaining five percent of computer uses were for more sophisticated work.

Despite the statistics showing that Americans are not accepting computers at the rate predicted in the late 1970's, Ahl believes:

> We are part of a third information revolution. The first produced written language, the second, the printed book. The third revolution, which began over a century ago, included the computer, telegraph, phone, photography, television, and moving pictures. These are all part of a whole new technology for storing, transmitting auditory information. The computer is unique in its capacity for manipulating and transforming information and hence in carrying it out, without human intervention, functions that had previously been performed only by the human brain (Ahl, 1977, p 41).

Ahl, (1977) when conducting research about consumer attitudes toward home computers, found that consumers felt they could not escape the influence of computers in their lifetime. There was ambivilence about computers' dehumanization of society. Substantially all believed that the computer was a tool that would replace

low skill jobs. Many felt fear that they would not be qualified for jobs after the computer revolution; yet, almost 75 percent felt they could use a computer in the work place. Conversely, he found that few of the respondents could visualize the concept of owning a home computer.

Cyberphobia

Sanford Weinberg (Wrege, 1982) termed the extreme anxiety produced by dealing with a high technology computer system as "cyberphobia." Weinberg has spearheaded research in man/machine communications.

"Cyberphobes experience many of the symptoms found in other anxiety producing situations, including high blood pressure, high pulse rate, and nausea" says Weinberg (Wrege, 1982, p 46). When forced to deal with a computer, a cyberphobe may be incapable of working and thinking clearly. At times, reactions may be less severe, but discomforting all the same. Stress, nervousness, tensions, unease, all may signal some degree of cyberphobia. The study of cyberphobia is so new that few statistics are available. Weinberg has worked with more than 500 clients and found that the phobia crosses distinctions of class, race, and sex.

Weinberg found at least 30 percent of all college students exhibit some degree of cyberphobia, and five percent report extreme anxiety (Wrege, 1982). Weinberg studied 200 managers who were leaving

jobs in which they were considered successful. He found computer anxiety listed as the chief reason for moving on. According to Wredge, Weinberg believes:

> If you look at any company that computerized, you'll find there is always a cadre of people who leave and go to a firm that hasn't yet computerized. But, today it's almost impossible to find a company or career without computers in it. Some people are actually changing careers to get away from computers (1982, p 47).

Negative reaction to computers affects certain groups more than others. Anderson, a University of Minnesota social psychologist, and Weinberg have both researched the effect of cyberphobia on different groups. They have found that women are affected more than men. This may be related to mathematics anxiety. "If women don't like computers, "minority groups are even more hostile. The more disadvantaged you are the more likely you will view the computer as a symbol of control" says Anderson (Wrege, 1982, p 47). Zuboff, a Massachusetts Institute of Technology researcher, states that "hostility toward computers is so widespread that it can result in increased physical ailments among office and clerical employees" (Wrege, 1982, p 47). Zuboff (Popular Computing, January 1982) also found that when people feel a loss of control there is a higher rate of computer and system sabotage.

Cyberphilia

If cyberphobia is an extreme fear of computers, cyberphilia is the flip side of the coin. Weizenbaum, (Wrege 1982) professor of

computer science at Massachusetts Institute of Technology, calls these people "compulsive programmers" and describes them as bright, young men who program for 20 to 30 hours at a time. "Cyberphiles are so involved with computers they become an end in themselves. They forget the purpose of a computer is to do something and become much more interested in maintaining the system for its own sake" (Wrege, 1982, p 50). The psychology behind "hacking," as endless programming is called, is not well researched. Weinzenbaum believes the cyberphile seeks the same control the cyberphobe draws away from. Some psychologists speculate that the "compulsive programmer is literally escaping from life by creating a world within the computer" (Wrege, 1982, p 50).

Harris (1982) researched teenage cyberphiles and found more boys than girls. Many of these teens have begun earning large sums of money with their computers. Two young men now 20 and 16 earned $800,000 in 1981 from their newly formed company. Two 12-year olds began Plum Software and made $15,000 last year from their filekeeping software program.

Computer Economics

There are two main parts of a modern computer system. The hardware is the electrical, mechanical and tangible equipment. The software is the intangible, control parts or programs of the computer (Lewis). The basic hardware of a home computer system consists of a

keyboard, video monitor, at least one disk drive and a printer. The hardware will range between $1,600 for a basic computer to $6,000 for a complete system (Newsweek, February 22, 1982). Each computer has its own method of communication or language, based on binary arithmetic. Fortran, Pascal, Pilot and COBOL are advanced computer languages that can do more complex tasks faster and easier. These languages on diskettes are similar to a collection of prerecorded musical tapes as described by Lewis in The Mind Appliance (1978). Computer companies are developing a variety of hardware and software while competing for the consumer market (Harris, March 1982).

Home Economics and the Home Computer

In 1972, a joint USDA and land grant committee on computer applications in household and family decision making stated that computer services and program materials exist in all areas of home economics (Magrabi, 1972). The committee's aim was to begin to understand the problems and dimension of the computer revolution and to make recommendations to aid people in bridging these changes by recognizing home computers as a resource. Anastasio found:

1. A scarcity of production and distribution of instructional materials.
2. An inhibition to develop computer assisted instruction (CAI) since no evidence has been

established that it is an effective teaching method.

3. Greater understanding of the instructional process which would lead to development of CAI is needed.
4. Cost of development of programs is a large factor, which may change in the future, as a result of supply and demand.
5. Undergraduate education requirements need to be changed to include computerized instruction methods.
6. Technical research and development must be increased to produce both improved instructional programs and improved hardware (1972, pp 26-27).

Summary

An item must be perceived as a resource before it will be utilized. This belief is held by researchers in both family resource management and consumer marketing. Consumer decisions are made based on the environmental influences affecting the consumer's basic determinants. The consumer's environmental influences will affect this decision making process. Communication is the unifying factor between the environmental influences and basic determinants.

Knowledge is a resource that has developed many new technological products. A home computer is a technological resource that is expected to revolutionize the world. This will occur only if people perceive it as a resource.

Chapter III
METHODOLOGY

Content validity, construct validity and instrument reliability are essential to the development of a research instrument. This research project is directed toward the development of a valid and reliable instrument.

The Product-moment Correlation Coefficient (Pearson r) was used as a statistical tool for determining the reliability of the instrument. In addition, procedures to achieve construct and content validity were followed.

Question Development

The questions in the instrument were based on the research model. The review of literature provided background information to aid in the development of questions. Each environmental, technology and home computer question, was designed to test the model. The questions that test the model are attitudinal, following a Likert style format. The questions were revised several times using Dillman's (1978) recommendations on writing Likert questions. The additional questions that involved consumer behavior were also based on the review of literature.

The instrument also includes several attitudinal questions which express consumer attitudes toward computer uses in the home, respon-

dent demographics, decision making styles and attitudes toward advertising related to home computers.

Pretesting

After the questions were designed and revised they were arranged in a logical order following Dillman's (1978) advice on survey development. The attitude statements that test the model were listed first, followed by questions related to consumer decision making and demographics.

One hundred surveys were given to undergraduate students in a family resource management course to pretest the questions the researcher developed. The students were interested in consumer sampling techniques and learning more about personal attitudes of consumers toward computers. The students were given general directions on methods for conducting a survey of respondents using personal interview techniques. The instruments were distributed and collected by the students. The respondents came from several urban and rural areas of Oregon, including Portland, Corvallis, and Eugene.

These instruments were checked by the Survey Research Center and the researcher to determine if any questions were not answered by many of the respondents or if questions were only answered in one direction. Suggestions for improvement of the Likert statements were incorporated into the revised statements for content validation. All the questions were answered and they were not in one specific direc-

tion. Consequently, all questions were retained. Additional questions related to the model were included as a result of the suggestions of the students. These questions also related to the model. The Likert statements were then ready for content validation. Also, the demographic questions were reedited for incorporation into the final instrument.

The revised questions (Appendix A) were sent to seven experts who represented the fields of business, computers, and education. Their task was to select the most appropriate content category for each question of the instrument. These seven categories were based on the five environmental influences plus technology and home computers.

Each content expert received directions for review of the statement content, envelopes with definitions and individualattitudinal statements. The experts used a sort system to place the individual statements into the appropriate envelopes. The researcher determined that if five of the seven experts filed a statement under the same category, the question had content validity. Several statements did not meet this criteria and were eliminated. Thirty-nine attitude statements were included in the final instrument. Many of these had more than five experts giving similar categorization.

The statements in each category were not numerically even. The categorization for each statement is listed in Appendix A. The combined responses for each variable were assessed through use of

product moment correlation. Since there was not a similar number of statements for each factor, an average score per factor was used in the statistical analysis of the data. In other words, the response scores for each question in a variable category were summed and then divided by the total number of questions, to avoid unintended weighting of any variable. The number of statements related to each category was:

Home Computer	14
Technology	7
Business	3
Economic	3
Social	5
Culture	5
Family	2

Instrument Design

The resulting questions were then placed in an order deemed most likely to be answered by the respondents. The Survey Research Center and Family Resource Management Department faculty at Oregon State University helped determine this order. The instrument was divided into five sections and designed into a booklet form (Appendix B). The booklet format was chosen to ease the work of the respondents in answering the questions and improve chances of respondents completing the instrument. Dillman's research (1978) shows that more instru-

ments are completed and returned when the instrument is in booklet form. The first 39 questions tested the model. Questions concerning home computer advertising followed the attitudinal statements. The third section of the instrument dealt with owning a home computer and the decision making process of the respondent. The fourth section asked the respondent to indicate which uses for a home computer he/she would consider. Twenty-one computer applications were listed, including a place for respondent comments on uses not listed. The fifth section was devoted to gathering demographic data about the respondent.

Respondent Population

The names for the sample were selected from the Eugene/Springfield telephone directory using the random sampling methods recommended by the Survey Research Center. The telephone book was divided into the number of columns available after eliminating government, medical and business listings, plus counting the alphabetizing space per page. The number was then divided by 100, the number of sample subjects desired for the respondent mailing. This spacing determined who was selected for the survey.

Instrument/Card Mailing

An introductory letter was designed to acquaint the respondents with the need for their help, the purpose of the survey, and to

assure them that their confidentiality would be honored. The letter was mailed to the sample subjects, along with the survey, on June 30, 1982. The introductory letter asked the respondents to return the completed instrument by July 14, 1982. Twenty-seven had been returned by July 12, 1982. A follow-up post card was sent to respondents who had not completed the survey to encourage their return. An additional ten respondents were late in returning the completed survey, and four returned incomplete responses. A total of 37 usable responses were available for statistical analysis.

Telephone Survey

After receiving their sample reminder cards, 59 had not responded to the survey instrument. A telephone survey was conducted on every fifth person in the sample who did not return the survey. This was done to ascertain whether or not there were differences among those who did answer the survey and those who did not. Consequently, the telephone survey was conducted with eight of the non-respondents. The telephone survey was designed to determine if those who answered the survey held pro or con attitudes toward home computers. However, the small number of responses would not allow conclusions. Only general observations about the two groups, could be made. These people were asked four questions from the instrument and the age. The questions were:

1. Have you ever read a computer magazine?
2. Have you seen or heard advertisements about home computers?
3. Do you own a home computer at the present time?
4. Would you consider purchase of a home computer?

Responses to these questions were compared with those who answered the mail survey. The percentages of yes/no's were compared between the two groups. An analysis was also made on the relationship of age to the responses to the telephone and mail surveys.

Statistical Analysis

The 37 completed surveys were coded and keypunched by the Survey Research Center. The statistical analysis was completed by Milne Computer Center, Oregon State University. The Statistical Package for Social Sciences computer programs for Chi-square was selected as the statistical tool for all data analysis, but the planned analysis could not be carried out because of the low response rate for specific questions. Because of the small cell size, the Pearson r was recommended as a means for testing the hypotheses in lieu of Chi-square. The Pearson r measures a linear correlation between two variables.

Chapter IV
FINDINGS

Reporting Criteria

In reporting the frequencies of responses to the questions on the instrument, the descriptor "absolute frequency" and "adjusted frequency" were used. The absolute frequency represents the total number of responses to a question. The adjusted frequency is the percent of the total responses to questions within each specific response category.

Sample Characteristics

Sex

Thirty-seven respondents returned completed instruments. Four additional returns contained comments but lacked completed attitudinal responses. Although equal numbers of questionnaires were sent to males and females, twenty respondents (52.8%) were male, sixteen (47.2%) were female, while one did not give this data.

Age

The median age of the respondents was 39, and the mean age was 34.1. The age range of the respondents is presented in Table 5.

TABLE 5

Age of Respondents

Age of the Respondents	Absolute Frequency	Adjusted Frequency
20 to 29 years	12	33.3%
30 to 39 years	6	16.7%
40 to 49 years	10	27.8%
50 to 59 years	4	11.1%
60 to 69 years	1	2.8%
over 69 years	3	8.3%
no answer	1	missing
Total	37	100.0

Income

Respondents were asked to indicate if they were presently working for pay. Twelve (32.4%) of the respondents were not working for pay.

Also, they were asked to indicate the income category which represented the annual income for their household. Six income categories were provided. The $10,000 - $19,999 had the largest number of respondents (10), and the majority of respondents had incomes under $20,000. Twenty-five (67.6%) of the 37 respondents were working for pay and supplied information about their income. The median salary was $17,499 while the mean was $19,399. Salary classifications are reported in Table 6.

Educational Background

The educational background of the respondents was diverse. Nine categories were listed, ranging from grade school to doctorate. All nine areas were represented in the sample. The largest group had bachelor degrees (29.7%), while those with some college ranked second (27%), and three groups vied for the lowest percentage category. These three groups were grade school only, some high school, and doctorate. The median education of the respondents ranged from some college to associate degrees. Table 7 shows the data related to the educational background of the respondents.

TABLE 6

Annual Income Category For Households

Annual Income	Absolute Frequency	Adjusted Frequency
Under $10,000	5	20%
$10,000-$19,999	10	40%
$20,000-$29,999	6	24%
$30,000-$39,999	3	12%
$40,000-$49,999	0	0%
over $49,999	1	4%
Missing	12	Missing
Total	37	100.0

TABLE 7

Educational Level of Respondents

Educational Level	Absolute Frequency	Adjusted Frequency
Grade School	1	2.7%
Some High School	1	2.7%
High School Graduate	3	8.1%
Voc-Tech Training	2	5.4%
Some College Training	10	27.0%
Associate Degree	3	8.1%
Bachelor Degree	11	29.7%
Master's Degree	5	13.5%
Doctorate Degree	1	2.7%
Total	37	100.0%

Work Experience

The respondents were asked to describe their job title, a brief description of the job, and the industry in which they worked. This tri-descriptor provided increased clarity of the respondents' occupations. Twenty-four of the 37 respondents replied. Job descriptors are shown in Table 8.

Testing Hypotheses

H_0^1 There is no relationship between attitudes toward technology and the following environmental variables:

1. Family
2. Social
3. Cultural
4. Business
5. Economic

The environmental variables, through the use of the attitudinal statements, were correlated to determine the relationship of each variable with an individual's attitudes toward technology. Linear correlations were assessed using Pearson product moment correlation. In all cases, an "unsure" response to a particular question was treated as missing data for the purpose of hypothesis testing. The positive correlation between family and attitude toward technology was statistically significant at the $p \leq .05$ percent level, while

TABLE 8

Occupational Information of Respondents

Job Title	Description/Industry
Engineer Technician	Government survey
Superintendent of plant	Wood Extraction
Waitress (2)	Food Service
Produce Buyer	Grocery
Builder/Electrician	Homes
Receptionist	Veterinarian Medicine
Manager	Food Service
Owner-hauling company	Wood
Bartender	Hotel
Computer Programmer	Education
Marketing Coordinator	Oil
Anchor Reporter	News Media
Extension Agent	Youth Development
Railroad Conductor	Wood Industry
Foreman	Construction
Territorial Manager	Farm Machinery
Retired (2)	---
Office Manager	Communications
Proprietor	Educational Products
Factory Representative	Automotive

culture and economics were significant at the $p \leq .01$ level. However, business and social factors were not significant. Consequently, the null hypotheses that attitudes toward technology are not related to by culture, economics and family were rejected. Table 9 illustrates the statistical results and acceptance or rejection of these hypotheses.

H_0^2 There is no relationship between attitudes toward home computers and the following environmental variables:

1. Family
2. Social
3. Cultural
4. Business
5. Economic

Family was correlated to attitudes toward home computers at $p \leq .01$. Thus, null hypothesis, $H_0^{2.1}$ was rejected.

The social factor variable was not significantly related to the respondents' attitudes toward home computers. The hypothesis, $H_0^{2.2}$ was retained.

The correlation between culture and attitudes toward home computers was significant at the level of significance of $p \leq .01$. The null hypothesis $H_0^{2.3}$ was rejected.

TABLE 9

Attitudes Toward Technology are Significantly Related to Family, Culture and Economic Factors

Hypothesis	Variable	Pearson r	Level of Significance	Hypothesis Rejected or Retained
$H_0^{1.1}$:	Family	.34959	.05	Rejected
$H_0^{1.2}$:	Social	.21862	Not Significant	Retained
$H_0^{1.3}$:	Culture	.44147	.01	Rejected
$H_0^{1.4}$:	Business	.05600	Not Significant	Retained
$H_0^{1.5}$:	Economic	.49022	.01	Rejected

With an r value of .09336, the hypothesis concerning business $H_0^{2.4}$ was retained. The environmental variable was not related to home computers.

The attitudes toward home computers were related to the economic variable at a level of significance of $p \leq .01$, and hypothesis $H_0^{2.5}$ was rejected. The relationship of the environmental variable to home computers is reported in Table 10. Family, culture and economic variables were found to have a significant correlation with both attitudes toward technology and attitudes toward home computers. Social and business variables were not found to have a significant linear relationship to either hypothesis (Table 11).

H_3 There Is No Linear Relationship Between Attitude Toward Technology and Attitude Toward Home Computers

Statements related to technology and home computers were analyzed using a Pearson r correlation coefficient. The r was .56872, with a significance level of $p \leq .01$. Hypothesis H_3 was rejected. Attitudes toward technology and attitudes toward home computers did have a significant, positive, linear correlation.

Consumer Attitudes, Decision Making Style and Demographics Related to Home Computers

The third section of the instrument was designed to provide information about the respondents. The small size of this pilot

TABLE 10

H_2: Attitudes Toward Home Computers are Significantly Related to Family, Culture and Economic Factors

Hypothesis	Variable	Pearson r	Level of Significance	Hypothesis Rejected or Retained
$H_0^{2.1}$:	Family	.47427	.01	Rejected
$H_0^{2.2}$:	Social	.19717	Not Significant	Retained
$H_0^{2.3}$:	Culture	.44147	.01	Rejected
$H_0^{2.4}$:	Business	.09336	Not Significant	Retained
$H_0^{2.5}$:	Economic	.64968	.01	Rejected

TABLE 11

Environmental Variable Relationship to Technology and Home Computers

Variable	Technology P Value	Home Computer P Value	Both Hypotheses Rejected/Retained
Family	.05	.01	Rejected
Social	N.S.	N.S.	Retained
Culture	.01	.01	Rejected
Business	N.S.	N.S.	Retained
Economic	.01	.01	Rejected

would not allow any conclusions to be drawn. However, general observations were made concerning respondents' attitudes about computer advertising, respondent demographics and respondents' decision making process. Questions which asked respondents about present attitudes and present or future behavior allowed an "unsure" response as one option. Although the frequencies for the unsure categories are reported in the tables, they are not used to assess potential behavioral patterns, since this response is judged to be essentially neutral, neither positive nor negative in nature.

Where would you most likely get advice on purchasing a home computer?

Thirty-six of the 37 respondents gave information on where they would most likely seek advice on purchasing a home computer. Six categories were given, including computer store, friends, computer magazine, advertisements, schools and others. No respondents gave advertisements as a source of information. Sixteen listed computer stores, and 11 listed other sources of advice, with eight defining the other sources of information. Five respondents indicated they would use a Consumer Reports magazine. One respondent preferred to use all of the sources, while another relied on the demonstrations and experiences of others. Other sources of advice were computer programmers and teachers. Table 12 shows the distribution of the responses.

TABLE 12

Source of Advice on Purchase of a Home Computer

Category	Absolute Frequency[1]	Adjusted Frequency
Computer Store	16	44.4%
Friends	4	11.1%
Computer Magazine	3	8.3%
Advertisements	0	0%
Schools	2	5.6%
Others	11	30.6%
Total	36	100.0%

[1]A total of 36 out of 37 possible respondents answered this question.

Have you ever read computer magazines?

Three respondents (8.3%) said they had read a computer magazine, while 33 (91.7%) said they had not read a computer magazine.

Have you seen or heard advertisements about home computers?

Twenty one respondents (56.8%) had seen advertisements for home computers, while 16 (43.2%) had not seen or heard advertisements for home computers.

Were the advertisements too technical for understanding?

The respondents who had seen advertisements related to home computers were asked their opinion concerning these advertisements. They were given attitudinal statements which they could personally evaluate. One question asked if the ad was too technical for their understanding. Table 13 shows responses to the technical level of the advertisements.

Did the advertisements accurately show the capabilities of the home computers?

The majority (52.4%) of respondents believed the advertisements accurately showed the capabilities of the home computers, however 33.3% disagreed and 9.5% strongly disagreed. Table 14 shows the categories and frequencies of these attitudes.

TABLE 13

Respondents are in General Agreement That Computer Ads Are Not Too Technical

Category	Absolute Frequency[1]	Adjusted Frequency
Unsure	2	9.5%
Strongly Disagree	0	0
Disagree	16	76.2%
Agree	3	14.3%
Strongly Agree	0	0
Total	21	100%

[1]A total of 21 out of 36 possible respondents answered this question.

TABLE 14

A Majority of Respondents Agree That
Advertisements Accurately Show Home Computer Capabilities

Category	Absolute Frequency[1]	Adjusted Frequency
Unsure	1	4.8%
Strongly Disagree	2	9.5%
Disagree	7	33.3%
Agree	11	52.4%
Strongly Agree	0	0
Total	21	100.0%

[1]A total of 21 out of 37 possible respondents answered this question.

Did the advertisements teach you more about home computers?

The respondents who had seen advertisements were asked if the advertisements taught them more about computers. Ten agreed, while nine disagreed, one was unsure, and one strongly disagreed (Table 15).

Did the advertisement make you feel more like purchasing a home computer?

Ten respondents felt that advertisements taught them more about computers. Ten (47.6%) also believed the advertisements made them feel more likely to someday purchase a home computer or accessories for a home computer (Table 16). Seven (33.3%) disagreed that advertising makes them more likely to purchase a home computer.

Cross Tabulations of Responses

Questionnaire items were cross tabulated to determine whether or not consistent attitudinal and behavioral patterns were evident in the responses. In some cases, attitudinal items were cross tabulated with demographic data to observe if one set of responses may have a relationship with the responses to other items. Review of these relationships provides a general insight into the characteristics of respondents with either positive or negative attitudes toward home computers. However, the small size of the sample and limited number

TABLE 15

Respondents Were Divided About Whether Advertisements Taught Respondents About Home Computers

Category	Absolute Frequency[1]	Adjusted Frequency
Unsure	1	4.8%
Strongly Disagree	1	4.8%
Disagree	9	42.9%
Agree	10	47.6%
Strongly Agree	0	0%
Total	21	100.0%

[1]A total of 21 out of 37 possible respondents answered this question.

TABLE 16

Respondents Were Divided About Whether Computer Advertisements Make It More Likely To Someday Want to Purchase a Home Computer

Category	Absolute Frequency[1]	Adjusted Frequency
Unsure	2	9.5%
Strongly Disagree	2	9.5%
Disagree	7	33.3%
Agree	10	47.6%
Strongly Agree	0	0%
Total	21	100.0%

[1]A total of 21 out of 37 possible respondents answered this question.

of responses in each category did not allow any conclusions to be made about a pro or con home computer attitude respondent. Not all respondents answered both cross tabulation questions; consequently, the number of respondents for each set of question varies.

Items 39 and 48A were cross tabulated to determine the consistency of response. The items were:

39. In the future, I see a home computer in my life.

48A. Someday I may consider purchase of a home computer.

The results were consistent: the cross tabulations had no counter examples. However, the small size weakens the observation. Because respondents were consistent in reporting interest in future purchase of a home computer, the researcher judged this question to be a good one for assessing cross tabulation relationships with other behavioral and demographic responses. It should be noted in Tables 17 and 18, that no "unsure" category is reported for question number 39. This category was omitted to insure that the same respondent group used in hypothsis testing relative to this variable was also used in the cross tabulation procedure. The "unsure" category was defined as missing data for hypothesis testing and this cannot be included here. The responses to these items are shown in Table 17.

Questions 39 and 48B were cross tabulated to observe if a computer saved the respondent about one hour of work each day would the respondents be more willing to purchase a home computer. The items were:

TABLE 17

Respondents were Consistent Concerning Likely Ownership of a Home Computer

Home Computer Seen In Future? Response Levels	Would Consider Purchase of Home a Computer		
	Yes	No	Unsure
Unsure[1]			
Strongly Disagree	0	1	0
Disagree	0	3	6
Agree	7	0	0
Strongly Agree	2	0	0
Total[2]	9	4	6

[1]For this statement the response category "unsure" was defined as misisng value in hypothesis testing. Consequently, it was omitted for consistency reasons when doing this cross tabulation.

[2]A total of 19 out of 37 possible respondents answered these two questions.

39. In the future, I see a home computer in my life.

48B. I would purchase a home computer if it saved me about an hour of work a day.

The attitudes either for or against computers remained consistent as shown by the pattern of yes/no responses in this cross tabulation. However, the number of unsure responses make this observation inconclusive (Table 18).

Items 49 and 48A were cross tabulated to observe if a person who foresees a home computer in their life would be willing to spend more for a home computer. The statements were:

48A. Someday I may consider purchase of a home computer.

49. Computer companies are working to design computers at prices acceptable to the consumer and with a profit for the company. Please circle the highest price you would be willing to pay for a home computer to meet your needs if you bought one.

The researcher observed that seven respondents with a positive attitude toward home computers, and eight unsure of willingness to purchase, specified the same price range for a computer (Table 19).

Questions 48A and 50 were cross tabulated to observe if relatives owning a home computer had any relationship with the respondent's willingness to purchase one. The questions were:

48A. Someday I may consider purchase of a home computer and with a profit for the company. Please circle the highest price

TABLE 18

Probable Home Computer Ownership Response Compared to Preference For Time Savings Advantage

Consider Home Computer? Response Levels	Computer Time Saving		
	Yes	No	Unsure
Unsure [1]			
Strongly Disagree	0	1	0
Disagree	2	6	1
Agree	4	0	4
Strongly Agree	1	0	1
Total[2]	7	7	6

[1]For this statement the response category "unsure" was defined as missing value in hypothesis testing. Consequently, it was omitted for consistency reasons when doing this cross tabulation.

[2]A total of 20 out of 37 possible respondents answered these two questions.

TABLE 19

Price Limitation Compared to Willingness to Purchase

Highest Price Willing To Pay for Home Computer? Response Levels	Consider Purchase of Home Computer?		
	Yes	No	Unsure
$ 500	7	2	8
$1,000	4	1	3
$2,000	3	0	0
Total[1]	14	3	11

[1]A total of 28 out of 37 possible respondents answered these two questions.

you would be willing to pay for a home computer to meet your needs if you bought one.

The researcher observed that the respondents with a positive attitude toward home computers, and those unsure of willingness to purchase, were both specified the same price range for a computer (Table 19).

Questions 48A and 50 were cross tabulated to observe if relatives owning a home computer had any relationship with the respondent's willingness to purchase one. The questions were:

48A. Someday I may consider purchase of a home computer.

50. Do any of your relatives own a home computer?

Relatives owning a home computer did not seem to have a relationship on a person's willingness to consider a future purchase (Table 20).

The respondents were asked if any member of their household owned a home computer. They all responded negatively. Consequently, no cross tabulation was advisable between this question and willingness to purchase a home computer.

The decision making style of an individual is related to purchase decisions. The respondents were separated into categories by sex to cross tabulate the decision making style of each sex and willingness to purchase a home computer. The items for each tabulation were:

48A. Someday I may consider purchase of a home computer.

TABLE 20

Home Computer Ownership by Relatives Compared To Willingness to Purchase

Do Relatives Own Computer? Response Levels	Consider Purchase of a Home Computer? Yes	No	Unsure
Unsure	1	0	1
Yes	1	1	1
No	13	5	11
Total[1]	15	6	13

[1]A total of 34 out of 37 possible respondents answered this question.

52. Are the decisions about spending money made by you along, by you jointly with other members of your household, or by someone else in your household?

No clear relationship concerning decision making style and willingness to buy a home computer could be ovserved from the data (Table 21). However, females were more likely to make decisions alone than male respondents. The small number in the sample necessitates the recommendation for replication of these questions.

Items 48A and 54 were cross tabulated to determine which type of respondent living situation would be most likely to exist for persons willing to purchase a home computer. The items were:

48A. Someday I may consider purchase of a home computer.

54. Information about consumer lifestyles is necessary to aid in the development of suitable consumer products. Describe your living situation.

1. I live alone.
2. I live with an adult(s).
3. I live with my children.
4. I live with an adult and children.
5. I live with several adults and children in a shared household.

The researcher observed that 50% of the respondents who reported that they live with others may be willing to purchase a home computer while 44% of those who live alone (Table 22).

TABLE 21

Comparison of Decision Making Style and Willingness to Purchase Home Computers

Male Respondent

Decision Made Alone, Jointly Response Levels	Consider Purchase of Home Computer		
	Yes	No	Unsure
You Alone	2	0	2
Jointly	6	2	6
Total[1]	8	2	8

Female Respondent

Decision Made Alone, Jointly Response Levels	Consider Purchase of a Home Computer		
	Yes	No	Unsure
You Alone	4	3	0
Jointly	3	0	5
Total[1]	7	3	5

[1]A total of 33 out of 37 possible respondents answered these two questions.

TABLE 22

Lifestyle and Possible Computer Purchase

Consumer Lifestyles; Response Levels.	Consider Purchase of a Home Computer? Yes	No	Unsure
Alone	3	2	1
Adult	6	1	5
Both (adults/children)	6	2	7
Total[1]	15	5	13

[1]A total of 33 out of 37 possible respondents answered these two questions.

The respondents who indicated they lived with children were asked if they wanted their children to learn to use a home computer. This was cross tabulated with willingness to purchase. The items were:

48A. Someday I may consider purchase of a home computer.

54-6B. Do you want your children to learn to use a home computer?

The respondents who wanted their children to learn to use a home computer may be likely to consider purchase of a home computer (Table 23).

Questions 55 and 48A were cross tabulated to examine the relationship of age with willingness to perceive a home computer as a resource. The items were:

48A. Someday I may consider purchase of a home computer.

55. My age is:
1. Under 20
2. 20-29
3. 30-39
4. 40-49
5. 50-59
6. 60-69
7. Over 69

The researcher observed that younger people may envision home computers in their life more than older people. However, older respondents retired for several years were also interested in home computers (Table 24).

TABLE 23

Respondents Who Want Their Children to Use Home Computers May Be Likely to Consider Buying One

Children Learn Home Computer? Response Levels	Consider Purchase of Home Computer? Yes	No	Unsure
Yes	6	0	4
No	0	1	1
Unsure	0	1	2
Total[1]	6	2	7

[1]A total of 15 out of 37 possible respondents answered these two questions.

TABLE 24

Age and Possible Computer Purchase

Age? Response Levels	Consider Purchase of a Home Computer? Yes	No	Unsure
20-29	5	2	3
30-39	4	0	2
40-49	3	0	6
50-59	1	2	1
60-69	0	1	0
Over 69	2	0	1
Total[1]	15	5	13

[1]A total of 33 out of 37 possible respondents answered these two questions.

The sex of consumers often affects buying behavior. The respondent's sex was cross tablulated with willingness to purchase a home computer. The specific questions were:

48A. Someday I may consider purchase of a home computer.

56. My sex is:

Male

Female

The respondents' sex did not seem to be related to the yes or no response in this cross tabulation (Table 25).

The economic status of a consumer often affects purchase decisions. Items 57 and 48A were cross tabulated to determine if working for pay would effect the consideration of purchase of a computer. The items were:

48A. Someday I may consider purchase of a home computer.

57. Are you presently working for pay?

Yes

No

Respondents working for pay may be more interested in home computers than the unemployed respondents (Table 26).

Since household income affects consumer purchase decisions, income and willingness to purchase a computer were cross tabulated. The items were:

48A. Someday I may consider purchase of a home computer.

59. My total gross income for 1981 was:

1. Under $10,000

TABLE 25

Sex and Possible Computer Purchase

Sex Response Levels	Willingness to Purchase a Home Computer		
	Yes	No	Unsure
Male	8	2	8
Female	7	3	5
Total[1]	15	5	13

[1]A total of 33 out of 37 possible respondents answered these two questions.

TABLE 26

Work Status and Possible Computer Purchase

Work for Pay? Response Levels	Consider Purchase of a Home Computer? Yes	No	Unsure
No	4	3	5
Yes	11	3	8
Total[1]	15	6	13

[1]A total of 34 out of 37 possible respondents answered these two questions.

2. $10,000-$19,999
3. $20,000-$29,999
4. $30,000-$39,999
5. $40,000-$49,999
6. Over $49,999

The researcher observed that nine respondents with incomes under $30,000 may consider purchase of a home computer, while another eight are unsure. No conclusions can be drawn about those with higher discretionary incomes because the sample size is too small. The range of income and willingness to purchase a home computer is shown in Table 27.

Items 60 and 48A were analyzed to determine the effect of education on the respondent's willingness to consider purchase of a home computer. The questions were:

48A. Someday I may consider purchase of a home computer.

59. Please circle the highest amount of schooling you have received:

1. Grade school - 1-8
2. High school - 9-11
3. High school diploma
4. Vocational or technical training
5. Partial college, no degree
6. Associate's degree
7. Bachelor's degree (B.A., B.S.)
8. Master's degree (M.A., M.S., MAT, ME, MBA, MPA, etc.)

TABLE 27

Income and Possible Computer Purchase

Income Response Levels	Consider Purchase of a Home Computer		
	Yes	No	Unsure
Under $10,000	2	1	1
$10,000-$19,999	4	0	6
$20,000-$29,999	3	1	1
$30,000-$39,999	1	1	0
$40,000-$49,999	0	0	0
over - $49,999	1	0	0
Total[1]	11	3	8

[1]A total of 22 out of 37 possible respondents answered these two questions.

9. Doctoral (Ph.D., D.Ed.)

10. Professional degree (M.D., D.O.S., D.V.M., Law, etc.)

More respondents had completed some college to bachelor's degree than the other categories. The majority of respondents who were willing to purchase a home computer were also from this category. No strong observation could be shown since the lower or higher educational areas have small sample sizes. However, it was observed that the respondents in the some college to bachelor's degree categories were almost equally divided between willingness to purchase and unsure about purchase of a home computer (Table 28).

Generally, the price a person is willing to pay for a product is related to their income level. Item 49 and 59 were cross tabulated to see if a pattern existed between a certain income level and the price respondents were willing to pay for a home computer. These items were:

49. Computer companies are working to design computers at prices acceptable to the consumer and with a profit for the company. Please circle the highest price you would be willing to pay for a home computer to meet your needs if you bought one.

    1. $500
    2. $1,000
    3. $2,000
    4. $3,000

TABLE 28

Education and Possible Computer Purchase

Educational Level Response Levels	Consider Purchase of a Home Computer		
	Yes	No	Unsure
Less Than High School	0	1	1
High School	2	1	0
Some College, Voc-Tech, Associate Degree	8	2	5
Bachelor's, Master's, Professional Degree	5	2	7
Total[1]	15	6	13

[1]A total of 34 out of 37 possible respondents answered these two questions.

5. $4,000

6. $6,000

50. My total gross income for 1981 was:

1. Under $10,000

2. $10,000-$19,999

3. $20,000-$29,999

4. $30,000-$39,999

5. $40,000-$49,999

6. Over $49,999

In this study (Table 29) most respondents (54%) were willing to pay $500.00 for a home computer. Seventy-seven percent of the respondents were not willing to spend more than $1,000. Also, as incomes rose the willingness to purchase a home computer at a higher price did not escalate. It was observed that the majority of the respondents who would purchase a home computer for $1,000 or less were in the $10,000-$19,999 bracket. However, this was where the majority of respondents were so no strong relationship observation was possible.

Respondent Desired Applications in Home Computers

Since computers are so new, the work the computer can accomplish is only beginning to be fully tested and developed. However, computer utility will increase as consumer needs are more fully studied and this information is transformed into functional computer

TABLE 29

Majority of Respondents Want Home Computers To Cost $1,000 or Less

Income Level Response Levels	Price Willing to Pay for a Home Computer					
	$500	$1000	$2000	$3000	$4000	$5000
Under $10,000	2	0	1	0	1	0
$10,000-$19,999	7	3	0	0	0	0
$20,000-$29,999	3	0	1	0	0	1
$30,000-$39,999	0	1	1	0	0	0
$40,000-$99,999	0	0	0	0	0	0
over $49,999	0	1	0	0	0	0
Total[1]	12	4	3	0	1	1

[1]A total of 22 out of 37 possible respondents answered these two questions.

programs. Consequently, the respondents were asked to state the types of functions they would want a computer to perform. The respondents were given a list of 23 computer activities. In addition, an "other" line was included to give the respondent an opportunity to write in additional activities they would desire. Medical checks and educational tutorial computer functions were given the highest percentages, while use of robots was given the lowest percentage. The "other" line included home business work, home record keeping and one respondent believed an endless variety of computer task opportunities would be available. Table 30 lists in percentage order, the desired applications the respondents deemed most useful. The percentage of respondents refers to those who said "yes" to wanting a computer to accomplish a particular task.

Telephone Survey

A telephone survey (eight people) was conducted to determine if the 37 respondents had different attitudes toward technology than those who did not return the survey. The comparison of groups was not conclusive. Five out of eight of those surveyed by telephone were not interested in a home computer, while four out of 19 of the mail respondents were not interested. Table 31 lists the questions asked and the response by mail and telephone survey.

TABLE 30

Respondents Desired Computer Applications

Desired Computer Task	Percent of Respondents (N=37)
Medical check of your heartbeat, blood pressure, pulse rate	85.3
Use a computer to tutor specific subject matter	85.3
Receive an immediate answer to any logical request	76.5
Provide a security alarm system	76.5
Play games	76.5
Computer monitoring of vital home energy sources	73.5
Have instant news of world available	73.5
Diagnose your car's need for maintenance and repair	70.6
Program your own computer applications	70.6
Calculate any quantity of food requried for recipes	64.7
Handle correspondence and type letters, etc.	64.7
Computer automatically check air for pollutants and take action to fix the situation	64.7
Have computerized banking and bill paying	58.8
Send and receive printed messages	52.9
Plan a trip and make reservations	52.9
Plan nutritional meals and special diets for family members	47.1
Give you the performance of over-the-counter and listed stocks	41.2
Use a computer to generate patterns for design purposes	35.3
Control your small home appliances via computer	26.5
Have robots responsive to computer commands	23.5
Other	20.6

TABLE 31

Comparison of Mail and Phone Survey Responses

Question/Statement	Mail Survey			Phone		
	Yes	No	Unsure	Yes	No	Unsure
Have you ever read computer magazines?	3	33	0	0	8	0
Have you seen or heard advertisements about home computers?	21	16	0	6	2	0
Some day I may consider purchase of a home computer	9	4	6	1	5	2

Age of Participant	Mail Survey	Phone Survey
20-20	7	1
30-39	6	3
40-49	9	2
50-59	4	1
60-69	1	0
over 69	3	0
No Response	1	1

Chapter V
SUMMARY AND RECOMMENDATIONS

Summary

A home computer revolution is predicted to change America in the next 20 years. If this is to occur, consumers must perceive the home computer as a resource. Consumer behavior studies show that acceptance of a new consumer product is based on internal determinants, which are affected by environmental variables. No research had been conducted on how or if these environmental variables may influence willingness to accept technology and home computers.

A pilot instrument was designed and tested to determine which environmental variables have a positive, linear relationship to a person's attitudes toward technology and home computers. This information will aid educators, marketers and business people who want to help facilitate the change from an industrial to high technology society.

The objectives of the study were to:

1. pilot test the research model and instrument for reliability and validity,
2. determine if there is a correlation between pro-technology attitudes and willingness to purchase a home computer,

3. determine the environmental variables that may be related to a person's willingness to accept or reject technology and home computers as a resource,
4. provide information on computer utility functions desired by the consumer and
5. develop a consumer profile based on acceptance or rejection of home computers by demographic groupings.

Prior to testing the instrument, a simple readability pretest and thorough content validation were completed. Thirty-seven respondents out of the 100 contacted, returned the questionnaire. The age, education, income and sex of the respondents were diverse. A phone survey was conducted to observe if there was a difference in the attitudes toward home computers between those who responded to the mail survey and those who did not. Pearson r correlation was used to test hypotheses because the small sample size precluded use of other statistics. The total number of questions in each environmental category plus technology and home computer categories had a total score which was averaged to avoid factor weighting. This method, recommended by the Survey Research Center, improved the hypothesis testing.

Two null hypotheses with five subsets each were used to analyze the relationship of these environmental variables to attitudes toward home computers and technology. In addition, the relationship of attitude toward technology to attitude toward home computers was

assessed. Three null hypotheses related to environmental variables were rejected. Thus, culture, family, and economic variables were significantly related to attitudes toward both technology and home computers ($p \leq .05$). Also, the relationship between attitude toward technology and attitude toward home computers was found to be significant ($p \leq .01$). Thus, the third null hypothesis was rejected. All significant correlations were linear and positive. Business and social environmental variable hypotheses, for both technology and home computers, were both retained because no significant relationships were found.

Consumer attitudes related to computer advertising and business were asked in the survey. Respondent demographics and decision making style were also included. The relationship between questionnaire items were observed through use of cross tabulations.

Twenty-one computer applications functions were rated by the respondents. The respondents wanted the computer to provide medical checks, tutorial help, answer questions, be a security alarm system, play games and monitor news and energy. Programming ability was the eighth request by the respondents. However, very few respondents want the computer to control robots for household work.

The first four objectives of the pilot project were met. The pilot project was developed to test the hypotheses and the desired computer applications were determined. However, results of the consumer responses related to acceptance or rejection of home computers

when compared to demographic variables in cross tabulations were often weak or inconclusive because of the limited number in the sample and small cell sizes. Another weakness of the cross tabulations observations occurred since respondents often utilized the "unsure" category or did not answer both questions. Upon recommendation of the Survey Research Center, this "unsure" category was not given credence, relative to the "yes" or "no" category when observations were made. These weaknesses precluded an accurate consumer profile from being developed. As an alternative, the researcher developed a research model (Table 32) which might serve as a basis for future study. This model was designed by the researcher through observations of the yes/no responses in the cross tabulations.

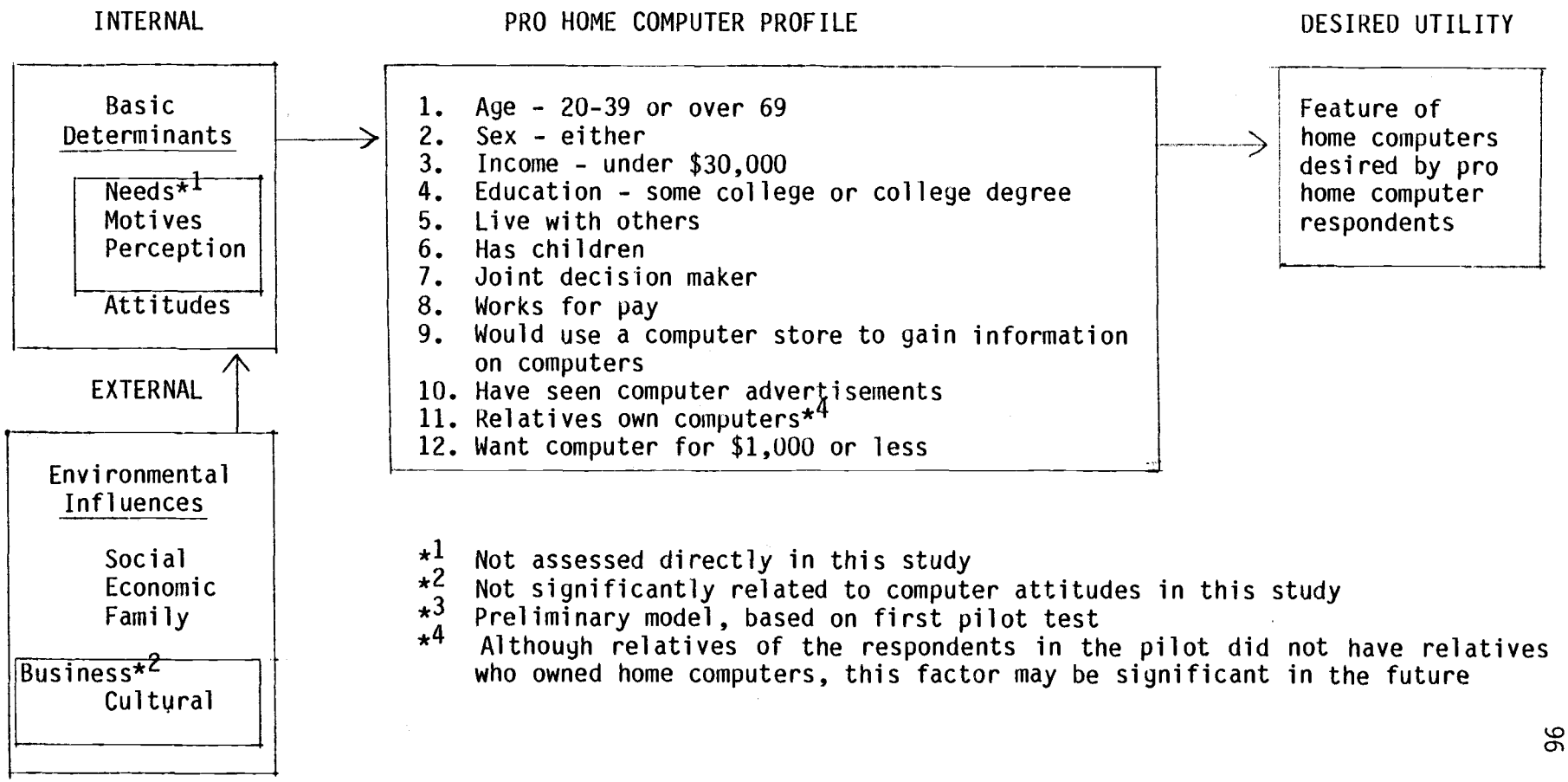
Recommendations

Based on the research data these recommendations are made relative to the pilot instrument, consumer profile, desired computer applications and further research. It is recommended that:

1. additional environmental questions be designed and be given the same content validity testing as completed for this pilot. This would improve the number balance of statements in each category;
2. the instrument needs to be modified by adding additional environmental questions and using a larger sample size. The pilot size used was too small to allow adequate sta-

TABLE 32

Proposed Pro Home Computer Profile Model*3



*1 Not assessed directly in this study
*2 Not significantly related to computer attitudes in this study
*3 Preliminary model, based on first pilot test
*4 Although relatives of the respondents in the pilot did not have relatives who owned home computers, this factor may be significant in the future

tistical testing and hypothesis tests could be more reliable with an increased number of attitudinal statements in each cateogy;

3. the consumer profile model be tested to see if the general characteristics of pro home computer respondents in the pilot remain consistent;
4. replicate assessment of desired computer functions. This information could aid marketers and programmers in the development of beneficial computer software;
5. retain the thirty-nine attitudinal questions when the pilot is modified by adding additional questions to provide balance in each cateogy. These questions were content valid, were answered in a consistent manner and were in a format that the respondents seemed to comprehend.
6. in a future study, the original and new attitudinal statements could be given a logical, numerical value or weight. Regression analysis would then be an appropriate statistical tool for analysis;
7. the researcher suggests some additional questions be developed and asked in a future instrument. These would address the following areas:
   a. level of education and relationship to being a cyberphobe/cyberphile,

b. the affect of being a minority in relationship to being a cyberphobe or cyberphile,

c. a question to help ascertain if people under 39 would purchase a computer as a means to upward mobility in the job market, and the relationship of both retirement and length of retirement to willingness to purchase a home computer to fill the respondent's time.

These recommendations are based on observations of the data and review of literature related to home computer by the researcher. If more consumers are to perceive the home computer as a resource, new research needs to be added to the study of consumer behavior and the computer. This knowledge will provide information to aid professionals in business and education in the development of materials which maximize promoting the home computer as a resource.

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APPENDICES

APPENDIX A

CONTENT VALIDITY MATERIALS

Dear Content Validifier:

I appreciate your help in evaluating these questions. I have included directions to add clarity and minimize the time this takes. I am developing a pilot study to try and ascertain if people who hold pro or con attitudes toward technology necessarily have pro or con home computer attitudes. Also, I would like to determine what external variables I am investigating are social, cultural, economic, business and family.

Based on my consumer behavior model I have compiled attitudinal questions concerned with technology and home computers. In addition, I have attitudinal questions related to the five external variables. I would like your expert opinion in helping assess if these questions actually fall into the same categories as I perceive.

A brief definition of each variable plus home computer technology follows. Each definition is specifically designed to encompass the research and model. In this study the term technology refers to knowledge organized for useful purposes. Any content validity questions related to general technology fall under this category. Under this generalized heading falls consumer products produced by technology, plus the effect of technology on American society. For example, technology includes products like hot water tanks, cars and light bulbs, while pesticide control a result of technology also effects our society. Home Computers, in this study, refers to a specific type of technology. Any content validity questions related at all to Home Computers fall under this category. A nome computer consists of two parts. One, electronic and mechanical and two, the software, magnetic disks or tapes which play the commands programmed onto them. The home computer has programming capabilities, plus it is possible to add a printer, disk drives or a modem. Questions on these two areas will either fall into the generalized or specific categories. Please remember to place all questions that relate general to technology and specific to home computers in the appropriate envelope. These questions will be used to determine if the survey respondents have pro or con attitudes related to technology or home computers.

The external variables that follow all have one thing in common. They influence consumer behavior and attitudes. Business influences refers to direct contact, either at the store or through personal selling and advertising. The social influence results from all personal contacts other than family or business. Family consumer influences come from relatives or those sharing the same residence. Economic influences are the constraints placed upon the consumer by income. Finally, cultural influences are the innate beliefs and sanctions developed over time by the social system. These variables indeed effect the consumers' attitudes about technology and home computers.

The directions for the content validation are found on page two. I am hoping this brief explanation of the focus of my study plus these definitions make this process interesting and not too difficult. Thank you very much for your help.

Sincerely,

Judi Jones
Graduate Student

DIRECTIONS:

1. Lay out the envelopes so you can view each term. Place the letter nearby in case you want to refer again to the definition of terms.

2. Read the definitions once more. Especially note the difference between specific and general categories.

3. Place the questions in a stack in front of you - face down.

4. Take one question at a time and place it in front of the envelope with the term which most fits the type of question according to your expert opinion. Don't worry if the number of questions for some envelopes is different than others.

5. When all questions are sorted place them in the envelope which you have designated as correct.

6. Mail or give this package to Judi Jones. If I have sent you this question sort, a return envelope is enclosed.

Thank you very much.

Judi Jones

Note:

Please recall that many of these questions will relate to certain variables subtly while others are more direct types of questions.

CONTENT VALIDTY QUESTION ENVELOPE DESCRIPTORS

GENERAL TECHNOLOGY RELATED QUESTIONS

SPECIFIC HOME COMPUTER RELATED QUESTIONS

ECONOMIC RELATED QUESTIONS

SOCIAL INFLUENCE RELATED QUESTIONS

BUSINESS RELATED QUESTIONS

CULTURAL INFLUENCE RELATED QUESTIONS

FAMILY INFLUENCE RELATED QUESTIONS

ECONOMIC INFLUENCE RELATED QUESTIONS

BUSINESS INFLUENCE RELATED QUESTIONS

QUESTIONS RELATED TO THE CONSUMER PRODUCT - HOME COMPUTER

GENERAL TECHNOLOGY RELATED QUESTIONS

Life in America has been good to me.

Americans depend too much on appliances and machines.

People in general buy products because of the inlfuence of others.

In my opinion, the use of scientific information to make new products and solve problems has only made the situation worse.

I believe if I had a home computer I could have the computer do work I have had other people do for me.

I have sufficient math ability to understand how to operate a home computer.

The home computer will just make life more complex.

Technology can help solve environmental and consumer problems.

As people become more dependent on machines and science, I think, they become less human emotionally.

As people become more dependent on machines and science, I think, they become less human physically.

My friends would be envious if I bought a home computer.

It is a good idea for children to learn to use a home computer.

If I unexpectedly received a large sum of money I would put it away for a rainy day.

If I unexpectedly received a large sum of money I would consider spending it for a home computer.

Generally, I believe new consumer products are made to increase company profits more than to meet consumer needs.

I would use a home computer if it were a gift.

Individuals have become consumers of needless technological products.

In the past my friends have influenced my purchases of products I bought.

People improve their lives when they buy new household appliances and products.

I believe home computer demnstrations would be a good way for computer companies to teach the public about home computers.

Computers will eventually effect most peoples lives.

Religion in general encourages more simple living.

I am a religious person.

Home computers are going to be of practical use to the average American family in the next ten years.

I believe a home computer could do work I have had to do myself.

If I lived with an adult who wanted a home computer, I would be more likely to purchase one.

A home computer inhibits creativity and thinking.

Computers in the home will result in less communication between people.

I believe home computers are going to be of direct, practical use to me in the next ten years.

In my opinion, home computers will reduce a person's privacy.

Generally, my friends feel technology has made life easier.

I believe a lifestyle without so many "conveniencies" is desirable.

In order to obtain access to a home computer I would be willing to own it jointly with several friends or on a community ownership basis.

I have trouble relaxing.

Going back to nature is a positive lifetime goal.

Business product demonstrations have influenced my past purchase decisions.

In the future I see a home computer in my life.

My friends don't like the idea of owning a home computer.

I grew up believing that new products would help improve my life.

I'm doubtful that a home computer will actually improve my life.

My family would like to own a home computer.

If I want a home computer I feel I could afford to purchase one now.

I believe purchase of a home computer is not a wise use of my money.

I believe life is too complicated.

People improve their lives when they buy new household appliances and products.

I am practical by nature.

The people I know believe that technology improves the quality of American life.

Math is difficult for me.

Home computers will do away with repetitive, manual jobs now done in the home.

Technology has made life simpler for Americans.

I make leisure time for myself.

Even if I owned a home computer I probably wouldn't know what to do with it.

I feel uncomfortable around home computers.

Churches encourage a materialistic lifestyle.

The home computer is a useful electronic devise.

My friends believe going back to nature is a positive lifetime goal.

The main value of a home computer is entertainment.

I don't trust advertisements to give accurate consumer information.

I don't buy products based on the influence of others.

I can learn to use a home computer.

A home computer is not an especially useful appliance.

Men have an easier time learning math than women.

I have an average middle class lifestyle.

Final Content Validity Category and Additional Questions Utilized to Test the Hypotheses

Legend: B = Business; C = Culture; E = Economic; F = Family; HC = Home Computer; S = Social; T = Technology

Statement Number	Category	Question
1.	T	Technology has made life simpler for Americans
2.	B	I don't trust advertisements to give accurate consumer information
3.	S	I don't buy products based on the influence of others
4.	HC	I feel uncomfortable around home computers
5.	HC	The main value of a home computer is entertainment
6.	S	My friends like the idea of owning a home computer
7.	C	Religion in general encourages more simple living
8.	T	In my opinion, the use of scientific information to make new products and solve problems has only made the situation worse
9.	HC	The home computer is a useful electronic device to me
10.	C	It is a good idea for children to learn to use a home computer
11.	HC	Home computers will do away with repetitive, manual jobs now done in the home

Statement Number	Category	Question
12.	B	Generally, I believe new consumer products are made to increase company profits more than to meet consumer needs
13.	F	If I lived with an adult who wanted a home computer I would be more likely to purchase one
14.	HC	I have sufficient math ability to understand how to operate a computer
15.	T	Technology can help solve environmental and consumer problems
16.	HC	Even if I owned a home computer I probably wouldn't know what to do with it
17.	C	In my opinion, men have an easier time learning math than women
18.	S	In the past my friends have influenced my purchases of the products I bought
19.	T	I grew up believing that new products would help improve my life
20.	E	If I want a home computer I feel I could afford to purchase one
21.	HC	Home computers are going to be of practical use to the average American family in the next ten years
22.	C	I consider myself to be a religious person
23.	T	Individuals have become consumers of needless technological products
24.	C	Churches encourage a materialistic lifestyle

Statement Number	Category	Question
25.	HC	The home computer will make life more complex
26.	B	Business product demonstrations have influenced my past purchase decisions
27.	S	My friends believe that going back to nature is a positive lifetime goal
28.	HC	I believe if I had a home computer I could have the computer do work I have had other people do for me
29.	F	If I lived with a child/children who wanted a home computer I would be more likely to purchase one
30.	S	People in general buy products because of the influence of others
31.	T	People improve their lives when they buy new household appliances and products
32.	HC	I believe home computers are going to be of direct, practical use to me in the next ten years
33.	T	As people become more dependent on machines and science I think they become less people oriented
34.	E	I believe the purchase of a home computer would not be a wise use of my money
35.	HC	I am doubtful that a home computer will actually improve my life
36.	HC	I believe a home computer could do work I have had to do myself
37.	E	If I received a large, unexpected sum of money I would consider spending it for a home computer

Statement Number	Category	Question
38.	HC	A home computer is not an especially useful appliance
39.	HC	In the future I see a home computer in my life

APPENDIX B

RESEARCH INSTRUMENT AND LETTER OF INTRODUCTION

School of Home Economics
Oregon State University
Corvallis, Oregon 97331 (503) 754-3551

Please read each of the following statements that have been made about computers, technology, society and consumers. Indicate whether you strongly agree, agree, disagree, or disagree strongly with each. (Circle the appropriate letters for each line.)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
1. Technology has made life simpler for Americans	SA	A	D	SD	U
2. I don't trust advertisements to give accurate consumer information	SA	A	D	SD	U
3. I don't buy products based on the influence of others	SA	A	D	SD	U
4. I feel uncomfortable around home computers	SA	A	D	SD	U
5. The main value of a home computer is entertainment	SA	A	D	SD	U
6. My friends like the idea of owning a home computer	SA	A	D	SD	U
7. Religion in general encourages more simple living	SA	A	D	SD	U
8. In my opinion, the use of scientific information to make new products and solve problems has only made the situation worse	SA	A	D	SD	U

PLEASE GO ON TO NEXT PAGE

please indicate whether you strongly agree, agree, disagree, or disagree strongly with each of the following. (Circle the appropriate letters for each line.)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
9. The home computer is a useful electronic device to me	SA	A	D	SD	U
10. It is a good idea for children to learn to use a home computer.	SA	A	D	SD	U
11. Home computers will do away with repetitive, manual jobs now done in the home	SA	A	D	SD	U
12. Generally, I believe new consumer products are made to increase company profits more than to meet consumer needs	SA	A	D	SD	U
13. If I lived with an adult who wanted a home computer I would be more likely to purchase one.	SA	A	D	SD	U
14. I have sufficient math ability to understand how to operate a computer.	SA	A	D	SD	U
15. Technology can help solve environmental and consumer problems.	SA	A	D	SD	U
16. Even if I owned a home computer I probably wouldn't know what to do with it	SA	A	D	SD	U
17. In my opinion, men have an easier time learning math than women	SA	A	D	SD	U
18. In the past my friends have influenced my purchases of the products I bought	SA	A	D	SD	U
19. I grew up believing that new products would help improve my life.	SA	A	D	SD	U
20. If I want a home computer I feel I could afford to purchase one.	SA	A	D	SD	U
21. Home computers are going to be of practical use to the average American family in the next ten years.	SA	A	D	SD	U
22. I consider myself to be a religious person.	SA	A	D	SD	U
23. Individuals have become consumers of needless technological products.	SA	A	D	SD	U
24. Churches encourage a materialistic lifestyle	SA	A	D	SD	U

PLEASE GO ON TO NEXT PAGE

Please indicate whether you strongly agree, agree, disagree, or disagree strongly with each of the following. (Circle the appropriate letters for each line.)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
25. The home computer will make life more complex	SA	A	D	SD	U
26. Business product demonstrations have influenced my past purchase decisions	SA	A	D	SD	U
27. My friends believe that going back to nature is a positive lifetime goal.	SA	A	D	SD	U
28. I believe if I had a home computer I could have the computer do work I have had other people do for me	SA	A	D	SD	U
29. If I lived with a child/children who wanted a home computer I would be more likely to purchase one.	SA	A	D	SD	U
30. People in general buy products because of the influence of others. . . .	SA	A	D	SD	U
31. People improve their lives when they buy new household appliances and products.	SA	A	D	SD	U
32. I believe home computers are going to be of direct, practical use to me in the next ten years.	SA	A	D	SD	U
33. As people become more dependent on machines and science I think they become less people oriented.	SA	A	D	SD	U
34. I believe the purchase of a home computer would not be a wise use of my money	SA	A	D	SD	U
35. I am doubtful that a home computer will actually improve my life	SA	A	D	SD	U
36. I believe a home computer could do work I have had to do myself	SA	A	D	SD	U
37. If I received a large, unexpected sum of money I would consider spending it for a home computer	SA	A	D	SD	U
38. A home computer is not an especially useful appliance	SA	A	D	SD	U
39. In the future I see a home computer in my life	SA	A	D	SD	U

PLEASE GO ON TO NEXT PAGE

Please answer the following questions related to business and advertising by circling the appropriate responses.

---

40. Circle the answer that best describes where you would most likely get advice on purchasing a home computer if you decided to investigate them.

    1 Computer store
    2 Friends
    3 Computer magazine
    4 Advertisements
    5 Schools
    6 Other (specify):_____

41. Have you ever read computer magazines?

    1 Yes - Please list magazines:_____

    _____

    2 No

It is helpful for computer companies to know the effects of advertisements and demonstrations on the consumer. Please circle the answer that best describes your behavior or feelings in the following questions.

42. Have you seen or heard advertisements about home computers?

    1 No (skip to question 47)
    2 Yes (answer questions 43, 44, 45, 46)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
43. I believe the advertisement was too technical	SA	A	D	SD	U
44. I believe the advertisement(s) accurately showed the capabilities of the home computer.	SA	A	D	SD	U
45. The advertisement(s) taught me more about home computers	SA	A	D	SD	U
46. The advertisement(s) made me feel more likely to some day want to purchase a home computer or accessories for a home computer	SA	A	D	SD	U

PLEASE GO ON TO NEXT PAGE

Please circle the answer that best describes you in the following questions.

47. Do you own a home computer at the present time?

1 Yes (skip to question 49)
2 No (go on to question 48)

48. Home computers are a fairly new appliance being sold today. Please indicate whether or not each of the following applies to you.

	Yes	No	Unsure
a. Some day I may consider purchase of a home computer	Y	N	U
b. I would purchase a home computer if it saved me about an hour or work a day	Y	N	U

49. Computer companies are working to design computers at prices acceptable to the consumer and with a profit for the company. Please circle the highest price you would be willing to pay for a home computer to meet your needs, if you bought one. (Circle one)

1 $500
2 $1000
3 $2000
4 $3000
5 $4000
6 $5000

	Yes	No	Unsure
50. Do any of your relatives own a home computer?	Y	N	U
51. Does any member of your household own a home computer?	Y	N	U

52. Are the decisions about spending money made by you alone, by you jointly with other members of your household, or by someone else in your household? (Circle one)

1 Made by you alone
2 Made jointly
3 Made by someone else

PLEASE GO ON TO NEXT PAGE

53. Since computers are so new, the work the computer can do is only beginning to be tested and developed. Please indicate whether or not you would consider using a home computer to do each of the following. (Circle the letter you choose for each line.)

	Yes	No	Unsure
a. Medical check of your heartbeat, blood pressure, pulse rate	Y	N	U
b. Plan a trip and make reservations.	Y	N	U
c. Have instant news of the world available.	Y	N	U
d. Give you the performance of over the counter and listed stocks.	Y	N	U
e. Receive an immediate answer to any logical request.	Y	N	U
f. Use a computer to tutor specific subject matter	Y	N	U
g. Calculate any quantity of food required for recipies.	Y	N	U
h. Handle correspondence and type letters, etc.	Y	N	U
i. Use a computer to generate patterns for design purposes.	Y	N	U
j. Provide a security alarm system.	Y	N	U
k. Have computerized banking and bill paying	Y	N	U
l. Send and receive printed messages.	Y	N	U
m. Have robots responsive to computer commands	Y	N	U
n. Diagnose your car's need for maintenance and repair	Y	N	U
o. Plan nutritional meals and special diets for each family member	Y	N	U
p. Control your small home appliances via computer	Y	N	U
q. Play games	Y	N	U
r. Computer monitoring of vital home energy sources	Y	N	U
s. Computer automatically check air and water for pollutants and take action to fix the situation.	Y	N	U
t. Program your own computer applications.	Y	N	U
u. Other_____			

PLEASE GO ON TO NEXT PAGE

Please complete the final section of this study by circling the answer or filling in the blank to describe yourself.

54. Information about consumer lifestyles is necessary to aid in the development of suitable new consumer products. Please circle the answer that best describes you in each question. Describe your household living situation. (Circle one)

1 I live alone
2 I live with an adult(s)
3 I live with my children
4 I live with an adult and children
5 I live with several adults and children in a shared household
Other_____

6a If you live with children please list their ages_____
6b Do you want your children to learn to use a home computer?
(Please circle one)
1 Yes
2 No
3 Unsure

55. My age is:

1 Under 20
2 20-29
3 30-39
4 40-49
5 50-59
6 60-69
7 Over 69

56. My sex is:

1 Male
2 Female

57. Are you presently working for pay:

1 No (skip to question ~~72~~ 58)
2 Yes (answer questions ~~70~~ 59-60, ~~71~~)

58. Please describe your job, give your job title and in what industry.

a. Title:_____

b. Description:_____

c. Industry:_____

PLEASE GO ON TO NEXT PAGE

59. My total gross income for 1981 was: (Circle one)

1 Under $10,000
2 $10,000 - $19,999
3 $20,000 - $29,999
4 $30,000 - $39,999
5 $40,000 - $49,999
6 Over $49,999

60. Please circle the highest amount of schooling you have received.

1 Grade school - 1-8
2 Partial high school - 9-11
3 High school diploma
4 Vocational or technical training
5 Partial college, no degree
6 Associate's degree
7 Bachelor's degree (BA, BS)
8 Master's degree (MA, MS, MAT, ME, MBA, MPA, etc.)
9 Doctorate (Ph.D., D.Ed.)
10 Professional degree (M.D., D.D.S., D.V.M., Law, etc.)

Comments:_____

I appreciate you taking time to answer this questionnaire. Please place it in the envelope provided. No postage is necessary.

THANK YOU

School of
Home Economics

Oregon State University

Corvallis, Oregon 97331 (503) 754-3551

July 1, 1982

Dear Fellow Consumer:

Technology, the use of scientific knowledge, to improve or invent products, has produced a new consumer appliance, the home computer. However, there is little information on how consumers feel about computers and how technology effects their lives. Your help is needed to provide this information. Your answers to the enclosed questionnaire may help direct the use of resources and prepare a product that meets consumer needs.

You have been selected to pretest this questionnaire and your response is a vital part of the study. There is no way we can substitute for the answers you can personally give us. In addition to answering the questionnaire, please feel free to comment on the questions or the format. I assure you the information we gather will be used for statistical summaries only and in no way will your responses be linked to your name. Your questionnaire has a number to identify it when it is returned. This will help avoid the inconvenience of you being contacted again. Results are tabulated for all who are sampled and not for any one individual. The Oregon State University computer center will help tabulate the results.

If you live with others, I would appreciate that the responsible adult female answer this questionnaire. Fifty percent of my letters ask for the adult female to respond and fifty percent the male, to provide equity. If no other adult lives at this address, please answer this yourself. Your help is greatly needed. Please return this questionnaire in the provided envelope by July 14. I will contact you again if I have not heard from you by this date. Thank you for your courtesy and help.

Very truly yours,

Judith Scheuerman Jones
Researcher

Geraldine Olson
Department Head
Family Resource Management
School of Home Economics

APPENDIX C

RESPONDENT COMMENTS

RESPONDENT I

I am not going to spend my time trying to figure out logical answers to your hodgepodge of irrational statements. Don't bother me again!

RESPONDENT II

Dear Ms. Scheuerman Jones, My training in social research has made it possible for me to see that this questionnaire is for the benefit of businessmen, not the consumer. I do not own a home computer and would not want to. When the basic needs of one-third of the world's population are not met, I feel it is a waste of scientific knowledge and resources to make sure every middle-class American has a home computer. Therefore, I don't want to fill out your questionnaire.

RESPONDENT III

We feel computers make for stale thinking. Too much is made too easy and the world is flying too fast. Someday it will fly into a pattern with no return. The pleasure of living is no more. Everything is thought out for you until we have no more mountains to climb.

RESPONDENT IV

I like the convenience but very doubtful to the effect to a household. There are so many small things which make the home a home. If the computer is taking over then there is nothing to be done at home. The family will further break into parts. It is scary.

RESPONDENT V

1) Questions concerning my own purchase of a home computer may not prove to be consistent, due to the fact I'm not sure I really want one. I bet in the future they will be quite available, for example, in libraries. 2) I don't have much of a religious background and my answers there may be inconsistent. 3) I feel children would use home computers not just for playing games, but for many positive practical uses, and if I was a parent I would think a home computer would be great for their own learning experiences!