

AGE AS A PREDICTOR OF ACCEPTANCE OF HOUSING
ALTERNATIVES AMONG THE NONMETROPOLITAN POPULATION

by

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(ABSTRACT)

The main purpose of this study was to investigate a model of predictors of acceptance of housing alternatives among the nonmetropolitan population. The study analyzed data from the Southern Regional Research Project, S-141, "Housing for Low- and Moderate-Income Families."

The sample consisted of 1,234 households and a subsample of 556 over age 55. The independent variables for this study were: housing situation, housing satisfaction, concept of home, and demographics, including age. The dependent variable was acceptance of housing alternatives.

The work of Rogers (1962, 1983) and Rogers and Shoemaker (1971) on the adoption process of innovations formed the theoretical framework for this study. The Total Knowledge Index of Weber, McCray, and Claypool (1985), based on the decision stage of the adoption process of Rogers and Shoemaker (1971), was used to measure acceptance of six types of alternative housing: active solar, passive solar, apartment/multifamily, earth-sheltered/underground,

manufactured/mobile home, and retrofitted/energy-improved.

Multiple regression was used to test the first hypothesis that the age of the respondent would explain more variation in acceptance of housing alternatives than could be explained by given set of independent variables. Age did not significantly add to the amount of variation in acceptance that could be explained by the model of predictors. For the subsample over age 55 the addition of age significantly increased the amount of variation in acceptance. More of the variation in acceptance was explained by the model of predictors with the over age 55 subsample than with the entire sample.

The second hypothesis involved regressing the set of predictors, excluding age, on each of the three age independent groups (under 55, 55 - 64, and age 65 and over). The set of predictors explained significantly more of the variation for the age defined groups of 55 to 64 and those age 65 and over than it did for the group under 55. Therefore, it appears that age is important in the prediction of acceptance of housing alternatives with the set of independent variables in this study, particularly for individuals over age 55.

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CHAPTER I

INTRODUCTION

A major concern of American society today is the aging of its population and the special housing needs of that aging population. The U. S. Bureau of the Census (1983) describes aging as "a general term which can be defined as a physiological, behavioral, sociological, or chronological phenomenon" (p. 1). For statistical reporting purposes, the Bureau looks at aging by means of the chronological concept and further refines the categories into: the older population (age 55 and over); the elderly (age 65 and over); the aged, (75 and over); and the very old (85 and older). Therefore, all persons over the age of 55 are considered to be part of the aging population.

According to Sumichrast (1982) our country is initially facing a housing crisis for older Americans. By a large measure, the growth of the elderly population has already surpassed the availability of adequate housing. Because of the heterogeneous nature of the older population, a wider variety of housing choices or alternatives are needed. The availability of these housing choices will be even more critical as the proportion of elderly continues to increase well into the 21st century. According to Riche

(1986), the present and future elderly will be making new choices about housing, where and how they want to live. Therefore, research into factors that affect housing choices is indicated.

The primary purpose of this study was to investigate a model of predictors relative to the acceptance of housing alternatives by the nonmetropolitan aging population using an existing data set.

Within the decade of the 1980s, alternative types of housing for the aging population have been considered, proposed, investigated, and built. What are these alternative housing options for the elderly? Eckert and Murrey (1984) did a critical review of types of alternative housing for the aging with the following description: "an alternative will include housing types which are considered atypical, newly emerging, or generally ignored in the literature" (p. 95). It also includes any housing type that represents an alternative to institutionalization in a nursing home or other extended care facility.

Alternatives can be developed by at least two methods. First, they can arise from the preferences of the elderly themselves. The first method involves taking into account the preferences, the perceptions, and finally the

acceptance of proposed housing by the elderly. Second, housing for special groups, including the elderly, can be planned and built without the input of the group for whom it is intended. Alternative housing such as that mentioned in the second method is not likely to address the special needs of the elderly. Ultimately, the aging population will accept alternative housing which is suitable and desirable.

Because of the heterogeneous nature of the older population, a wider variety of housing choices is needed. The advent of several major changes that accompany aging, (such as retirement, reduced income, widowhood, and health), may influence what is considered satisfactory housing by this group. There has been a wave of innovations in the housing field, particularly in response to the concerns of the elderly, presenting the housing industry with the questions of acceptance. This makes it important to research the acceptance of the vast array of housing alternatives which may be proposed for the aging.

Justification for the Study

The aging population is destined to become a larger and more influential segment of American society. The declining birth rate that began in the early 60s, coupled with increases in life expectancy, makes this demographic shift inevitable. The older population--persons 65 years

or older--numbered 29.2 million in 1986. Since 1980 the number of elderly persons has increased by 3.6 million, or 14%, while the portion of the population under 65 has increased by only 5%. In 1986, the older population represented about 12.1% of the U.S. population. And the older population itself is getting older. In 1986 the 65 to 74 age group was eight times larger than in 1900, the 75 to 84 group was 12 times larger, and the 85+ group was 22 times larger (American Association of Retired Persons, 1987). The fastest growing segment of the population is the age 80 plus category. By the turn of the century, those aged 75 and over may comprise 45% of the aging population. Twenty-five percent of this projected population will be at least 80 years of age (Lammers, 1983). The significance of growth projections for the aging population employed to estimate future housing demands is that housing needs will become more acute, especially for those 75 and over (Newman, 1984).

The magnitude of the increase in sheer numbers for the aged population is an appropriate rationale to justify focusing on the many areas of housing for the elderly. According to Hancock (1987), the elderly population has been increasing in "both absolute numbers and percentage terms" (p. xvi). This trend will continue with an increase of elderly households from 16 million in 1980 to 23 million

by the year 2000. Based on this prediction, the aging population will require seven million more housing units in the year 2000 than this group had in 1980. This forecast is based on the assumption that all households had decent and suitable housing in 1980, that housing norms will remain the same, and existing housing stock will be maintained.

While the total future demand for housing by the elderly will be heavily influenced by the number and rate of formation of elderly headed households, the demand for different types of housing is more closely related to the characteristics of those households, according to Pitkin and Masnick (1980). Estimates by the Census Bureau and others indicated that between 1980 and 1985, six million net additional households headed by elderly persons would be formed.

The immediate setting in which one lives and gains protection from the environment is housing. The cost of housing and the adequacy of housing impacts on other aspects of daily life. As people age, they may become less mobile due to health problems and reduced income; thus, they spend more time at home. However, homes, as well as people age, and a house that was once adequate and comfortable may no longer be appropriate for the capabilities and financial resources of the elderly person.

To older persons, the home represents a great economic and emotional investment, and the elderly often desire to remain living independently as long as possible.

The average life of a house is approximately 50 years; thus, each year many older units are lost. These older housing units are often the ones that the elderly own or rent. Also, these are the units that are in most need of repair. As people age, they experience reduced physical capabilities which makes it difficult and often impossible to maintain a house and yard.

Elderly homeowners have also lived in their homes longer than the non-elderly (Bylund, LeRay & Crawford, 1980). Krout (1984) substantiated this finding in western New York. Longer tenure for the elderly, in general, means that the housing of the elderly is also older. Bylund et al. (1980) report that 48% of the housing of the elderly was built prior to 1940 versus 35% for all dwellings. Other implications are that the older houses tend to have more maintenance problems and more deficiencies and are more likely to be functionally inadequate. Also, these older homes are worth less money.

The elderly are more likely to own their homes mortgage free than are the non-elderly (almost three times as likely) according to the 1981 White House Conference on Aging. Ecosometrics (1981) reports home ownership for 90%

of rural elderly farm families and 82% of nonmetropolitan elderly, versus 56% of the urban elderly. The higher rate of home ownership for the rural and nonmetropolitan elderly means that this group is more likely to be affected by problems of maintenance, repair, and property tax increases.

Federal, state, and local tax policies also have major effects on the housing choices of older Americans. One of the most important tax provisions is the one-time exclusion of capital gains on the sale of homes. The capital gains provision encourages older persons over the age of 55 to sell their home and move into less expensive housing without incurring a tax liability (Turner, 1986). Thus, the population over age 55 who own their homes may make choices about alternative housing. This could impact upon their acceptance of alternative housing.

Within the past decade there has been a proliferation of housing alternatives for people of all ages to choose among. It is likely that this trend will continue. With the expanding number of options being offered as viable alternatives for the aging population, research is necessary to determine the acceptability of these alternatives. Housing for the aging population was a major concern of the 1971 White House Conference on Aging as well as the 1981 Conference. Until 1971, the government did

not recognize housing for the aging as a priority concern (White House Conference on Aging, 1971).

Bylund et al. (1980) found that the nonmetropolitan elderly are more likely to live in single, detached dwelling units than are the metropolitan elderly (86 percent versus 54 percent). This may be a reflection of the desire of the nonmetropolitan elderly to live in this type of house, but it also underscores the lack of adequate alternatives.

Kleemeir (1959) said that if much of the present housing of older people is unsatisfactory for their present and future needs, then significant attention must be paid to the possibility of modifying the present living quarters in order to meet minimum standards of adequacy, as well as to the erection of new housing adapted to meet specialized needs. Research attempting to identify predictors of acceptance of alternative housing could provide information on what factors are important to the elderly in acceptability of housing alternatives.

The availability of housing for the elderly is and will continue to be a priority for government and public policymakers, builders, communities, gerontologists, and others. It is, therefore, imperative to investigate a variety of housing alternatives which may provide options for the fastest growing segment of American society.

Research into acceptance of housing alternatives by the aging population will provide insight into and add to the body of knowledge about factors that will predict acceptance of housing alternatives. The results of this investigation can be used by builders, designers, architects, gerontologists, and others who will plan and build housing for the elderly. To date, there has been little research on the aging population's acceptance of the housing alternatives considered in the S-141 Southern Regional data set, "Housing for Low- and Moderate-Income Families," which include: earth-sheltered/underground, active solar, passive solar, manufactured/mobile home, apartment/multifamily, retrofitted/energy-improved.

Purpose of the Study

The purpose of this study was to investigate potential predictors of acceptance of alternative housing. First, acceptance was tested with the entire sample and with the over 55 age group. Subsequently, prediction of acceptance among the age categories of under 55, 55 to 64, and age 65 and over was compared.

Theoretical Framework

Rogers and Shoemaker (1971) have described and tested a theory about the process by which individuals accept or reject new ideas or products. The theoretical framework for this study will have as a basis the theory of social

change and adoption as proposed by Rogers and Shoemaker. This theory has been used extensively as the basis for testing the acceptability of innovative products or ideas, such as the innovative housing alternatives addressed in this study. This theory consists of three sequential steps: invention, diffusion, and consequences.

Alternative housing, particularly the innovative types in this study, can be categorized under the first step of "invention". The invention step, however, involves proposal of a new product or idea, and does not ensure societal acceptance. Diffusion is the process by which information about the innovations is spread to other members of a social system. Despite generally favorable attitudes toward technology and change in the United States, a considerable time lag exists from the introduction of an innovative idea to its widespread adoption. Housing innovations have lagged behind innovations in other fields, according to Sumichrast (1982), chief economist and spokesman for the National Association of Home Builders. The third process of the social change theory is consequences. What happens following invention and diffusion? Is the idea or innovation accepted or rejected?

According to Rogers (1962), innovations are not immediately adopted following their invention. Rather,

there are many stages through which one moves in the adoption process. These stages are as follows:

Awareness - The individual is exposed to the innovation.

Interest - The individual becomes interested in the innovation and seeks new information.

Evaluation - The individual mentally applies the innovation to his present and anticipated future situation and then decides whether or not to try it.

Trial - The individual uses the innovation on a small scale to determine its utility for personal use.

Adoption - The individual decides to continue full use of the innovation.

In 1983 Rogers proposed a model of the innovation-decision process which consists of five stages: knowledge, persuasion, decision, implementation, and confirmation. The basis for the innovation-decision process is that there is a process individuals experience as they pass from first discovering an innovation (knowledge), to forming an attitude toward the innovation (persuasion), to adopting or rejecting the innovation (decision), to utilizing the innovation (implementation), and finally to verifying acceptance or rejection of the innovation (confirmation).

The knowledge stage is impacted by prior conditions of the person, socio-economic characteristics, and an awareness of needs among others. The persuasion stage involves the perceived characteristics of the innovation

which include these factors: relative advantage, compatibility, complexity, trialability (see Definition of Terms), and observability. In the decision stage, which is a mental process, either acceptance or rejection of the innovation occurs. The implementation stage is not passive, but active; the person actually uses the innovation. The final stage, confirmation, is one during which individuals reinforce the decision they originally made to use the innovation.

The diffusion stage describes how knowledge of the innovation is spread. Weber, McCray, and Claypool (1985) have taken the basic theoretical model of Rogers and Shoemaker and adapted it for use in analyzing data regarding the propensity of individuals to adopt innovative housing. Weber et al. (1985) stated that the process by which innovative housing is diffused through society in relation to the diffusion process is relatively unknown.

The theoretical framework of Rogers (1962, 1983) and Rogers and Shoemaker (1971), of the adoption process of innovations, is the foundation of this research study. The work of Weber et al. (1985) resulted in indexes based on the decision stage of the adoption process of Rogers and Shoemaker (1971). These indexes were used to measure the acceptance of alternative housing in the current study of the S-141 data set. The Total Knowledge Index has been

tested and validated by Weber et al. They believe that this scale can be used to measure the propensity to adopt or accept innovative housing. Weber et al. used the Total Knowledge Index to measure acceptance of four types of innovative housing in the S-141 data set. The Total Knowledge Index was used in this research study to measure acceptance with six of the alternatives considered in the original data set.

Data Base

A subsample of approximately 1,234 respondents from the total sample of 1,804 respondents included in the S-141 Southern Region Housing Research Project, "Housing for Low- and Moderate-Income Families" was used as the sample for the primary analysis. Age was categorized for the second analysis.

This study analyzed selected data from five of the seven participating states in the regional research project (Alabama, Arkansas, North Carolina, Oklahoma, Virginia). Although seven states were involved in the total project, two of the states (Georgia and Florida) elected not to use questions in Part IV involving concept of home and specific satisfaction features. Therefore, the subsample excluded these two states from the study.

The overall purpose of the S-141 project was to identify factors which might be constraints to the adoption

of energy-efficient housing alternatives. Possible constraints investigated were demographic characteristics, family resources, decision-making processes of the family, and perceptions of selected housing alternatives.

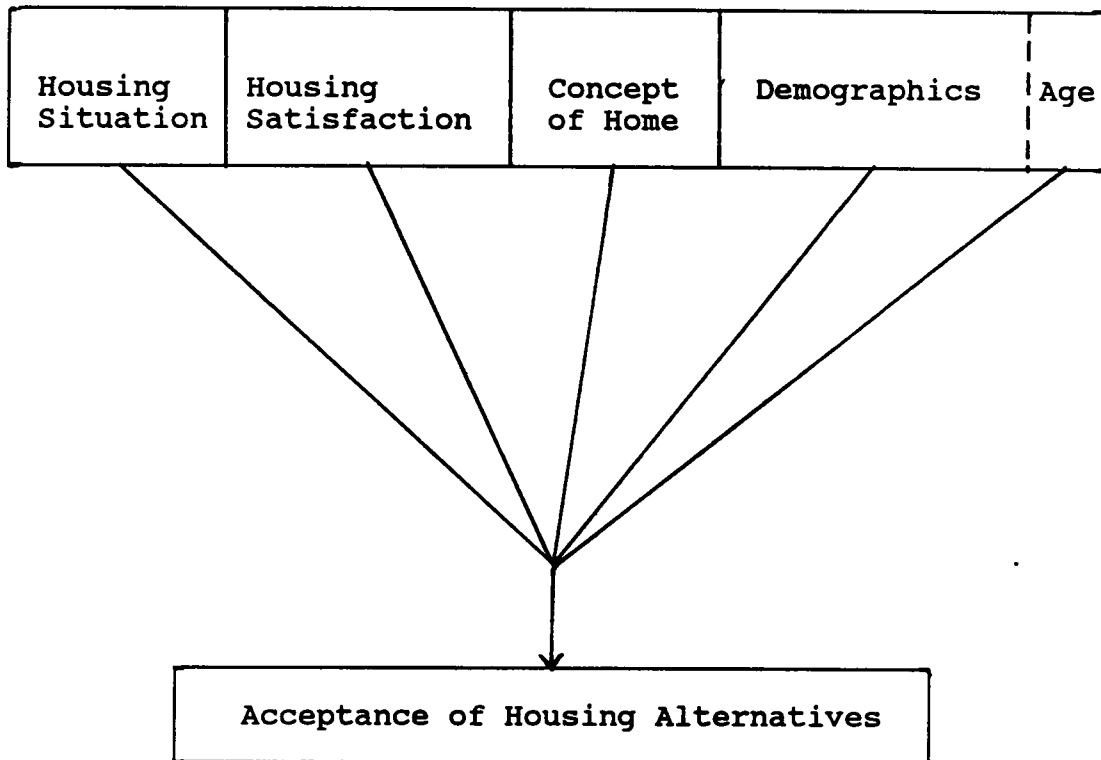
The S-141 sample of 1,804 households was drawn from nonmetropolitan areas of seven states. Each state's number of the total sample was determined by that state's proportion of nonfarm households. The 1970 Census of Population data were used to determine the number of nonfarm households in each state. The 1980 Census was not available when the sampling procedures were developed.

A two-phase stratification process, based on the median annual income and the number of nonfarm households in each county, was used in the selection of four counties within each of the states. Data collection occurred in 1980. Detailed discussion of the methodology used to select the sample can be found in "Perceptions of Alternative Housing" (September, 1983), the S-141 data book.

Proposed Conceptual Model

The proposed conceptual model (Figure 1) shows how the investigator examined the dependent and independent variables. The basic premise of this model is that acceptance of housing alternatives can be predicted by housing situation, housing satisfaction, concept of home,

Figure 1. Proposed conceptual model



and selected demographics, including age.

The independent variables for this study were categorized as follows: housing situation, housing satisfaction, concept of home, demographics, and age. Selected aspects investigated in each of the independent variable categories were:

A. Present housing situation

1. tenure status
2. length of time lived in dwelling
3. dwelling expense
4. location of dwelling
5. type of dwelling
6. size of dwelling
7. age of dwelling

B. Housing satisfaction

1. satisfaction with physical location and
 - convenience to work
 - convenience to shopping
 - availability of public transportation
 - community services
 - availability of medical services
2. satisfaction with space in the home for
 - preparing food
 - laundering clothes
 - food storage
 - closet space
 - general storage
 - outdoor storage
3. satisfaction with general features of the dwelling including
 - size of rooms
 - arrangement of rooms
 - overall comfort of home
 - appearance of home outside
 - privacy from neighbors or public
 - privacy within home
 - air conditioning
 - heating

- inside appearance
- plumbing
- number of bedrooms
- number of bathrooms
- electrical facilities
- water supply

4. overall satisfaction with present dwelling

C. Concept of home

1. physical meaning
2. social meaning
3. personal meaning
4. general positive concept
5. general negative concept

D. Demographics

1. gender
2. income
3. education
4. marital status

- E. Age, in the overall model, was the actual age of all respondents in the study. In further testing age was broken down into three categories of under 55, 55 to 64, and age 65 and over. Age, although a demographic variable, was considered separately, since the relationship of the other variables to acceptance was considered on an age basis.

The dependent variable for this study was acceptance of housing alternatives in general. Acceptance of housing alternatives involved the measurement of the propensity to adopt or accept these options: active solar, passive solar, apartment/multifamily, earth-sheltered/underground, manufactured/mobile home, retrofitted/energy-improved.

More specific information on types of variables and scales of measurement is given in Chapter 3 in the section, "Treatment of the Data."

Objectives of the Study

The primary research objective was to determine whether the acceptance of housing alternatives can be predicted by the current housing situation, housing satisfaction, concept of home, selected demographics, and age.

If age proves to be a significant predictor of acceptance of housing alternatives, then the predictive value of each of the other four variable classifications will be compared in each of three age defined categories (under 55, 55 to 64, and 65 years of age and over) to determine if acceptance of housing alternatives can be predicted differently as age increases.

Hypotheses

Based on the review of literature, the following hypotheses, as stated in null form, were tested.

Ho₁. Age does not add significantly to the amount of variation explained in the acceptance of housing alternatives above that which is explained by the current housing situation, satisfaction levels, concept of home, and selected demographics.

Ho₂. The amount of variation in acceptance of housing alternatives explained by regressing acceptance on demographic factors, housing situation, housing satisfaction, and concept of home does not differ among the

three specified age groups of under 55, 55 to 64, and age 65 and over.

The rationale for the second hypothesis is that if age is found to explain significant variation in acceptance of housing alternatives, over and above that which is explained by the other variables, then a comparison of the prediction model among the three age groups is appropriate.

Limitations

A primary limitation of the study is that it was limited to examining only those variables included in the instrument "Perceptions of Alternative Housing." Thus, the testing of the model for acceptance of housing alternatives by the aging population was restricted both in its use of the independent variables and of the dependent variable.

Another limitation of this study was the use of 1970 Census data as a means of stratifying and selecting the sample counties for the regional project. It is a possibility that in the intervening years before the actual research project began in 1979 conditions may have changed, making the classification of counties on the basis of median annual income and proportion of nonfarm households out-dated, thus a possible limitation of this study.

Another limitation is the geographical restrictions of the project. The geographical location of the study was restricted to the rural south which is considered more

conservative than other regions of the country.

Another limitation was in the selection of individual properties to be sampled in each county. Project leaders found considerable inconsistency in the methods of maintaining tax records not only from state to state but among counties within the same state.

It is possible that economic conditions in general, particularly high interest rates on mortgage loans, which were rampant at the time of the administration of the instrument, may have influenced responses to the interview items.

Delimitations

The sample was limited to nonfarm households located in four counties in each of the seven southern states participating in the regional research project. The four counties sampled in each state were limited to those not part of a Standard Metropolitan Statistical Area. Of the 1,804 households included in the original sample, two breakdowns were used. For the testing of H_{01} , a sample of 1,234 respondents and a subset of 556 over the age of 55 from five of the seven states was used. In testing H_{02} , three age defined categories of under 55, 55 to 64, and age 65 and over were used.

Definitions of Terms

The following definitions (S-141 Technical Committee, 1983) were used in the framework of this study:

Active solar house - a housing unit that uses accompanying mechanical devices which collect solar energy and transfer this energy for use in the interior. The active solar unit includes collection panels, storage devices, and a control system that act to regulate all phases of collection and delivery.

Adoption - The final stage in the process of acceptance of an innovative idea or product, i.e., voluntary use.

Apartment/Multifamily - a housing unit in a building with three or more units that has a common foundation and structural system for roof and wall divisions.

Earth-sheltered/Underground house - a housing unit in which at least 50% of the exterior surface is covered by earth which provides increased energy efficiency in relation to heating and cooling.

Housing alternatives - energy efficient housing units which are the result of the use of innovative materials, designs, construction methods, and mechanical systems and/or subsystems.

Manufactured/Mobile home - factory built units that are transported to the site to be used as permanent housing.

Nonfarm household - a group of people living together in a dwelling unit whose income from sources other than farming is more than 50% of the combined household income.

Non-SMSA counties - a county or group of adjacent counties that contain neither a single city of at least 50,000 inhabitants nor twin cities with a combined population of at least 50,000 inhabitants.

Passive solar house - a housing unit which relies on design, construction materials, site orientation, or landscaping to provide energy efficiency in the heating and cooling of the unit.

Retrofitted/Energy-improved house - a structural improvement to the housing unit for the purpose of increasing energy savings.

Trialability - a term coined by Rogers and Shoemaker to explain the process or extent to which the innovation can be adopted on a less-than-full-scale basis. Rogers and Shoemaker (1983) prefer the term trialability rather than divisibility because it includes the notion of a psychological trial.

Summary

In summary, the need for a study of the factors important in predicting acceptance of innovative housing alternatives is justified on the basis of: 1) the rapid growth of the elderly segment of the population; 2) the need for additional housing units for this elderly group; and 3) the need for improving the quality of the existing housing stock currently occupied by the elderly. The theoretical framework used for the study is outlined, and the conceptual model used to test the theory is described.

The applicable literature concerning acceptance of housing alternatives, and the potential influence of the chosen predictors on acceptance, is reviewed in Chapter 2. The methodology used to conduct this research is described in Chapter 3, and the description of the data is presented in Chapter 4. Chapter 5 delineates the findings from the analysis of the data. The research is summarized in Chapter 6, and implications of the current research and recommendations for further study are presented.

CHAPTER II

REVIEW OF LITERATURE

The review of literature will consider the concept of acceptance in relation to housing alternatives, selected features of the present housing situation, housing satisfaction of the aging population, the meaning of the concept of home, selected demographic factors, and age.

Acceptance in Relation to Housing

Acceptance of a new pattern of thinking or of a new behavior requires more energy expenditure than maintenance of the old pattern (Ryan, 1969). An innovation is an idea that is perceived as new by a person. It does not matter if the idea is new as measured by the amount of time elapsed since its first use or discovery. It is the newness of the idea to individuals that determine their reaction to it. There is a real psychological barrier to the acceptance of innovation among all individuals (Rogers & Shoemaker, 1971).

Adoption is the final stage in the process of acceptance of an innovative idea or product (Rogers & Shoemaker, 1971). Adoption is an individual matter. It is the mental process through which a person passes from first hearing about an innovation to final adoption.

Rogers (1983) proposed a model of the innovation/decision process which includes five stages: knowledge, persuasion, decision, implementation, and confirmation. Knowledge occurs when an individual is first exposed to the existence of the innovation and gains some understanding of how it works. Knowledge is an important component in this model and is deemed an important variable by Weber, McCray, and Claypool (1985) in the measurement of acceptance of innovative housing.

Sweaney, Pittman, and Montgomery (1985) investigated the impact of age and marital status on housing behavior of older Southern women. The subjects were a part of the sample of 1,804 households used in the S-141 Southern Regional Housing Project "Housing for Low- and Moderate-Income Families." Consumer acceptance of housing alternatives was one of six dependent variables examined. The six housing alternatives were conventional, apartment, retrofitted, active solar, passive solar, and earth-sheltered. Age was found to have a negative effect on consumer acceptance in four of the alternative housing types: conventional, retrofitted, active solar, and passive solar. Marital status was determined to be a predictor of acceptance of apartments, passive solar, and earth-sheltered housing. Widows were predicted to be more accepting of apartment living, whereas married women found

passive solar and earth-sheltered housing to be more acceptable. The only housing alternative in which both marital status and age were significant predictors was passive solar. Age and marital status were then tested by stepwise multiple regression as predictors of acceptance of the various alternatives. In the final model for acceptance of each housing type, either marital status or age was included. Marital status was the strongest predictor of acceptance of apartments and earth-sheltered housing. Age group was the strongest predictor in the models for the alternatives of conventional, retrofitted, and active solar housing.

Beamish, Sweaney, Tremblay, and Bugg (1987) investigated consumer acceptance of the energy-efficient housing alternatives using the S-141 data base. To provide insight into acceptance, the researchers looked at perceptions of the respondents who reported that they would or would not consider living in one of these housing types. Results showed that "design/appearance" could be the factor that limits acceptability. There was a high percentage of the sample who responded "uncertain/don't know" or had no response, suggesting that many consumers do not have adequate information about the energy-efficient housing alternatives to make a decision.

Using the S-141 data base, Dagwell (1983) examined factors related to the probable adoption or nonadoption of energy-efficient housing alternatives. Findings indicated that probable adopters of the housing alternatives were usually younger and had more education and higher incomes.

A research study by Dillman, Dillman, and Schwalbe (1980) concentrated on the strength of housing norms and the willingness to accept housing alternatives. The researchers believed that a study of this nature was important as it was becoming more difficult for many people in America to purchase traditional housing. Four specific housing norms--ownership, detached structure, private outside space, and conventional construction--were used in this study. The relationship between the influence of personal characteristics and the willingness to accept housing alternatives was examined. Findings determined that conventionality declined in importance with increasing age. In relation to income, conventionality was important for individuals with an income level below \$5,000, and for individuals with an income level above \$20,000.

Even though the aging population tends to be highly satisfied with their housing, Lee (1986) suggested that older people "can and do envision other types of housing, that may be more congenial with their needs and desires" (p. 37). Dillman, Tremblay, and Dillman (1979) explained

this in similar terms with the theory of disengagement, which is, that with age the elderly feel less inclined to conform to housing norms. The effort of maintenance, as well as the additional housing expense could affect this inclination of resisting conformity to traditional norms. This is particularly true for the female headed households. Thus, they may be more receptive toward renting and see it as offering them freedom as well as mobility. Even though not fully explainable, the data suggest that a large proportion of the elderly would prefer some alternative housing form in lieu of owning a conventional home, though most of them are owners.

Lawton (1981), who has done much research on alternative types of housing, particularly in terms of matching types of housing in accordance with the intellectual and physical competency of the aging individual, stated that new and untried forms of alternative housing should be proposed and built. Lawton defines alternative housing in terms of exclusion; "whatever is not in the traditional group is alternative" (p. 74). Lawton urges further work in this area, even though there may be limited markets for many types of alternative housing geared to the aging population, particularly those untried and unusual types of housing.

A research study by Brent, Lower-Walker, and Twaddell (1983) investigated whether making adaptations in the homes of older adults at risk of institutionalization, as well as the use of social support systems, would insure independence of these adults in their own homes. The study confirmed the hypothesis that adaptations would enable the elderly participants to remain independent and in their homes. The findings have larger implications that may be important to this study. Retrofitting is one of the alternatives proposed in the S-141 study. Acceptance of retrofitting by the aging could serve more than one purpose. It would allow the aging population to stay in their own homes and to be independent for as long as possible. Retrofitting would be less costly than other housing alternatives or institutionalization and the housing adequacy for an aging society could be improved.

According to a 1980 research report by Pitkin and Masnick of the Department of Housing and Urban Development, approximately 10%, or 1.6 million, aging families had inadequate housing. Although the adequacy of housing in the sample of elderly families was shown to be high, another concern emerged. The attitude of those aging persons was one in which they loved their homes despite inadequacies and the "home is a place where they want to stay as long as possible" (p. 139). The researchers

concluded that the inadequacies could be taken care of by retrofitting much more cheaply than the costs of institutionalization:

...the eventual dollar savings to aid older adults to stay in their own home by supporting "retrofit" projects for their housing are substantial (p. 140).

Since the late 1970s there has been a surge of interest in expanding housing options for older Americans. The survey by the American Association of Retired Persons (1987) reported by Dobkin asked 1,500 respondents if they would consider 12 different housing options. Women were more likely to accept moving to a congregate housing facility, a continuing care facility, or Echo housing [small planned housing units for the elderly, a term coined by Leo Baldwin (American Association of Retired Persons, 1987)]. Men were more likely to consider home equity conversion, a second mortgage, or starting a home business--all options that would allow them to remain in their homes. It is important to keep in mind that the dynamics of housing choices are influenced by a familiarity with the alternatives and if these alternatives actually exist in a desired community. While these survey findings cannot be used to predict behavior, they do provide insight into perceived preferences of older Americans.

McCray, Tremblay, and Navin (1985) investigated the perceptions of housing alternatives from a sample of

Arkansas households. A vast majority of the respondents had limited knowledge of/or interest in alternative housing types. Over 50% of the respondents said they would consider retrofitted and passive solar homes while over a third would consider active solar and earth-sheltered housing. The results from the survey regarding features liked and disliked about housing types suggests that design/appearance is the factor that has the greatest impact on acceptability. Thus, it was reasonable to assume that because passive solar and retrofitted homes are similar to the conventional home in design and appearance, they were regarded as acceptable by a majority of the respondents.

Combs, Tremblay, and Madden (1983) investigated the probability of adoption of solar heating systems within their homes as a measure of saving energy within the home. They used the classic theory of Rogers (1962) and Rogers and Shoemaker (1971) and in particular, two factors of the theory, those of complexity and trialability, to test the Nebraska households. The results of the study showed that solar energy systems were perceived as too complex and not as easily trialable for small households whose members are elderly and whose members have lower incomes and educational levels.

Day, Lentner, Beamish, Crisco, and Dyer (1985) analyzed data concerning 312 Virginia respondents from the Southern Region Housing Research S-141 project entitled "Housing for Low- and Moderate-Income Families." The focus of the study was to determine consumers' acceptance of energy-efficient housing alternatives and to identify constraints to the adoption of these housing alternatives.

Consumer acceptance of the seven housing alternatives were assessed: conventional home, manufactured/mobile home, apartment/multifamily home, retrofitted home, passive solar home, active solar home, and earth-sheltered/underground home. The measures of consumer acceptance used were: knowledge of/or exposure to the housing alternatives, if additional information had been sought about any of the alternatives, and if respondents would consider living in one of these housing alternatives, their perceptions (likes and dislikes) of the housing alternatives, and a ranking of the housing alternatives.

From 56% to 98% of the respondents had heard about each of the individual alternative housing types but only a small percentage had sought information or had lived in these types, with the exception of manufactured/mobile home or apartment/multifamily. Forty percent indicated that they would definitely consider the conventionally built house while approximately 10% would consider the passive

solar and the active solar and 8% would consider the earth-sheltered/underground house.

In a ranking of preferences, conventional housing was the most preferred, followed by retrofitted, passive solar, active solar, multifamily/apartment unit, and earth-sheltered/underground housing. The manufactured/mobile home was ranked as the least liked of the alternatives.

McCray, Weber, and Claypool (1987) examined the impact of knowledge of energy conserving building technologies on housing behavior and utilization of 1,609 homeowner households from seven states in the southern region of the United States using data from the Regional Research project S-141, "Housing for Low- and Moderate-Income families." A "Knowledge Index" previously designed by the researchers was used as the basis for this study.

The study sought to identify the impact of knowledge of energy-efficient innovative building technologies on energy related housing and modifications. Data were analyzed using chi-square and correlation analyses. The results showed that as total knowledge increased, so, too, did the number of modifications to the present dwellings. Knowledgeable nonadopters of energy efficient innovative housing systems make more modifications designed to reduce energy consumption in their present dwellings than do respondents who are less knowledgeable of these systems.

The researchers suggested educational programs designed to alter energy consuming lifestyles and information regarding technology transfer to conventional housing systems. The transfer of energy efficient technologies to conventional housing systems may provide an acceptable alternative to the widespread adoption of solar, earth-sheltered, or other innovative housing systems which have limited acceptability and/or understanding by consumers.

In summary, acceptance is a critical issue in the adoption of any new or untried product or idea, such as is the case with the innovative housing alternatives considered in this study. Younger, more educated, and/or more wealthy individuals appear to be more likely to adopt new or innovative housing alternatives. The elderly, on the other hand, appear to love their homes despite inadequacies, and may be slow to consider adoption of these newer housing alternatives. The increasing need for adequate, affordable housing for the elderly makes it necessary that acceptable alternatives are available to the elderly. The choices are influenced by the availability of different housing alternatives in a given community. However, education of the elderly about the various housing alternatives may be the most-limiting factor in making these housing alternatives acceptable to the elderly.

The Housing Situation

This section will review literature dealing with specific aspects of the housing situation of the 55 and over population in relation to acceptance of housing alternatives. Specific aspects of the housing situation are tenure status, length of time in present dwelling, dwelling expense including utilities, location, type, size, and age of dwelling.

Housing Norms

Many of these specific aspects of the housing situation can be expressed in terms of norms or the ideal. According to Rogers (1962) a norm is defined "as the most frequently occurring pattern of overt behavior for members of a particular social system" (p. 57). Norms influence the diffusion of new ideas. Culture is also very important in the understanding of the norms of a society. Families judge their housing and that of others by using criteria from the culture known as norms (Morris & Winter, 1978). A family whose housing does not meet the norms experiences one or more deficits. An adjustment in housing occurs whenever the family has a normative deficit that causes a significant reduction in housing satisfaction. Four types of responses are possible, which are residential mobility, residential alterations, normative family adaptation, and structural family adaptation.

Tenure Status

A survey conducted by the American Association of Retired Persons and reported by Dobkin (1987), explored the relationship of housing in the lives of 1500 persons aged 60 and over. Ownership was the preferred tenure status. Eighty percent of the respondents wanted to remain in their own homes and never move. Women over 80 were especially adamant about not wanting to move. Nearly half of the respondents had lived at their current residence for over 20 years and two-thirds had lived in the same community for over 20 years. In response to the results of this survey, projections for home ownership rates among the aging population in the United States are expected to rise and reach 80% by 1995.

There is a dramatic difference between the proportion of elderly owners and renters. This difference increases with advancing age making tenure status an important characteristic by which to subgroup the elderly. According to Newman, Zais, and Struyk (1984) there appears to be a shift from owning to renting as age increases. Among owners who do move, about 40% shift to rental units while only 15% of renters shift to ownership. The effect is an increase in the size of the elderly renter population. This fact could impact upon acceptance of housing alternatives due to decisions regarding change from one

category of tenure to another. Approximately 25% of the elderly population are renters. As age increases, the number of renters who are household heads or are males living alone declines. Therefore, the increase in the percentage of renters, as age increases from 55 to over 75, is due to the increasing number of women living alone who are primarily widows.

Length of Time in Residence

After the age of 35, Americans do not change residences often, partly because of ownership and partly because of the emotional security of being in a familiar environment. The majority (60%) of elderly Americans have lived in their present dwellings for more than 20 years, while only 20% of the number of non-elderly have lived in one dwelling for that length of time (Atchley, 1985). Research by Struyk and Soldo (1980) found that elderly renters (28%), who are more mobile than elderly homeowners, stayed in the same dwelling for 12 years or more.

O'Bryant and McGloshen (1987) investigated older widows' intentions to stay or move from their homes. They found that widows' intentions to stay or move from their homes were more closely related to subjective attitudes (attachment to home) rather than socio-demographic or objective factors.

A change in the family life cycle is related to mobility (Morris & Winter, 1978). The additional housing needs which arise from age related factors may produce dissatisfaction which in turn may produce residential mobility, alterations, or additions.

Dwelling Expense

Struyk and Soldo (1980) documented housing costs by using the standard, set by the Department of Housing and Urban Development, that 30% of total income was a reasonable proportion of total income to devote to housing costs. In using data from the 1976 Annual Housing Survey, Struyk and Soldo (1980) found among the elderly more than 48% of the renters and more than 38% of the owners with mortgages had excessive housing costs. The groups most burdened with high housing costs were females and those living alone.

According to Newman, Zais, and Struyk (1984), research indicates that as the pre-old age cohort enters older age, the ratio of his/her housing costs to income rises. In 1980 those who were in the 65 to 74 age group had housing costs to income ratios between 6 and 12 percentage points higher than they had had a decade earlier. Although these increases continue, they are not as sharp for age 75 and above. Many of the elderly population who own homes do not have mortgages. However, a valid question is, must they

cut back on other necessities in order to remain in their homes?

Utility costs are particularly high for the older population in proportion to their income and also when compared to the utility costs of younger adults. Many of the aging population, particularly homeowners, live in older houses that may not be well insulated and that may have inefficient heating systems. Utility costs for owners appear to increase with increases in age. In 1980, owners in the 65 to 74 age category experienced a \$200 increase in utility costs over what they had experienced a decade before. A likely suggestion is that energy conservation measures are not being adopted by the elderly or that their homes may not be suitable for retrofitting (Newman, Zais, & Struyk, 1984).

Location of Dwelling

In rural areas the aging are more likely to live in small towns. More than a quarter of the elderly live in counties with no town of over 25,000 population and no city of 50,000 population or more in any surrounding county (Atchley, 1985). According to Lee (1986), the housing of the rural elderly has been neglected and has received less attention than the housing of the metropolitan elderly.

Morris and Winter (1982) maintain that the rural elderly are more likely to be able to obtain the norm of

home ownership and to have outside space, important factors in our American culture. They further point out that the rural elderly are more likely to have housing congruent with their preferences.

In their study of rural housing, Montgomery, Stubbs, and Day (1980) found that over 95% of the low-income elderly reported that their housing suited their needs. There was no expressed desire to move and very few saw the need for major improvements to their current dwelling units. Thus, in spite of poor quality housing, the rural elderly appear to be more satisfied with their housing than any other age and residence category of the aging population.

Type of Dwelling

Dillman, Tremblay, and Dillman (1979), in a study of housing preferences, noted that the single family detached dwelling was first choice of their sample with the exception of two categories, the elderly and the widowed. Less than half of the respondents in these two categories listed the single family home as either first or second choice. These two groups were more receptive to renting or to owning a mobile home on a rented lot.

These conclusions differed from those by other researchers. According to Morris and Winter (1978), elderly householders are more likely to own a single family

detached dwelling unit than any other type. The elderly are also more likely to live in a single family detached dwelling unit than other segments of the population. In spite of the recent surge of alternatives types, particularly condominiums, these types have not yet replaced the preference of the elderly for the single family detached dwelling unit.

The current housing situation can influence the propensity of the elderly to accept innovative housing alternatives. An individual would be more likely to adopt a new housing alternative if they perceive that their current housing does not meet standard housing norms. There appears to be a shift from owning to renting as age increases. When a change from one tenure status to another is imminent, the elderly individual may be more receptive to different housing alternatives. The elderly tend to remain in the same residence for a longer period of time than do non-elderly, therefore, as the length of time in the dwelling increases, the elderly individual may be more resistant to change. The portion of the elderly's dwelling expenses represented by home mortgages is generally smaller than for non-elderly, but the portion due to utility expenses is actually higher than for the non-elderly.

Housing Satisfaction

Residential satisfaction has traditionally been treated as one of a number of indicators of "quality of life" for elderly people. Other indicators used for satisfaction studies have been marriage, family life, job, health, and friends. Housing satisfaction has been shown to be at least moderately related to more generalized life satisfaction in almost all gerontological research (e.g., Carp, 1966; Lawton & Cohen, 1974; McAuley, 1977; Lohmann, 1980). Therefore, the study of residential satisfaction appears important not only for its own sake but also for its contribution to the overall concept of quality of life and well being of older people (Lawton, 1980).

Morris and Winter's Theory

Morris and Winter (1978) have proposed a general theory of housing adjustment as a continuous process through which a family or single individual evaluates its current housing situation. Throughout the family life cycle, housing evaluation is more important at some times than at others, depending upon changes in the family structure.

Families judge their housing using criteria known as norms. Norms define sets of rules or behavior which are acceptable. When related to housing, norms define what is acceptable housing behavior. If a family's housing does

not meet or conform to housing related norms, then that family experiences a housing deficit. Normative standards have been set in relation to space, tenure, quality, expenditure, structure type, and neighborhood. It is possible that a family may be unaware of a housing deficit. If the family should perceive that their housing falls short of the cultural norms, a normative housing deficit exists. The family may, according to the model of Morris and Winter, deal with the deficit in one of these major ways: residential mobility, residential alteration, normative family adaptation, or structural family adaptation. If it is not possible to alter the deficit housing conditions in one of these ways, the family may experience dissatisfaction with its housing (Morris & Winter, 1978). Numerous studies have used this theoretical model of housing satisfaction and adjustment behavior.

An elderly family may have special housing needs unassociated with the usual housing norms. Such needs may be age related poor health, disability, death of spouse, and decrease in income.

Satisfaction Studies

In a landmark study by Carp (1966) involving a proposed move to Victoria Plaza (housing built especially for older adults), the phenomenon of cognitive balance emerged. Carp interviewed all the Victoria Plaza

applicants and found that current housing satisfaction was high even though they were seeking acceptance into Victoria Plaza. Carp followed up with a second interview in which she found that the satisfaction level of the rejected applicants did not change. But Carp did, however, find a substantial drop in current housing satisfaction among those who had been accepted into the new housing. It required the existence of a realistic alternative for these applicants to be able to tolerate the imbalance between an objective evaluation of their present housing and their personal evaluation of it.

O'Bryant and Wolf (1983) reported the results of a comparative study of housing satisfaction between older homeowners and renters. Three variables--personal-demographics, housing characteristics, and a group of subjective factors concerning value of home--were investigated as to their usefulness in predicting the housing satisfaction of older homeowners and older renters. A second purpose of the study was to determine if these variables would function in similar ways in explaining housing satisfaction of owners and renters. Physical characteristics were more useful as predictors of housing satisfaction for renters, but subjective factors were more useful in explaining the satisfaction of older homeowners. O'Bryant and Wolf (1983) said of alternative housing for

the elderly:

Alternative housing will not attract older persons if it does not also incorporate the psychological values they have come to enjoy as a result of owning their own home (p. 231).

Golant (1982), in a research study of 400 persons aged over 60, found that older people who were more satisfied with their dwellings were less favorable toward new or stimulating environments, were home owners, traveled less frequently away from home, had lived longer in their residences, and reported few financial problems. Golant found that owners are more likely to be satisfied with their dwellings because they view them as possessions. In essence, ownership gives owners control over their environment. Homeownership also connotes a symbol of status, that of having arrived. Ownership has always been an important part of the American culture. Length of residence was found to be positively correlated with a higher level of housing satisfaction. The fact that a person has grown old in the same dwelling can be looked upon as "concrete evidence of previous life successes and accomplishments" (Golant, 1982, p. 129); i.e., the dwelling plays a major role in the individual's personal history. Golant determined that subjective and objective indicators of housing satisfaction may not yield conclusions which are consistent.

In the elderly family, the dwelling is an especially integral part of that family's total life situation. Many elderly people live in dwellings that by objective standards are not suitable in terms of quality and may even be detrimental to their health (Struyk, 1977). Yet, Lawton (1978) has found that the elderly report higher housing satisfaction levels than expected.

Many elderly are often satisfied with housing that is inadequate for their current situation. Lawton (1980) determined that variables such as housing deficiencies and attributes, as well as demographic characteristics accounted for only about 19% of the variance in housing satisfaction. Furthermore, Lawton found that the home's heating system took precedence over all other housing attributes in its relationship to housing satisfaction. Despite improved conditions in alternative housing, many elderly homeowners will remain in their homes because of the psychological value and significance of these homes. Renters may be more dissatisfied with physical attributes and deficiencies, and therefore, be more likely to consider moving (O'Bryant & Wolf, 1983).

Despite the fact that housing takes a larger share of the older person's income, that it may be substandard or that it may not be commensurate with their physical needs, satisfaction with housing increases with the age of the occupant and the length of time in that residence (O'Bryant, 1983, p. 32).

Lawton (1987) proposes that the elderly's degree of

expressed satisfaction with their housing is greater than that expressed by other age groups and greater based on objective features of the dwelling. Lawton termed this "excess satisfaction" and this hypothesis has been supported by other research (Campbell et al. 1976; Carp, 1975; Lawton, 1978). A study by Herzog and Rodgers (1981) investigated age-satisfaction relationships, while controlling for the three objective factors of health, income, and education of which the elderly are most likely to be deprived. The investigation supported Lawton's hypothesis of "excess satisfaction."

Campbell, Converse, and Rodgers (1976) supported the finding that excess satisfaction was increased by lower aspirations and by an ignorance of alternatives, which are without question parts of the cognitive balance effect. Older adults have a tendency to accept the "status quo" in housing.

Age, income, and education are confounded in most of the research showing excess satisfaction, thus caution is advised against explanations on these variables alone. Clearly, there is the need for more research in the area of housing satisfaction, particularly in light of the fact that in the next few years there is likely to be an increase in the building of housing for the aging population.

Housing satisfaction varies both with age and tenure type. An explanatory theory put forth by Lawton (1987), termed "progressive shopping," proposes that over a lifetime, older people have had numerous opportunities to exact a match among their own needs, their assessment of what is possible, and their actual dwelling situation. The result is a state of perceived congruence of the older person with his dwelling and environment.

Lawton (1987) further expands on the meaning of housing satisfaction, as it relates to age, with the hypothesis that familiarity with an environment and a dwelling is a strong determining factor of housing satisfaction in older adults. This theory has not yet been sufficiently tested to make it generally accepted as a fact. Herzog and Rodgers (1981) did not find length of residence to be a strong determinant of the relationship between age and residential satisfaction.

A 1986 study by Whiteford and Morris investigated the relationship between age and housing satisfaction. Tenure was controlled. They hypothesized that housing satisfaction was greater among the elderly than younger age groups and homeowners were more satisfied than renters. Multiple regression analysis was used to test these hypotheses. Two control variables, income and health, were used to improve the prediction's accuracy. For the

purposes of the study, four age groups were formed: under 35; 35 to 49 years; 50 to 64 years; and 65 or older. Each group was then subdivided into tenure status categories. The income of the aging is lower than during their earlier years, therefore, they are more likely to spend a larger percentage of their income on housing than other groups.

As a group, the aging are more likely to be homeowners. Thus, the norm of ownership may need to be examined in relation to housing satisfaction. Tremblay (1981) found that ownership of a single family detached dwelling is the strongest of the four primary housing norms. Whiteford and Morris (1986) pose the question of whether home ownership is a strong need for older people. In a study of retirees in a variety of residential settings, Sherman (1972) concluded that many felt it would be a mistake to buy a home in the later years of their life. Dillman, Tremblay, and Dillman (1979) noted that while the norm for ownership was preferred by the elderly, the desire to purchase a home declined with age. If the strength of the tenure norm declines with age, could the factor of satisfaction be expected to decline with age? The literature, however, reports a direct and positive correlation between age and housing satisfaction.

The results of the Whiteford and Morris (1986) investigation revealed that housing satisfaction did not

increase with age. Renters above the age of 50 showed a satisfaction level similar to that of owners, while renters under the age of 50 were less satisfied. The study may suggest the trend that many elderly are returning to renting, thereby freeing themselves from some of the constraints of ownership. Some aging may have always rented, thus the norm of ownership may never have occurred or been important to them. The authors concluded from the study that the relationships of age, tenure, and housing satisfaction among the aging population may be more complex than has been previously thought.

The results of a 1987 survey by the American Association of Retired Persons to explore relationships between older people and their housing confirms previous studies which indicated that housing satisfaction increases as one ages in spite of lowered quality in housing and housing that is more expensive to repair and maintain in relation to income. The study suggests that this phenomenon may occur because the home is a reflection of oneself and one is hesitant to slander it. Another suggestion is that the aging process is accompanied by a reduction in aspirations and/or that older age cohorts are socialized to have lower expectations. Subgroups of the older population who express the most dissatisfaction with their housing are those with serious health limitations,

those who live alone, women, minorities, and mobile home residents (Dobkin, 1987).

Researchers (Kart, 1981, Soldo, 1980, Weeks, 1984) have thought that, given the poorer quality of the housing of the elderly, as a group the elderly would be less satisfied. Kart (1981) stated that the elderly's assessment of their dwelling units is somewhat more positive than the non-elderly's. He feels that this is due to the stronger attachment the elderly feel to their homes due to the facts that they are more likely to be homeowners and have lived there longer or because of the lack of other housing options. This satisfaction may also reflect a cohort effect in that the elderly grew up in less modern housing and are thus satisfied with less.

Weaver and Ford (1988) studied two types of alternative living arrangements for the elderly in regard to social participation and life satisfaction. The two living arrangements were conventional apartment living and shared living, which is a newly emerging housing alternative for the elderly. The researchers hypothesized that there is a relationship between living arrangements, social participation, and life satisfaction and that residents of shared living units would have lower levels of solitary activity and higher levels of group activity than residents of senior citizen apartment complexes and

therefore, would report higher levels of life satisfaction. The study involved 117 respondents, 52 who lived in shared living arrangements and 65 who lived in senior citizen complexes. The researchers found that the impact of living arrangements in determining social participation and life satisfaction was not as strong as hypothesized. The researchers further found that shared living arrangements in this study could not be considered viable alternatives to conventional forms of housing for the elderly.

To summarize, the elderly's degree of expressed satisfaction with their housing is greater than expressed by other age groups. The high levels of housing satisfaction reported by many elderly homeowners appear to be due to subjective factors, whereas physical characteristics are more useful in determining the perceived level of satisfaction among elderly renters. Individuals who are more satisfied with their dwellings are less favorable toward new or innovative environments. In order for alternative housing to be acceptable to elderly people, it must incorporate features and values that produce high levels of expressed housing satisfaction.

Concept of Home

There has, within the past two decades, been an increasing interest in the relationship between physical environments and social and psychological factors (Proshansky, Ittelson, & Rivlin, 1976). The findings of several researchers (Cooper, 1974; Fried, 1963; Gans, 1962; Schorr 1966; Golant, 1984, O'Bryant, 1983) have contributed to this interest. Cooper (1974) stated that the house is symbolic of self. A person is judged by the outward image of his place of residence. Schorr's work (1966) involving slums and type of housing provides substance for the concept of home as self-identity. Gans (1962) and Fried (1963), in describing the housing situation in Boston's West End, particularly relocation, found that the home was a source of social and cultural identification.

It is difficult to ascribe only one meaning to the concept of home, according to Hayward (1975). The term or meaning of home is difficult to verbalize, highly personal, and hard to study. There is no universal definition of home that will satisfy everyone. In order to study concept of home, Hayward developed a framework of the meanings of home to serve as a basis for understanding research and theory on the topic.

In developing the concept of home framework, Hayward (1977) utilized open-ended questions in both interviews and

questionnaires. As a result of his research on the psychological constructs of home, Hayward developed clusters of similar meanings that appear to be universal. The major findings of Hayward's research are categorized, as follows. These categories were used by the investigators in the S-141 research project to label the responses.

Nine Dimensions of the Concept of Home (Hayward, 1977)

1. Home as intimate others is the primary category that emerged from this study. Examples include home: as a sense of belonging; as the center of the family; place to enjoy family.
2. Home as social network refers to home as a wider social context that includes relationships between neighbors, friends, community and neighborhood.
3. Home as self-identity concentrates on the idea that home is a symbol of themselves and also how they want to be seen by others. Home is an expression of values and goals.
4. Home as a place of privacy and refuge refers to ideas such as privacy, freedom to do as one pleases, a place to relax and a place to be alone.
5. Home as continuity refers to a cluster of meanings that emphasize one's relationship to an environment over time. Home is a place one can return to; it is a place of permanence and stability with familiar surroundings.
6. Home as a personalized place involves the active process of control over the environment. A principal theme is ownership with the authority to make the environment reflect your ideas, needs and tastes.
7. Home as a base of activity involves a functional and behavioral orientation to home. It includes home as a base of activity, a place where one begins and ends the day.
8. Home as a childhood home describes the place where one grew up or one's roots and heritage.

9. Home as a physical structure describes home as an impersonal concept including such factors as a room, house, neighborhood, architectural design, and the amount of space and grounds (p 11).

Hayward's research does substantiate the fact that home involves social and psychological meanings in addition to physical meanings and that further research on the meaning of home must take all these factors into consideration.

Subjective Value of Home

Rowles (1983) explored the concept of attachment to place in old age by means of a three year in-depth study of elderly residents of Appalachia. He identified three dimensions of attachment: physical, social and autobiographical insidedness. The hypothesis that the increasing mobility of the current elderly is resulting in changing signs of attachment to place was investigated. Rowles used two age categories, those of the old-old (over 75) and the young-old (under 75). He found differences between the two groups. The old-old were strongly attached to their proximate physical environment, whereas the young-old appeared to be less strongly attached to their environment and were more receptive to change. The young-old were more able to identify with a new environment and were more adaptive to relocation. This implication lends strength to the need for the study of acceptance of a variety of housing alternatives among the elderly.

From their recent work, Kahana and Kahana (1983) have proposed that old people are adventuresome and adaptive when it comes to relocation. Not until recently has this concept been put forth. It has been assumed, in the past, that the elderly are resistant to change and prefer to remain in one place for as long as possible.

O'Bryant (1982, 1983, 1986) has conducted extensive research of the subjective value of home to older persons. Older people report higher levels of satisfaction than do other age groups. Yet this satisfaction has not been strongly related to demographic factors, personal factors, or to the physical properties of the dwelling. Lawton (1980) found that objective factors relating to the physical quality of the dwelling only accounted for 19% of the variance in housing satisfaction.

In a 1982 study, O'Bryant developed an instrument to measure the subjective value of home. The results of a factor analysis of homeowners' attitudes revealed four subjective factors regarding value of home. These factors were: 1. competence in a familiar environment; 2. traditional family orientation and memories; 3. the status value of homeownership; 4. a cost versus comfort tradeoff factor. The relationship of these four factors to the high housing satisfaction levels reported in other research was investigated. The number of respondents was 320 and all

were over the age of 60. Multiple regression analyses revealed that the subjective factors accounted for significantly more of the variation in housing satisfaction, over and above that which was explained by other types of variables.

Many in the field of housing for the elderly have tried to explain the discrepancy between high housing satisfaction and low housing quality by suggesting that older people use subjective factors by which to analyze their housing. Campbell, Converse, and Rodgers (1976) have noted that older persons may lack housing aspirations or may have lost hope and or become resigned to their fate in life. Montgomery, Stubbs, and Day (1980) also suggested that the elderly may have lost hope and have resigned themselves to being humble and satisfied with what they have.

Selby and Anderson (1987) administered questionnaires to senior students in architecture in order to learn more about these students' perceptions of designing housing for the elderly. A second phase of this study involved a post-occupancy evaluation of a 208 unit housing development for the elderly. The major objective was to have architecture students develop the ability to design housing for the elderly from a user standpoint.

The students were asked open ended questions regarding the concept or spirit of home to the elderly. More than half of the students responded with home as a place where objects, possessions, and memorabilia could be kept. Many said that safety, security, and physical comfort were elements which defined home.

While the students expressed the opinion that the elderly were dissatisfied with their living environments, results from the post-occupancy evaluation did not support this perception. While the majority (92%) expressed overall residential satisfaction with their environment, dissatisfaction was only expressed with specific aspects of the living environment.

Selby and Anderson (1987) concluded with rationale for the value of this type of research. One of the values is that emphasis be placed in searching for the essence of the problem such as what the spirit or concept of home means to the elderly and that they as future designers and architects of housing for the elderly understand this and its importance in designing housing for the aging group.

In summary, there is no universal definition of the concept of home that will satisfy everyone. The concept of home involves social and psychological meanings in addition to the physical component. Individuals with a very strong attachment to the current dwelling are resistant to

changing to a different environment, therefore they would be expected to be less willing to accept new or innovative housing alternatives. Some researchers have found that the young-old appear to be more willing than the old-old to consider new environments and are more adaptive to relocation. Other researchers have countered that the elderly are adventuresome and adaptive to relocation. Therefore, the overall effect of an individual's concept of home on acceptability of housing alternatives remains to be elucidated.

Demographics of the Elderly

Although it is clear that even larger numbers and proportions of people are surviving to age 65 and beyond, the composition of this population must be considered when assessing housing needs and housing alternatives of the elderly. Among the key factors are age, sex, marital status, and living arrangements. Major demographic changes in housing and living arrangements of older Americans in the past few years signal that housing for the older population will be a major challenge today and in the next few decades.

Are there certain demographic factors which may impact upon the acceptance of housing alternatives by the aging population? Most older Americans do not move from their owned homes after age 55. The factors which govern the

decision to move and the choice of housing alternatives among older people are not very well understood, according to Howell (1980). Reduced economic circumstances certainly play a role as does a change in life circumstances. Howell further said that mobility will depend on the "availability of suitable alternatives within the community environments of preference to the aging consumer" (p. 4).

Two demographic factors, age and marital status, are frequently mentioned as predictors of housing arrangements according to Sweaney et al. (1984). The study investigated these two variables on the housing behavior of older Southern women (227 widowed females and 227 married females living with their spouses). The subsample was part of the larger sample of 1,804 households in the S-141 Southern Regional Housing Project "Housing for Low and Moderate Income Families". The dependent variables investigated were current housing situation, housing costs, geographic mobility, housing satisfaction, decision making, and consumer acceptance of housing alternatives. The subsample of older women was further broken down into three age groups: those 50 to 64; 65 to 74; and 75 and over. Age proved to be the best demographic predictor of mobility behavior with older respondents being less mobile than the younger respondents.

Marital status appeared to be more significant in

predicting housing behavior in regard to the housing situation, housing satisfaction, and several attitudes toward housing alternatives. Age was more powerful in predicting behavior of housing costs, mobility, and several attitudes about housing alternatives. Sweaney et al. (1984) concluded that while marital status (widowhood) is an important predictor of several housing variables, it appears that the effects of widowhood are overshadowed by those of other demographic variables.

Montgomery (1965) looked at several studies of the perceptions which older rural Americans have concerning their housing. He identified several factors that predisposed older rural persons to ignore needed improvements. One such factor was age. There was the feeling that there was little use in beginning expensive modifications to a dwelling if one only had a few years left to live in it. Cost was another factor. People seemed to learn to live with a house as is and not to consider change or retrofit to meet the changing needs of the occupants. Further, Montgomery implied that one way of denying aging was to deny its impact on housing needs.

Rogers and Shoemaker (1971) have set up adopter categories based on the length of time it takes an individual to adopt new ideas following their introduction. The adopter categories are innovators, early adopters,

early majority, late majority, and laggards. From content analyses of research publications in the Diffusion Documents Center at Michigan State University, the authors studied over 3,000 findings relating various independent variables to innovativeness. Over 60% of the relationships produced by the content analysis had innovativeness as the dependent variable. One such finding relating to age is:

Early adopters are no different from later adopters in age. There is inconsistent evidence about the relationship of age and innovativeness; about half of the 228 studies on this subject show no relationship, 20 percent show that earlier adopters are younger, and 30 percent indicate they are older (p. 185-86).

Mercier (1987) examined the relationship between participation in the decision to move into a retirement community and its effect on happiness using a sample of 116 residents of retirement communities. There are about one million elderly living in retirement communities today. Aging individuals who move into retirement communities tend to be more affluent, more highly educated and have had high status occupations. Age was one of the six concepts that Mercier used to test a model of participation in decision making. Typically, old age is characterized by lower levels of residential mobility. However, there appear to be two age periods that show increasing rates of mobility. These two age periods are 60 to 69 and 75+. Mercier says that providing aging individuals with housing alternatives will give them high housing satisfaction as well as more

security in regard to their health.

As increasingly more individuals are surviving to age 65 and older, the changing composition of the population must be considered when assessing housing needs and the acceptability of housing alternatives. A number of demographic factors can influence the choices by the elderly regarding available housing alternatives. Economic status, age, and marital status are frequently cited demographic factors that have been shown to impact on the propensity of individuals to consider alternative housing.

Summary

The relationship that older people have with their housing is complex and multi-faceted. The fact that the number and proportion of the aging population are fast increasing is impacting upon the demand for housing alternatives for this group. A wider variety of housing alternatives will be needed to meet the growing demands of the aging population (AARP, 1986; U. S. Bureau of Census, 1983; Pitkin & Masnick, 1980; Newman, 1984; Hancock, 1987).

Research indicates that certain aspects of the housing situation for the elderly are changing. A higher percentage of the aging population have acquired the norm of home ownership than for any other segment of the population (AARP, 1986; Pastalan, 1983; Lawton, 1987). With the increase in the aging population and in

particular, the increase of female headed households, it is likely that there will be a shift from owning to renting. Thus, as age increases, the norm of ownership may become less important (Newman, Zais, & Struyk, 1984).

The aging report higher levels of satisfaction with their housing than younger age groups. Older people spend more time in their proximate environments, thus subjective factors of the dwelling may be more important than objective factors (Golant, 1982; Lawton, 1978, 1980; O'Bryant, 1983; Carp, 1966; Whiteford & Morris, 1984; Dobkin, 1987).

Recent research (Rowles, 1983; Kahana & Kahana, 1983) supports the idea that the younger elderly may be more receptive to change and adaptation of novel and stimulating environments. In the past it has been assumed that the elderly are not as likely to readily accept changes in the housing environment.

There has been a moderate amount of research into housing alternatives for the elderly but few researchers have attempted to address the issue of acceptance of these alternatives by the target population.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine prediction of acceptance of the alternative housing options by the nonmetropolitan population of a sample of 1,234 households from the S-141 data set. In addition, prediction of acceptance of alternative housing was compared among three age defined groups of under 55, 55 to 64, and age 65 and over.

The methodology that was used is described in the following sections: (a) source of the data; (b) description of the instrument; (c) selection of the sample and subsample; (d) collection of data; (e) treatment of data; (f) indexing of acceptance; and (g) analysis of data.

Source of the Data

This study analyzed data from the Southern Regional Research Project, S-141, "Housing for Low- and Moderate-Income Families." The project, which was funded by USDA Agricultural Experiment Station Research monies under the Hatch Act, began October 1, 1979, and was terminated September 30, 1984.

The Southern Regional Housing Research Committee has been involved in research designed to improve the quality of housing in the South since 1948. The S-141 project was

a regional effort, with researchers in seven states (Alabama, Arkansas, Florida, Georgia, North Carolina, Oklahoma, and Virginia) involved in the development and implementation of the research. This study analyzed selected data from five of the seven participating states in the regional research project (Alabama, Arkansas, North Carolina, Oklahoma, Virginia).

The overall purpose of the S-141 project was to identify factors which might be constraints to the adoption of energy-efficient housing alternatives. The objectives of the S-141 project are listed in Appendix A. Possible constraints investigated were demographic characteristics, family resources, decision making processes of the family, and perceptions of selected housing alternatives.

Description of the Instrument

The survey schedule, "Perceptions of Alternative Housing," was developed, evaluated, pretested, and revised by the S-141 Regional Research Technical Committee. The revised interview schedule contained five major parts:

1. Present Housing Situation (Questions 1 through 25). Questions in this section pertained to the current dwelling in terms of location, quality, size, number and type of rooms, condition, age of structure, amenities, housing costs, utility costs, tenure status, plumbing facilities, and energy saving related features.

2. Decision Making Practices (Questions 26 through 55). Questions in this section assessed how families make decisions about housing including tenure, mobility, location, and structural modifications and improvements. Aspirations and housing satisfaction were assessed in relation to the process of decision making. Additional questions attempted to measure the impact of the energy crisis on housing decisions.

3. Consumer Acceptance (Questions 56 through 63). Questions in Section 3 were designed to measure the respondent's reaction to selected housing alternatives which included: conventionally built, passive solar, manufactured/mobile, active solar, earth-sheltered, energy retrofitted, and apartment/multifamily. A visual workbook containing lay definitions and pictures and/or diagrams of each alternative was used to clarify the concepts of the alternative structures that were represented to the respondent.

4. Demographic Characteristics (Questions 64 and 65). This section asked questions to assess quantitative characteristics of each household in regard to household composition and structure, size, and income level. In addition, questions concerning the sex, race, degree of disability, employment, occupation, and employment status of each household member were asked.

5. Concept of Home and Satisfaction (Questions 1A - 9A). These questions were developed by researchers in North Carolina to assess satisfaction factors of the home, importance of home ownership, and the meaning of concept of home. Two of the seven states (Georgia and Florida) did not include the additional questions. Since concept of home and the specific satisfaction variables are of interest in this study, respondents to the other four sections of the interview schedule from Georgia and Florida were not included in the subsample.

Selection of the Sample

The sample of 1,804 households was selected from the seven southern states participating in the regional project (Alabama, Arkansas, Florida, Georgia, North Carolina, Oklahoma, and Virginia). As the 1980 Census was not available when sampling procedures were devised, the 1970 Census of Population data were used to determine the number of nonfarm households in each state. Each state's number of the total sample was determined by that state's proportion of nonfarm households. A two phase stratification process based on the median annual income and the number of nonfarm households in each county was used in the selection of four counties within each of the states. Detailed discussion of the methodology used to select the sample can be found in the S-141 data book,

"Perceptions of Alternative Housing" (S-141 Technical Committee, September, 1983).

The entire sample of respondents was 1,327 but 93 cases could not be used because these respondents did not give their age. Of the remaining 1,234 respondents, 556 were over age 55.

Data Collection

All data for this project were collected by personal interviews between June, 1981, and February, 1982, using the instrument "Perceptions of Alternative Housing." The project director in each of the seven participating states secured and trained the interviewers. All interviewers participated in an intensive training program and were given detailed instructions regarding procedures for administering the interviews. Additionally, training manuals were provided to the interviewers as a reference source. This manual included information on the purposes of the study as well as guidelines and procedures to assist and aid the interviewer.

The protocol for surveying instructed the interviewers to make three attempts to contact the household located on the sample property. After three unsuccessful attempts to contact the household, the interviewer was instructed to substitute a household from a listing of alternates. If the interviewer determined at the initial contact that the

household received more than one-half of its income from farming, that household was to be excluded from those surveyed, and a household from the listing of alternative households was to be surveyed.

Treatment of the Data

The dependent variable was acceptance of housing alternatives and the independent variables were the housing situation in regard to selected features, satisfaction with selected housing features, meaning of concept of home, and selected demographics including age. In this section the variables and the coding system used are explained in detail. Some variables were restructured because of recoding and/or collapsing categories.

The questions selected to analyze present housing situation were (Question number in the questionnaire appears in parentheses):

1. Tenure (#12):

1. own (paid for)
2. own (are buying)
3. rent (or lease)
4. receive for services
5. other

This variable was recoded as owners (responses 1 and 2), renters (responses 3 and 4) and others.

2. Number of years in present dwelling (#26).

3. Total monthly housing cost included house payment or rent (#13) and was responded to by actual dollar amount and utility costs for 1980 (#14) which was coded as a dollar estimate in one or more of the following categories (See Appendix B for more detailed information):

- a. highest monthly
- b. lowest monthly
- c. average monthly
- d. not applicable

4. Location (#9):

1. open country
2. suburban area
3. incorporated area (population <5,000)
4. town (population 5,001 - 10,000)
5. town (population 10,001 - 25,000)
6. town (population over 25,000)

5. Type of housing (#8b):

1. mobile home
2. modular home
3. conventional home
4. apartment

6. Size of dwelling unit (#11) was coded in actual number of square feet.

7. Age of dwelling unit (#10) was actual years.

Four questions (#4a, #5a, #7a and #32) were used to measure housing satisfaction. The first three questions deal with the specific features of the physical location (#4a), the space of the home (#5a) and general features of the dwelling (#7a). These were measured on a four point Likert-scale and scale values from 1 (very satisfied) to 4

(very dissatisfied) were assigned for each topic under these questions. These variables were restructured with 4 (very satisfied) to 1 (very dissatisfied) in order to provide a "negative to positive" range of values to aid in interpretation of the effects of satisfaction on acceptance of housing alternatives. A total satisfaction index combining these three questions was used. Question #32 assessed the overall satisfaction with the present dwelling, and was measured on a 5 point Likert-scale. The scale values ranged from 1 (very satisfied) to 5 (very dissatisfied). Restructuring of this variable resulted in reversing the numerical values from 5 (very satisfied) to 1 (very dissatisfied).

The concept of home was asked as an open ended question. Respondents could elect to give one or more responses to the question (#9a). For coding purposes, the researchers coded the respondent's first two answers by assigning the response to one of nine meanings it most closely reflected of the concept of home developed by Hayward (1977). Provision was also made for two additional response categories of general negative and general positive.

The present study involved a collapsing of Hayward's nine original categories into three categories with similar meanings. These categories were: 1) personal concept of

home (includes A = home as intimate others, C = home as self-identity, and D = home as a place of privacy and refuge); 2) social concept of home (includes B = home as social network, G = home as base of activity, and H = home as childhood home); 3) physical concept of home (includes F = home as a personalized place, E = home as continuity, and I = home as physical structure). Thus, there were five possible responses to this question:

1. personal concept of home
2. social concept of home
3. physical concept of home
4. general positive response
5. general negative response

For a more detailed description of Hayward's definitions of the concept of home, see Appendix C.

The selected demographics were: gender (male or female); income (total monthly income classified into 9 categories ranging from less than \$250 to more than \$2,168); marital status (single, married, widowed, divorced, separated, and other); education (actual number of years); and the actual age of the respondents. Appendix B contains the questions asked in the questionnaire and selected for use in this analysis.

Age was used as a continuous variable in the multiple regression procedures. Of the 1,327 possible respondents in this study, a total of 93 did not state their age, thus they could not be used in this study. Five different age

categories were used with this study. They were: the entire group of 1,234; the group over 55; under 55; 55 to 64; and age 65 and over. The prediction model of acceptance was tested with the entire sample without the variable of age. In the second model, age was added to the model and in the third model, age squared was added. Because age was found to be a significant predictor of acceptance of housing alternatives, the prediction model was tested within the three age defined categories of under 55, 55 to 64, and age 65 and over.

There were some problems encountered with the data set in regard to missing values. When the original data were coded, anything that was answered with 777, 888, or 999 was coded as missing (original responses were don't know, not applicable, or no response). For example, in some of the housing cost data involving utility costs, not applicable would have been more accurately recorded as such, instead of as missing. Since many of the individuals over age 55 had missing values coded for monthly housing cost, the assumption was made that many of these likely had originally answered "does not apply", thus, probably they no longer owed on any mortgage. Therefore, the missing values were assigned a value of \$0 for purposes of calculation of total housing costs. A sum function was used to get the total utility costs across all types of

utilities (wood, oil, electric, etc.). Then, a new variable was created to equal the monthly housing payment or rent plus the average utility bill.

The monthly net income was equal to the total family income divided by 12. Although the recorded total family income was expressed on an annual basis, monthly income is more commonly reported in the literature than is annual income. The total family income was calculated by taking the midpoint of the income category checked, on a yearly basis, and adding the amount of any annual supplemental income.

Table 1 lists the variables used, the type of measurement, and the level of measurement for each of the variables used.

Indexing of Acceptance

Evaluation of acceptance of housing alternatives was the primary objective of Part III of the instrument. For this study the dependent variable of acceptance of housing alternatives was measured by expanding the Total Knowledge Index developed by Weber et al. (1985) based on the diffusion and adoption theories of Rogers (1963, 1983) and Rogers and Shoemaker (1971).

Acceptance of each housing alternative was measured using a four step process developed by Weber et al. (1985).

Table 1. Type and Measurement Level for Variables Used.

Variable Name	Type		Measurement Level			
	Con	Cat	Nom	Ord	Int	Rat
Tenure		X	X			
Length of time/ dwelling	X				X	
Dwelling expense + Utility costs	X					X
Location of dwelling		X	X			
Type of dwelling		X	X			
Size of dwelling	X					X
Age of dwelling	X					X
Housing Satisfaction						
Location		X		X		
Space		X		X		
General		X		X		
Overall		X		X		
Concept of Home						
Physical		X	X			
Social		X	X			
Personal		X	X			
General Positive		X	X			
General Negative		X	X			
Gender		X	X			
Income		X		X		
Education	X					X
Marital Status		X	X			
Age	X					X
Acceptance	X				X	

Con = Continuous, Cat = Categorical

Nom = Nominal, Ord = Ordinal, Int = Interval, Rat = Ratio

The first step (stage in the adoption process) involved asking the respondents about their prior knowledge and exposure to each housing alternative. This was completed before the pictorial forms of the housing alternatives were shown to the respondents. Step 2 involved open-ended questions about likes and dislikes of each housing alternative. The study by Weber et al. (1985) did not use questions from Step 2. In Step 3 (willingness to consider) the acceptance level for each housing alternative was measured by use of a Likert-scale from "definitely would consider" to "definitely would not consider". After each housing alternative was reviewed, the respondent was asked, in Step 4 (house ranks) to rank the housing alternatives from 1 to 7 with 1 being the alternative most liked and 7 being the alternative least liked.

The investigators developed two weighting schemes, Weight A and Weight B, for measuring the stage in the adoption process and the development of the Total Knowledge Index. Two indexes, Index I and Index II, were developed from information gathered using the weighting schemes, A and B. A mean knowledge level was calculated for each alternative housing type in Index I.

The researchers found problems with weighting scheme A and concluded that weight A was less precise than weight B. Therefore, they judged weight B as the preferred weighting

scheme to use in the measurement of the propensity to adopt housing alternatives.

The Total Knowledge Score (Index II) was developed by the addition of the scores for all four alternative housing types obtained in Index I. Scores ranged from 0-26 for both weighting schemes and these were categorized into low, medium, and high knowledge levels. The usefulness of Index II is limited because discrimination between individual alternative housing types is not possible, but the index can be used to assess willingness to adopt alternative housing types in general.

After testing, the researchers concluded that Index II was more appropriate to measure the propensity of acceptance of housing alternatives in general. Index I is more appropriate for the prediction of preferences for various individual housing types. Since the objective of the current study was to evaluate potential predictors of acceptance of housing alternatives, the general index (Index II) was appropriate for use in this study.

In the current study, Index II was used with weighting scheme B, since this weighting scheme appears to give refined information on the respondent's level of interest. Knowledge level scores were summed across all six types of housing alternatives considered in the S-141 data, with possible scores ranging from 0 to 42.

The first step in the calculation of the acceptance index (dependent variable) was to weight the responses for each variable used in the index by the knowledge score associated with it by Weber et al. (1985). This was done for each of the six housing alternatives that were used. The sum of knowledge levels for each individual alternative was then taken to obtain an overall knowledge score for the alternatives.

For each housing alternative a score of 7 was possible (7×6 alternatives = 42). Three questions (#53, 54, 55) were used in the calculation of Total Knowledge Index II. Question 53 asked if the respondent had heard about, read about, seen, lived in, or never heard of/don't know. If the respondent did not respond (missing value), or checked "never heard of/don't know" then a score of 0 was recorded. If the respondent checked "heard only," one point was given. If the responses of "heard about" and "read about" were checked, then two points were recorded. If the respondent checked either "read about" or "seen," three points were assigned. If the categories of "heard about" and "seen" and "read about" and "seen" were checked, four points were given. Question 54 assessed the respondent's attempt to seek information about each of the six housing alternatives. Two responses of 0--not checked and 1--checked were included. If the respondent checked a "1,"

then a total score of 5 was possible. Question 55 asked if the respondent had attempted evaluation of the housing alternatives. Again two responses, either not checked or checked, were possible. If the "checked" response was marked, then a total score of 6 was given. Finally, if one of the housing alternatives had actually been lived in, the highest possible score of 7 was allowed.

Each of the responses represented a single stage in the adoption process based on knowledge level of the respondents. Level 1 represents an awareness stage; Levels 2, 3, 4, 5 represents an interest stage; Level 6 represents the stage of evaluation; and Level 7 represents trial or adoption of housing alternatives.

The acceptance index consisted of a summation of scores obtained on each of the six housing alternatives. The possible score range was from 0 to 42. Based on the percentages associated with the frequencies for acceptance and on the standard deviation associated with the mean acceptance level, the breakpoints were 0-9, low knowledge level, 10-23, medium knowledge level, and 24-42 high knowledge level.

Analysis of the Data

The SAS (Statistical Analysis System) was used to obtain descriptive and inferential analyses of the data. Frequency distributions and percentages were used for the descriptive analyses of the data. Univariates were used for description of variables where appropriate. The Pearson Product Moment Correlation (r) was used to determine the strength of the association between the dependent variable of acceptance and the set of independent variables.

The inferential analyses of the data involved multiple regression using the GLM (General Linear Models) procedure of SAS. According to Pedhazur (1982), multiple regression is suitable for "analyzing the collective and separate effects of two or more independent variables on a dependent variable". Hypotheses were tested at an appropriate alpha level. This study involved testing the value of five categories of independent variables, including selected features of the housing situation, satisfaction factors, the concept of home, and selected demographics and age, for prediction of the dependent variable, acceptance of housing alternatives.

Dummy coding was used in the analysis for the independent variables for all the categorical variables. A dummy variable is a vector in which members of a given

category are assigned an arbitrary number, while all others (cases not belonging to the given category) are assigned a different arbitrary number (e.g., 0 and 1). Dummy coding allows one to enter all possible responses to dichotomies, trichotomies, etc. in the model at one time, and still be able to determine the relative effects of each response. Dummy variables can be very useful in analysis of research when the independent variables are categorical.

The significance of the amount of variation in acceptance of housing explained by age was evaluated, in particular, to determine if the second hypothesis was testable. A statistically significant change in R^2 indicates that a variable provides unique information about the dependent variable that is not available from the other independent variables in the model. Based on significant F-tests for the change in R^2 when age and age squared were added to the model with the entire group and the over age 55 group, then a comparison of the prediction model among the three age groups was indicated, thus the testing of H_{02} .

The use of age, as well as an age squared term in the analysis of the data, was indicated due to research findings that age may be related in a curvilinear fashion to some housing norms. For example, as age increases the importance of the norm of ownership may decrease after some

point in mid-life. This could impact on acceptance, because if home ownership decreases in importance with age, then the older age groups may be more receptive to accept housing alternatives.

CHAPTER IV

DESCRIPTION OF THE SAMPLE

This chapter includes the descriptive analysis of the independent variables: demographic characteristics of the respondents including age, their housing situation, housing satisfaction, and meaning of concept of home. The variables were summarized using the entire sample of 1,234 respondents and a subsample of 556 respondents who were over age 55. The sample sizes for each category are: under 55, 678; 55 to 64, 239; and age 65 and over, 317. Percentages based on the total number of actual responses for a particular variable are presented.

Demographic Characteristics of Respondents

Selected demographics used in this study are age, gender, income, marital status, and education. See tables 2 and 3.

Age

The ages of the respondents ranged from 16 to 95. The total number of usable respondents was 1,234. The mean age for those included was 51.5 years. There were 556 respondents over the age of 55, with a mean age of 66 years.

Table 2

Age Categories of Respondents

	<u>n</u>	Percentage
Entire Sample	1234	100%
Under 55	678	54.9
55 and older	556	45.1
55 - 64	239	19.4
65 and older	317	25.7

Gender

There was a higher proportion of female respondents (69.1%) than male respondents (30.9%). For the over age 55 category, 65.5% were female and 34.5% were male. Comparison of the three age defined categories showed a slight but steady decrease in the percentage of female respondents and a corresponding increase in the percentage of male respondents with advancing age.

Income

This variable had one of the lowest response rates (500 missing values) of the entire sample. Of the 734 respondents, 17% reported monthly incomes of \$2,168 and over. Twenty-nine percent reported income within the ranges of \$1,251 - \$2,167. The median total monthly income was within the range of \$1,042 to \$1,250.

Over 56% of the over 55 group had a total monthly income in the range of \$252 - \$1,042. The median total monthly income per household was within the range of \$625 - \$833.

Twenty-five percent of the sample under age 55 reported a total monthly household income of \$2,168 and over. With increasing age, the total monthly household income decreased greatly. The highest percentage (48.1%) of the over 65 group had total monthly income in the three lowest ranges from \$0 to \$625.

Marital Status

The majority (70.8%) of the respondents were married. The next highest percentage (17.3%) of the entire age group was widowed. Widowhood increased substantially in the over 55 group, with 19.3% in the 55 to 64 group and 44.2% in the age 65 and over group. The categories of "divorced" and "separated" were very low within the two age groups over 55.

Education

Although the educational level of the respondents ranged from less than an eighth-grade education to post-graduate education, the highest percentage (33.8%) of the entire sample were high school graduates. Seventeen percent had attended college or trade school and 10% were college graduates. The mean educational level was 11.6 years.

With the over 55 group the highest percentage (32.3%) had completed elementary school or less. The mean educational level of the over 55 group was 10.6 years. In a comparison of the three age defined categories, a slightly higher percentage were college graduates (18.1%) in the 55 to 64 group than in either the under 55 group (17.6%) and over 65 age (15.8%).

Table 3

Demographic Characteristics of the Respondents

Characteristics	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Gender										
Female	853	69.1	364	65.5	489	72.1	163	68.2	201	63.4
Male	381	30.9	192	34.5	189	27.9	76	31.8	116	36.6
TOTAL	1234		556		678		239		317	
Marital Status										
Married	873	70.8	336	60.5	537	79.2	180	75.6	156	49.2
Widowed	213	17.3	186	33.5	27	4.0	46	19.3	140	44.2
Single	72	5.9	16	2.9	56	8.3	4	1.7	12	3.8
Divorced	61	4.9	16	2.9	45	6.6	7	2.9	9	2.8
Separated	14	1.1	1	0.2	13	1.9	1	.4	0	0
TOTAL	1233		555		678		238		317	
Education										
Grade School	221	18.0	179	32.3	42	6.2	56	23.5	123	38.9
High School	204	16.6	95	17.2	109	16.2	41	17.2	54	17.1
High School Graduate	416	33.8	128	23.1	288	42.7	70	29.4	58	18.4
College	212	17.3	93	16.8	119	17.6	43	18.1	50	15.8
College Graduate	124	10.1	40	7.2	84	12.4	19	8.0	21	6.7
Post-Graduate	52	4.2	19	3.4	33	4.9	9	3.8	10	3.2
TOTAL	1229		554		675		238		316	
Total Monthly Household Income										
\$0 - 250	49	6.7	34	10.6	15	3.6	5	4.0	29	15.0
\$251 - 417	60	8.2	49	15.3	11	2.6	8	6.4	41	21.1
\$418 - 625	68	9.3	45	14.1	23	5.6	19	15.1	26	13.4
\$626 - 833	71	9.7	41	12.8	30	7.3	22	17.5	19	9.8
\$834 - 1042	75	10.2	46	14.4	29	7.0	15	11.9	31	16.0
\$1043 - 1250	70	9.5	20	6.3	50	12.1	11	8.7	9	4.6
\$1251 - 1667	108	14.7	35	10.9	73	17.6	14	11.1	21	10.8
\$1668 - 2167	105	14.3	25	7.8	80	19.3	15	11.9	10	5.2
\$2168 & over	128	17.4	25	7.8	103	24.9	17	13.5	8	4.1
TOTAL	734		320		414		126		194	

Note. Percentages may not add up to 100% due to rounding.

The Housing Situation

The selected features of the housing situation were: tenure status, length of time lived in the dwelling, total dwelling expense including utilities, location of dwelling, type of dwelling, size of dwelling, and age of dwelling. See tables 4 and 5.

Tenure Status

A majority (90.3%) of the 1,234 respondents aged 16 to 95 were homeowners. This percentage increased to 94.6% for the over 55 respondents. There was a higher percentage (86.7%) of homeowners under the age of 55 than the national average of approximately 70 percent.

Number of Years in Dwelling

With the increasing age of the respondents, the length of time of living in the present dwelling increased. Of the entire sample, approximately 50% had lived in their present homes from 2 to 15 years. Of the over 55 group a large percentage (45.5%) had lived in their homes from 21 to over 40 years. The mean for the length of time the total sample lived in the present dwelling was 14.7 years. The mean for length of time lived in their present dwelling for respondents over age 55 was 21.2 years.

Table 4

Characteristics of the Current Housing Situation: Tenure Status, Number of Years in Dwelling, Total Housing Costs, and Location of Dwelling

Characteristics	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Tenure Status										
Owners	1112	90.1	525	94.6	587	86.7	226	94.6	299	94.6
Renters	109	8.8	26	4.7	83	12.3	11	4.6	15	4.8
Others	11	0.9	4	0.7	7	1.0	2	0.8	2	0.6
TOTAL	1232		555		677		239		316	
Number of Years in Dwelling										
1 Year or less	76	6.2	12	2.2	64	9.4	9	3.8	3	1.0
2 - 4 Years	225	18.3	62	11.2	163	24.0	33	13.9	29	9.3
5 - 9 Years	249	20.2	68	12.3	181	26.7	36	15.1	32	10.2
10 - 15 Years	258	21.0	101	18.3	157	23.2	50	20.9	51	16.3
16 - 20 Years	115	9.3	38	6.8	57	8.4	31	13.0	27	8.7
21 - 30 Years	135	12.6	116	21.0	39	5.8	43	18.0	73	23.3
31 - 40 Years	96	7.8	86	15.6	10	1.5	31	13.0	55	17.6
Over 40 Years	56	4.6	49	8.9	7	1.0	6	2.5	43	13.8
TOTAL	1230		552		678		239		313	
Total Housing Cost (including utilities)										
No cost	6	0.5	2	0.4	4	0.7	1	0.4	1	0.4
Under \$100	389	35.8	259	50.6	130	22.0	96	42.7	164	57.9
\$101 - 199	317	28.7	171	33.4	146	24.6	79	35.1	91	31.7
\$200 - 299	168	15.2	43	8.4	125	21.1	28	12.4	15	5.2
\$300 - 399	114	10.3	23	4.5	91	15.4	12	5.3	11	3.8
\$400 - 599	88	8.0	10	1.9	78	13.2	6	2.7	4	1.4
\$600 or more	22	2.0	4	0.6	18	3.0	3	1.3	1	0.4
TOTAL	1104		512		592		225		287	
Location of Housing Unit										
Open Country	576	46.8	239	43.1	337	49.9	119	49.8	120	38.1
Suburban Area	147	12.0	83	15.0	64	9.5	34	14.2	49	15.6
Incorporated Area	221	17.9	109	19.7	112	16.6	44	18.4	65	20.6
(Population <5,000)										
Town (5,001 - 10,000)	55	4.5	32	5.8	23	3.4	10	4.2	22	7.0
Town (10,001 - 25,000)	131	10.7	62	11.2	69	10.2	22	9.2	40	12.7
Town (over 25,000)	100	8.1	29	5.2	71	10.5	10	4.2	19	6.0
TOTAL	1230		554		676		239		313	

Notes. Percentages may not add up to 100% due to rounding.

Total Housing Cost

Thirty-five percent of the respondents reported total monthly housing costs of under \$100. Of the respondents over age 55, over 50% reported total housing costs of under \$100. This indicates that these respondents had no mortgage and that their utility costs were their only constant dwelling expense. The mean housing expense for the entire sample was \$190.59. With the two age groups over the age of 55, housing costs for a majority of the respondents ranged from under \$100 to \$199. The mean dwelling expense for the over 55 group was \$129.83.

Location of Dwelling

A majority (47%) of the respondents in the entire sample lived in the open country. The next highest percentage (40%) lived in either suburban areas or incorporated areas of population <5,000. Trends in location were the same for the over 55 group. And in looking at the three age subgroup categories there was a higher percentage of respondents who lived in a town with a population range of 10,001 - 25,000 than in a town with a population of 5,001 - 10,000 or a population over 25,000.

Housing Type

The four possible responses regarding housing type were mobile home, modular, conventional, and apartment. The majority (94%) of the respondents lived in conventional

type housing. Four percent of the entire sample and 3% of respondents over age 55 lived in mobile homes.

Square Footage

There were 714 respondents of the 1,234 total (a very low response rate) that did not report the square footage of their home, indicating that many respondents did not know their exact house size in terms of square footage. A majority of the homes (55.6%) were in the size range of 1,000-1,749 total square footage. The mean dwelling size was 1,535 square feet. The percentages were similar for the over 55 group. The mean dwelling size for the over 55 group was 1,495 square feet. With the three age groups broken down, a higher percentage (15%) in the over 65 group had homes in the range of 2,000 - 2,499 square feet.

Age of Dwelling

Of the total respondents, 30% reported that the age of their dwelling was in the range of 5 - 15 years. Eighteen percent reported that the age of their dwelling unit was 41 years and older. The mean age of the dwelling unit for the entire sample was 25.8 years. A higher percentage (32.8%) of the over 65 age group reported that their homes were 41 years or older contrasted to 15% in the 55 to 64 age bracket and 13% in the under 55 age group. The mean age of the dwelling units for the over 55 age group was 32.5 years.

Table 5

Characteristics of the Current Housing Situation: Housing Type, Square Footage, and Age of Dwelling

Characteristics	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Housing Type										
Mobile Home	50	4.2	17	3.1	33	5.0	8	3.4	9	2.9
Modular	7	0.5	3	0.6	4	0.6	1	0.4	2	0.6
Conventional	1128	94.0	519	95.4	609	92.8	222	95.3	297	95.5
Apartment	15	1.3	5	0.9	10	1.5	2	0.9	3	1.0
TOTAL	1200		544		656		253		311	
Square Footage										
749 and under	46	6.4	22	7.3	24	5.8	9	6.0	13	8.5
750 - 999	69	9.7	35	11.6	34	8.3	14	9.4	20	13.1
1000 - 1249	146	20.5	66	21.8	80	19.4	29	19.5	37	24.2
1250 - 1499	127	17.7	39	12.9	83	20.2	28	18.8	16	10.5
1500 - 1749	124	17.4	60	19.9	69	16.8	33	22.2	23	15.0
1750 - 1999	49	6.9	23	7.6	26	6.3	13	8.7	10	6.5
2000 - 2499	95	13.3	37	12.3	58	14.1	14	9.4	23	15.0
Over 2500	58	8.1	20	6.6	38	9.2	9	6.0	11	7.2
TOTAL	714		302		412		149		153	
Age of Dwelling										
Less than 1 year	12	1.1	4	0.8	8	1.4	3	1.4	1	0.4
1 - 5 years	122	11.6	31	6.5	91	15.9	19	9.0	12	4.4
6 - 10 years	191	18.1	53	11.0	138	24.0	27	12.8	26	9.6
11 - 15 years	166	15.7	56	10.7	110	19.2	31	14.7	25	9.2
16 - 20 years	115	10.9	48	9.9	67	11.7	27	12.8	21	7.8
21 - 30 years	163	15.4	100	20.8	63	11.0	39	18.5	61	22.5
31 - 40 years	94	8.9	69	14.3	25	3.9	33	15.6	36	13.3
41 years and over	193	18.3	121	25.1	72	12.5	32	15.1	89	32.8
TOTAL	1056		482		574		211		271	

Note: Percentages may not add up to 100% due to rounding.

Housing Satisfaction

Housing satisfaction consisted of four measures. One measure assessed the overall satisfaction with the present dwelling, and the other three measures assessed satisfaction with specific dwelling features.

Overall Satisfaction

There was a high level of expressed satisfaction with the present dwelling unit in the entire sample. The highest percentage (52.4%) reported being "very satisfied" and the next highest percentage (37.8%) reported being "satisfied" with their present home (Table 6).

In the over 55 group, more than 60% reported being "very satisfied." There was approximately a six percentage point increase in this category with the entire sample. And when the entire sample was broken down into the three age categories, under 55, 55 to 64, and age 65 and over, satisfaction increased with age. Sixty-three percent of the 65 and over group reported they were "very satisfied" with their present home.

Satisfaction with Physical Location

Satisfaction with selected features of the physical location were assessed: convenience to work, to shopping areas, public transportation, community services, and medical service (Table 7). There were a number of respondents who reported that "convenience to work" and

Table 6

Overall Housing Satisfaction

	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Very Satisfied	646	52.4	337	60.6	309	45.6	137	57.3	200	63.1
Satisfied	467	37.8	180	32.4	287	42.3	84	35.2	96	30.3
Neither	93	7.5	33	5.9	60	8.9	17	7.1	16	5.1
Dissatisfied	23	1.9	5	0.9	18	2.7	0	0	5	1.6
Very Dissatisfied	5	0.4	1	0.2	4	0.6	1	0.4	0	0
TOTAL	1234		556		678		239		317	

Note. Percentages may not add up to 100% due to rounding.

Table 7

Level of Housing Satisfaction with the Physical Location of the Home in Relation to Convenience and Services

	Entire			Over 55			Under 55			55 to 64			65 +		
	N	%		N	%		N	%		N	%		N	%	
Convenience to Work															
Very Satisfied	324	32.9		94	28.1		230	35.4		50	26.2		44	30.5	
Satisfied	582	59.1		231	69.0		351	54.0		135	70.7		96	66.7	
Dissatisfied	70	7.1		9	2.7		61	9.4		5	2.6		4	2.8	
Very Dissatisfied	9	0.1		1	0.3		8	1.2		1	0.5		0	0	
TOTAL	985			335			650			191			144		
Convenience to Shopping Areas															
Very Satisfied	310	25.4		136	24.7		174	25.9		50	21.3		86	27.3	
Satisfied	775	63.5		365	66.4		410	61.1		159	67.7		206	65.4	
Dissatisfied	124	10.2		45	8.2		79	11.8		25	10.6		20	6.3	
Very Dissatisfied	12	1.0		4	0.7		8	1.2		1	0.4		3	1.0	
TOTAL	1221			550			671			235			315		
Availability of Public Transportation															
Very Satisfied	54	14.6		27	15.9		27	13.6		8	10.5		19	20.2	
Satisfied	205	55.6		100	58.8		105	52.8		48	63.2		52	55.3	
Dissatisfied	97	26.3		41	24.1		56	28.1		18	23.7		23	24.5	
Very Dissatisfied	13	3.5		2	1.2		11	5.5		2	2.6		0	0	
TOTAL	369			170			199			76			94		
Community Services (fire dept, police, etc.)															
Very Satisfied	249	21.1		114	21.4		135	20.9		40	17.6		74	24.2	
Satisfied	829	70.3		384	72.0		445	68.8		169	74.5		215	70.3	
Dissatisfied	94	8.0		29	5.4		65	10.1		13	5.7		16	5.2	
Very Dissatisfied	8	0.7		6	1.1		2	0.3		5	2.2		1	0.3	
TOTAL	1180			533			647			227			306		
Availability of Medical Services															
Very Satisfied	238	19.6		105	19.1		133	20.0		37	15.7		68	21.7	
Satisfied	831	68.5		391	71.1		440	66.4		177	75.0		214	68.2	
Dissatisfied	126	10.4		45	8.2		81	12.2		18	7.4		27	8.6	
Very Dissatisfied	18	1.5		9	1.6		9	1.4		4	1.7		5	1.5	
TOTAL	1213			550			663			236			314		

Notes. Percentages may not add up to 100% due to rounding.

"public transportation" were features that they did not have.

Generally, respondents (in all possible age breakdowns) reported being either "very satisfied" or "satisfied" with these features.

Satisfaction with Space in Home

Features in regard to space in the home included space for preparing food, laundry, food storage, closet space, general storage, and outdoor storage (Table 8). While the majority of the respondents checked "very satisfied" or "satisfied" with these features, there were more "dissatisfied" responses in all age categories with the features of closet space, general storage, and outdoor storage.

Satisfaction with General Features

General features of the dwelling unit included size of rooms, arrangement of rooms, comfort of home, outside appearance, privacy from public or neighbors, privacy within the home, air conditioning, heating, inside appearance, plumbing, number of bedrooms, number of bathrooms, electrical facilities, and water supply (Table 9). Generally, the majority of the respondents checked either the category of "very satisfied" or "satisfied" for each of these 14 general features of the dwelling unit.

Table 8

Level of Housing Satisfaction with the Space Available in the Home for Different Activities

	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Preparing Food (kitchen space)										
Very Satisfied	340	27.8	142	25.8	198	29.5	51	21.5	91	29.0
Satisfied	779	63.7	366	66.4	413	61.5	161	67.9	205	65.3
Dissatisfied	96	7.8	39	7.1	57	8.5	22	9.3	17	5.4
Very Dissatisfied	8	0.7	4	0.7	4	0.6	3	1.3	1	0.3
TOTAL	1223		551		672		237		314	
Laundrying Clothes										
Very Satisfied	298	24.9	121	22.4	177	26.9	46	19.6	75	24.5
Satisfied	773	64.5	367	67.8	406	61.7	160	68.1	207	67.7
Dissatisfied	120	10.0	48	8.9	72	10.9	26	11.1	22	7.2
Very Dissatisfied	8	0.7	5	0.9	3	0.5	3	1.3	2	0.6
TOTAL	1199		541		658		235		306	
Food Storage										
Very Satisfied	275	22.5	122	22.1	153	22.8	39	16.5	83	26.3
Satisfied	782	63.9	369	66.7	413	61.6	163	68.8	206	65.2
Dissatisfied	160	13.1	58	10.5	102	15.2	32	13.5	26	8.2
Very Dissatisfied	6	0.5	4	0.7	2	0.3	3	1.3	1	
TOTAL	1223		553		670		237		316	
Closet Space										
Very Satisfied	239	19.6	117	21.2	122	18.3	38	16.1	79	25.0
Satisfied	688	56.4	328	59.4	360	53.9	143	60.6	185	58.5
Dissatisfied	271	22.2	96	17.4	175	26.2	49	20.8	47	14.9
Very Dissatisfied	22	1.8	11	2.0	11	1.6	6	2.5	5	1.6
TOTAL	1220		552		668		236		316	
Other General Storage										
Very Satisfied	225	18.8	108	20.0	117	17.8	35	15.2	73	23.5
Satisfied	746	62.3	340	62.8	406	61.9	147	63.6	193	62.3
Dissatisfied	209	17.5	83	15.3	126	19.2	42	18.2	41	13.2
Very Dissatisfied	17	1.4	10	1.8	7	1.1	7	3.0	3	1.0
TOTAL	1197		541		656		231		310	
Outdoor Storage										
Very Satisfied	210	18.8	98	19.5	112	18.2	31	14.4	67	23.3
Satisfied	675	60.3	322	64.0	353	57.3	146	67.6	176	61.3
Dissatisfied	210	18.8	75	14.9	135	21.9	34	15.7	41	14.3
Very Dissatisfied	24	2.1	8	1.6	16	2.6	5	2.3	3	1.1
TOTAL	1119		503		616		216		287	

Note. Percentages may not add up to 100% due to rounding.

With the ages categorized into three groups, the age group of 55 to 64 expressed a higher percentage of satisfaction with all the general features. With the entire sample, higher percentages of dissatisfaction were expressed with some general features: number of bathrooms (17.3%); appearance of home outside (14.4%); and size of rooms (13.7%). For these same three features the over 55 age group also expressed a high percentage of dissatisfaction but the percentages were slightly lower. Air conditioning was a feature that many did not have.

With the entire sample broken down into three categories, the feature of "appearance of home outside," the age 65 and over group expressed higher dissatisfaction (13.6%) than did the age group of 55 to 64 (12.2%).

Table 10 shows the individual satisfaction scores, averaged across all individual satisfaction features, for all groups of samples.

Concept of Home

Open ended questions were asked to obtain the concept of home. Each response was coded as the one of nine meanings of concept of home (Hayward, 1977) that it most closely reflected. Provision was also made for two additional responses of "general negative" and "general positive" (Table 11).

Table 9

Level of Housing Satisfaction with General Features of the Home

	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Size of rooms										
Very Satisfied	266	21.6	130	23.5	136	20.2	42	17.6	88	27.9
Satisfied	786	64.0	360	65.1	426	63.0	160	67.3	200	63.6
Dissatisfied	168	13.7	59	10.7	109	16.2	34	14.3	25	7.9
Very Dissatisfied	8	0.7	4	0.7	4	.6	2	.8	2	.6
TOTAL	1228		553		675		238		315	
Arrangement of rooms										
Very Satisfied	249	20.3	122	22.0	127	18.9	37	15.5	85	26.9
Satisfied	865	70.6	395	71.3	470	69.9	178	74.8	217	68.7
Dissatisfied	108	8.8	35	6.3	73	10.9	21	8.9	14	4.4
Very Dissatisfied	4	0.3	2	0.4	2	.3	2	.8	0	0
TOTAL	1226		554		672		238		316	
Overall Comfort of Home										
Very Satisfied	288	23.5	133	24.0	155	23.0	44	18.6	89	28.2
Satisfied	870	70.8	398	72.0	472	69.9	183	77.2	215	68.0
Dissatisfied	67	5.5	21	3.8	46	6.8	10	4.2	11	3.5
Very Dissatisfied	3	0.2	1	0.2	2	.3	0	0	1	.3
TOTAL	1228		553		675		237		316	
Appearance of Home Outside										
Very Satisfied	231	18.8	116	21.0	115	17.0	40	16.9	76	24.1
Satisfied	817	66.6	365	66.0	452	67.0	168	70.9	197	62.3
Dissatisfied	177	14.4	70	12.6	107	15.8	28	11.8	42	13.3
Very Dissatisfied	3	0.2	2	0.4	1	.2	1	.4	1	.3
TOTAL	1228		553		675		237		316	
Privacy from Neighbors or Public										
Very Satisfied	292	23.8	138	25.0	154	22.8	45	18.9	93	29.4
Satisfied	855	69.6	394	71.2	461	68.3	177	74.7	217	68.7
Dissatisfied	71	5.8	16	2.9	55	8.2	12	5.1	4	1.3
Very Dissatisfied	10	0.8	5	0.9	5	.7	3	1.3	2	.6
TOTAL	1228		553		675		237		316	
Privacy Within your Home										
Very Satisfied	306	25.0	151	27.4	155	23.1	50	21.2	101	32.1
Satisfied	888	72.7	391	71.0	497	74.1	180	76.3	211	67.0
Dissatisfied	28	2.3	9	1.6	19	2.8	6	2.5	3	.9
Very Dissatisfied	0	0	0	0	0	0	0	0	0	0
TOTAL	1222		551		671		236		315	
Air Conditioning										
Very Satisfied	213	22.4	98	23.7	115	21.5	28	14.9	70	31.1
Satisfied	640	67.4	286	69.3	354	66.0	144	76.6	142	63.1
Dissatisfied	90	9.6	27	6.5	63	11.8	15	8.0	12	5.4
Very Dissatisfied	6	0.6	2	0.5	4	.7	1	.5	1	.4
TOTAL	949		413		536		188		225	

Note. Percentages may not add up to 100% due to rounding.

Table 9 (Continued)

Level of Housing Satisfaction with General Features of the Home (Continued)

	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Heating										
Very Satisfied	247	20.4	112	20.4	135	20.4	30	12.8	82	26.0
Satisfied	881	72.6	410	74.5	471	71.0	189	80.4	221	70.2
Dissatisfied	76	6.3	23	4.2	53	8.0	13	5.3	10	3.2
Very Dissatisfied	9	0.7	5	0.9	4	.6	3	1.3	2	.6
TOTAL	1213		550		663		235		315	
Appearance Inside										
Very Satisfied	246	20.2	121	22.0	125	18.7	37	15.7	84	26.8
Satisfied	863	70.8	387	70.5	476	71.0	183	77.9	204	64.9
Dissatisfied	106	8.7	40	7.3	66	9.8	14	6.0	26	8.3
Very Dissatisfied	4	0.3	1	0.2	3	.5	1	.4	0	0
TOTAL	1219		549		670		235		314	
Plumbing										
Very Satisfied	233	19.4	109	20.2	124	18.7	33	14.2	76	24.7
Satisfied	890	74.0	399	73.8	491	74.1	191	82.3	208	67.5
Dissatisfied	75	6.2	29	5.4	46	6.9	6	2.6	23	7.5
Very Dissatisfied	5	0.4	3	0.6	2	.3	2	.9	1	.3
TOTAL	1203		540		663		232		308	
Number of Bedrooms										
Very Satisfied	254	20.8	118	21.4	136	20.2	34	14.4	84	26.7
Satisfied	845	69.1	401	72.8	444	66.1	188	79.7	213	67.6
Dissatisfied	116	9.5	28	5.1	88	13.1	13	5.5	15	4.8
Very Dissatisfied	8	0.7	4	0.7	4	.6	1	.4	3	.9
TOTAL	1223		551		672		236		315	
Number of Bathrooms										
Very Satisfied	227	18.9	113	21.0	114	17.2	29	12.5	84	27.4
Satisfied	755	62.9	362	67.2	393	59.5	166	71.6	196	63.8
Dissatisfied	208	17.3	64	11.8	144	21.8	37	15.9	27	8.8
Very Dissatisfied	10	0.9	0	0	10	1.5	0	0	0	0
TOTAL	1200		539		661		232		307	
Electrical Facilities (outlets, wiring, & sockets)										
Very Satisfied	236	19.5	106	19.4	130	19.6	32	13.6	74	23.9
Satisfied	876	72.4	400	73.4	476	71.6	186	78.8	214	69.3
Dissatisfied	94	7.8	38	7.0	56	8.4	17	7.2	21	6.8
Very Dissatisfied	4	0.3	1	0.2	3	.4	1	.4	0	0
TOTAL	1210		545		665		236		309	
Water Supply (quality and pressure)										
Very Satisfied	245	20.4	111	20.6	134	20.3	35	15.1	76	24.8
Satisfied	870	72.6	398	73.8	472	71.5	182	78.1	216	70.6
Dissatisfied	76	6.3	28	5.2	48	7.3	15	6.4	13	4.3
Very Dissatisfied	8	0.7	2	0.4	6	.9	1	.4	1	.3
TOTAL	1199		539		660		233		306	

Note. Percentages may not add up to 100% due to rounding.

Table 10

Average Satisfaction Score for Individual Features

	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Individual Sat										
Very Satisfied	220	17.8	106	19.1	114	16.8	28	11.7	78	24.6
Satisfied	982	79.6	440	79.1	542	79.9	204	85.4	236	74.5
Dissatisfied	27	2.2	8	1.4	19	2.8	6	2.5	2	.6
Very Dissatisfied	5	.4	2	.4	3	.4	1	.4	1	.3
TOTAL	1234		556		678		239		317	

Note. Percentages may not add up to 100% due to rounding.

Table 11

Type of "Concept of Home"

	Entire		Over 55		Under 55		55 to 64		65 +	
	n	%	n	%	n	%	n	%	n	%
Type of Home Concept										
Personal	758	63.1	296	54.8	462	69.8	130	55.1	166	54.6
Social	137	11.4	70	13.0	67	10.1	27	11.4	43	14.1
Physical	175	14.6	90	16.6	85	12.8	39	16.5	51	16.8
Positive	130	10.8	83	15.4	47	7.1	40	17.0	43	14.1
Negative	2	0.1	1	0.2	1	.6	0		1	.3
TOTAL	1202		540		662		236		304	

Note. Percentages may not add up to 100% due to rounding.

The present study involved a collapsing of Hayward's nine original categories with similar meanings. These categories are: 1) personal concept of home (includes A = home as intimate others, C = home as self-identity, and D = home as a place of privacy and refuge); 2) social concept of home (includes B = home as social network, G = home as base of activity, and H = home as childhood home); 3) physical concept of home (includes F = home as a personalized place; E = home as continuity, and I = home as a physical structure).

The majority (63.1%) of the entire sample reported home was a "personal" concept (Table 11). Over 14% of the respondents reported home as a "physical" concept; and over 11% reported home as a "social" concept. With the over 55 group, there was a slight decrease (54.8%) who reported home as a "personal" concept and a slight increase (16.6%) who reported home as a "physical" concept.

Over 10 percent of the entire sample checked the meaning of concept of home as "general positive" and over 15% of the over 55 group checked this response. The response of "general negative" had very few responses.

CHAPTER V

ANALYSIS OF DATA, RESULTS, AND DISCUSSION

The analysis of data, results, and discussion of findings are given in this chapter along with tables to document the findings and provide additional information. The purpose of this study was twofold: first, to investigate the impact of age and an age squared term to a model of predictor variables in explaining the variance in acceptance of housing alternatives; second, to evaluate if the predictor variables in the model equally predict housing acceptance for each of the three age groups. The SAS (Statistical Analysis System) was used to obtain the inferential results for this study. The major analyses involving multiple regression utilized the GLM (General Linear Models) procedure of SAS. The GLM procedure uses the method of least squares to fit general linear models. Because the GLM procedure has the feature of being able to handle classification variables as well as continuous variables, it was deemed to be the most appropriate procedure to use for the regression analyses.

Description of the Dependent Variable

Acceptance of housing alternatives was the dependent variable for this study. Acceptance was regressed on the set of independent variables which included housing situation, housing satisfaction, concept of home, and

demographics including age. Multiple regression was used to measure the variance in acceptance with the set of independent variables chosen from the review of literature and the data set.

An acceptance score, a summation of knowledge scores obtained on each of the six housing alternatives (passive solar, active solar, underground, apartment, mobile home, retrofitted), was calculated. The possible range of acceptance scores ranged from 0 to 42. From this range the levels of low, medium, and high acceptance of alternative housing were set up based upon frequency distributions. The breakpoints were determined to be 0-9, low acceptance level; 10-23, medium acceptance level; and 24-42, high acceptance level.

The actual scores for acceptance of alternative housing ranged from 0 - 39 for the entire sample and the over 55 age group (no one scored the highest values of 40, 41 or 42). There were a total of 1,234 cases in the entire sample and 556 in the over 55 group (Table 12).

The mean acceptance level for the entire sample was 16.11. Over 70 percent were in the medium acceptance level group with the lowest percentage (12.1%) in the high acceptance category.

Table 12

Acceptance Level Index

Scores	Number	Percentage
Entire Sample (\underline{n} = 1234)		
Low (0 - 9)	206	16.7
Medium (10 - 23)	879	71.2
High (24 - 39)	149	12.1
Sample Over Age 55 (\underline{n} = 556)		
Low (0 - 9)	110	19.8
Medium (10 - 23)	380	68.3
High (24 - 39)	66	11.9

The mean acceptance level for the over 55 group was 15.2. There was a slightly higher percentage (3.1%) of the over age 55 group in the low acceptance level than in the entire sample.

A plotting of the frequency distribution of the acceptance level index scores showed a skewed curve with the entire sample and the over 55 group (see Figures 2 and 3). Table 13 shows a breakdown of all the five age categories with the mean acceptance level.

Correlations

The Pearson product-moment correlation coefficients (r) were calculated to give an indication of suggested relationships between variables. Correlations indicated low to moderate relationships between the dependent and independent variables. Pearson r 's were calculated for the entire sample (Table 14), but only the significant associations are discussed. A positive correlation existed between acceptance and education ($r=.34$) and total monthly income ($r=.27$) suggesting acceptance should increase as education or income increases. Low negative correlations existed between acceptance and number of years lived in house ($r=-.19$), the age of respondent ($r=-.15$), and marital status ($r=-.10$). The negative relationships suggest that acceptance of housing alternatives would be expected to

Table 13

Mean Acceptance Level of Housing Alternatives
by Age Categories

Age Category	Number	Mean
Entire Group	1234	16.1
Under 55	678	16.8
Over 55	556	15.2
55 - 64	239	16.2
Over 65	317	14.5

Note. Acceptance scores could range from 0 to 42. All mean values fall within the medium acceptance level, based on the frequency distribution of acceptance scores.

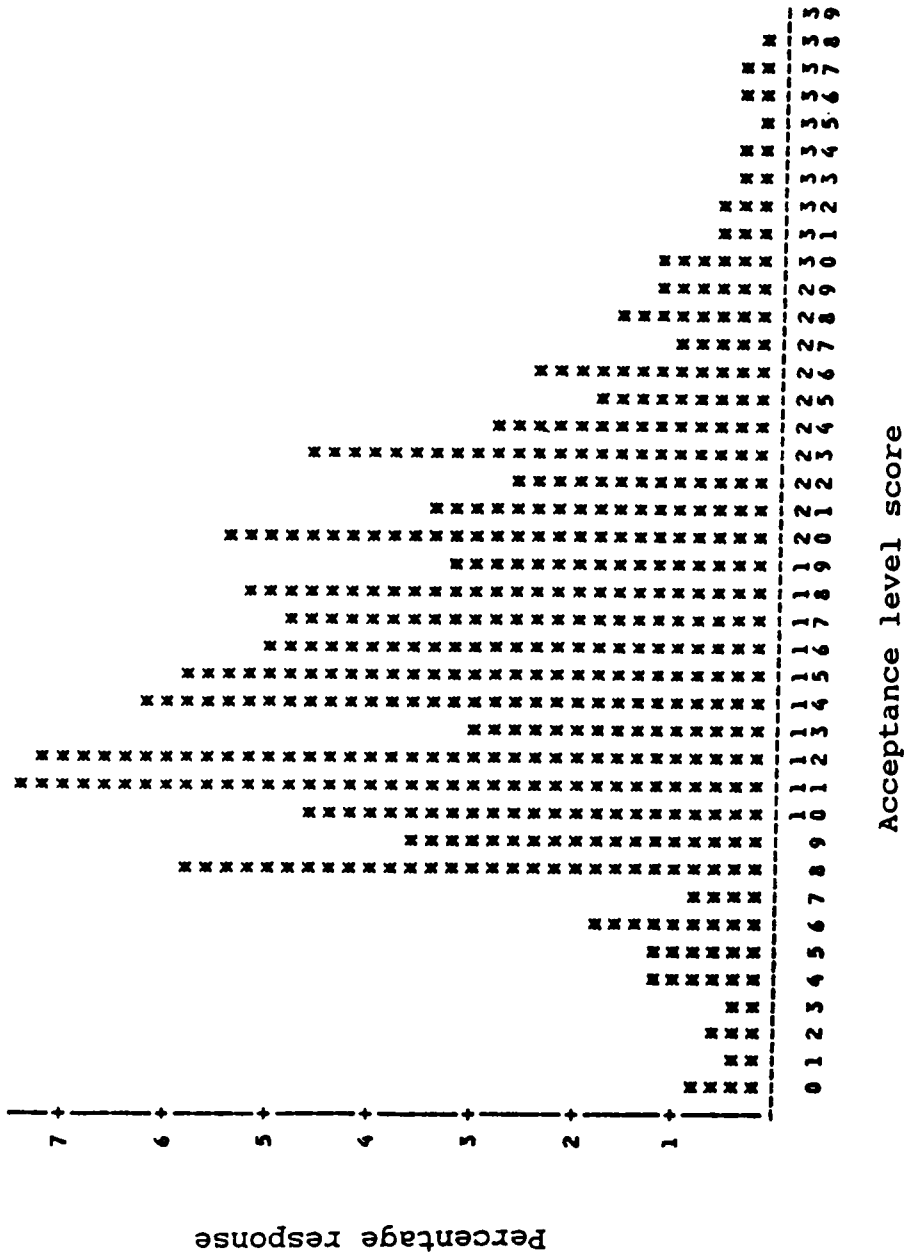


Figure 2. Frequency distribution of percentage response in acceptance of housing alternatives for the entire sample.

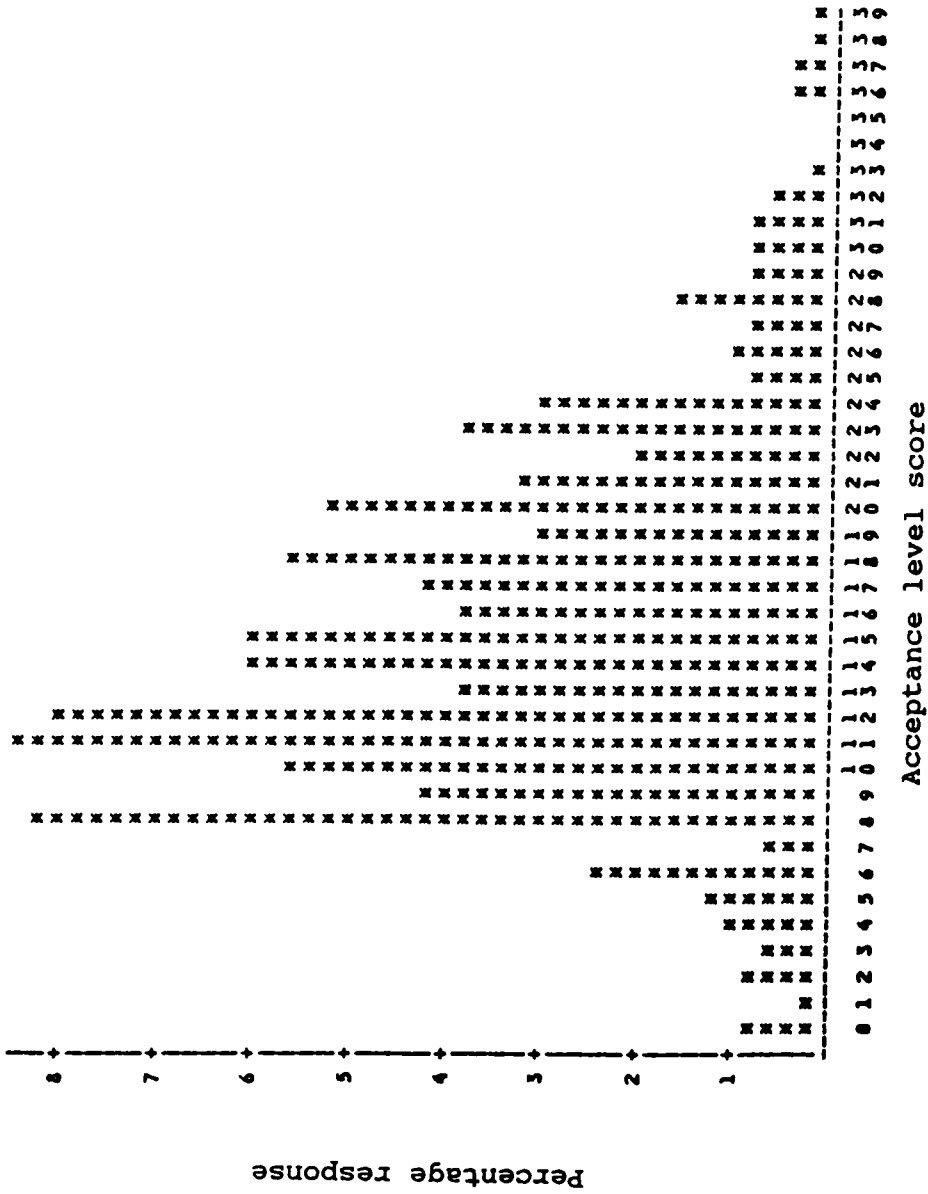


Figure 3. Frequency distribution of percentage response in acceptance of housing alternatives for the portion of the sample over age 55.

Table 14

Pearson's Correlation Coefficients for the Entire Sample (n = 1,234)

	Accept	Xtenure	Years	Tothcost	Loca	Houstyp	Sqft	Dwlage	Oversat	Indivsat	Homecon	Sex	CmoInc	Educ	Marata	Age
Accept	1.0000	-.01028	-.19190	.08385	-.06937	-.03657	.10972	-.13446	.03449	.10980	-.10088	-.08167	.27107	.33921	-.10467	-.15092
	.0000	.2882	.0001	.0053	.0150	.2056	.0033	.0001	.2260	.0001	.0005	.0041	.0001	.0001	.0002	.0001
Xtenure		1.0000	-.18540	.07454	.04185	.08664	-.10149	-.07209	-.19232	-.09516	.00967	.01204	-.08049	-.00721	-.06885	-.16486
		.0000	.0001	.0133	.1427	.0037	.0067	.0193	.0001	.0008	.7379	.6730	.0232	.8008	.0157	.0001
Years			1.0000	-.22199	-.01708	.10665	-.00917	.54021	.07960	-.02491	.13778	.03728	-.28308	-.24654	.10798	.53414
			.0000	.0001	.5502	.0002	.8068	.0001	.0052	.3827	.0001	.1914	.0001	.0001	.0001	.0001
Tothcost				1.0000	.06532	.05475	.25618	-.20042	.01362	.02459	-.07456	.01622	.35747	.22420	-.08611	-.36302
				.0000	.0302	.0730	.0001	.0001	.6513	.4144	.0141	.5904	.0001	.0001	.0042	.0001
Loca					1.0000	.10580	.12790	.03712	-.02503	.01351	-.04405	-.04372	.08181	.12832	.12081	.01996
					.0000	.0002	.0006	.2285	.3804	.6359	.1275	.1254	.0268	.0001	.0001	.4844
Houstyp						1.0000	.18881	.13858	.03053	.04936	.02530	-.02350	-.02042	.05904	.02004	.03415
						.0000	.0001	.0001	.2906	.0874	.3875	.4150	.5876	.0413	.4882	.2371
Sqft							1.0000	-.03488	.20298	.27821	-.06643	-.01005	.30702	.24823	-.10731	.00243
							.0000	.3718	.0001	.0001	.0780	.7886	.0001	.0001	.0041	.9483
Dwlage								1.0000	-.03637	-.10350	.08714	-.00082	-.23646	-.20182	.08904	.28666
								.0000	.2377	.0008	.0049	.9787	.0001	.0001	.0038	.0001
Oversat									1.0000	.36907	.01073	-.00022	.12585	.05047	-.08397	.15234
									.0000	.0001	.7101	.9938	.0006	.0769	.0032	.0001
Indivsat										1.0000	-.05769	.01393	.11658	.12566	-.03559	.07896
										.0000	.0455	.6249	.0016	.0001	.2118	.0055
Homecon											1.0000	-.00557	-.13225	-.15161	.06713	.16456
											.0000	.8471	.0004	.0001	.0200	.0001
Sex												1.0000	-.08597	-.00432	.12041	-.04090
												.0000	.0198	.8797	.0001	.1510
CmoInc													1.0000	.48725	-.33373	-.41676
													.0000	.0001	.0001	.0001
Educ														1.0000	-.13449	-.32501
														.0000	.0001	.0001
Marata															1.0000	.24172
															.0000	.0001
Age																1.0000
																.0000

Note. Probability associated with each correlation is given directly below the correlation coefficient.
 Note. See Appendix Table 28 for definition of variable names.

decrease as the respondent aged, and as the number of years in the present dwelling increased.

As the number of years lived in the house increased, the total cost of the dwelling would be expected to decrease ($r=-.32$); as the age of the dwelling and the respondent's age increased, the number of years lived in the dwelling increased ($r=.54$ and $.53$ for dwelling age and respondent's age, respectively). An increase in total housing cost was suggested to accompany an increase in monthly income ($r=.36$), and a decrease in total housing costs was found to be associated with increasing age of the respondent. The correlation between square footage and monthly income was $.31$, indicating individuals with higher monthly income had larger houses. As the overall satisfaction of the respondent increased, the correlations indicated that satisfaction with individual features would likely increase ($r=.36$). An increase in total monthly income would suggest that an increase in the educational level of the respondent would be expected ($r=.48$). The negative correlation ($r=-.42$) between income and age indicates that as age increases, income declines.

Pearson r 's were also calculated for the subsample over age 55 (Table 15). Moderate positive correlations existed between acceptance and education ($r=.36$) and total monthly income ($r=.26$). The correlations between

acceptance and years lived in the dwelling, dwelling age, satisfaction with individual features, concept of home and the age of the respondent were all similar to what was observed in the entire group. The correlations between total housing cost and monthly income or age of the respondents were smaller for the over 55 group than for the entire group; the correlation between tenure group and total housing cost appeared to be greater.

Test of Hypothesis One

Hypothesis one stated that age does not add significantly to the amount of variation explained in the acceptance of housing alternatives above that which is explained by the current housing situation, satisfaction levels, concept of home, and selected demographics. The testing of hypothesis one involved multiple regression procedures (described below) with the entire sample and with the subsample over age 55.

The multiple regression analyses were carried out in three stages. First, acceptance was regressed on all independent variables except age [i.e., Acceptance = current housing situation (tenure, length of time in dwelling, dwelling expense, location, type, size and age of dwelling) + housing satisfaction (location, space, general, and overall) + concept of home (physical, social, personal, general positive, and general negative) + demographics

Table 15

Pearson's Correlation Coefficients for the Over 55 Portion of the Sample (n = 556)

	Accept	Xtenure	Years	Tothcost	Loca	Houstyp	Sqft	Delage	Overeat	Indivast	Homecon	Sex	CmoInc	Educ	Marsta	Age
Accept	1.0000	-.05176	-.19073	.00955	-.00235	-.02234	.03804	-.16731	.01732	-.14349	-.10634	-.05737	.26394	.36465	-.11538	-.14247
	.0000	.2234	.0001	.8293	.9559	.4516	.3147	.0002	.6836	.0007	.0134	.1767	.0001	.0001	.0065	.0008
Xtenure		1.0000	-.10805	.19583	-.06489	.03478	-.01754	.00318	-.11862	-.11866	.04919	.06648	-.03677	-.07598	.11686	-.02417
		.0000	.0111	.0001	.1275	.2025	.7619	.9445	.0051	.0051	.2543	.1177	.9122	.0742	.0059	.5699
Years			1.0000	-.17424	-.04759	.13812	.03458	.59511	.01867	-.09394	.10382	.08925	-.13706	-.15786	.11698	.31805
			.0000	.0001	.2652	.0013	.3445	.0001	.6615	.0273	.0161	.0361	.0004	.0002	.0060	.0001
Tothcost				1.0000	-.07523	.04814	.27377	-.07630	-.02751	.02986	-.03636	-.04481	.15145	.13728	-.04305	-.15871
				.0000	.0897	.2817	.0001	.1041	.5346	.5002	.4153	.3116	.0085	.0019	.3315	.0003
Loca					1.0000	.07405	.03990	.01535	-.01212	.03625	-.04746	-.01005	.14155	.07824	.16091	.13395
					.0000	.0850	.4905	.7370	.7759	.3944	.2718	.8134	.0114	.0662	.0001	.0016
Houstyp						1.0000	.22090	.12055	.01269	.02799	.06361	-.00062	-.04375	.08011	-.01644	.02268
						.0000	.0001	.0087	.7677	.5147	.1440	.9886	.4406	.0624	.7023	.5976
Sqft							1.0000	-.02132	.18740	.26394	-.06500	-.06522	.26324	.16927	-.09547	.01928
							.0000	.7224	.0011	.0001	.2625	.3585	.0002	.0032	.0983	.7387
Delage								1.0000	-.07662	-.14362	.07549	.03722	-.20719	-.21528	.07427	.24092
								.0000	.0929	.0016	.1007	.4149	.0005	.0001	.1038	.0001
Overeat									1.0000	.30782	.01617	-.03129	.19283	.07222	-.06537	.05955
									.0000	.0001	.7077	.4615	.0005	.0895	.1240	.1608
Indivast										1.0000	-.01930	-.00467	.17369	.17238	.02943	.10590
										.0000	.3620	.9125	.0018	.0001	.4890	.0125
Homecon											1.0000	-.02625	-.07030	-.10292	.05691	.02456
											.0000	.5427	.2164	.0168	.1871	.5690
Sex												1.0000	-.18575	-.04728	.25665	-.02572
												.0000	.0008	.2666	.0001	.5451
CmoInc													1.0000	.39814	-.35322	-.34274
													.0000	.0001	.0001	.0001
Educ														1.0000	-.05802	-.03973
														.0000	.0000	.1730
Marsta															1.0000	.26746
															.0000	.0001
Age																1.0000
																.0000

Note. Probability associated with each correlation is given directly below each correlation coefficient.
 Note. See Appendix Table 28 for definition of variable names.

(gender, income, education, marital status); Model 1]. This formed the base model for the multiple regression analyses used.

As the regression equation contained both continuous and categorical variables, an operational process of dummy coding was set up. Whereas the continuous variables such as age and education have a defined scale of measurement, the categorical variables such as satisfaction and concept of home have no natural scale of measurement. Thus, a set of levels was assigned to the categorical variables to account for the effect that the variable might have on the response.

In the second stage, acceptance was regressed on the same independent variables as in the first stage and age was added last to the equation (Model 2). For the third stage, acceptance was regressed on the same set of independent variables as in the second stage, and age and age squared were added last (Model 3). Thus, a stepwise approach was used in adding age and the age squared term to the set of independent variables in the base model. All three stages of regression were used for both the entire sample and the over 55 age group.

Due to the excessive number of missing values, there were only 384 usable responses with the entire sample, and the number of responses over age 55 was 156. Missing

values were excessively high on two variables, monthly income and square feet. GLM will not use observations if there is a missing value for any variable in the regression, therefore, the two variables (square feet and monthly income) with an excessive number of missing values may have been largely responsible for the low number of "usable" cases. In order to provide supplementary explanation in this study, additional statistical analyses were done leaving these two variables out of the regression models. Although the number of usable cases increased to 928 in the entire sample and to 439 in the group over 55, it did not enhance the ability of age to explain acceptance.

The increase in R^2 resulting from the addition of age and of age squared was tested to determine if age was related curvilinearly to acceptance. Additionally, the collective effect of adding age and age squared to the basic model was quantified by testing the change in R^2 from Model 1 to Model 3. This approach allowed the independent variables [housing situation, housing satisfaction, concept of home, and demographics (excluding age)] to serve as covariates, thus allowing the effects of age on acceptance to be isolated. Since the only differences between the model being tested were additions of terms relating to age, measuring the R^2 change allowed for quantifying the

effect of the age of the respondent on acceptance, given the other independent variables used.

For the entire sample, the addition of age to the other independent variables did not significantly add to the amount of variation in acceptance that could be explained by this model. The addition of age squared, however, produced a nearly significant increase in R^2 ($P < .10$), and by adding age and age squared the increase in R^2 was close to being significant ($P < .10$). Table 16 shows the R^2 obtained for the models used in the three stages for the entire sample, and the R^2 changes when age and age squared are added.

It appeared that the effect of age on acceptance could be curvilinear, suggesting that acceptance increased with increasing age to some point and then began to decline. This would also suggest that the model of predictors may be more effective if used for the older segment of the population. Therefore, the same models were fit to the subsample over age 55. The regression models were all significant for the over 55 age group.

For individuals over age 55, the addition of age to the model significantly increased the amount of variation in acceptance that could be explained by the chosen variables (Table 17). The addition of age squared did not explain any additional variation. Collectively, age and

Table 16

Table of R^2 Changes in the Model For the Entire Sample
(n = 384 usable cases)

Model	R^2	Significance Level	R^2 Change Significance
Model 1 (Base Model)	.1904	.0001	—
Model 2 (With Age Added)	.1963	.0001	.25
Model 3 (With Age Squared Added)	.2039	.0001	.10
Significance of Change From Model 1 to Model 3			.10

Note. The change in R^2 was measured using the test statistic for increment in proportion of variance accounted for (Pedhazur, 1982, p. 62).

Table 17

Table of R^2 Changes in the Model For the Sample over
Age 55 (n = 165 usable cases)

Model	R^2	Significance Level	R^2 Change Significance
Model 1 (Base Model)	.3281	.0047	—
Model 2 (With Age Added)	.3635	.0009	.01
Model 3 (With Age Squared Added)	.3681	.0011	NS
Significance of Change from Model 1 to Model 3			.05

Note. The change in R^2 was measured using the test statistic for increment in proportion of variance accounted for (Pedhazur, 1982, p. 62).

age squared added to the model produced a significant increase in R^2 . These results would suggest that the age of the respondent is an important factor in explaining acceptability of housing alternatives, particularly for individuals over the age of 55.

In this study, the set of independent variables used explained approximately 19% and 36% of the variation in the subjective measure of acceptance for the entire sample and those over 55 years of age, respectively. Lawton (1980) found that objective factors and demographic factors only accounted for about 19% of the variance in housing satisfaction of the elderly, another subjective housing measure. Whiteford and Morris (1986) also reported that only 15 to 16% of the variance in satisfaction could be explained by factors such as age, tenure, income, and health status. Therefore, it appears that the total amount of variation in acceptance that is explained by the selected housing situation, housing satisfaction, and demographic factors, and concept of home is rather limited in the present study. However, based on reports in the literature one would not expect very large R^2 values on models evaluating a subjective measure such as acceptance.

Since the age plus age squared terms were not significant for the "entire" sample but were significant for the "over 55" group, one can conclude that age may be

related curvilinearly to acceptance. There is strong evidence that age is not related to acceptance in the entire sample in the same manner as it is related in individuals over 55 years of age.

Sweaney et al. (1985) found that age had a negative effect on consumer acceptance in six out of seven housing alternatives in the S-141 data set they considered. Dillman et al. (1979) found evidence that with increasing age, the elderly, particularly those of female headed households, are more receptive to renting or owning mobile homes on rented lots.

Testing of Hypothesis Two

The second hypothesis stated that the amount of variation in acceptance that could be explained by the set of independent variables in this study did not differ among the three specified age groups of under 55, 55 to 64, and age 65 and over. Acceptance was regressed on housing situation, housing satisfaction, concept of home, and demographic factors excluding age (i.e., the same model as Model 1 for the first hypothesis, fit within each of the three age groups). The three age groups were independent, therefore, the total variation in acceptance explained by the independent variables could be tested by comparing the R^2 from group to group (Table 18).

Table 18

Comparison of R^2 for the Three Age-Defined Categories

Age Category	Usable Cases	R^2	Fisher's Z score
Under 55	219	.251719	.551597 ^a
55 - 64	77	.496990	.877123 ^b
Over 65	88	.606518	1.042295 ^b

Note. Z scores of each group were compared under the hypothesis $H_0: p_1 = p_2$, for each comparison.

Note. Significance of R^2 differences between groups is indicated by differing superscripts ($P < .05$).

For individuals less than 55 years of age ($N=219$), the percentage of total variation in acceptance explained by the independent variables was 25.2% ($P=.0093$). The R^2 for the 55 to 64 age group ($N = 77$) was .492 ($P=.1002$). In those individuals over age 65 ($N = 88$), the percentage of total variation in acceptance explained was 60.7% ($P=.0004$).

Increasing the acceptable alpha level for the overall model would allow one to avoid errantly failing to reject the hypothesis that the independent variables do not explain variation in acceptance for this group (i.e., making a Type II error) when the low number of usable cases for this age group may have reduced the power to detect the overall significance of the model. The exploratory nature of the second hypothesis warrants accepting a higher alpha level as the number of cases are low and in order to make comparisons of the R^2 with the other two groups.

When the R^2 for the under 55 age group was compared to the other two age groups (55 - 64 and age 65 and over), the R^2 was significantly lower for individuals under 55 years of age than for those 55 to 64 years of age ($P<.05$) or those 65 years of age and over ($P<.01$). The total amount of variation in acceptance explained by the independent variables did not significantly differ between individuals from 55 to 64 years of age and those 65 years and over.

Significant effects in the model with the under 55 age group were number of years lived in house, satisfaction with individual features of dwelling, and education (Table 19). There were no significant effects in the second age group of 55 to 64 even though the model as a whole was significant (Table 20). Significant effects in the third group 65 and over were tenure and total monthly housing expenses (Table 21).

From this analysis it would appear that the effect of education is more powerful with the younger age group than the older age groups. The cost of housing was not a significant factor in the older group (65 and over), suggesting perhaps that their mortgage was paid off and that their housing costs were not as much as the younger age group.

In 1983 Dagwell used the S-141 data set to examine demographic characteristics of probable adopters of energy efficient housing alternatives. She found that probable adopters were younger, had more education and higher incomes. Newman et al. (1984) found that there appears to be a shift from owning to renting as age increases. This was due, in part, to the increasing number of women living alone, who were primarily widows. O'Bryant and McGloshen (1987) investigated older widows' intentions to stay or move from their homes. They found that their intentions

Table 19

Analysis of Variance for Regression Model for the Sample
Under Age 55

Variable	d.f.	Mean Square	Probability
Tenure	1	140.16	.1042
Years in Dwelling	1	333.82	.0122*
Total Housing Costs	1	64.21	.2705
Location of Dwelling	5	89.70	.1351
Housing Type	3	22.04	.7392
Square Footage	1	21.08	.7392
Dwelling Age	1	0.45	.9264
Overall Satisfaction	4	61.74	.3234
Individual Satisfaction	2	176.31	.0371*
Concept of Home	3	45.83	.4567
Sex	1	39.99	.3842
Monthly Income	8	27.60	.8366
Education	1	452.14	.0038*
Marital Status	3	57.66	.3517
Error	183	52.55	
Total	218		

Note. Mean squares followed by * are significant.

Table 20

Analysis of Variance for Regression Model for the Sample
From Age 55 to 64

Variable	d.f.	Mean Square	Probability
Tenure	1	126.08	.0706
Years in Dwelling	1	52.88	.2368
Total Housing Costs	1	5.49	.7010
Location of Dwelling	5	69.51	.1147
Housing Type	2	26.77	.3982
Square Footage	1	76.71	.1556
Dwelling Age	1	67.60	.1819
Overall Satisfaction	2	10.19	.7594
Individual Satisfaction	2	60.32	.2053
Concept of Home	3	19.38	.6662
Sex	1	4.86	.7179
Monthly Income	8	27.11	.6586
Education	1	50.69	.2466
Marital Status	2	74.21	.1447
Error	46	36.80	
Total	76		

Table 21

Analysis of Variance for Regression Model for the Sample
Age 65 and Over

Variable	d.f.	Mean Square	Probability
Tenure	1	202.46	.0190*
Years in Dwelling	1	3.93	.7378
Total Housing Costs	1	288.53	.0056*
Location of Dwelling	5	41.76	.3197
Housing Type	2	17.92	.5995
Square Footage	1	79.88	.1349
Dwelling Age	1	64.27	.1790
Overall Satisfaction	2	13.56	.6785
Individual Satisfaction	1	27.21	.3797
Concept of Home	4	12.84	.8290
Sex	1	4.69	.7146
Monthly Income	8	27.11	.6211
Education	1	92.72	.1078
Marital Status	2	6.31	.8343
Error	56	34.71	
Total	87		

Note. Mean squares followed by * are significant.

were closely related to subjective attitudes such as attachment to home. In the current study, concept of home was not a significant predictor, but this may have been due in part to the large number of predictors used in comparison to the number of usable cases.

Sweaney et al. (1985) found that marital status was important in determining acceptance of some housing alternatives, contrary to what was found in this study.

Dillman et al. (1979) found that with age there appeared to be less inclination to conform to traditional housing norms. In the current study, the only norms that appeared to be important in the individual age groups were tenure and total housing costs in the age 65 and over group.

Golant (1982) found that older people who were more satisfied with their dwellings were less favorable toward new or stimulating environments, which was in agreement with the present study. Length of residence was found to be positively correlated with a higher level of housing satisfaction (Golant, 1982). In this study the vast majority of respondents over the age of 55 had lived in their homes over ten years.

In the study by Beamish et al. (1987) consumer acceptance of energy-efficient housing alternatives was investigated. Final results showed that a high percentage

of the sample did not have adequate information about the energy-efficient housing alternatives to make a decision. This was consistent with findings in the current study.

McCray et al. (1985) studied perceptions of low to moderate income households about alternative housing and also found that the vast majority had limited knowledge and/or interest in alternative housing types. McCray et al. (1987) examined the effect of knowledge of energy conserving building technologies on housing behavior using a sample from the S-141 research project. The result showed that as knowledge increased, so also did the number of energy modifications to their present dwellings.

Summary

A covariate, stepwise approach was used to test the amount of variation in acceptance of housing alternatives that could be explained by age over and above that which was explained by a group of variables including: housing situation, housing satisfaction, concept of home, and other demographics. The set of independent variables used in this study appears to explain a small proportion of the variance in acceptance of housing alternatives. For the first hypothesis, age explained significantly more of the variation in acceptance of housing alternatives than that explained by the other predictors, particularly for the individuals over 55 years of age. The set of predictors in

the model also seemed to account for more of the variance in acceptance in the over age 55 sample than with the entire sample.

The same predictors, excluding age, were also fit within each of three age-defined categories in order to determine if the amount of variation in acceptance differed among the three groups (Under 55, 55 to 64, and age 65 and over). The effects used in the model for comparison between the three age groups explain significantly more of the variation in acceptance for either of the two groups over age 55 than for those under 55, but the amount of variation explained does not differ significantly for individuals age 55 to 64 in comparison to those individuals age 65 and over. The number of years lived in the dwelling, satisfaction with individual features, and the education level of the respondent were significant predictors of acceptance in the under 55 age group. For the 65 and over age group, tenure and total monthly housing costs were significant factors, whereas no significant factors were found for the 55 to 64 age group.

CHAPTER VI

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter includes the summary of procedures and findings for this study. Conclusions and implications from the study are discussed and recommendations for further study are suggested.

Summary

The major objective of this study was to determine whether the acceptance of housing alternatives could be predicted by the current housing situation, housing satisfaction, concept of home, and selected demographics, including age. A subsample of 1,234 respondents from the total sample of 1,804 respondents included in the S-141 Southern Region Housing Research Project, "Housing for Low- and Moderate-Income Families" was used. Nonfarm families in nonmetropolitan areas of seven states were surveyed in the original project (Alabama, Arkansas, Florida, Georgia, North Carolina, Oklahoma and Virginia); since concept of home questions were not used in Georgia and Florida, data for these two states were excluded from the analysis. The project was part of a five-year study, conducted between 1979 and 1984, and the data used for the current study were collected in 1982 by personal interview.

The work of Rogers (1962, 1983) and Rogers and Shoemaker (1971) on the adoption process of innovations formed the theoretical framework of this study. The Total Knowledge Index of Weber, McCray, and Claypool (1985), based on the decision stage of the adoption process of Rogers and Shoemaker (1971), was used to measure acceptance of six types of alternative housing: active solar; passive solar; apartment/multifamily; earth-sheltered/underground; manufactured/mobile home; and retrofitted/energy-improved.

The ages of the respondents ranged from 16 to 95 years of age, with a mean age of 51.5 years. In the sample 69% were females, the medium monthly income was in the range of \$625 to \$833, and the mean education level was 11.6 years. Seventy percent of the respondents were married, while 17.3% of the respondents were widowed.

The majority of the respondents were homeowners, living in conventional housing in the open country. The mean age of the dwelling was 25.8 years, and the respondents had lived in their current dwelling for an average of 14.7 years. The average size of the homes was 1,535 square feet, and the mean monthly dwelling expenses were \$190.59. The majority of the respondents had a "personal" concept of home and 52% of the respondents reported that they were "very satisfied" with their housing overall, and the level of satisfaction increased with

increasing age.

Multiple regression was the statistical procedure used to test the hypotheses. The GLM (General Linear Models) procedure of SAS (Statistical Analysis System) was used for the inferential analyses of the data. This study involved testing the value of five categories of independent variables, including selected features of housing situation, satisfaction factors, the concept of home, selected demographics, and age, for prediction of the dependent variable acceptance of housing alternatives. Five different age categories were used in analysis of data. They were: the entire group of 1,234; the group over 55; under 55; 55 to 64; and age 65 and over. Age was used as a continuous variable in the multiple regression procedure for the testing of the first hypothesis, and three age-defined groups were used for testing the second hypothesis.

The first hypothesis was designed to test whether age of the respondent would explain more of the variation in acceptance of housing alternatives than could be explained by a given set of independent variables. A conceptual model of prediction of acceptance was tested with the entire sample without the variable of age. In the second model, age was added to the predictors of acceptance, and in the third model, age squared was added. The addition of

age to the set of predictors of acceptance did not significantly change the R^2 in the entire sample, but the addition of age squared produced a nearly significant increase in R^2 ($P < .10$), and by adding age and age squared the increase in R^2 was also close to being significant ($P < .10$).

Since it appeared that age could be related curvilinearly to acceptance, the models were also fit for a subsample of 556 respondents over the age of 55 years of age. In this over age 55 subsample, the addition of age to the set of predictors of acceptance significantly increased the total amount of variation in acceptance explained by the model ($P < .01$). Further addition of age squared did not significantly increase R^2 , but age and age squared together significantly increased the amount of variation in acceptance that was explained ($P < .05$) for individuals over age 55. These data indicated that age was a significant predictor of acceptance of housing alternatives. Therefore, it was appropriate to test the prediction model within the three age defined categories of under 55, 55 to 64, and age 65 and over.

The second hypothesis stated that the amount of variation in acceptance that could be explained by a set of independent variables did not differ among the three specified age groups of under 55, 55 to 64, and age 65 and

over. The same set of predictors were used in testing this hypothesis as were used for the first hypothesis, with the exception of age. The set of predictors explained 25.2% of the total variation in acceptance in the under 55 age group. A significantly greater percentage of total variation in acceptance was explained by the prediction model for the 55 to 64 year age group and for those age 65 and over (49.7% and 60.7%, respectively; $P < .05$), but no difference in the amount of variation explained in the two older groups was detected ($P > .15$). The number of years lived in the dwelling, satisfaction with individual features, and the educational level of the respondent were significant predictors of acceptance in the under 55 age group. For the age 65 and over group, tenure and total monthly housing costs were significant factors, whereas no significant factors were found for the 55 to 64 age group. The total percentage of variation in acceptance explained by these criteria was approximately 20% for the entire sample and 35% for the subsample over age 55.

Conclusions

Acceptance of housing alternatives can be predicted by selected housing situation, housing satisfaction, concept of home, and demographics criteria. Although the R^2 obtained in this study were small to modest at best, similar R^2 have been obtained for prediction of other

subjective housing measures, therefore, it appears that the set of predictors chosen for this study adequately predict acceptance of housing alternatives.

Age is a significant predictor of acceptance of housing alternatives, particularly for individuals over the age of 55. As individuals age, the level of acceptance of housing alternatives declines for the entire sample. The amount of variation in acceptance of housing alternatives that could be explained by the set of predictors chosen in this study was significantly lower for individuals under the age of 55 than for the two age groups over age 55. Therefore, it appears that the effects of age should be considered when studying acceptance of housing alternatives. Additionally, the results of this study suggest that different predictor variables may be important in explaining acceptance for individuals under age 55 than for those over the age of 55.

The theoretical framework used in this study suggested that acceptance of new ideas or products goes through three sequential steps: invention, diffusion, and consequences. The innovative housing alternatives considered in this study are inventions. The low acceptance levels encountered in the study are an indication that diffusion of information about many of these alternatives has not been complete, since many respondents indicated that they

had not heard of a number of the alternatives. Therefore, the consequence step, considering the advantages and disadvantages of these housing alternatives, and potentially adopting one of the housing alternatives, cannot be addressed by many of the respondents in this study. Other researchers have also pointed out that additional information about housing alternatives must be disseminated to the public, if individuals are to be able to make informed judgments about the housing alternatives.

The diffusion and consequences steps in the theoretical framework can be more specifically described as proceeding through five stages: knowledge, persuasion, decision, implementation, and confirmation. Once an individual has knowledge about a housing alternative, and is persuaded to accept that alternative, the decision stage will not be reached if the housing alternative is not feasible due to cost or geographical constraints. In other cases, the individual may decide to adopt a housing alternative, and actually implement this decision, but never fully utilizes the benefits of that alternative; thereby, the confirmation stage is never fully addressed. These two cases illustrate that, although the adoption-diffusion process addressed in this study can aid our understanding of the acceptance of housing alternatives, full utilization of these alternatives is not guaranteed.

Additional research is still required to fully address the question of acceptance of housing alternatives.

Implications

The most important implication from the research reported here is that the methodology developed and used in this study can serve as a basis for research by others into other housing alternatives for the aging population. Verification of the relationships of age and the other predictors to acceptance of housing alternatives under current conditions would be necessary before the prediction equations could be used for prediction of the propensity to accept housing alternatives.

The research reported here is important because it indicates that age is an important factor in explaining acceptance of housing alternatives. The variance in acceptance explained by the set of predictors accounts for more variation for individuals over age 55 than for those 55 or less. The prediction equations could be used by researchers, and those in the building industry, to predict if one of these housing alternatives would be acceptable to a target group of the aging population.

The mortgage industry can use the research reported in this study to help target population groups that would be receptive to acceptance of the housing alternatives included in this study, particularly of energy-improved/

retrofitted housing, and would be in need of mortgage or home equity loan capital.

Advocacy groups for the elderly, such as the American Association of Retired Persons or Elderhostel, could use the findings of this study to target the individuals in their groups that would be most interested in innovative housing alternatives, and would benefit most from receiving specific information about the available housing alternatives in their region. Additionally, this study indicated that the ratio of total housing costs to total income increases as age increases; therefore, advocacy groups can use these results to warrant supplementary housing assistance for the elderly.

The results of this study have shown that the majority of nonmetropolitan nonfarm elderly in the rural south are homeowners with high total housing cost to income ratios, and, contrary to the accepted belief that in old age, the balance of tenure status changes is from owning to renting. This would imply that, particularly for the region surveyed for this study, energy-improvement/retrofitting may allow these individuals to assume more control over their housing costs, and, subsequently, to remain in the homes longer.

Recommendations

This study should be repeated using current data in order to verify the relationships between age or the other

predictors and acceptance of housing alternatives. This should give an indication of whether the results obtained in the current study were due to the social and economic climate of the period preceding data collection.

Since the largest percentage of respondents was homeowners in the current study, this study should be repeated for a sample population made up primarily of renters. This would indicate if the results obtained would be applicable to another tenure group.

The sample population for this study was geographically confined to the nonmetropolitan area, therefore, this research needs to be repeated with viable alternatives for the metropolitan areas as well.

Even though this study measured acceptance of the six housing alternatives in general, research into acceptance of specific alternatives is also indicated and could use the same basic approach as used in this study.

For future studies, it would be desirable to have sufficient numbers of respondents so that the effect of age could be evaluated in discrete classifications. Recent research has indicated that individuals under the age of 75 differ more in their response to a new environment than those individuals over the age of 75 (Rowles, 1983). This would suggest that even among the aging population (over age 55), there may be differences that the researcher was

unable to detect due to an insufficient number of respondents in these age categories.

The concept of home would logically be expected to affect acceptance of housing alternatives, much as does housing satisfaction, although little evidence of any effect was found in the current study. Since it also seems logical that the concept of home could have been confounded with measures of housing satisfaction in the current study, further investigation of the impact of the concept of home on acceptance of housing alternatives in the elderly is indicated.

This research would also tend to support the conclusions of other researchers who have found that education of the general public about what housing alternatives are available, and their advantages and disadvantages under different conditions, is a must if we are to be able to explain acceptability. This education, accompanied by a follow-up survey, may give a different perspective as to what factors are important for explaining acceptance.

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APPENDICES

APPENDIX A

S-141 PROJECT OBJECTIVES

The five major objectives of the S-141 cooperative regional research project. "Housing for Low- and Moderate-Income Families" are described as follows:

A. To provide innovative designs and research assistance for the construction of prototype housing systems and subsystems and for rehabilitation, and to review and evaluate them by interdisciplinary teams;

B. To determine societal constraints to the adoption of housing alternatives, including those of finance, cost, regulations, policies, land use, and energy use;

C. To determine constraints within the family to the adoption of housing alternatives, including demographic characteristics, family resources, family decision-making processes, and consumer acceptance;

D. To analyze existing and innovative delivery systems for producing, marketing, and financing housing to maximize accessibility of quality housing;

E. To develop effective methods of disseminating housing research information to consumers and key decision-makers in the area of housing.

APPENDIX B

PERCEPTIONS OF ALTERNATIVE HOUSING INSTRUMENT

Questions selected for use from PERCEPTIONS OF ALTERNATIVE HOUSING instrument for this investigation. Question numbers correspond to the question numbers in the original instrument.

- 8b. HOUSING TYPE:
1. Mobile home_____ 2. Modular_____
 3. Conventional_____ 4. Apartment_____
 5. Other (Specify)_____ 9. Don't Know_____
9. LOCATION OF HOUSING/DWELLING UNIT:
1. Open country_____
 2. Suburban area_____
 3. Incorporated area (population 5,000)_____
 4. Town (population 5,001 - 10,000)_____
 5. Town (population 10,001 - 25,000)_____
 6. Town (population over 25,000)_____
10. HOW OLD IS YOUR HOUSING/DWELLING UNIT?
1. _____years
 9. DK_____
11. GIVE ME AN ESTIMATE OF THE NUMBER OF SQUARE FEET IN YOUR HOUSING/DWELLING UNIT:
1. _____sq. ft.
 9. DK_____
12. DO YOU:
1. Own (paid for)_____ (skip to question 14)
 2. Own (are buying)_____
 3. Rent (or lease)_____
 4. Receive for services _____(skip to question 14)
 5. Other (Specify)_____
13. HOW MUCH IS YOUR MONTHLY HOUSE PAYMENT OR RENT?
1. \$_____

14. PLEASE GIVE ME AN ESTIMATE OF THE FOLLOWING
UTILITY COSTS FOR 1980.

	Highest Monthly	Lowest Monthly	Average Monthly	NA (888)	DK (999)
1. Electricity	_____	_____	_____	_____	_____
2. Gas(natural)	_____	_____	_____	_____	_____
3. Gas(bottled)	_____	_____	_____	_____	_____
4. Oil	_____	_____	_____	_____	_____
5. Water	_____	_____	_____	_____	_____
6. Wood	_____	_____	_____	_____	_____
7. Combined	_____	_____	_____	_____	_____
Other(Specify)	_____	_____	_____	_____	_____

26. HOW LONG HAVE YOU LIVED IN THIS HOUSE? (Record actual number)

1. Years _____
2. DK _____

32. HOW SATISFIED ARE YOU WITH YOUR PRESENT DWELLING?

1. Very satisfied _____
2. Satisfied _____
3. Neither satisfied or dissatisfied _____
4. Dissatisfied _____
5. Very dissatisfied _____

53. WHICH OF THE FOLLOWING TYPES HAVE YOU HEARD ABOUT,
READ ABOUT, SEEN, LIVED IN? (Check as many as apply)

	HEARD ABOUT (a)	READ ABOUT (b)	SEEN (c)	LIVED IN (d)	NEVER HEARD OF/DK (e)
1. Passive solar	_____	_____	_____	_____	_____
2. Active solar	_____	_____	_____	_____	_____
3. Manufactured home/mobile home	_____	_____	_____	_____	_____
4. Apartment/multifamily	_____	_____	_____	_____	_____
5. Earth sheltered/underground	_____	_____	_____	_____	_____
6. Retrofitted (energy saving improved home)	_____	_____	_____	_____	_____

54. HAVE YOU EVER LOOKED FOR ADDITIONAL INFORMATION ABOUT THESE HOUSING TYPES? (Check as many as apply)

1. Passive solar_____
2. Active solar_____
3. Manufactured/mobile home_____
4. Apartment/multifamily_____
5. Earth sheltered/underground_____
6. Retrofitted (energy saving improved) home_____
7. None_____ (skip to question 56)

55. AFTER GATHERING INFORMATION, HAVE YOU TRIED TO DETERMINE THE ADVANTAGES AND DISADVANTAGES OF ANY OF THE HOUSING TYPES FOR YOUR OWN PARTICULAR USE? (Check as many as apply)

1. Passive solar_____
2. Active solar_____
3. Manufactured/mobile home_____
4. Apartment/multifamily_____
5. Earth sheltered/underground_____
6. Retrofitted (energy saving improved) home_____
7. None_____ (skip to question 56)

56a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN A CONVENTIONALLY BUILT HOUSE?

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

57a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN A MANUFACTURED HOME/MOBILE HOME?

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

58a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN AN APARTMENT/MULTIFAMILY UNIT?

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

59a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN A RETROFITTED (ENERGY SAVING IMPROVED) HOME?

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

60a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN A PASSIVE SOLAR HOME?

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

61a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN AN ACTIVE SOLAR HOME?

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

62a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN AN EARTH SHELTERED/UNDERGROUND HOME?

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

63. I WOULD LIKE YOU TO LOOK AT THESE DWELLING UNITS AGAIN AND TELL ME WHICH ONE YOU LIKE BEST (1), WHICH YOU LIKE SECOND BEST (2), WHICH HOME YOU LIKE LEAST (7), WHICH HOME YOU LIKE NEXT TO LEAST (6), NOW OF THE ONES LEFT, WHICH DO YOU LIKE BEST (3)? WHICH DO YOU LIKE LEAST (5)? THEN THE ONE LEFT IS (4).

1. Conventionally built home_____
2. Manufactured home/mobile home_____
3. Apartment/multifamily unit_____
4. Retrofitted (energy saving improved) home_____
5. Passive solar home_____
6. Active solar home_____
7. Earth sheltered/underground home_____

64. Demographic Data

SEX

1-male

2-female

AGE

Code actual years

MARITAL STATUS

1-single

2-married

3-widowed

4-divorced

5-separated

6-other

EDUCATION

Code actual years

1-12;

13-vocational;

14, 15, 16-college graduate; 17-post graduate

INCOME

(Hand Income Card to respondent that corresponds to pay period.) From these cards, please give me the number that corresponds to the amount of take home pay received by each household member. (Record number)

Take Home Pay

Weekly

Bi-weekly

Monthly

Annually

Annual Supplemental Income

7a. NOW, I WANT TO ASK YOU ABOUT SOME GENERAL FEATURES OF YOUR HOME/DWELLING? HOW SATISFIED ARE YOU WITH:

	VS	S	D	VDS	DNH	
1.	_____	_____	_____	_____	_____	Size of the rooms
2.	_____	_____	_____	_____	_____	Arrangement of rooms (the way each is used)
3.	_____	_____	_____	_____	_____	Overall comfort of the home
4.	_____	_____	_____	_____	_____	Appearance of home outside
5.	_____	_____	_____	_____	_____	Privacy from neighbors or the public
6.	_____	_____	_____	_____	_____	Privacy within your home
7.	_____	_____	_____	_____	_____	Air conditioning
8.	_____	_____	_____	_____	_____	Heating
9.	_____	_____	_____	_____	_____	Appearance inside
10.	_____	_____	_____	_____	_____	Plumbing
11.	_____	_____	_____	_____	_____	Number of bedrooms
12.	_____	_____	_____	_____	_____	Number of bathrooms
13.	_____	_____	_____	_____	_____	Electrical facilities (outlets, wiring, & sockets)
14.	_____	_____	_____	_____	_____	Water supply (quality and pressure)

8a. HOW IMPORTANT IS IT TO YOU TO OWN A HOME?

1. Very important _____
2. Important _____
3. Not very important _____
4. Of no importance _____

9a. WHAT DOES THE TERM "HOME" MEAN TO YOU?

Code responses using the categories in Exhibit D

APPENDIX C

Coding Categories for Question 9a

If only one response is given, please code in column 40 and code column 41 with a T--no response. Use column 41 only if a second meaning is given. If more than 2 meanings are given code only the first two.

- A. Home as intimate others is the primary category of meaning to emerge from this research. Exemplary ideas within this category include: (home as:) a sense of belonging, love and togetherness, "where someone cares for me," intense emotional experiences, warmth and security, mutual respect, and feeling welcome. The title to this category reflects its emphasis on family and close friends, and the feelings, affection, and the security of these relationships.

Examples: "A place to enjoy our family"
"The center of the family"

- B. Home as social network is a second category of meaning, and it refers to a wider social context, including relationships among friends, neighbors, the community, local shopkeepers, and acquaintances in the neighborhood.

Examples: "The center of the community"

- C. Home as self identity centers on the idea that what people call home serves as a symbol of how they see themselves and how they want to be seen by others. Thus, home may be thought to be a center of one's world, a reflection of one's ideas and values, and an important influence on being comfortable and happy with oneself.

Examples: Pride
"my castle"
"my kingdom"
"my haven"
"my world"

- D. Home as a place of privacy and refuge is a fourth category, articulated by ideas such as: getting away from outside pressures, a chance to be alone and not be bothered, a place of peace and rest, where you can do what you want, and be safe and secure.

Examples: Privacy
 Getting away from it all
 A place you can always go
 A place to relax
 Be myself
 Freedom to do as one pleases

- E. Home as continuity describes a cluster of meanings which emphasize one's relationship to an environment over time. Ideas in this group range from home as a place you can return to (like a home town, or a family homestead) to other ideas about permanence, stability, and familiar surroundings.

Examples: "There is no place like home"

- F. Home as a personalized place articulates home as a concept which emerges from an active process of creating and controlling an environment. It includes ideas such as ownership, investing time and money in a place, and changing a place or decorating a place to reflect your ideas and tastes.

Examples: "A place of my own"

- G. Home as a base of activity acknowledges more of a functional and behavioral orientation to home: it involves work and leisure, it is where one's day "starts" and "ends", and is often the locus of activities such as eating, sleeping, and recreation.

Examples: Shelter
 A place to live (stay)
 A place to hang your hat
 Meets my needs

- H. Home as childhood home refers to a kind of heritage, or "roots", which seems to be primarily related to where people grew up, and perhaps where their parents live.

I. Home as physical structure describes a rather impersonal view of a housing environment, yet this is the way that home is often referred to since it is tangible. It includes meanings such as a room, a building, an apartment, a house, a neighborhood, architectural design, being near the ground, and the amount of space in and around the dwelling.

J. General Negative Descriptions unrelated to the above

Examples: "Temporary"
"Uncertain"
"Nothing"

K. General Positive Descriptions unrelated to the above

Examples: "very important"
"where the heart is"
"wonderful place"
"everything"

S. Don't know

T. No response

Reference: Hayward, D. G. (1977). Housing research and the concept of home. Housing Educators Journal, 4(3), 7-12.

APPENDIX D

Table 22

Analysis of Variance for Regression Model 1 for the Entire Sample

Variable	d.f.	Mean Square	Probability
Tenure	1	60.57	.2711
Years in Dwelling	1	389.99	.0054*
Total Housing Costs	1	131.01	.1059
Location of Dwelling	5	58.68	.3199
Housing Type	3	29.97	.6146
Square Footage	1	47.85	.3279
Dwelling Age	1	21.50	.5118
Overall Satisfaction	4	66.65	.2558
Individual Satisfaction	2	76.95	.2150
Concept of Home	4	22.65	.7691
Sex	1	20.55	.5213
Monthly Income	8	21.86	.8976
Education	1	717.46	.0002*
Marital Status	3	34.74	.5544
Error	347	49.85	
Total	383		

Note. Mean squares followed by * are significant.

Table 23

Analysis of Variance for Regression Model 2 (Age added)
for the Entire Sample

Variable	d.f.	Mean Square	Probability
Tenure	1	44.54	.3441
Years in Dwelling	1	503.08	.0016*
Total Housing Costs	1	53.01	.3021
Location of Dwelling	5	50.17	.4109
Housing Type	3	28.45	.6328
Square Footage	1	30.73	.4319
Dwelling Age	1	24.10	.4863
Overall Satisfaction	4	58.55	.3194
Individual Satisfaction	2	61.77	.2893
Concept of Home	4	22.13	.7753
Sex	1	5.60	.7371
Monthly Income	8	25.89	.8405
Education	1	739.21	.0001*
Marital Status	3	18.16	.7776
Age	1	127.82	.1094
Error	346	49.62	
Total	383		

Note. Mean squares followed by * are significant.

Table 24

Analysis of Variance for Regression Model 3 (Age and Age x Age added) for the Entire Sample

Variable	d.f.	Mean Square	Probability
Tenure	1	53.11	.3000
Years in Dwelling	1	560.31	.0008*
Total Housing Costs	1	72.19	.2270
Location of Dwelling	5	46.32	.4553
Housing Type	3	26.35	.6589
Square Footage	1	26.31	.4656
Dwelling Age	1	41.62	.3588
Overall Satisfaction	4	53.60	.3626
Individual Satisfaction	2	79.99	.1989
Concept of Home	4	17.68	.8380
Sex	1	0.45	.9240
Monthly Income	8	31.60	.7432
Education	1	698.88	.0002*
Marital Status	3	15.72	.8118
Age	1	95.35	.1652
Age x Age	1	161.83	.0709
Error	345	49.29	
Total	383		

Note. Mean squares followed by * are significant.

Table 25

Analysis of Variance for Regression Model 1 for the Sample
Over Age 55

Variable	d.f.	Mean Square	Probability
Tenure	1	100.45	.1303
Years in Dwelling	1	6.09	.7084
Total Housing Costs	1	255.23	.0166*
Location of Dwelling	5	29.42	.6401
Housing Type	2	35.27	.4454
Square Footage	1	58.87	.2459
Dwelling Age	1	70.27	.2051
Overall Satisfaction	2	7.75	.8364
Individual Satisfaction	2	86.04	.1414
Concept of Home	4	51.84	.3155
Sex	1	0.05	.9716
Monthly Income	8	16.48	.9296
Education	1	437.25	.0019*
Marital Status	3	62.34	.2345
Error	131	43.33	
Total	164		

Note. Mean squares followed by * are significant.

Table 26

Analysis of Variance for Regression Model 2 (Age Added)
for the Sample Over Age 55

Variable	d.f.	Mean Square	Probability
Tenure	1	127.40	.0816
Years in Dwelling	1	28.23	.4103
Total Housing Costs	1	159.26	.0519
Location of Dwelling	5	33.05	.5524
Housing Type	2	47.32	.3217
Square Footage	1	16.41	.5299
Dwelling Age	1	108.98	.1070
Overall Satisfaction	2	19.31	.6281
Individual Satisfaction	2	53.91	.2752
Concept of Home	4	38.07	.4543
Sex	1	24.64	.4416
Monthly Income	8	23.23	.8076
Education	1	378.71	.0030*
Marital Status	3	72.67	.1578
Age	1	299.01	.0081*
Error	130	41.36	
Total	164		

Note. Mean squares followed by * are significant.

Table 27

Analysis of Variance for Regression Model 3 (Age and Age x Age Added) for the Sample Over Age 55

Variable	d.f.	Mean Square	Probability
Tenure	1	135.26	.0730
Years in Dwelling	1	14.07	.5609
Total Housing Costs	1	165.11	.0479*
Location of Dwelling	5	29.70	.6113
House Type	2	44.98	.3404
Square Footage	1	17.80	.5131
Dwelling Age	1	97.53	.1272
Overall Satisfaction	2	20.82	.6059
Individual Satisfaction	2	54.03	.2746
Concept of Home	4	38.13	.4537
Sex	1	25.62	.4329
Monthly Income	8	23.32	.8061
Education	1	390.29	.0026*
Marital Status	3	76.67	.1409
Age	1	59.66	.2321
Age x Age	1	38.42	.3371
Error	129	41.39	
Total	164		

Note. Mean squares followed by * are significant.

Table 28

Listing of Variable Names and Key to Their Meaning

Variable Name	Definition
Accept	Acceptance level score (dependent variable)
Xtenure	Tenure status (owners, renters, or others)
Years	Number of years lived in present dwelling
Tothcost	Monthly housing cost (including utilities)
Loca	Population density of the community
Houstyp	Type of structure
Sqft	Square footage in dwelling unit
Dwelage	Age of dwelling
Oversat	Overall satisfaction with dwelling
Indivsat	Average satisfaction with specific features
Homecon	Meaning of concept of home
Sex	Sex of respondent
Cmoinc	Monthly net income of respondent
Educ	Number of years of education for respondent
Marsta	Marital status of respondent
Age	Actual age of respondent

Table 29

Model 1 Regression Coefficients for Entire Sample

Parameter	Estimated Coefficient	Probability
Intercept	12.58179672	0.2035
Xtenure: Owners	2.09284940	0.2711
Renters	0.00000000	-
Years	-0.12211712	0.0054
Tothcost	-0.00447781	0.1054
Loca: Open Country	1.90762410	0.2894
Suburban Area	2.67160113	0.1750
Population < 5,000	1.37969342	0.4753
5,001 - 10,000	-0.31391944	0.9162
10,001- 25,000	3.75186455	0.0631
Over 25,000	0.00000000	-
Houstyp: Mobile Home	-5.33575143	0.3729
Modular Home	-5.13683743	0.5054
Conventional Home	-6.72370726	0.2439
Apartment	0.00000000	-
Sqft	0.00062568	0.3279
Dwellage	-0.01480452	0.5118
Oversat: Very Dissatisfied	-5.41850390	0.4906
Dissatisfied	-3.78577209	0.3089
Neither	-1.82962723	0.2343
Satisfied	-1.75024293	0.0417
Very Satisfied	0.00000000	-
Indivsatt: Dissatisfied	3.68951058	0.2071
Satisfied	-0.71206288	0.4925
Very Satisfied	0.00000000	-
Homecon: Personal	5.57751282	0.4517
Social	5.12130741	0.4939
Physical	6.58218757	0.3764
Positive	5.55378388	0.4571
Negative	0.00000000	-
Sex: Male	0.51429761	0.5213
Female	0.00000000	-
Cmoinec: \$0-250	-1.59283954	0.4478
\$251-417	-0.26557517	0.8924
\$418-625	-1.58038599	0.3847
\$626-833	-2.04172182	0.2519
\$834-1042	-1.66589877	0.3114
\$1043-1250	-1.63626574	0.2894
\$1251-1667	-1.63471739	0.1979
\$1668-2167	-0.33960905	0.7901
\$2168 and Over	0.00000000	-
Educ	0.54497863	0.0002
Marsta: Single	-1.78986669	0.5467
Married	-1.02521934	0.6304
Widowed	0.60828680	0.7968
Divorced	0.00000000	-

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Table 30

Model 2 (Age Added) Regression Coefficients for the Entire Sample

Parameter	Estimated Coefficient	Probability
Intercept	10.92235600	0.2710
Xtenure: Owners	1.80276374	0.3441
Renters	0.00000000	-
Years	-0.14767324	0.0016
Tothcost	-0.00300259	0.3021
Loca: Open Country	1.94298800	0.2795
Suburban Area	2.48565409	0.2067
Population < 5,000	1.54240534	0.4245
5,001 - 10,000	-0.31272336	0.9164
10,001- 25,000	3.63204303	0.0716
Over 25,000	0.00000000	-
Houstyp: Mobile Home	-5.62627711	0.3466
Modular Home	-5.84115768	0.4486
Conventional Home	-6.85148241	0.2340
Apartment	0.00000000	-
Sqft	0.00050488	0.4319
Dwelage	-0.01568175	0.4863
Oversat: Very Dissatisfied	-4.93511890	0.5294
Dissatisfied	-2.99546721	0.4237
Neither	-1.61903537	0.2931
Satisfied	-1.70695602	0.0466
Very Satisfied	0.00000000	-
Indivsatt: Dissatisfied	3.76416631	0.1971
Satisfied	-0.40746046	0.6986
Very Satisfied	0.00000000	-
Homecon: Personal	5.10891382	0.4899
Social	4.46039712	0.5510
Physical	6.02073126	0.4179
Positive	4.90569620	0.5109
Negative	0.00000000	-
Sex: Male	0.27317837	0.7371
Female	0.00000000	-
Cmoinc: \$0-250	-2.08068187	0.3255
\$251-417	-0.80448813	0.6858
\$418-625	-2.01584549	0.2719
\$626-833	-2.34667462	0.1716
\$834-1042	-2.10962610	0.2054
\$1043-1250	-1.58225296	0.3046
\$1251-1667	-1.67142541	0.1871
\$1668-2167	-0.32399289	0.7901
\$2168 and Over	0.00000000	-
Educ	0.55356066	0.0001
Marsta: Single	-1.17731345	0.6935
Married	-1.18662318	0.5772
Widowed	0.03339182	0.9888
Divorced	0.00000000	-
Age	0.05726710	0.1094

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Table 31

Model 3 (Age and Age x Age Added) Regression Coefficients
for the Entire Sample

Parameter	Estimated Coefficient	Probability
Intercept	18.81438971	0.0822
Xtenure: Owners	1.97101184	0.3000
Renters	0.00000000	-
Years	-0.15676029	0.0008
Tothcost	-0.00352115	0.2270
Loca: Open Country	1.90382777	0.2878
Suburban Area	2.38263032	0.2248
Population < 5,000	1.46400481	0.4470
5,001 - 10,000	-0.36925906	0.9010
10,001- 25,000	3.46987546	0.0844
Over 25,000	0.00000000	-
Houstyp: Mobile Home	-5.99104328	0.3149
Modular Home	-6.17454036	0.4218
Conventional Home	-6.90590177	0.2288
Apartment	0.00000000	-
Sqft	0.00046738	0.4656
Dwelage	-0.02076814	0.3588
Oversat: Very Dissatisfied	-4.60500288	0.5561
Dissatisfied	-3.33553444	0.3721
Neither	-1.71126213	0.2652
Satisfied	-1.58067524	0.0653
Very Satisfied	0.00000000	-
Indivsatt: Dissatisfied	4.28817136	0.1425
Satisfied	-0.48604216	0.6433
Very Satisfied	0.00000000	-
Homecon: Personal	4.41623251	0.5498
Social	3.73886041	0.6165
Physical	5.19624189	0.4838
Positive	4.27395061	0.5668
Negative	0.00000000	-
Sex: Male	0.07804047	0.9240
Female	0.00000000	-
Cmoinc: \$0-250	-2.44413695	0.2488
\$251-417	-1.13837333	0.5674
\$418-625	-2.11534830	0.1355
\$626-833	-2.56058369	0.1355
\$834-1042	-2.42658673	0.1463
\$1043-1250	-1.75005992	0.2555
\$1251-1667	-1.92016248	0.1308
\$1668-2167	-0.31620069	0.8032
\$2168 and Over	0.00000000	-
Educ	0.53908993	0.0002
Marsta: Single	-2.08853250	0.4893
Married	-1.41573768	0.5054
Widowed	-0.57925100	0.8093
Divorced	0.00000000	-
Age	-0.21409824	0.1652
Age x Age	0.00271802	0.0709

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Table 32

Model 1 Regression Coefficients for the Sample Over Age 55

Parameter		Estimated Coefficient	Probability
Intercept		26.26910058	0.0190
Xtenure:	Owners	-6.67834532	0.1303
	Renters	0.00000000	-
Years		-0.02218237	0.7084
Tothcost		-0.01498202	0.0166
Loca:	Open Country	-1.71356206	0.6505
	Suburban Area	-0.69938947	0.8563
	Population < 5,000	1.26321612	0.7461
	5,001 - 10,000	-2.16170451	0.6421
	10,001- 25,000	-0.72908463	0.8544
	Over 25,000	0.00000000	-
Houstyp:	Mobile Home	-3.02793674	0.3232
	Modular Home	5.43892822	0.4405
	Conventional Home	0.00000000	-
Sqft		0.00125975	0.2459
Dwelage		-0.04507487	0.2051
Oversat:	Neither	-1.33063961	0.6776
	Satisfied	-0.62302511	0.6354
	Very Satisfied	0.00000000	-
Indivsatt:	Dissatisfied	-9.28248401	0.0862
	Satisfied	-1.94596766	0.1847
	Very Satisfied	0.00000000	-
Homecon:	Personal	4.85014601	0.5018
	Social	8.65018671	0.2433
	Physical	5.33781793	0.4648
	Positive	3.90722072	0.5912
	Negative	0.00000000	-
Sex:	Male	-0.04339566	0.9716
	Female	0.00000000	-
Cmoinc:	\$0-250	-1.97874243	0.5147
	\$251-417	0.35340695	0.9014
	\$418-625	1.11272240	0.6782
	\$626-833	1.15558623	0.6562
	\$834-1042	-1.17242333	0.6394
	\$1043-1250	0.10091584	0.9737
	\$1251-1667	1.30147168	0.5988
	\$1668-2167	0.31706025	0.9023
	\$2168 and Over	0.00000000	-
Educ		0.58721745	0.0019
Marsta:	Single	-11.73268622	0.0640
	Married	-10.38823204	0.0482
	Widowed	-9.65625097	0.0649
	Divorced	0.00000000	-

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Model 2 (Age Added) Regression Coefficients for the Sample
Over Age 55

Parameter	Estimated Coefficient	Probability
Intercept	16.88820928	0.1394
Xtenure: Owners	-7.54220814	0.0816
Renters	0.00000000	-
Years	-0.04844552	0.4103
Tothcost	-0.01202919	0.0519
Loca: Open Country	-2.08896733	0.5722
Suburban Area	-1.26759568	0.7374
Population < 5,000	1.12599098	0.7677
5,001 - 10,000	-2.12144789	0.6406
10,001- 25,000	-1.62120729	0.6775
Over 25,000	0.00000000	-
Houstyp: Mobile Home	-4.35920764	0.1519
Modular Home	2.65187241	0.7032
Conventional Home	0.00000000	-
Sqft	0.00067886	0.5299
Dwelage	-0.05656116	0.1070
Oversat: Neither	-2.40474394	0.4459
Satisfied	-0.87616820	0.4963
Very Satisfied	0.00000000	-
Indivsatt: Dissatisfied	-7.76470664	0.1435
Satisfied	-1.40375811	0.3315
Very Satisfied	0.00000000	-
Homecon: Personal	3.18757717	0.6525
Social	6.61482005	0.3633
Physical	3.24256655	0.6512
Positive	2.41067312	0.7352
Negative	0.00000000	-
Sex: Male	-0.95412473	0.4416
Female	0.00000000	-
Cmoinc: \$0-250	-3.29036395	0.2746
\$251-417	-0.76173759	0.7869
\$418-625	0.98556753	0.7068
\$626-833	0.57812840	0.8203
\$834-1042	0.12311697	0.9672
\$1043-1250	0.57736212	0.8123
\$1251-1667	0.38404395	0.8790
\$1668-2167	0.31706025	0.9023
\$2168 and Over	0.00000000	-
Educ	0.54825277	0.0030
Marsta: Single	-13.49260794	0.0306
Married	-11.48043929	0.0415
Widowed	-10.98987897	0.0327
Divorced	0.00000000	-
Age	0.23123216	0.0081

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Table 34

Model 3 (Age and Age x Age Added) Regression Coefficients
for the Sample Over Age 55

Parameter	Estimated Coefficient	Probability
Intercept	-14.57303265	0.6741
Xtenure: Owners	-7.78456103	0.0730
Renters	0.00000000	-
Years	-0.03513556	0.5609
Tothcost	-0.01225723	0.0479
Loca: Open Country	-1.99080060	0.5906
Suburban Area	-1.45303118	0.7012
Population < 5,000	1.03036569	0.7870
5,001 - 10,000	-2.04738697	0.6524
10,001- 25,000	-1.69397456	0.6640
Over 25,000	0.00000000	-
Houstyp: Mobile Home	-4.29829563	0.1578
Modular Home	2.23383786	0.7488
Conventional Home	0.00000000	-
Sqft	0.00070739	0.5131
Dwelage	-0.05370024	0.1272
Oversat: Neither	-2.48960252	0.4304
Satisfied	-0.91487597	0.4778
Very Satisfied	0.00000000	-
Indivsatt: Dissatisfied	-7.88093485	0.1379
Satisfied	-1.34588839	0.3523
Very Satisfied	0.00000000	-
Homecon: Personal	3.58849449	0.6130
Social	7.01692311	0.3359
Physical	3.84833803	0.5932
Positive	2.86166186	0.6888
Negative	0.00000000	-
Sex: Male	-0.97296638	0.4329
Female	0.00000000	-
Cmoinc: \$0-250	-3.26899953	0.2779
\$251-417	-0.92576281	0.7430
\$418-625	0.96940623	0.7115
\$626-833	0.56512381	0.8243
\$834-1042	-2.06264798	0.4033
\$1043-1250	0.04531552	0.9879
\$1251-1667	0.57649361	0.8126
\$1668-2167	0.34694829	0.8907
\$2168 and Over	0.00000000	-
Educ	0.55731687	0.0026
Marsta: Single	-14.07117129	0.0026
Married	-10.59249118	0.0250
Widowed	-11.09236252	0.0313
Divorced	0.00000000	-
Age	1.15156777	0.2321
Age x Age	-0.00674169	0.3371

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Table 35

Regression Coefficients for the Sample Under Age 55

Parameter		Estimated Coefficient	Probability
Intercept		13.21365069	0.1270
Xtenure:	Owners	3.73872240	0.1042
	Renters	0.00000000	-
Years		-0.23519849	0.0122
Tothcost		-0.00412001	0.2705
Loca:	Open Country	3.81780192	0.0965
	Suburban Area	4.64647796	0.0714
	Population < 5,000	0.98750935	0.6849
	5,001 - 10,000	1.15174201	0.8170
	10,001- 25,000	4.86733315	0.0584
	Over 25,000	0.00000000	-
Houstyp:	Mobile Home	-4.52022505	0.5016
	Modular Home	-5.01718228	0.6077
	Conventional Home	-6.28914064	0.2439
	Apartment	0.00000000	-
Sqft		0.00054473	0.5273
Dwelage		0.00277549	0.9264
Oversat:	Very Dissatisfied	-10.93958736	0.2009
	Dissatisfied	-4.19427610	0.3159
	Neither	-2.31204571	0.2209
	Satisfied	-1.93706734	0.1076
	Very Satisfied	0.00000000	-
Indivsac:	Dissatisfied	8.32265022	0.0286
	Satisfied	-0.57487928	0.7099
	Very Satisfied	0.00000000	-
Homecon:	Personal	-2.43893750	0.2566
	Social	-3.98024107	0.1179
	Physical	-2.02418212	0.4286
	Positive	0.00000000	-
Sex:	Male	0.98701469	0.3842
	Female	0.00000000	-
Cmoinc:	\$0-250	0.32465227	0.9268
	\$251-417	2.57681356	0.5544
	\$418-625	-1.49030995	0.6843
	\$626-833	-3.61844170	0.2005
	\$834-1042	-0.97758121	0.7134
	\$1043-1250	-1.36971748	0.4725
	\$1251-1667	-1.76941765	0.2610
	\$1668-2167	0.04206396	0.9782
	\$2168 and Over	0.00000000	-
Educ		0.71367806	0.0038
Marsta:	Single	-1.12314534	0.7574
	Married	1.18966588	0.6333
	Widowed	5.14717538	0.1504
	Divorced	0.00000000	-

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Note. Model used is the same as Model 1 for the test of Hypothesis 1.

Table 36

Regression Coefficients for the Sample Age 55 to 64

Parameter		Estimated Coefficient	Probability
Intercept		-6.13236974	0.6507
Xtenure:	Owners	13.26962522	0.0706
	Renters	0.00000000	-
Years		-0.11218877	0.2368
Tothcost		0.00339112	0.7010
Loca:	Open Country	7.01310730	0.2345
	Suburban Area	1.38717082	0.8221
	Population < 5,000	8.14188361	0.1672
	5,001 - 10,000	6.51586404	0.3588
	10,001- 25,000	7.99847839	0.2035
	Over 25,000	0.00000000	-
Houstyp:	Mobile Home	-4.43144605	0.3982
	Conventional Home	0.00000000	-
Sqft		0.00282069	0.1556
Dwelage		0.06720266	0.1819
Oversat:	Neither	5.33705585	0.4764
	Satisfied	0.18946733	0.9326
	Very Satisfied	0.00000000	-
Indivsat:	Dissatisfied	-11.46088853	0.0994
	Satisfied	-0.21631960	0.9260
	Very Satisfied	0.00000000	-
Homecon:	Personal	2.28942786	0.3434
	Social	3.85258992	0.3004
	Physical	0.73671559	0.8097
	Positive	0.00000000	-
Sex:	Male	-0.64887727	0.7179
	Female	0.00000000	-
Cmoinc:	\$0-250	4.22175252	0.3901
	\$251-417	1.85058008	0.6438
	\$418-625	1.38471745	0.6705
	\$626-833	6.75858335	0.0461
	\$834-1042	1.32957384	0.7319
	\$1043-1250	1.50472306	0.7174
	\$1251-1667	1.49838497	0.6743
	\$1668-2167	2.37495527	0.4629
	\$2168 and Over	0.00000000	-
Educ		0.41403387	0.2466
Marsta:	Married	-9.83411843	0.0996
	Widowed	-10.89793482	0.0512
	Divorced	0.00000000	-

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Note. Model used is the same as Model 1 for the test of Hypothesis 1.

Table 37

Regression Coefficients for the Sample Age 65 and Over

Parameter	Estimated Coefficient	Probability
Intercept	43.21377011	0.0044
Xtenure: Owners	-16.73390118	0.0190
Renters	0.00000000	-
Years	-0.02859726	0.7378
Tothcost	-0.02706284	0.0056
Loca: Open Country	-9.40412191	0.1247
Suburban Area	-5.82885980	0.3215
Population < 5,000	-8.09592409	0.1766
5,001 - 10,000	-11.35419385	0.1234
10,001- 25,000	-9.42204059	0.1265
Over 25,000	0.00000000	-
Houstyp: Mobile Home	-2.75399434	0.4735
Modular Home	4.47950462	0.5347
Conventional Home	0.00000000	-
Sqft	0.00219515	0.1349
Dwelage	-0.07808501	0.1790
Oversat: Neither	-1.25549870	0.7525
Satisfied	-1.55819461	0.3934
Very Satisfied	0.00000000	-
Indivsatt: Satisfied	-1.68550513	0.3797
Very Satisfied	0.00000000	-
Homecon: Personal	1.17256881	0.8695
Social	3.55528771	0.6479
Physical	2.87269484	0.6960
Positive	3.44321338	0.6467
Negative	0.00000000	-
Sex: Male	-0.62129577	0.7146
Female	0.00000000	-
Cmoinc: \$0-250	-3.15709036	0.4851
\$251-417	-0.32152626	0.9432
\$418-625	0.28422504	0.9520
\$626-833	-3.48676676	0.4137
\$834-1042	-3.47798425	0.3575
\$1043-1250	0.63789082	0.8938
\$1251-1667	-1.45713350	0.7197
\$1668-2167	3.37328158	0.5033
\$2168 and Over	0.00000000	-
Educ	0.39429424	0.2412
Marsta: Single	-2.25853257	0.5809
Married	-0.67047269	0.7437
Widowed	0.00000000	-

Note. Probability given is for the null hypothesis that the coefficient does not differ from zero.

Note. Model used is the same as Model 1 for the test of Hypothesis 1.

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