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**A cross-cultural study of housing adjustment among Korean,
Mexican, and American households**

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Iowa State University, 1991

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**300 N. Zeeb Rd.
Ann Arbor, MI 48106**

A cross-cultural study of housing adjustment among
Korean, Mexican, and American households

by

Sehwa Yang Khil

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CHAPTER I. INTRODUCTION AND LITERATURE REVIEW

Purpose

The purposes of this dissertation are to compare the housing adjustment propensities of Korean, Mexican, and American households, and to identify cultural effects on the process of housing adjustment through an analysis of three different sets of data. The specific objectives are to: (1) observe cultural norms for housing in each culture; (2) analyze a causal model of housing adjustment (Morris and Winter, 1975, 1978, 1985) that focuses on normative housing deficits, housing satisfaction, and the propensity to adjust (move or alter/add); (3) examine the fit of the Morris and Winter model to each culture, and (4) analyze the cultural influences that produce the differences in the housing adjustment process.

The Significance of the Study

As one way to better understand the provision of improved environmental quality, there has been a growing interest in cultural and cross-cultural perspectives on housing. Murdock (1940) states that all human cultures, despite their diversity, in general, have a great deal in common, and that these common aspects are susceptible to scientific analysis at the cross-cultural level. The common aspects make possible

the formation and variation of scientific generalizations of a cross-cultural or universal human character. The common aspects of all human cultures such as language, religion, art, material traits, knowledge, society, property, government and war describe the nature of cultures and can be studied culturally or cross-culturally (Kroeber, 1962).

Housing and housing orientations are also common aspects of cultures. Nevertheless there are likely to be different implementations of housing in specific cultures. Many studies have approached housing with such an idea. In a study to review housing dissertations focused on the cultural aspects (Pedersen, Triple, & Keiser, 1988), it was found that a stream of studies has been concerned with the cultural influences on various aspects of housing such as form, structure, interior design, adjustment and space. About 30 percent of the research reviewed investigated housing needs, preferences and satisfaction as general ideas of housing adjustment. The studies, however, mainly focused on particular cultures through case studies or surveys.

This dissertation extends the research scope to the cross-cultural level. Individuals and households in all cultures evaluate their housing, and when dissatisfied, perform a sequence of behaviors to adjust housing conditions to attain desired housing under the constraints of the given situation. Through investigations of individual cultures and

cross-cultural comparisons, it is possible to show that some findings are related to housing adjustment in general rather than being bound to a single culture. Of course, the findings for each culture are critical information that can be used in solving housing problems or developing sound housing policy in each country. That is one of the important aspects of this research.

Another important aspect of this dissertation is the testing of the applicability of the Morris and Winter model of housing adjustment in different cultures. The testing and elaboration of existing theory will be a contribution to the development of new theory about housing.

During the last decade and a half, this model has been widely used for the study of housing in the United States. Although Morris and Winter (1978) suggested that this model could be used to study housing adjustment in other countries, those studies are rarely found except the recent studies of housing in Oaxaca, Mexico (Morris et al., 1988; Garcia et al., 1989; Suh, 1988). The results of this dissertation, featuring cross-cultural comparisons of three different cultures, Korea, Mexico, and the United States, will provide researchers with more general information about both the housing adjustment model itself and the application of the model to different cultures.

Limitations of the Comparative Method

There are a number of factors inherent in the comparative method that require cautious interpretation of the influence on housing orientations of cultural differences between samples from different nations. The main factor is that there are many differences between nations that are not directly or obviously cultural. In addition to language and the normative structure of the society, the population size, the natural resource base, and the nature and strength of the economy all can differ. To whatever extent such factors affect households and their housing orientations they can be confounded with the cultural differences.

A second factor is the potential for differences in how the research instrument is understood and responded to in each of the samples. Even if questionnaire development was done carefully and effectively, it is possible that there are subtle differences in meaning of the words, as translated, that could affect the findings. Elements of measurement error within a single culture have been explained by Sward (1991). Suggestions from that research have been adopted in this research.

A third factor relates to sampling error. Even if sampling in each nation is assumed to be random, it can result in error in the estimation of differences between the nations.

As in all sampling operations there will be some proportion of samples that differ greater from the population.

A fourth factor is the possibility that the theory operates differently at different levels of descriptive variables regardless of culture. The housing adjustment model, which was developed primarily in the United States, has been shown to be a reasonable model for samples that are in particular ranges of age, income, household size, and other variables. It is conceivable that the model would not work as well for samples with different means of age, income, household size, etc. from those of the United States. For that reason it is important not only to analyze the relationships implied in the model but also to state the levels of the variables to be analyzed.

Both within and between countries it is possible that the relationship between, for example, deficits and satisfaction would be different at different levels of income. This possibility is particularly troublesome if the basic underlying relations are curvilinear. The location of a particular sample on the curve of a curvilinear relationship can produce very different results if it is located just where an inflection in the curve occurs than if the particular sample were located in a more linear portion of the curve.

Complete resolution of many of these issues requires multiple samples within societies as well as multiple

comparisons between societies. Such are beyond the scope of the present research. Two pieces of research have begun the task within the United States (Whiteford and Morris, 1985; Eichner, 1986). It remains for future research to further resolve these issues.

A fifth potential problem relates to the timing of the three samples analyzed in this dissertation. One of the samples was taken in 1977, one in 1987 and one in 1989. Between 1977 and 1989 much has happened historically in all three nations. With respect to the descriptive data, the only item that would be specifically affected by time would be the effect of inflation on income. Correcting income for inflation would make the income of the U.S. sample substantially higher than the Korean income. With respect to changes in the relationships over time there is no reason to believe that those will have changed substantially and there is some evidence to indicate that they, indeed, have not (Eichner, 1986; Snyder-McKenna, 1982).

Ideally, one would simultaneously obtain a high quality sample from each of the three countries, gather data with as nearly identical instruments and procedures as possible, and perform identical analyses on each. For numerous reasons, having to do with limited resources (time and money, primarily) the ideal study could not be performed. Because of the great expenses and virtual impossibility of such a task,

compromises are necessary. Therefore, a sample from the United States from 1977 that included respondents from a metropolitan area (population about 400,000) and its outlying towns was used. In Mexico, the sample came from a city of 300,000. In Korea, the sample was from a section of the city of Seoul.

It is clear that these are not samples that represent their nations. Rather, they represent the areas they were taken from. Because this is the first detailed international comparison of housing adjustment it fills an important need but is only a first step.

A reasonable conclusion is that it is appropriate to compare these three samples but that cautious interpretation is necessary. The needed caution arises, primarily, from the inherent nature of the comparative method and not so much from specific defects in the design of the present research.

Assumptions of the Model

Basically, the assumptions in the Morris and Winter housing adjustment theory are applied to this study. A household judges its own housing and the housing of others and uses cultural norms as criteria. Housing adjustment is viewed as a voluntary behavior motivated by the household's desire to maintain a state of equilibrium, that is, housing that meets the norms. Such decisions are made by the household members'

common consent. It is also assumed that the housing orientations and behaviors of households are important indicators of the cultural and social conditions of households' own systems, the quality of their lives.

Review of Literature

This section begins with literature pertaining to the general ideas of housing adjustment behavior. The second part gives specific descriptions of the Morris and Winter model of housing adjustment (Morris and Winter, 1975, 1978, 1985; Morris et al., 1990) providing a theoretical framework for this cross-cultural analysis of housing behavior. The last part includes the recent trends in the study of housing adjustment in Korea, Mexico, and the United States.

Housing adjustment

Since Riemer's (1945) development of the idea of "maladjustment to the family home," much consideration has been given to the housing orientations and behavior of households in a sociological perspective. The sociological interests are derived from the views of functional analysts, in which social systems are viewed as oriented toward maintenance of a preferred state through self-regulating mechanisms (Parsons, 1951; Merton, 1957; Buckley, 1967; Sztompka, 1974). That is, housing and housing adjustment

behaviors are analyzed with the idea that a household is a social system attempting to satisfy its housing needs (Rossi, 1955; Butler et al., 1969; Brown and Moore, 1970; Speare, 1970; Gladhart, 1973; Goodman, 1974; Bross, 1975; Morris and Winter, 1975; Harris, 1976; Morris et al, 1976, 1990; Michelson, 1977; Eichner, 1986).

Rossi (1955) conceptualized residential mobility as one of the housing adjustment processes. His basic idea was that whether a household's housing meets its subjective housing needs affects its satisfaction and behavioral propensities. Morris and Winter (1975) conceptualized housing needs as cultural norms for housing, and introduced the concept of normative deficit which indicates a deviation from a norm as the condition that propels housing adjustment.

Satisfaction with housing and the surrounding neighborhood is one of the significant concepts used in the study of the sources of motivation for housing behavior. Satisfaction, introduced by Rossi as the concept of complaints, was further developed by Speare (1974), and tested in several adjustment studies (Harris, 1976; Morris, 1976; Morris et al., 1976; Yockey, 1976; Winter and Morris, 1978; Eichner, 1986; Park, 1989). According to Speare (1974), satisfaction is an important intervening concept between housing and household characteristics and the consideration of

adjustment. His analysis and subsequent analysis (e.g. Winter and Morris, 1978) have supported that notion.

The term, housing adjustment, is defined by Brown and Moore (1970) as a decision-making process that involves the decision whether to move to a different dwelling or to make changes in the present one. It has been generally used in a simple dichotomy of "move" or "alter".

Values and constraints are also important concepts explaining the housing orientations and behavior of households. Cutler (1947) pointed out that satisfaction is a function of the level of concordance between the housing values of a household and the present housing conditions. Goulart (1981) empirically analyzed the connection between value concordance and housing satisfaction and supported Cutler's (1947) assertion. Beyer et al. (1955) grouped housing values using basic human values, and developed housing plans that emphasize specific value orientations. The concept of constraints was introduced by Foote et al. (1960). Constraints prohibit some households from freely making housing choices.

The Morris and Winter model of housing adjustment

The Morris and Winter model of housing adjustment (Morris and Winter, 1975, 1978, 1985; Morris et al., 1990) is the basis for the theoretical framework of the study. Their

model, as an attitude-behavior model related to housing, is focused on the household.

The housing adjustment model was developed mainly from previous thoughts on housing by Riemer (1945), Rossi (1955), Foote et al. (1960) and Brown and Moore (1970). The model is a structural-functional one from sociology (Parsons, 1975), and is also based on the general systems theory developed by Sztompka (1974), microeconomic theory applied to consumer choice behavior and modes of managerial behavior and decision-making processes of the household (Deacon and Firebaugh, 1981; Gross, Crandall, and Knoll, 1980) in explaining the family or household and its housing orientations and behavior.

There are five basic assumptions in this model: 1) A household tries to maintain an equilibrium, namely, normative housing, 2) cultural norms are the criteria used when the household evaluates present housing conditions, 3) the household makes housing decisions on a sufficient consensus, 4) housing adjustment behavior is voluntary, and 5) it is cognitive (Morris and Winter, 1985).

In this model, a household is viewed as a social system functioning in pursuit of the achievement of normative housing through self-regulatory mechanisms. Normative housing is housing that meets cultural and household level norms. Cultural norms are the rules or standards for the culture as a whole. Family norms are the family's specific standards that

they apply to themselves. Both are applied to evaluate current housing conditions and are weighted according to their relative importance to the family for each housing characteristics (Morris and Winter, 1978).

When a household has not attained normative housing, a housing deficit exists. Normative deficits are the indicators of unmet needs that result from housing conditions that do not meet the norms. If the household perceives the deficit to be important, it will be dissatisfied, and will have a propensity to engage in housing adjustment behavior to remove the deficit. Housing adjustment behavior involves two alternatives, moving to another dwelling or altering the present dwelling.

Constraints, however, may prohibit the household from successfully performing the adjustment process. The perception of normative deficits, the development of dissatisfaction and an adjustment propensity, and the accomplishment of adjustment behavior may be affected (Morris and Winter, 1981: 197). The constraints include resource constraints including money, skills, time, and information; market constraints such as supply and price factors in the housing, materials and mortgage money market; household organizational constraints such as the household's ability to make decisions and implement them; psychological dimensions of the household similar to the personality of the individual

such as fatalism, apathy, and value orientation; and discrimination based on such characteristics as sex, race, or age.

When the constraints are so serious that adjustment is not feasible, the household takes adaptive actions including changes in resources, family norms, roles, and compositional structure (Morris and Winter, 1978, 1985). Preferences are the norms relaxed because of the constraints. Values are used to explain how, given the constraints, the norms are translated into preferences (Morris, 1977; Morris and Winter, 1978).

There are two versions of the housing adjustment model, the comparative-static model and the dynamic model. They have similar concepts and assumptions. But the focus of the dynamic model is on the changes in those concepts as time passes.

This study compares the housing adjustment behavior of Korean, Mexican, and American households by applying the comparative-static model of housing adjustment to each of three cultures. The ultimate goals of this study are to examine the similarities and differences in housing orientations among the three cultures, and analyze the cultural factors related to these findings.

Housing adjustment studies

Korea Before reviewing the previous housing studies in Korea, it is helpful for understanding the findings to briefly discuss the general housing situation based on the population and housing census data (Economic Planning Board, 1985). With developing industrialization since the 1960s, the migration to urban areas for jobs has rapidly increased various aspects of urban population problems. Housing problems are among the most serious ones that need to be solved.

Even though the housing supply has been steadily increasing, the housing shortage is still severe. About 60 percent of Korean households in urban areas are renters. The rapid increase in housing prices which exceeds the rate of increase in household income is the major constraint on home ownership for the Korean households.

The single-family detached dwelling is still regarded as the structure-type norm for Korean households, but the trend is changing slightly. Because of the efficiency of land use, the development of apartment housing complexes has been very popular in Korea since the late 1970s, especially in urban areas. The potential reasons for this could be the desire for higher housing quality with better facilities and the lower prices of apartments relative to those of single-family detached dwellings.

About 60 percent of Korean couples share bedrooms with their children (Hong, 1986). This situation may originate in the traditional idea of the parent-child relationships rather than in the shortage of bedrooms.

Many studies have been conducted on the housing behavior of Korean households. That research has examined relationships among sociodemographic and housing characteristics of households and various concepts related to housing orientation and behaviors such as housing needs and preferences, housing quality, satisfaction, housing adjustment, housing purchase behavior, and so on. Nine specific studies concerning housing adjustment behaviors of Korean households will be reviewed in this section. It is important to the understanding of the usability of housing adjustment theory in Korean society that most of these studies are based on applications of the model.

Oh (1983) studied the relationships between previous and future housing adjustment and housing satisfaction with current housing in relation to sociodemographic and housing characteristics using data for 338 households in Seoul. She found that households in earlier stages of the family life cycle, with higher levels of household income, longer length of residence and higher-quality homes are less likely to move. Households living in single-family housing rather than apartments and those with longer rather than shorter length of

residence tend to make alterations or additions to their housing.

There is a positive relationship between housing satisfaction and previous adjustment behavior. In other words, households who had previously engaged in housing adjustment are more likely to be satisfied than those who had not. Having a housing adjustment plan is negatively related to housing satisfaction and previous adjustment behavior. The greater the household's satisfaction, or the more the household has engaged in previous housing adjustment, the less likely it is to engage in future adjustment behavior. It was also found that living in single-family housing, household income and housing quality have significant positive relationships to housing satisfaction, while household size has a negative one.

Most of the results are similar to those of studies in the U. S.. The difference is found in the results related to residential mobility and family life cycle. Older households are more likely than younger households to move in Korea, while in the U.S., younger households are more likely to move than older households (Rossi, 1955; Foote et al., 1960; Butler et al., 1964; Van Arsdol et al., 1968; Long, 1972; Pickvance, 1973; Duncan and Newman, 1976; Crull, 1979; Cho, 1987; Park, 1989).

Yu and Hong (1983) investigated the relationship between family life cycle stages and housing adjustment behavior. One of their findings is that households without children, with preschool children and grown-up children rate nearness to environmental aspects as the primary factor they consider when they plan to move, while households with middle school and high school children place location of housing relative to the school district as the most important one.

The focus of Kim's (1984) study of housing adjustment of rental households is on the rental cost. She hypothesized that the burden of rising rental cost, considering household income, would have a significant effect on the adjustment behavior of households who rent. The results indicate that if the increment in rental cost becomes excessive and household income is not sufficient for the expense, then the household tends to move to a different dwelling. When the rise is moderate, the household takes adaptive measures including cutting other living expenses, or getting extra jobs.

Alteration or addition behavior as one of the housing adjustments is popular among apartment residents in Korea. Hong (1984) examined the relationship between sociodemographic and housing characteristics and the housing alteration or addition behavior of apartment residents, using housing satisfaction as an intervening variable. Households with higher housing satisfaction are more likely to make

alterations or additions to current housing than to move to different housing. Among the households who are dissatisfied with their housing, those who live in owned dwellings show a higher desire for alteration than those living in rented ones.

Lee (1987) and Park (1987) also studied housing alteration behavior of apartment residents. A study of specific alteration behavior was performed by Lee (1987), who considered remodeling behavior on the built-in furniture in the apartment. Differences in such behaviors are directly associated with housing characteristics such as tenure type, dwelling size, expected duration of residence, and interest in interior design.

Park (1987) found that the housing satisfaction of the households who live in apartments is high, and they want to live in their current homes with some alteration behaviors as housing adjustment for the future. The average number of previous alteration behaviors per household is 3.6, and social spaces such as living room and dining room, and work spaces are more likely to be changed than private spaces. The households indicated that structural changes and bathroom design will be the targets of future alteration behavior. It also was found that expected duration of residence, dwelling size and age of apartment building are significantly related to the plan for alteration of households living in apartments.

An extensive project was accomplished by a research team of the College of Home Economics at Yonsei University in Seoul, Korea (Research Institute of Home Economics, 1989). The main purpose of this project is to provide fundamental data that would be useful for developing multi-family housing. The data were collected from surveys and observation of almost 1,000 households living in high-rise apartments in Seoul.

Planning to move was examined in the context of family factors including household size, household income, and family life cycle stages and housing factors such as expected time until a move and preferences for structure type, dwelling size, and location. Almost 70 percent of all households plan to move within 4 years of residence, and the high-rise apartment is the most preferred structure type (68 percent). It was also found that there are positive relationships between household size, household income, and family life cycle stages and preferred dwelling size. Households with more household members, more household income and in later stages of the family life cycle tend to prefer larger dwellings than those with fewer household members, less household income and in earlier stages of the family life cycle.

Hong (1986) hypothesized that there are significant relationships between family and housing characteristics, housing deficits and adjustment or adaptation. She analyzed

the norms for structure type, tenure type, and bedroom separation in relation to family life cycle stages.

Strong preferences for multi-family dwellings were observed among the newlywed couples (Hong, 1986). As the children grow up, the single-family dwelling is preferred, and the multi-family dwelling is desired again for the launching households. Preference for home ownership remains until the children leave their parents.

Housing deficits do not have direct relationships with family characteristics, but are related to rental housing and a small number of rooms in the dwelling. Households living in multi-family housing are more likely to perform alteration behavior than those living in single-family housing. Also, the more expensive housing the household has, the higher the tendency to alter.

Mexico Much interest has been given to the rural-urban migration accompanying industrialization and urbanization in Latin America. Mexico is not an exception. The city of Oaxaca where the data were gathered has grown at an amazing rate increasing from less than 100,000 in 1940 to over 300,000 in 1990. Oaxaca City is the capital of the state of Oaxaca located in Southeast of Mexico City, the national capital. As in the case of Seoul, it is difficult for housing to keep pace with such rapid growth caused by rural-urban migration. Migratory moves are excluded in the categories of housing

adjustment behavior of households. The primary motive for those moves is related to economic factors such as better jobs and more money (Butterworth, 1973; Stepick & Murphy, 1980; Hendricks & Murphy, 1981; Morris et al., 1988) rather than housing. The reasons for housing adjustment are housing-related ones derived from the changing housing needs of households within culturally acceptable limits (Morris & Winter, 1978).

A few studies (Murphy, 1979, 1987; Suh, 1988; Morris et al., 1988; Garcia et al., 1989) considered the housing adjustment process of Mexican households, in Oaxaca City, Mexico. Except for Murphy (1979, 1987), they were accomplished using data gathered in 1987 in the city of Oaxaca de Juarez, Oaxaca, Mexico, as a part of the project, "A Decade of Change in Oaxaca, 1977-1987."

Morris et al. (1988) analyzed housing norms, preferences, satisfaction, and behavioral intentions of couple-headed households in Oaxaca. Their approach focused on the variations in the quality and the quantity of housing in relation to norms, preferences and satisfaction.

Two dependent variables, the propensity to make alterations or additions to the present dwelling, and the propensity to move to another dwelling, were included. There were three intervening variables, housing satisfaction, housing quality, and the number of rooms. Six constraint

variables, socioeconomic status (based on number of workers in the household, education of the husband and the wife, income, and a level of living score), age of the husband, household size, in-migrant status, type of dwelling, and home ownership status were utilized.

The quality and quantity of dwellings are positively related to socioeconomic status of households. Larger households have lower quality and larger dwellings. Owned and single-family dwellings are larger than rented and multiple-family ones. Quality is not related to ownership or type of dwelling. High quality and large dwellings produce high satisfaction. High satisfaction produces a propensity to make alterations or additions but reduces the propensity to move.

Age has effects on many variables, and also has curvilinear relationships to quality, number of rooms, and both propensity variables. These results are very similar to those typically found in the United States. The two main differences are 1) the propensity to make alterations and additions is much higher than in the U. S. especially in comparison to the propensity to move, and 2) satisfaction is very high given the low quality and small size of the dwellings (p. 8).

Suh (1988) focused on the relative contribution of a number of determinants of the propensity to engage in residential improvements, and tested the applicability of the

Morris and Winter model of housing adjustment in Oaxaca. The dependent variable was the propensity to make improvements. Housing satisfaction, housing quality and the number of rooms were used as the intervening variables as in Morris et al. (1988). The constraint variables included age of the head, socioeconomic status, length of occupancy, household size, recent change in household size, type of structure, and past experience in residential improvements.

Suh (1988) concluded that Oaxacan households have a tendency to make residential improvements for their housing adjustment behavior to raise the quality and quantity aspects of the dwelling. Another conclusion is that the model serves moderately well in explaining the propensity to make residential improvements to the dwelling in Oaxaca, because quality does not perform in the analysis the way it would in a more developed nation. For Oaxacan households, because the lack of rooms given the numbers and composition of the household is so serious, the importance of space in terms of satisfaction with the number of rooms overwhelms the importance of quality.

A similar study was done by Garcia et al. (1989). They focused on identifying the groups of households in Oaxaca that have the highest propensities to move and to make alterations in relation to housing satisfaction, type of dwelling, age of

household head, home ownership, household size, and constraints.

The results of the study indicate that the majority of households want to stay in the present dwelling, and most of those who want to move wish to stay in the state of Oaxaca. A high percentage of younger households who rent their dwellings have a higher propensity to move than owners. The propensity to move is lower in the advanced stages of the domestic life cycle than in the earlier stages.

Home owners have a higher propensity to make alterations than do renters. Such alterations are mainly derived from a lack of or a diminution of "public space," as the number of household members increases. Many of those who wish to make alterations must adapt their alterations to the amount of income they earn. Their construction begins when enough resources and materials are accumulated.

Murphy (1979, 1987) also discussed housing conditions of the households in the city of Oaxaca, Mexico. The Oaxacan households think of their housing as adequate, even though shacks in 1976 constituted more than 20 percent of the housing of the city and about 13 percent live in one room. However, more households would like to make some improvements in their dwellings than improvements in other aspects of their lives. Murphy (1987) also pointed out that for most Oaxacan households except those who are wealthy, time and money are

interactive resources in obtaining a comfortable home and near environment.

The United States Most studies concerning housing adjustment of the households in the United States have concentrated on residential mobility. In some studies, residential alterations and additions have been treated as a substitute for residential mobility. In this section, studies referring to residential mobility will be reviewed first, and then those related to residential alterations and additions will be mentioned.

Residential mobility Previous studies of residential mobility are divided into two types: 1) those that analyze the effects of various characteristics of the household on mobility, and 2) those that introduce intervening housing variables such as housing satisfaction between household characteristics and mobility (Winter & Morris, 1978; Crull, 1979). Demographic and socioeconomic characteristics of the household have been extensively used as predictors of residential mobility and mobility intentions. They include age of the household head, household size, education of the household head, household income, employment status of the household head, sex of the household head, and race of the household head.

Age of the household head and household size often are used to represent the family life cycle. The family life

cycle is, in general, considered an important concept in predicting residential mobility and mobility intentions because each stage of the family life cycle represents demographic and socioeconomic characteristics as well as the housing needs of the household. Age of the household head and residential mobility have significant negative relationships, namely, younger households are more likely to move than older households (Rossi, 1955; Foote et al., 1960; Butler et al., 1964; Van Arsdol et al., 1968; Speare, 1970; Long, 1972; Duncan and Newman, 1976; Carey, 1979; Crull, 1979; Newman and Duncan, 1979; Bourne, 1981; Cho, 1987; Park, 1989). Household size represented by the number of persons in the household is positively (Rossi, 1955; Long, 1972; Goodman, 1976; Crull, 1979), or negatively (Weisbrod and Vidal, 1981; Eichner, 1986; Park, 1989) related to residential mobility.

Differences in research design may account for the difference in results. The present research offers an opportunity to explain some of the differences in such relationships among different samples.

Education of the household head, household income, and employment status of the household head are often used as the general indicators of socioeconomic status. They are correlated with one another to a substantial degree. As a result, previous research has shown inconsistent results regarding the effects of education of the household head on

mobility. The level of education has an insignificant (Long, 1972; Roistacher, 1974; Speare et al., 1975; Duncan and Newman, 1976; Morris, 1977; Crull, 1979; Park, 1989), or a significant positive (Foote et al., 1960; Memken, 1984), or a negative (Varady, 1983) influence. Mixed results have been also found in the effect of household income: a positive (Crull, 1979), or a negative (Varady, 1983), or a curvilinear (Roistacher, 1974), or an insignificant (Park, 1989) effect on mobility. Employment status does not have a significant relationship with mobility (Roistacher, 1974).

Many studies have found that there are significant relationships between sex and race of the household head and mobility. Female-headed households tend to be more likely to move than are male-headed households (Rossi, 1955; Long, 1972; Barrs, 1975; Morris et al., 1976; Stapleton, 1980; Varady, 1983). Black households are more likely to move than are whites (McAllister et al., 1971). These findings are related to the facts that female-headed and black households have more economic constraints, and are less likely to own their housing or to live in single-family dwellings.

Housing characteristics such as tenure type, structure type, space, quality, expenditure, neighborhood, and satisfaction have been examined in mobility studies. They are analyzed for the simple effects on mobility as one of the household characteristics, or tested as the intervening

variables between household characteristics and residential mobility.

Tenure and structure type are the most important factors explaining mobility. Generally, the findings concerning the effects of these two variables are clear. Renters are more mobile than are owners (Rossi, 1955; Speare, 1970; Pickvance, 1973; Roistacher, 1974; Duncan and Newman, 1976; Morris et al., 1976; Morris, 1976; Crull, 1979; Newman and Duncan, 1979; Clark and Onaka, 1983; Park, 1989), and households who do not live in single-family conventional dwellings are more likely to move than those who live in single-family dwellings (Morris, 1977; Newman and Duncan, 1979; Park, 1989).

Tenure and structure type are sometimes used as a combined variable in mobility studies (Gladhart, 1973; Zimmer, 1973; Morris et al., 1976; Carey, 1979; Memken, 1984; Sward, 1991). Households in owner-occupied single-family dwellings are less likely to move than are others. Also, tenure and structure type are closely related to age of the head (Roistacher, 1974). Specifically, young households are more likely to be renters, to live in multi-family dwellings rather than single-family homes, and to be mobile than are older households.

Some researchers introduced the concept of deficits in analyzing the effects of tenure and structure type on housing satisfaction and mobility (Morris et al., 1976; Morris and

Winter, 1978; Crull, 1979; Morris and Jakubczak, 1988). They found that tenure and structure type deficits have direct effects on the desire to move as well as indirect ones through housing satisfaction.

Space is one of the most popular reasons for residential mobility (Morris and Winter, 1978). Households who do not have enough space have a tendency to move (Rossi, 1955; Michelson et al., 1973). However, it was found that space does not have a direct relationship to the desire to move. The relationship is indirect through the reduction in housing satisfaction (Morris, 1976; Morris et al., 1976; Winter and Morris, 1982).

The findings of the influences of quality and expenditures on mobility are limited. From reviewing empirical studies, Morris and Winter (1978) concluded that households engaging in residential mobility are in general those who live in poor quality housing relative to their ability to pay for housing, or spend an unusually high or low proportion of their income for housing (Crull, 1979). However, quality and expenditures for housing are closely related to income, and an increase in income is a better prediction of mobility intentions than quality or expenditure. That is, an increase in income causes a household to move to higher quality and more expensive housing (Morris and Winter, 1978; 185).

Neighborhood factors such as heterogeneity, poor quality schools and neighborhoods, high density, high crime rates, and location within the city are related to the decline in neighborhood satisfaction and further, the desire to move (Butler et al., 1969; Morris and Winter, 1978; Crull, 1979).

In Speare's (1974) study of residential mobility, housing satisfaction was analyzed as an intervening variable between housing and household characteristics and the consideration of moving. Housing satisfaction has the strongest effect on potential mobility of all the variables. Some studies found that the direct cause of the desire to move is not household and housing characteristics themselves but a reduction in housing satisfaction caused by those characteristics, although some act directly to produce mobility (Morris et al., 1976; Morris and Winter, 1978; Crull, 1979; Memken and Stalnaker, 1987; Morris and Jakubczak, 1988).

Propensity to move or potential mobility referring to a desire, expectation, willingness or plan to move to another dwelling has been shown to be positively related to actual or subsequent mobility (Rossi, 1955; Speare, 1974; Roistacher, 1975; Michelson, 1977; Yee and Van Arsdol, 1977; Morris and Winter, 1978; Crull, 1979; Newman and Duncan, 1979; Park, 1989). Households with high propensities for future mobility are more likely to carry out the actual mobility behavior. Some households with constraints may not be able to accomplish

their plans, however (Morris and Winter, 1978). The present research focuses on the propensity to move rather than actual mobility. Subsequent mobility was not measured in any of the three studies.

Residential alterations and additions Research on residential alterations and additions is limited. With the small amount of research, the findings about the relationships among the variables are tentative and inconsistent. Residential alterations and additions are primarily performed by home owners (Bross and Morris, 1974; Meeks and Firebaugh, 1974; Bross, 1975; Morris and Winter, 1978; Seek, 1983), especially those of single-family dwellings if the dwelling fits the household's needs (Morris and Winter, 1978).

Age of the household head has a curvilinear (Winger, 1973; Yockey, 1976), negative (Meeks and Firebaugh, 1974; Harris, 1976) or no relationship (Needham, 1973) to alterations and additions. Income also shows mixed relationships to alterations. Most researchers used the amount of expenditures spent on alteration behaviors for the measure of these activities. Bross (1975) and Meeks and Firebaugh (1974) found that there is no relationship between income and the expenditure on alterations, while Winger (1973) found that these are positively related. Socioeconomic status (Shonrock, 1975) and education of the head (Yockey, 1976) have curvilinear relationships to alterations. Specifically,

middle-class households tend to do more alterations than either upper- or lower-class groups. The differences among studies of the effects of some of these variables are likely to be caused by differences in research design and measurement and differences in the samples. By standardizing the measurement and reducing somewhat the variation in research design, the present research can clarify some of the inconsistencies.

Three studies have used the concept of normative deficits in the analysis of residential alterations or the desire to make alterations (Bross, 1975; Harris, 1976; Yockey, 1976). They hypothesized that households with normative space and quality deficits would be more likely to make alterations and additions to eliminate such deficits. Bross found that bedroom deficits have a curvilinear relationship to the amount spent for alterations within the context of age of the head. Younger and older households with negative or positive deficits are likely to engage in alterations and additions.

In terms of the effect of housing satisfaction on the propensity to engage in residential alterations, Morris and Winter (1978) tentatively concluded that housing satisfaction also has a curvilinear relationship to alterations and additions, that is, both households who are highly satisfied and highly dissatisfied make more alterations than others.

Summary

This section reviewed the literature on housing adjustment in Seoul, Oaxaca, and Omaha/Council Bluffs. The Morris and Winter model of housing adjustment which provides the theoretical framework of this study was described in detail. The historical and theoretical aspects of housing adjustment were emphasized.

In addition to basic information about housing adjustment patterns of Korean, Mexican, and American households and recent trends in the study of housing adjustment in each culture, the relevant empirical studies were reviewed. While much research has been done in the United States, that in Korea and Mexico is limited. Also, a larger portion of adjustment studies performed in Korea were mainly focused on alteration behaviors, while those in the United States were concentrated on mobility.

The previous findings related to the simple effects of housing and household characteristics on the process of adjustment were quite similar among the cultures. The focus of this study is to analyze the major differences among the cultures.

CHAPTER II. PROCEDURES

This chapter is divided into four sections. The first section describes the empirical model and hypotheses. The second section describes the data including the samples and the methods of data collection. The third section describes the conceptual and operational definitions of the variables included in this dissertation. The last section describes the analytical procedures.

The Empirical Model and Hypotheses

The empirical model to be analyzed in this study is similar to those in the previous studies of housing adjustment. In the case of the Oaxaca data and the Omaha/Council Bluffs data, some analyses have already been done using housing adjustment concepts. The primary goal of this dissertation is to compare the general adjustment behaviors of households in three different cultures rather than to clarify the relationships among the factors in the adjustment model. Therefore, a slightly simplified version of the model is used to facilitate the comparison, since a somewhat restricted set of variables facilitates consistency of measurement among the three sets of data.

The empirical model is derived from the Morris and Winter theory of housing adjustment and the previous studies

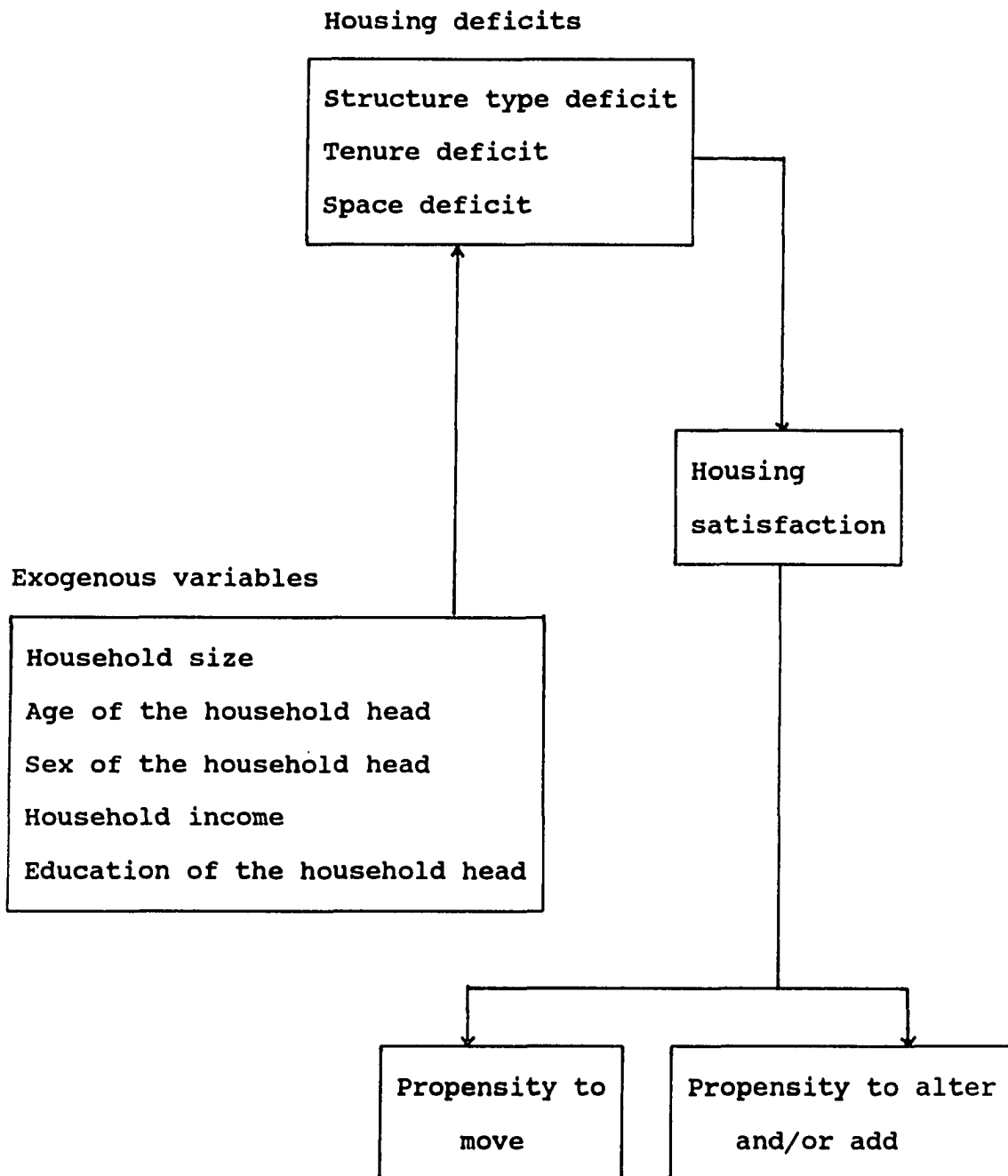


Figure 1. Model to be analyzed,
derived from Morris and Winter (1978)

reviewed (Figure 1). There are three categories of variables in the model: exogenous variables, intervening variables, and dependent variables. The five exogenous variables, serving as controls or constraints, represent household characteristics. Household size, age of the household head, and sex of the household head represent demographic characteristics of the household. Household income and education of the household head measure socioeconomic characteristics. The dependent variables are propensity to move and propensity to alter and/or add.

For the intervening variables between the exogenous variables and the dependent variables, housing satisfaction and housing deficits (including structure type deficit, tenure deficit, and space deficit) are considered.

It is hypothesized that propensity to move or propensity to alter and/or add are directly affected by housing satisfaction when the exogenous variables and the housing deficits scale are controlled. The housing deficits scale is hypothesized to have an indirect effect on propensity to move or propensity to alter and/or add through housing satisfaction rather than a direct effect. The housing deficits scale is projected to have a direct effect on housing satisfaction. The exogenous variables are hypothesized to have indirect effects on housing satisfaction through the housing deficits scale. The housing deficits scale and each of the three

deficits are expected to be directly influenced by the exogenous variables. The hypothesized relationships among the variables are represented in a very general form in the following equations:

- (1) propensity to move or propensity to alter/add
= f (household size, age of the household head, sex of the household head, household income, education of the household head, housing deficits, housing satisfaction)
- (2) housing satisfaction = f (household size, age of the household head, sex of the household head, household income, education of the household head, housing deficits)
- (3) housing deficits = f (household size, age of the household head, sex of the household head, household income, education of the household head)

It is also hypothesized that there are differences in housing adjustment behaviors among the households in the three cultures, Korea, Mexico, and the United States. The specific form of the hypothesized relationships between the explanatory variables and the endogenous variables are shown in Table 1 and are as follows:

The housing deficits scale

1. The housing deficits scale has a negative relationship with household size.
2. The housing deficits scale has positive relationships with age of the head, sex of the head, household income, and education of the head.

Housing satisfaction

3. Housing satisfaction has negative relationships with household size and sex of the head.

4. There are positive relationships between housing satisfaction and age of the head, household income, education of the head, and the housing deficits scale.

Table 1. Hypothesized causal relationships

	Housing deficits	Housing sat.	Prop. to move	Prop. to alter/add
<u>Explanatory variables</u>				
Household size	-	-	-	+
Age of the head	+	+	-	-
Sex of the head	+	-	-	+
Household income	+	+	-	0
Educ. of the head	+	+	-	-
Housing deficits	x	+	-	-
Housing sat.	x	x	-	-
+ positive relationship 0 no relationship - negative relationship x not in model				

Propensity to move

5. There are negative relationships between propensity to move and household size, age of the head, sex of the head, household income, education of the head, the housing deficits scale, and housing satisfaction.

Propensity to alter/add

6. Propensity to alter/add has positive relationships with household size and sex of the head.

7. Propensity to alter/add has negative relationships with age of the head, education of the head, the housing deficits scale, and housing satisfaction,
8. There is no relationship between propensity to alter/add and household income.

These hypotheses are referred to as the directional hypotheses in this dissertation. A common set of hypotheses is used for all these samples because the literature review did not give obvious reasons why they should be differentiated by country.

The Data

A Study to Assess Housing Needs of Korean Households (1989)

The data for the Korean households come from a survey to assess housing needs of households in Seoul, Korea. This survey was specifically designed for this dissertation.

The instrument was developed on the basis of those used in several previous research projects: the regional research project, NC-128, "The Influence of Area of Residence on the Quality of Life (1977)," "An Assessment of Housing Needs and Conditions in Small Cities and Towns in Iowa (1977)," "The North Central Regional Study of Housing (1985)," and "Study of Housing and Households, City of Oaxaca, Mexico (1987)." To collect data on the general housing ideas of Korean households, the questions on housing norms, preferences, general and housing values, current housing conditions, satisfaction, and previous and prospective adjustment were

selected from those earlier interview questions. The demographic and socioeconomic characteristics of the household were also included.

After being developed in English, it was translated into Korean. For a test of the appropriateness of the translation, it was checked with the help of 6 housing professionals in Korea and the U. S.. On the basis of these professionals' opinions, parts of the instrument were changed to use more common expressions, and the instrument was more effectively organized. Also, it was approved by the Human Subjects Review Committee of Iowa State University to insure that the rights and welfare of the human subjects were properly protected.

The data were gathered during November and December, 1989, in Seoul. The target population for this study is Korean households. However, because of the available budget and time, the study was limited to a relatively convenient area of Seoul. A stratified random sampling method was employed in the selection of a sample of households, based upon the age of the household head, structure type, and socioeconomic status.

Specifically, two administrative districts in Seoul were selected first, one from those mainly with single-family home dwellers and the other from those with apartment dwellers. The next step was to select one elementary school and one high school in each district. The reason why elementary and high

schools were considered was to reduce the skewness of age of the household head. The final step was to draw a class randomly in each school. The questionnaires were sent to the households through the teachers of the schools. The sample also included a random sample within each of the two districts. The questionnaires were distributed to the households through the representatives of sub-districts and personal inquiries. A total of 400 self-administered questionnaires was sent to the households. The female head of household was asked to fill out the questionnaire.

Of the 400 questionnaires that were sent, 370 were collected. Sixty-five cases were deleted due to large amounts of missing information on the variables used in this study were deleted. Thus, the responses by the female heads of 305 households are used for analysis.

Study of Housing and Households, City of Oaxaca, Mexico (1987)

The data for Mexican households were collected in 1987 in the city of Oaxaca de Juarez, Oaxaca, Mexico, as a part of the project, "A Decade of Change in Oaxaca, 1977-1987." The overall project was funded by the National Science Foundation, and its purpose was to assess the effects of the macroeconomic changes in Mexico and in Oaxaca in the past 10 years on Oaxacan households.

The sample includes 630 households drawn in a two-stage probability sample in the city of Oaxaca. The first stage of sampling was to draw a random sample of the blocks in the city. The second stage involved the systematic sampling of households within the blocks.

The data were collected in personal interviews administered by trained Mexican interviewers during the five months from January to May of 1987. Each interview for those households was done with the female household head and lasted approximately one hour. Also, interviews were completed with about 404 of the husbands of the married females, those interviews lasted approximately 45 minutes. For the analysis of this study, the responses by the female heads of a total of 599 households are utilized after excluding 26 cases with missing information and 5 cases of one-person households.

The Influence of Area of Residence on the Quality of Life
(1977)

This regional research project, NC-128, provides the data for the analysis of housing adjustment of American households. The data were collected during the summer and fall of 1977 by researchers at Iowa State University and the University of Nebraska.

A stratified probability sample of households was drawn from the Omaha-Council Bluffs Standard Metropolitan

Statistical Area (SMSA) by the Iowa State Statistical Laboratory. The sample also included a random sample from small nearby communities in both Iowa and Nebraska.

Personal interviews were administered by trained interviewers. Each interview lasted approximately one and a quarter hour with either the head of the household or the spouse of the household head. Interviews were completed with 485 households. The present study utilizes the cases of couple-headed and female-headed households for the sample of American households, because the other two samples are limited to the households with dual heads or a female head with at least one other household member. Thus the 100 cases with only a male household head or only one household member were excluded. The final sample consists of 385 cases.

The Variables

(Refer to the Appendix for the specific question.)

The dependent variables

Propensity to move The propensity to move was defined as desires, inclinations or expectations about the possibility of a future move. Households expecting to move are more likely to move than are households just thinking about moving.

Each of the three data sets measured this variable in its own way. In the Korean data, the concept is treated as a single-item variable: which of the following statements best

describes your feelings about moving from your present dwelling? The responses are scored from 1, "have never thought about moving," to 5, "have definite plans to move."

In the Mexican data, this variable is operationalized in terms of five separate questions. The scale of propensity to move ranges from 0 to 5 as follows: no propensity to move (0), have thought about moving from this dwelling unit (1), want to move within the next three years 2), want to move to a different dwelling within the next twelve months (3), expect to move to a different dwelling within the next twelve months (4), and have definite plans to move to a different dwelling within the next twelve months (5).

The American households were asked two questions about (1) definite plans to move within the next twelve months, and (2) desires to move from the residence during the next twelve months. The responses of each question is dichotomous with 1 for "yes," and 0 for "no." The responses are recoded so that the scale of propensity to move ranges from 0 to 2 as follows: no propensity to move (0), desire to move during the next twelve months (1), and definite plans to move within the next twelve months (2). The responses to those questions as well as those on propensity to alter/add are skewed and present some problems in statistical estimation. The effects are expected to be similar in the three samples and solutions for

the problem are scarce. Therefore, cautious interpretation of the results will be required.

Propensity to alter or add The propensity to alter or add includes desires, expectations, or plans for future alterations and additions. Residential alterations refer to changes or improvements in the quality of the dwelling. Residential additions refer to actual enlargement of the structure for the increases in the amount of space or number of rooms in the dwelling (Morris and Winter, 1978).

This concept is operationalized in the same way as the concept of propensity to move. In the Korean data, this variable is operationalized by a single question: which of the following statements best describes your feelings about making alterations and/or additions to your present dwelling? The responses range from 1, "have definite plans to make alterations/additions," to 5, "have definite plans to make alterations/additions."

In the Mexican data, this concept is measured by five separate questions. The scale of the responses ranges from 0, "no propensity to alter/add," to 5, "have definite plans to alter/add present dwelling within the next twelve months."

The concept of propensity to alter and add is operationalized in terms of two questions in the American data. The scale of the responses ranges from 0, "no

propensity to alter/add," to 2, "definite plans to alter/add within the next twelve months."

The intervening variables

Housing satisfaction The concept of housing satisfaction has been defined by Morris and Winter (1978) as "a state of contentment with current housing conditions which refers to an entire continuum of satisfaction, ranging from very satisfied to very dissatisfied (p.80)." Housing satisfaction is used as the intervening variable between housing deficits and the propensity to adjust.

Housing satisfaction can be assessed either directly by a single item or by a scale made up of the summation or other weighted combination of satisfaction with specific aspects of housing (Morris and Winter, 1978). Several studies (Harris, 1976; Morris, 1976; Yockey, 1976) found that scales based on several items had significant correlations with a single item on overall housing satisfaction.

Housing satisfaction in this study is measured by a single question asking about the "overall satisfaction with housing." The satisfaction question is measured on slightly different scales according to the data sets. Specifically, a seven-point scale from 1, "very dissatisfied," to 7, "very satisfied," is used in the data for the American households, and a five-point scale from 1, "very dissatisfied," to 5,

"very satisfied," is used in the Korean and the Mexican data. The effects, if any, of this difference on the analysis are anticipated to be minor.

Housing deficits Housing deficits are conceptualized as deviations or imbalances between actual housing conditions and conditions prescribed by cultural and family norms. Therefore, when the norms and conditions do not match, households are said to have housing deficits.

Cultural norms for housing are, as stated earlier, cultural prescriptions indicating to individuals and households what kind of housing gains the respect of others (Morris and Winter, 1978). The operationalization of this concept is based on the question asking about the "best thing for the typical family in your country." Family or household norms are more or less accurate versions of the cultural norms internalized by households. Household norms are measured by the question asking about the "best kind of housing for you and your family right now." The difference between the two measures is that the household norms questions are more affected by current housing and socioeconomic conditions. The cultural norms are likely to be more "constraint free" responses.

In this dissertation, only household norms are utilized in measuring deficits. This permits a more rigorous test of the model by allowing households' unmet conditions (which

differ greater between samples) to affect their responses to the norms questions. Deficits are individually calculated for structure type, tenure, and space, and then are added to make a total housing-deficits score for each household. The operationalization of each deficit is consistent in each data set used in this study.

A structure type deficit exists when a household lives in a structure that does not meet its norms, where structure type means the categorization of dwelling types such as single-family detached dwelling, multi-family dwelling, mobile home, etc. Structure type deficit is measured by subtracting the household's structure type norm, which is based on the question asking about the "best type of structure for you and your family right now," from the structure type in which the household currently lives. The structure type for both structure norms and current conditions is coded 1 for a single-family dwelling and 0 otherwise. Therefore, three values of the structure type deficit are possible: 1, 0, and -1. The positive structure type deficit is represented as 1 if the household lives in a single-family dwelling when it actually does not want to live in a single-family dwelling, while the negative structure type deficit coded as -1 is possible if the household lives in another structure type when it desires to live in a single-family dwelling. The value of 0 represents no structure type deficit.

Tenure type is the mode of possessing housing, and is divided into ownership and rental ("free rent" is included among renters). A tenure deficit exists when a household's actual tenure is different from its norms. The same operationalization as for the structure type deficit is used for the tenure deficit, that is, subtracting the household's tenure norms based on the question, the "best tenure type for you and your family right now," from the household's current tenure type. The responses for the tenure type are coded 1 for owners and 0 for renters. There are three possibilities for the tenure deficit. If a household desires to rent, but actually owns its housing, the household has a positive tenure deficit coded as 1. If a household desires to be a owner, but actually is a renter, the household has a negative tenure deficit coded as -1. No tenure deficit is coded as 0.

Space deficit refers to an excess or shortage of space or living area (Morris and Winter, 1978). Here, the space deficit is based on the number of bedrooms. The space deficit is calculated by subtracting the number of bedrooms needed by the household right now from the number of bedrooms in the household's current dwelling. A positive score (excess) or negative score (shortage) for space deficit may exist, and both types are included in this study. The scores are recoded: 1 for positive space deficit scores, 0 for no space deficit, and -1 for negative scores. Therefore, the possible

scores for total housing deficits range from -3 to 3 after summing the three deficits.

The operationalization of the three deficits results in variables that have restricted ranges. This procedure is likely to result in actual conservative results and therefore may make the effects of other variables more modest than they might be.

The exogenous variables

The exogenous variables include five demographic and socioeconomic characteristics of the household. Household size is defined as the total number of household members living in the dwelling at the time that the questionnaire was completed.

Age of the household head is a continuous variable. It refers to the age in years of the male head in the couple-headed households or the female head in the female-headed households.

Sex of the household head, a dichotomous variable, was coded "0" for the female-headed households and "1" for the couple-headed households.

Household income is the total annual of net income earned by all of the household members during the previous year from all sources. Household income is a continuous variable in the Mexican data, while the other two data sets were gathered by

giving the respondent a question containing a series of income categories and asking that person to indicate the category in which their income fell. For the regression analyses, these two were recoded to the midpoint of each category.

Education of the household head is a variable indicating the number of years of formal schooling completed by the household head. Only the Korean data were collected by asking a question with six categories of education. The category indicated as the schooling completed by that person was recoded to the number of years based on the education system in Korea.

The data were gathered by face-to-face interviews in Oaxaca and Omaha/Council Bluffs and self-administered questionnaires in Korea. It is assumed that any problem produced by the differences in procedures would be swamped by the greater effects of the difference in language, socioeconomic status, and the like.

Analytical Procedures

To accomplish the purpose of cross-cultural comparison of housing adjustment, the three different sets of data are analyzed separately. Descriptive statistics are used to summarize the characteristics of each sample used in the study. Percentage distributions of all the variables for each sample provide an overview and preliminary comparison of the

characteristics of households in these samples. Comparison of means and variances of the exogenous and endogenous variables among the samples will serve to analyze the levels at which each version of the model is tested. For example, the average ages of the samples differ. The differences in average ages and the averages of other variables may affect the comparison and can set limits that differ among the samples on the effects of exogenous variables on the dependent variables.

For each data set, Pearson correlation coefficients are calculated to measure the zero-order correlations for all combinations of variables presented in the proposed model. The coefficients indicate the strength and direction of total association among all pairs of variables. The tables of correlations are included for reference but are not discussed.

Path analysis is employed for testing the empirical model. Path analysis is designed for describing the patterns of causal relationships among a set of variables. More specifically, it is a method for studying the direct and indirect effects of variables hypothesized as causes of variables treated as effects. Path analysis is based on a set of ordinary least squares regressions. The estimate of the coefficient for each path is expressed as a standardized regression coefficient. Details of path analysis procedures can be found in Pedhazur (1982) and Alwin and Hauser (1975). The regressions were used for two purposes, 1) to test the

directional hypotheses given in Chapter 2, and 2) to analyze the direct and indirect effects of the variables in the model.

To accomplish the path analysis for this dissertation, a set of regressions through the SPSSx computer program (SPSSX Inc., 1986) was performed. First, the influences of the exogenous variables on the housing deficits scale were assessed. Also, for more information, each of the deficits was regressed on the exogenous variables. Next, the influences of both the exogenous variables and the housing deficits scale on housing satisfaction were examined. Last, the effects of the exogenous variables and the intervening variables including the housing deficits scale and housing satisfaction on the two dependent variables were examined.

To meet the assumptions of regression, every variable in the model is arranged as a continuous or dummy variable. Within each model, the relative contribution of the independent variables in predicting the dependent variable is evaluated by examining standardized regression coefficients (betas) and t-tests for the significance of each coefficient. A standardized coefficient describes the change in the dependent variable produced by a standardized change in a particular independent variable, controlling for the other independent variables.

The overall model is evaluated by examining the R^2 which indicates the proportion of variance explained by the

independent variables, and the corresponding F-values. If the computed F-value is higher than the tabular F-value, the regression of the dependent variable on the independent variables is considered statistically significant.

These procedures are done individually with the three sets of data. Differences and similarities in the path coefficients for the variables will help to arrive at conclusions about the cultural effects on the housing adjustment process. The path coefficients come from the fully recursive regression analysis of the endogenous variables.

CHAPTER III. ANALYSIS AND FINDINGS

This chapter presents the results and discussion of the data analysis. Three data sets were analyzed. The chapter starts with a preliminary comparison of the sample characteristics based on the percentage distributions. The second section reports the findings from the Pearson Product-Moment Correlation Coefficients. The last section shows the path analysis to test the directional hypotheses, analyze the model of housing adjustment, and presents the results from the three samples.

Description of the Sample Characteristics

The first part of this section concerns the demographic and socioeconomic characteristics of the samples. The second part describes the characteristics related to housing. Some characteristics were temporarily recoded for presenting the distributions.

Demographic and socioeconomic characteristics

Table 2 shows the percentage distribution for the demographic and socioeconomic characteristics selected in the proposed model. The Mexican sample has comparatively more household members (5.6) than the Korean (4.19) or American

Table 2. Percentage distribution of demographic and socioeconomic characteristics

Characteristics	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
Household size			
2 persons	5.9	5.3	37.4
3-4 persons	63.3	31.6	42.6
5+ persons	30.8	63.1	20.0
Mean(Std.dev.)	4.19(1.09)	5.60(2.42)	3.35(1.43)
Age of the head			
Less than 35	16.4	33.4	30.1
35-49	61.0	35.4	29.6
50-64	21.6	23.5	24.4
65+	1.0	7.7	15.9
Mean(Std.dev.)	42.13(8.62)	42.99(13.68)	46.04(16.29)
Sex of the head			
Female	6.9	14.9	10.4
Couple	93.1	85.1	89.6
Mean(Std.dev.)	.93(.25)	.85(.36)	.90(.31)
Household income			
Less than \$15,000	36.1	99.6	48.1
\$15,000-19,999	45.8	-	23.6
\$20,000-29,999	9.5	.2	17.1
\$30,000+	8.6	.2	11.0
Mean(Std.dev.)	17,729.75 (9407.38)	1,666.11 (5287.32)	17,761.04 (11794.74)
Education of the head			
0-11 grades	8.5	80.6	23.1
12 grades	27.2	5.5	37.4
some college	64.3	13.9	39.5
Mean(Std.dev.)	14.37(2.96)	6.71(5.00)	12.61(3.06)

(3.35) samples. The three- or four-persons household is the modal category of household size for both Korean and American samples; whereas for the Mexican sample, 63 percent have five or more persons in the household.

The three samples have similar means of age of the head of the household, which range from 42 to 46. About 60 percent of the Korean sample are concentrated in the category of 35-49 years. Of the U.S. sample, about 16 percent have heads aged 65 years or over.

The percentage of households that are headed by couples is about 90 percent in each sample: 93 percent for the Korean, 85 percent for the Mexican, and 90 percent for the U.S. samples.

The household income data for the Korean and Mexican samples were converted into U.S. dollars based upon the foreign exchange rate for the country in which the data were collected. The mean household income for each sample is: \$17,730 for the Korean, \$1,666 for the Mexican, and \$17,760 for the U.S. samples. If the 1977 U.S. income were corrected for inflation to 1989 dollars, the U.S. income would be somewhat higher than the Korean means.

The Korean sample shows the highest mean of education of the head (14.4 years). Of the Korean sample, 64 percent have some college education. On the other hand, the mean education

of head for the Mexican sample is 6.7 years, and almost 80 percent have not completed secondary school.

Housing characteristics and orientations

Housing characteristics and orientations include cultural norms, household norms, and current conditions of housing. The endogenous variables in the empirical model, housing deficits, housing satisfaction, propensity to move, and propensity to alter and/or add are presented.

Cultural norms for housing Table 3 summarizes the cultural housing norms of the three samples. Ninety six percent of the American and 88 percent of the Mexican sample answer, "single-family dwelling," for the cultural structure norm in their country. A discrepancy seems to exist between

Table 3. Percentage distribution of cultural norms for housing

Cultural norms	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
Structure type			
Others	46.9	12.4	3.6
Single-family dwelling	53.1	87.6	96.4
Tenure type			
Rent	3.9	1.3	8.1
Own	96.1	98.7	91.9
Space			
1-2 bedrooms	4.6	26.0	32.7
3-4 bedrooms	89.5	64.4	64.7
5+ bedrooms	5.9	9.6	2.6

these two and the Korean sample. Almost half of the Korean sample (47 percent) think that the nonsingle-family dwelling is the ideal structure type in Korea. At the present time, it is necessary to take these results at face value. For future research it would be fruitful to investigate the possibility that there is something subtle in the question wording in the Korean questionnaire.

For tenure type, over 90 percent of each sample answer that home ownership is desirable in their countries. The overwhelming majority of the Mexican sample (99 percent) think that way.

The responses of the U.S. and Mexican samples appear to be similar in the distribution of the cultural space norm. However, when considering the mean household size, 5.6 for the Mexican and 3.4 for the U.S. samples, it can be interpreted that Mexican households require fewer bedrooms than do the U.S. and Korean ones. The respondents of the Korean sample report more bedroom requirements than those of the U.S. samples, but the Korean sample has a larger mean household size than the U.S. sample (See Table 2).

Household norms for housing Table 4 indicates that most respondents in both the Mexican (89 percent) and the U.S. (91 percent) samples think the single-family dwelling is the best type of structure for their households right now compared with less than half of the Korean sample (46 percent). For the

tenure norm, the choice of ownership is overwhelming. The percentages, however, are slightly lower for every sample compared with those for the cultural norms.

Table 4. Percentage distribution of household norms for housing

Household norms	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
Structure type			
Others	54.1	11.5	8.6
Single-family dwelling	45.9	88.5	91.4
Tenure type			
Rent	4.6	1.5	14.0
Own	95.4	98.5	86.0
Space			
1-2 bedrooms	9.5	28.2	30.4
3-4 bedrooms	83.3	62.3	63.3
5+ bedrooms	7.2	9.5	6.3

Current housing conditions Table 5 presents the current housing conditions of the three samples. Sixty-three percent of the Korean sample currently live in nonsingle-family dwellings, while over three fourths of the Mexican (79 percent) and the U.S. (88 percent) sample live in single-family dwellings. The differences between the Korean data compared with the Mexican and United States data indicate that the type of dwelling lived in is related to the responses to

the norm question. This pattern provides some support for the reliability of the Korean data.

There are similarities in the percentage distribution of present tenure type among the three samples. Over 70 percent of each sample are home owners. The modal number of bedrooms in the current dwelling is one or two rooms for the Korean (58

Table 5. Percentage distribution of current housing conditions

Current conditions	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
Structure type			
Others	63.0	20.7	12.5
Single-family dwelling	37.0	79.3	87.5
Tenure type			
Rent	25.9	29.7	20.3
Own	74.1	70.3	79.7
Space			
1-2 bedrooms	57.7	71.0	32.0
3-4 bedrooms	39.6	25.0	62.8
5+ bedrooms	2.7	4.0	5.2

percent) and Mexican (71 percent), and three or four rooms for the U.S. (63 percent) samples.

Housing deficits Each deficit was calculated by subtracting the household norm from the current condition. The percent distribution of deficits is given in Table 6.

It was found that, except for the space deficit, over two-thirds of each sample have no deficit which indicates that their norms and current conditions match. Over seventy percent of the Korean and Mexican samples report negative scores on the housing deficits scale. The structure type deficits show that the shortage of single-family dwellings does not result in a high percentage of deficits in Korea because many Koreans have adapted by developing norms favorable to apartment housing.

Table 6. Percentage distribution of housing deficits

Housing deficits	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
Structure deficit			
-1	19.7	18.5	6.0
0	69.5	72.1	91.1
1	10.8	9.3	2.1
Tenure deficit			
-1	22.3	29.2	8.8
0	76.7	69.8	88.6
1	1.0	1.0	2.6
Space deficit			
-1	67.9	73.0	27.8
0	28.5	22.5	54.5
1	3.6	4.5	17.7
The housing deficits scale			
-3 to -1	70.8	75.0	31.9
0	24.3	19.0	50.4
1 to 3	4.9	6.0	17.7

The shortage of large dwellings and/or the expense of obtaining them nevertheless results in high proportions of deficits in Mexico and Korea. Therefore, the pattern of structure type results is surprising.

Housing satisfaction Table 7 presents the distribution of the level of housing satisfaction of the three samples. The original 5- or 7-point scale for the satisfaction level was temporarily recoded into three categories: dissatisfied, mixed and satisfied.

Most of the U.S. sample are satisfied with their housing (almost 90 percent). Also, it can be said that the other two groups are generally satisfied, even if they have a large portion of a group expressing mixed feelings. The low level of satisfaction in Korea suggests that the number of deficits may be underestimated because of the responses to the structure type norms.

Table 7. Percentage distribution of housing satisfaction levels

Housing satisfaction	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
Dissatisfied	19.1	16.2	7.8
Mixed	47.9	21.0	3.4
Satisfied	33.1	62.8	88.8

Propensity to move It is surprising that almost ninety-seven percent of the Korean respondents indicate that they desire or expect to move or have definite plans to move to a different dwelling in the near future compared with only about twenty percent of the other two groups (Table 8). There are

Table 8. Percentage distribution of responses to propensity to move

Propensity to move	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
No propensity	2.6	76.0	78.4
Expectation or desire	77.7	14.7	13.5
Definite plan	19.7	9.3	8.1

similarities in the distributions of the responses to propensity to move between the U.S and Mexican samples. These results further indicate there may be some underlying, even repressed, conflict among Koreans about housing conditions in Seoul.

Propensity to alter and/or add Table 9 shows the distribution of responses to propensity to alter and/or add. The strongest desires to engage in alteration behavior are also found in the sample of Korean households (59.7 percent). However, only a small portion of the Korean respondents indicate that they have definite plans to alter (5 percent) compared with about twenty percent of the U.S. and Mexican

samples. This pattern in Korea may be related to the high propensity to move. Expressing desires for alteration may be a form of dissatisfaction that would likely be reduced by moving.

Table 9. Percentage distribution of responses to propensity to alter and/or add

Propensity to alter/add	Korea (N=305)	Mexico (N=599)	the U.S. (N=385)
No propensity	35.4	48.9	61.0
Expectation or desire	59.7	26.9	16.9
Definite plan	4.9	24.2	22.1

Correlation Coefficients

The Pearson Product-Moment correlation coefficients for all pairs of variables used in the proposed model are calculated. The correlation matrix for each sample is presented in Tables 10, 11, and 12. Inspecting the correlation matrix is one of the ways of detecting multicollinearity.

The situation of multicollinearity arises when the independent variables that are being considered for the model are highly correlated among themselves. That is, by the degree of intercorrelation among the independent variables, the standard errors of the estimated regression coefficients increase in size. Generally, however, multicollinearity does not bother obtaining a good fit to the data (Neter et. al., 1983).

None of the data sets seem to have a critical problem with multicollinearity. The range of coefficients between pairs of the exogenous variables for each data set is: from .00 to .48 for the Korean sample, from .00 to .27 for the Mexican sample, and from .00 to .35 for the U.S. sample.

Table 10. Pearson Product-Moment correlation coefficient matrix of the Korean data

	1	2	3	4	5	6	7	8	9	10	11	12
1. Household size	1											
2. Age of the head	.48	1										
3. Sex of the head	.05	-.05	1									
4. Household income	.08	.03	.15	1								
5. Edu. of the head	-.23	-.38	.35	.30	1							
6. Structure type def.	-.02	-.03	.10	.06	.16	1						
7. Tenure def.	.07	.05	.05	.09	.09	-.12	1					
8. Space def.	.02	.14	-.01	.05	-.10	-.03	.20	1				
9. Housing def. scale	.04	.09	.07	.12	.08	.53	.53	.69	1			
10. Housing sat.	-.01	.03	.07	.16	.13	-.07	.15	.15	.12	1		
11. Prop. to move	-.02	-.10	.04	.06	.07	.16	-.18	-.19	-.10	-.20	1	
12. Prop. to alter/add	.08	.05	.10	-.06	-.05	.04	.19	-.05	.09	-.12	.12	1

* All of the coefficients in bold are significant at $p < .01$.

Table 11. Pearson Product-Moment correlation coefficient matrix of the Mexican data

	1	2	3	4	5	6	7	8	9	10	11	12
1. Household size	1											
2. Age of the head	.15	1										
3. Sex of the head	.05	-.20	1									
4. Household income	-.01	-.03	.04	1								
5. Edu. of the head	-.11	-.27	.24	.10	1							
6. Structure type def.	.05	.08	.04	.04	.20	1						
7. Tenure def.	.18	.28	-.03	-.06	-.10	.21	1					
8. Space def.	-.12	.19	.05	.00	.14	.09	.03	1				
9. Housing def. scale	.04	.28	.04	-.00	.14	.68	.60	.63	1			
10. Housing sat.	-.05	.16	.04	.06	.03	.08	.20	.15	.22	1		
11. Prop. to move	-.12	-.30	.02	.04	.08	-.11	-.61	-.04	-.37	-.28	1	
12. Prop. to alter/add	.06	-.13	.08	.06	.01	.07	.20	-.03	.11	-.05	-.16	1

* All of the coefficients in bold are significant at $p < .01$.

Table 12. Pearson Product-Moment correlation coefficient matrix of the U.S. data

	1	2	3	4	5	6	7	8	9	10	11	12
1. Household size	1											
2. Age of the head	-.35	1										
3. Sex of the head	.01	.09	1									
4. Household income	.10	.03	.24	1								
5. Edu. of the head	.22	-.31	-.02	.35	1							
6. Structure type def.	.02	.16	.04	.11	.06	1						
7. Tenure def.	.02	.21	.04	.15	-.05	.45	1					
8. Space def.	-.29	.33	.01	.21	.04	.17	.10	1				
9. Housing def. scale	-.20	.37	.04	.24	.03	.60	.58	.82	1			
10. Housing sat.	-.04	.15	.12	.17	-.03	-.01	.13	.12	.13	1		
11. Prop. to move	.03	-.19	-.00	-.16	-.02	-.21	-.18	-.18	-.26	-.38	1	
12. Prop. to alter/add	.23	-.24	.01	.09	.15	.10	.13	-.15	-.03	.01	-.16	1

* All of the coefficients in bold are significant at $p < .01$.

Hypotheses Testing and Path Analysis

Path analysis

This section reports the results of the tests of the directional hypotheses and the path analyses to compare the tests of the model of housing adjustment. The path analysis is presented first. Path analysis is accomplished by a set of ordinary least squares regressions, which is applied to each of the three data sets. The results from each data set are compared and discussed.

Seven variables are used as the endogenous variables on a specific set of independent variables in the regressions. The endogenous variables are structure type deficit, tenure deficit, space deficit, the housing deficits scale, housing satisfaction, propensity to move, and propensity to alter and/or add. Household size, age of the head of the household, sex of the head of the household, household income, and education of the head of the household are the exogenous variables in each model.

As stated earlier, the regressions of the three deficit variables on the exogenous variables are not utilized for the present path model, but these are useful for giving specific information about the relationships among them. The relationships between two of the endogenous variables,

propensity to move and propensity to alter and/or add, are not considered in the present study.

This analysis follows the usual procedures of path analysis (Alwin and Hauser, 1975). First, the regressions are performed with hierarchical inclusion of the variables in the causal order presented in Figure 1. In the first step of the regressions, the hypothesized influences of the exogenous variables on the three deficit variables are individually tested, and then the housing deficits scale is assessed on the exogenous variables. In the next regressions, housing satisfaction is regressed on the exogenous variables first, and then the housing deficits scale is added. In the regressions of propensity to move, the five exogenous variables are entered into the analysis first, then the housing deficits scale is added, and finally housing satisfaction is added. The procedures for the regressions of propensity to alter and/or add are the same as those for propensity to move.

Next, the path coefficients are presented through the path diagram for identifying the hypothesized direct causal paths in the proposed model. The coefficients are obtained from the fully recursive regression analysis of each endogenous variable. And then, the path coefficients are decomposed into direct and indirect effects to elaborate the interpretations of the relationships among the variables.

For purposes of testing the directional hypotheses, a one-tailed test with $p < .05$ was used. For purposes of the path analysis the effective probability criterion is 10 percent.

The Korean sample

Housing deficits Table 13 shows the results of the regression analysis of the three deficit variables on the exogenous variables with the Korean data. It is somewhat

Table 13. Regression analyses of structure type deficit, tenure deficit, and space deficit on the exogenous variables using the Korean data

Independent variables	<u>Structure type deficit</u>		<u>Tenure deficit</u>		<u>Space deficit</u>	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	2.66E-03	.040	.067	1.011	-.070	-1.071
Age of the head	.028	.409	.060	.863	.130	1.889*
Sex of the head	.046	.746	-2.36E-03	-.038	.021	.336
Household income	.010	.168	.050	.823	.084	1.387
Education of the head	.151	2.167*	.116	1.656*	-.103	-1.470
Constant	-.673		-.733		-.698	
R ²	.028		.023		.031	
Adjusted R ²	.012		.007		.015	
df	5 & 299		5 & 299		5 & 299	
F-ratio	1.742		1.403		1.915	

*Significant at $p < .05$, one-tailed test.

surprising that most of the exogenous variables do not contribute significantly to any of the three deficits. The significant relationships are found between education of the head and structure type deficit, education of the head and tenure deficit, and age of the head and space deficit. Households with a head who has a lower level of education tend to have negative structure type deficits and tenure deficits. In other words, such households are more likely to live in apartments but feel they should live in single-family dwellings, or desire to be a owner, even though currently a renter. Higher education is related to the reverse of both situations. The younger the household head is, the more is likely is a negative space deficit.

Table 14. Regression analysis of the housing deficits scale on the exogenous variables using the Korean data

Independent variables	Beta	t-value
Household size	-9.30E-03	-.141
Age of the head	.125	1.821*
Sex of the head	.039	.640
Household income	.082	1.348
Education of the head	.085	1.218
Constant	-2.104	
R ²	.030	
Adjusted R ²	.014	
df	5 & 299	
F-ratio	1.838	

*Significant at $p < .05$, one-tailed test.

The first endogenous variable in the path model is the housing deficits scale. It was hypothesized that the exogenous variables directly influence the housing deficits. The housing deficits scale is made up of the sum of the three specific deficits. The results of the regression on the exogenous variables are shown in Table 14. Age of the head is the only variable with a statistically significant effect on the housing deficits scale.

Housing satisfaction Housing satisfaction was hypothesized to be directly related to housing deficits and indirectly related to the exogenous variables through housing deficits. Housing satisfaction is first regressed on the five exogenous variables. The first two columns of Table 15 present the resulting regression coefficients. Although the exogenous variables as a group contribute significantly to housing satisfaction ($F=2.406$, $p<.05$), the only significant individual effect is from household income; the higher the household income, the higher the satisfaction with the housing.

The results of adding the housing deficitis scale to the equation are shown in the last two columns of Table 15. Household income still has a significant direct effect on housing satisfaction, and there is no evidence to say that household income has an indirect effect on housing satisfaction through housing deficits. The housing deficits

Table 15. Regression analyses of (1) housing satisfaction on the exogenous variables, and (2) housing satisfaction on the exogenous variables and the housing deficits scale using the Korean data

Independent variables	(1)		(2)	
	Beta	t-value	Beta	t-value
Household size	-.035	-.534	-.034	-.522
Age of the head	.088	1.286	.077	1.115
Sex of the head	.023	.379	.020	.321
Household income	.122	2.004*	.114	1.880*
Education of the head	.112	1.615	.104	1.503
Housing deficits	-	-	.092	1.594
Constant	2.207		2.376	
R ²	.039		.047	
Adjusted R ²	.023		.028	
df	5 & 299		6 & 298	
F-ratio	2.406*		2.439*	

*Significant at $p < .05$, one-tailed test.

scale is not significant. The R^2 value is increased from .039 to .047, although it is still low. It indicates that the explanatory power of the housing satisfaction model is only slightly increased by adding the housing deficits scale.

Propensity to move The results of the regression of propensity to move on the exogenous variables, the housing deficits scale, and housing satisfaction are presented in Table 16. The first two columns show the coefficients of the model including only the exogenous variables. No significant

relationships between the exogenous variables and propensity to move are found.

When housing deficits are entered into the regression, the model still does not fit the data. However, the housing deficits scale has a significant effect on propensity to move.

Table 16. Regression analyses of (1) propensity to move on the exogenous variables, (2) propensity to move on the exogenous variables and the housing deficits scale, and (3) propensity to move on the exogenous variables, the housing deficits scale, and housing satisfaction using the Korean data

Independent variables	(1)		(2)		(3)	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	.028	.415	.027	.402	.019	.300
Age of the head	-.109	-1.574	-.096	-1.379	-.080	-1.167
Sex of the head	.024	.380	.028	.450	.032	.527
Household income	.059	.957	.068	1.103	.091	1.512
Education of the head	6.00E-03	.085	.015	.216	.037	.535
Housing deficits	-	-	-.108	-1.862*	-.089	-1.557
Housing satisfaction	-	-	-	-	-.209	-3.638*
Constant	3.332		3.026		3.784	
R ²	.015		.027		.068	
Adjusted R ²	-.001		.007		.046	
df	5 & 299		6 & 298		7 & 297	
F-ratio	.925		1.355		3.100*	

*Significant at $p < .05$, one-tailed test.

In the fully recursive regression model of propensity to move, housing satisfaction is included with the exogenous variables and the housing deficits scale. The overall F-value for testing the proposed model is statistically significant ($F=3.100$, $p<.05$). The R^2 , .068, indicates that about seven percent of the variance in propensity to move is explained by the variables in the model.

Only the effect of housing satisfaction is found to be statistically significant. As hypothesized, housing satisfaction has a direct influence on propensity to move. The negative effect of housing satisfaction means that households who are less satisfied with their dwellings tend to have more intentions to move.

Propensity to alter and/or add The regressions of propensity to alter and/or add show somewhat similar results to those of propensity to move (Table 17). As shown in the last 2 columns, only the fully recursive model including the exogenous variables, the housing deficits scale, and satisfaction is statistically significant. However, the overall F-value and R^2 are still small. That means that the variables in the model may not be good predictors in explaining the propensity to alter and/or add of the Korean households, and some other important factors which would be expected to explain a large portion of variance in the concept may have been omitted.

Housing satisfaction has a direct and negative effect on propensity to alter. The lower the housing satisfaction, the higher is the intention of alteration and/or addition. The housing deficits scale appears to have a significant negative effect on propensity to alter/add. Households who have

Table 17. Regression analyses of (1) propensity to alter and/or add on the exogenous variables, (2) propensity to alter and/or add on the exogenous variables and the housing deficits scale, and (3) propensity to alter and/or add on the exogenous variables, the housing deficits scale and housing satisfaction using the Korean data

Independent variables	(1)		(2)		(3)	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	.055	.840	.056	.854	.052	.455
Age of the head	.011	.160	5.14E-05	.001	9.53E-03	.250
Sex of the head	.129	2.097*	.126	2.044*	.128	2.095*
Household income	-.068	-1.119	-.076	-1.236	-.061	-1.005
Education of the head	-.061	-.876	-.069	-.982	-.056	-.800
Housing deficits	-	-	.088	1.513	-.099	-1.711*
Housing satisfaction	-	-	-	-	-.124	-2.013*
Constant	1.622		1.825		2.194	
R ²	.025		.033		.047	
Adjusted R ²	.009		.013		.025	
df	5 & 299		6 & 298		7 & 297	
F-ratio	1.545		1.674		2.100*	

*Significant at $p < .05$, one-tailed test.

negative housing deficits are more likely than those who have positive ones to have desires to alter. Among the exogenous variables, sex of the household head shows significant effects on propensity to alter and/or add. Sex of the head has an even greater coefficient than housing satisfaction, which implies a stronger contribution to the model than that of housing satisfaction. Female-headed households are less likely to have desires to engage in alteration behavior than are couple-headed households.

Decomposition of effects To better understand the relationships among the variables used in the model, the effects are decomposed into direct and indirect effects. Table 18 shows the results of the decomposition of effects among the variables. Also, the significant path coefficients are represented for the proposed models of two dependent variables, propensity to move (Figure 2) and propensity to alter and/or add (Figure 3). The path diagram helps to identify the findings of the hypothesized causal relationships among the variables. As stated earlier, the coefficients are standardized regression coefficients obtained from the fully recursive regression models, and represent the partial direct effects among the variables.

Basically, it seems that the proposed models do not fit the current Korean data. In other words, the models are not good enough to explain the responses to the propensity to both

Table 18. Decomposition of effects among the variables using the Korean data

Dependent variables	Explanatory variables	Indirect effects due to		Direct effects	Total effects
		Housing deficits	Housing satisfaction		
Housing deficits	H. size	-	-	-.000	-.000
	Age of head	-	-	.125*	.125*
	Sex of head	-	-	.039	.039
	H. income	-	-	.082	.082
	Edu. of head	-	-	.085	.085
Housing sat.	H. size	-.001	-	-.034	-.035
	Age of head	.011	-	.077	.088
	Sex of head	.003	-	.020	.023
	H. income	.008	-	.114*	.122*
	Edu. of head	.008	-	.104	.112
	H. deficits	-	-	.092	.092
Prop. to move	H. size	.001	.008	.019	.028
	Age of head	-.013	-.016	-.080	-.109
	Sex of head	-.004	-.004	.032	.024
	H. income	-.009	-.023	.091	.059
	Edu. of head	-.015	-.022	.037	.000
	H. deficits	-	-.019	-.089	-.108*
	H. satisfaction	-	-	-.209*	-.209*
Prop. to alter/add	H. size	-.001	.004	.052	.055
	Age of head	.011	.000	.000	.011
	Sex of head	.003	-.002	.128*	.129*
	H. income	.008	-.015	-.061	-.068
	Edu. of head	.008	-.013	-.056	-.061
	H. deficits	-	.187	-.099*	.088
	H. satisfaction	-	-	-.124*	-.124*

*Significant at $p < .05$, one-tailed test.

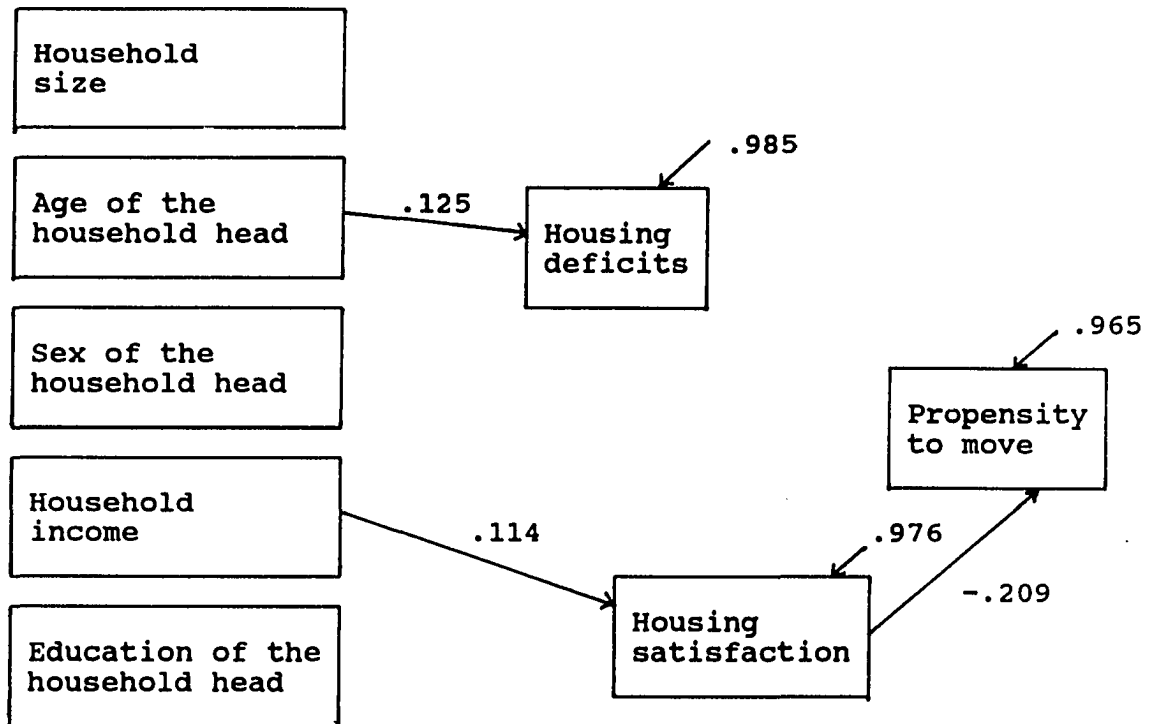


Figure 2. Significant paths of the proposed model of propensity to move using the Korean data (The values for the noncausal relationships between pairs of exogenous variables are given in the correlation matrix in Table 10.)

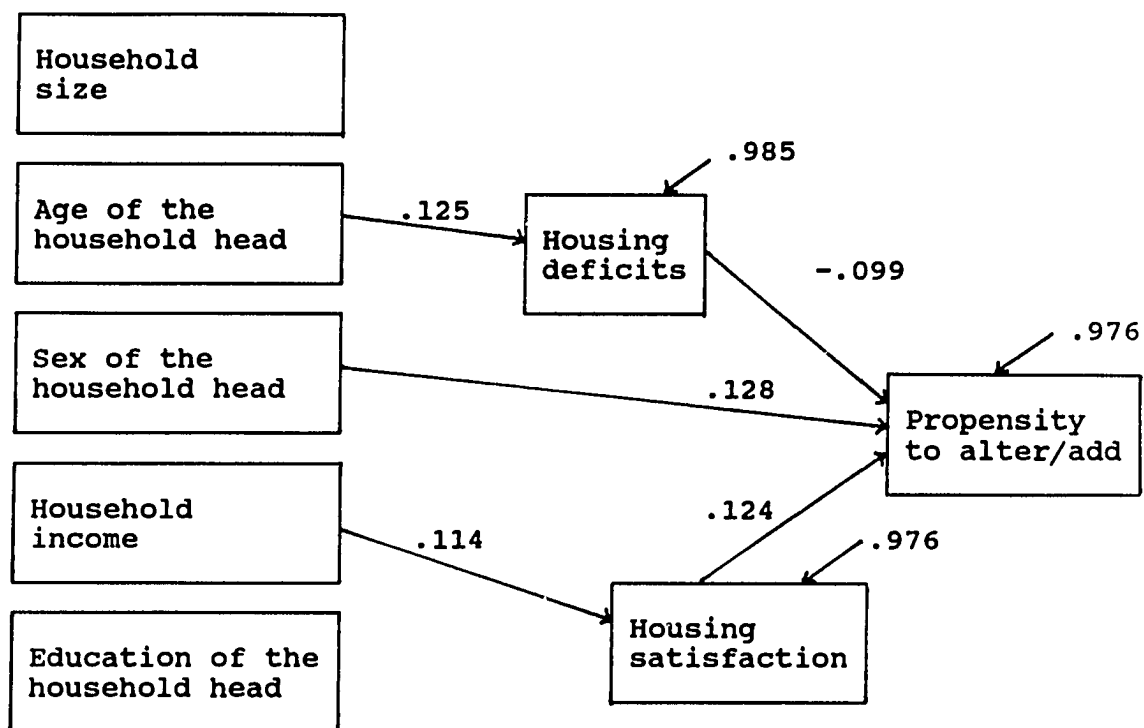


Figure 3. Significant paths of the proposed model of propensity to alter and/or add using the Korean data (The values for the noncausal relationships between pairs of exogenous variables are given in the correlation matrix in Table 10.)

move and to alter/add for Korean households. This conclusion is based on the insignificant coefficients as well as the low R^2 and insignificant F-values. Less than ten percent of the variances in the two dependent variables are explained by the exogenous and intervening variables.

For the housing deficits scale, some direct effects of the exogenous variables were expected. Only age of the head is significantly related to the housing deficits scale.

In relation to the effects of the exogenous variables and the housing deficits scale on housing satisfaction, there are no significant direct effects of housing deficits. That is, it can be said that no effect of the housing deficits scale as intervening variable between household income and housing satisfaction is found.

As hypothesized, housing satisfaction has a significant direct effect on propensity to move. Its coefficient is greatest among the explanatory variables. The housing deficits scale is also significantly related to propensity to move, but the effect is more direct rather than indirect through housing satisfaction.

In the model of propensity to alter and/or add, three significant effects are found. The effect of housing satisfaction is direct, as expected. Sex of the household head is the other contributor, which has a direct influence on propensity to alter/add. The effect of sex of the household

head is stronger than that of housing satisfaction. An indirect effect is found in the relationship between the housing deficits scale and propensity to alter/add.

The Mexican sample

Housing deficits The results of the regressions of the three deficits on the exogenous variables are represented in Table 19. The F-ratio for each model is significant. The values of R^2 range from .063 to .104.

Table 19. Regression analyses of structure type deficit, tenure deficit, and space deficit on the exogenous variables using the Mexican data

Independent variables	<u>Structure type deficit</u>		<u>Tenure deficit</u>		<u>Space deficit</u>	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	.053	1.306	.141	3.567*	-.144	-3.632*
Age of the head	.136	3.226*	.262	6.360*	.276	6.689*
Sex of the head	8.19E-03	.197	.019	.468	.071	1.727*
Household income	.024	.592	-.050	-1.286	-.013	-.340
Education of the head	.240	5.645*	-.014	-.336	.182	4.375*
Constant	-.559		-.830		-1.206	
R^2	.063		.104		.100	
Adjusted R^2	.055		.096		.092	
df	5 & 593		5 & 593		5 & 593	
F-ratio	7.958*		13.729*		13.150*	

*Significant at $p < .05$, one-tailed test.

Related to the relationships of structure type deficit and the exogenous variables, positive effects of age of the head and education of the head are found. Households with a young head or one who is less educated are more likely than those with an older head or one who has more education to live in nonsingle-family dwellings, even though they desire to live in single-family dwellings.

Two variables have significant effects on tenure deficit. The positive relationship of household size to tenure deficit indicates that smaller households tend to be renters despite the desires to be owners. The other significant effect is from age of the head. Not surprisingly, younger households are more likely to be renters.

Significant relationships are found between space deficit and household size, age of the head, sex of the head, and education of the head. Large households and couple-headed households are more likely than small households and female-headed households to experience the shortage of bedrooms. Households with more bedrooms than needed have a relatively old head or one with a high level of education.

In Table 20, the results of the regression of the housing deficits scale on the exogenous variables are shown. The R^2 is .134 indicating that about 13 percent of the variance in housing deficits is explained by the exogenous variables.

Age of the head and education of the head have significant effects on the housing deficits scale with direct positive relationships. Households with an older head or with a highly educated head are more likely to have no or positive housing deficits.

Table 20. Regression analysis of the housing deficits scale on the exogenous variables using the Mexican data

Independent variables	Beta	t-value
Household size	.015	.375
Age of the head	.352	8.701*
Sex of the head	.053	1.325
Household income	-.019	-.497
Education of the head	.222	5.442*
Constant	-2.595	
R ²	.134	
Adjusted R ²	.126	
df	5 & 593	
F-ratio	18.301*	

*Significant at $p < .05$, one-tailed test.

Housing satisfaction The effects of the exogenous variables and housing deficits on housing satisfaction are presented in Table 21 using the Mexican data. The first two columns show the coefficients of the regression analysis with only the exogenous variables. The R^2 is .042 and it indicates that less than 5 percent of the variance in housing satisfaction is explained. Household size, age of the head,

and sex of the head have significant positive relationships with housing satisfaction.

The addition of the housing deficits scale (last two columns) yields a slight increase of the R^2 to .070. Three variables have significant coefficients, households size, age of the household head and the housing deficits scale. As hypothesized, the housing deficits scale has a direct positive effect on housing satisfaction. Households who have a positive number on the housing deficits scale tend to have higher satisfaction. Conversely, households with negative

Table 21. Regression analyses of (1) housing satisfaction on the exogenous variables, and (2) housing satisfaction on the exogenous variables and the housing deficits scale using the Mexican data

Independent variables	(1)		(2)	
	Beta	t-value	Beta	t-value
Household size	-.073	-1.789*	-.076	-1.879*
Age of the head	.196	4.603*	.132	2.974*
Sex of the head	.071	1.691*	.062	1.482
Household income	.053	1.312	.056	1.417
Education of the head	.053	1.223	.013	.289
Housing deficits	-	-	.180	4.224*
Constant	2.850		3.323	
R^2	.042		.070	
Adjusted R^2	.034		.060	
df	5 & 593		6 & 592	
F-ratio	5.147*		7.385*	

*Significant at $p < .05$, one-tailed test.

housing deficits, indicating that they have not achieved what they want, are less satisfied with their dwelling. Age of the head is still significant. Age of the head still has a stronger direct effect than an indirect effect through the housing deficits scale. The effect of household size is also direct.

Propensity to move Table 22 shows the results of the regressions of propensity to move on the exogenous variables, housing deficits, and housing satisfaction using the Mexican data. Propensity to move is first regressed on the five exogenous variables. The first two columns present the results. Almost 10 percent of the variance in the dependent variable is explained ($R^2=.095$), and household size and age of the household head have significant effects.

When the housing deficits scale is entered into the regression, the R^2 is increased to .190. It indicates that the explanatory power of the variance in propensity to move is twice that of the model without the housing deficits scale. Significant negative relationships are found between propensity to move and three explanatory variables, household size, age of the head and the housing deficits scale. Also, education of the head has a positive effect on propensity to move.

The last two columns of Table 22 show the resulting regression coefficients of the fully recursive model of

propensity to move. Five variables in the model have significant coefficients: household size, age of the head, education of the head, the housing deficits scale, and housing satisfaction. Among them, the housing deficits scale has the greatest effect on propensity to move, followed by housing satisfaction. Housing satisfaction has, as expected, a direct and negative effect. The lower the satisfaction with housing, the higher is the desire to move. The effect of the housing deficits scale is mainly direct rather than indirect via housing satisfaction. Households with a low value on the housing deficits scale are more likely than those with a high value on the housing deficits scale to have desires to move.

The exogenous variables were hypothesized to have indirect effects on the dependent variable through the housing deficits scale and housing satisfaction. But the effects of the significant exogenous variables on propensity to move appear to be mainly direct except for age of the head. The indirect effect of age of the head on propensity to move through the effect of the housing deficits scale will be demonstrated in the decomposition of effects among the three variables (Table 24). Young households tend to have negative scores on the housing deficits scale, negative scores lead to the desire to move. Also, households with smaller household size and those with a head who has a high level of education have higher propensities to move.

Table 22. Regression analyses of (1) propensity to move on the exogenous variables, (2) propensity to move on the exogenous variables and the housing deficits scale, and (3) propensity to move on the exogenous variables, the housing deficits scale, and housing satisfaction using the Mexican data

Independent variables	(1)		(2)		(3)	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	-.071	-1.795*	-.067	-1.767*	-.082	-2.203*
Age of the head	-.290	-7.028*	-.174	-4.182*	-.148	-3.608*
Sex of the head	-.037	-.912	-.020	-.059	-7.64E-03	-.201
Household income	.029	.731	.022	.602	.033	.918
Education of the head	3.59E-03	.086	.077	1.909*	.080	2.013*
Housing deficits	-	-	-.332	-8.349*	-.296	-7.512*
Housing satisfaction	-	-	-	-	-.196	-5.231*
Constant	2.689		1.270		2.331	
R ²	.095		.190		.226	
Adjusted R ²	.087		.182		.217	
df	5 & 593		6 & 592		7 & 591	
F-ratio	12.410*		23.157*		24.641*	

*Significant at $p < .05$, one-tailed test.

The R^2 is increased from .190 to .226 when housing satisfaction is added to the regression equation. About one-fourth (23 percent) of the variance in propensity to move is explained by the variables in the model.

Propensity to alter and/or add The results of testing the effects of the exogenous variables, the housing deficits scale, and housing satisfaction on propensity to alter and/or add are presented in Table 23. When only the exogenous variables are included in the model, the R^2 of the regression is only .030. Household size and age of the head have significant effects on propensity to alter/add.

Although still low, the R^2 value is increased slightly to .057 by adding the housing deficits scale to the equation. Three variables have significant relationships with the dependent variable: household size, age of the head and the housing deficits scale.

The last two columns of Table 23 display the regression coefficients of the full model of propensity to alter and/or add. Housing satisfaction does not show a significant direct relationship to the dependent variable. Education of the head has an unhypothesized direct effect on propensity to alter/add. Age of the head and the housing deficits scale still remain significant. Their effects are direct rather than indirect. Households with a young head are more likely to have a propensity to alter/add. The positive relationship between housing deficits and propensity to alter/add implies that households with a negative value on the housing deficits scale are less likely than those with a positive value on the housing deficits scale to have desires to alter. It may be

interpreted that because the current housing deficits are related to structure type, tenure and number of bedrooms, these deficits are somewhat difficult to remove by alteration behaviors. Alternatively, households may consider moving to a different dwelling.

Table 23. Regression analyses of (1) propensity to alter and/or add on the exogenous variables, (2) propensity to alter and/or add on the exogenous variables and the housing deficits scale, and (3) propensity to alter and/or add on the exogenous variables, the housing deficits scale, and housing satisfaction using the Mexican data

Independent variables	(1)		(2)		(3)	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	.073	1.766*	.070	1.726*	.066	1.614
Age of the head	-.136	-3.173*	-.198	-4.414*	-.190	-4.215*
Sex of the head	.060	1.419	.051	1.212	.054	1.296
Household income	.058	1.417	.061	1.519	.064	1.600
Education of the head	-.036	-.825	-.075	-1.714	-.074	-1.699*
Housing deficits	-	-	.177	4.120*	.187	4.303*
Housing satisfaction	-	-	-	-	-.058	-1.407
Constant	2.108		3.080		3.485	
R ²	.030		.057		.060	
Adjusted R ²	.022		.048		.049	
df	5 & 593		6 & 592		7 & 591	
F-ratio	3.670*		5.970*		5.408*	

*Significant at $p < .05$, one-tailed test.

Decomposition of effects Table 24 summarizes the results of the decomposition of effects among the variables using the Mexican data. Also the path diagrams are displayed for propensity to move (Figure 4) and propensity to alter and/or add (Figure 5).

Among the exogenous variables, age of the head and education of the head have direct effects on the housing deficits scale. It is likely that households who have a younger head or one with a low level of education have negative housing deficits.

In the results of the regression of housing satisfaction on the exogenous variables and the housing deficits scale, as hypothesized, a strong direct effect is found between the housing deficits scale and satisfaction. Other significant determinants are household size and age of the head. The results of the decomposition analysis for both variables show that their effects are direct rather than indirect through the housing deficits scale, however.

As expected, housing satisfaction has a strong direct effect on propensity to move. However, the effect of the housing deficits scale is also direct ($-.296$) rather than indirect ($-.036$) through housing satisfaction, and its direct effect is even stronger than that of housing satisfaction. Household size, age of the head, and education of the head have significant effects. From the results of the

Table 24. Decomposition of effects among the variables using the Mexican data

Dependent variables	Explanatory variables	Indirect effects due to		Direct effects	Total effects
		Housing deficits	Housing satisfaction		
Housing deficits	H. size	-	-	.015	.015
	Age of head	-	-	.352*	.352*
	Sex of head	-	-	.053	.053
	H. income	-	-	-.019	-.019
	Edu. of head	-	-	.222*	.222*
Housing sat.	H. size	.003	-	-.076*	-.073*
	Age of head	.064	-	.132*	.196*
	Sex of head	.009	-	.062	.071*
	H. income	-.003	-	.056	.053
	Edu. of head	.040	-	.013	.053
	H. deficits	-	-	.180*	.180*
Prop. to move	H. size	-.004	.015	-.082*	-.071*
	Age of head	-.116	-.026	-.148*	-.290*
	Sex of head	-.017	-.020	-.000	-.037
	H. income	.007	-.011	.033	.029
	Edu. of head	-.077	-.003	.080*	.000
	H. deficits	-	-.036	-.296*	-.332*
	H. satisfaction	-	-	-.196*	-.196*
Prop. to alter/add	H. size	.033	.004	.066	.073*
	Age of head	.062	-.008	-.190*	-.136*
	Sex of head	.009	-.003	.034	.060
	H. income	-.003	-.003	.064	.058
	Edu. of head	.036	-.001	-.074*	-.036
	H. deficits	-	-.010	.187*	.177*
	H. satisfaction	-	-	-.058	-.058

*Significant at $p < .05$, one-tailed test.

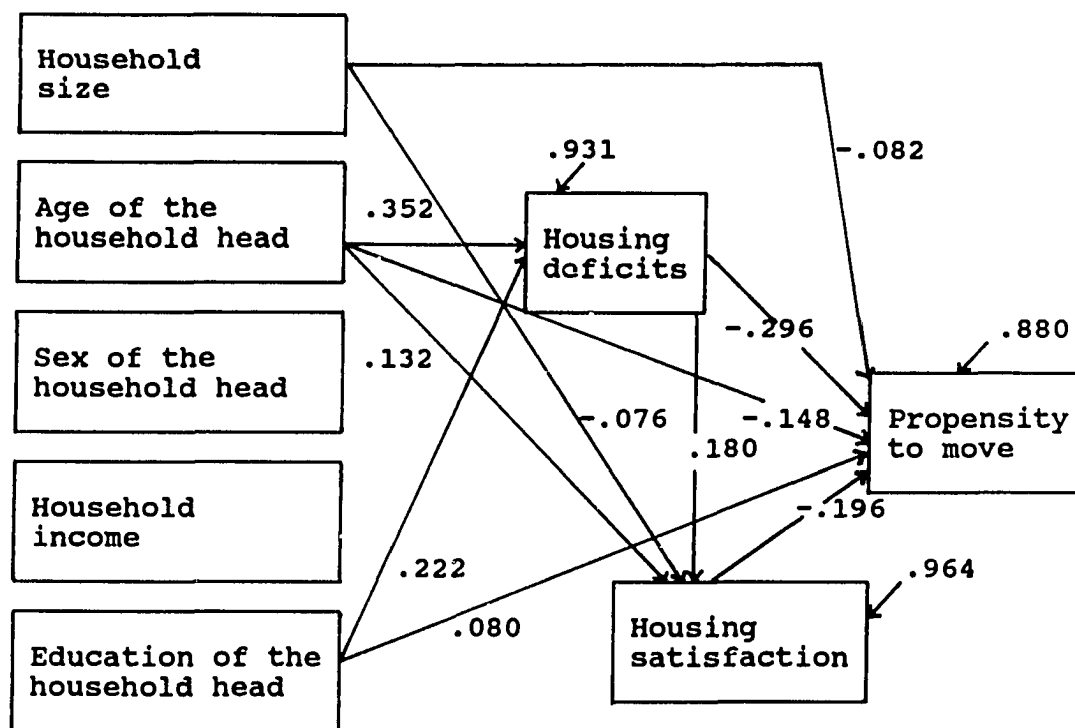


Figure 4. Significant paths of the proposed model of propensity to move using the Mexican data (The values for the noncausal relationships between pairs of exogenous variables are given in the correlation matrix in Table 11.)

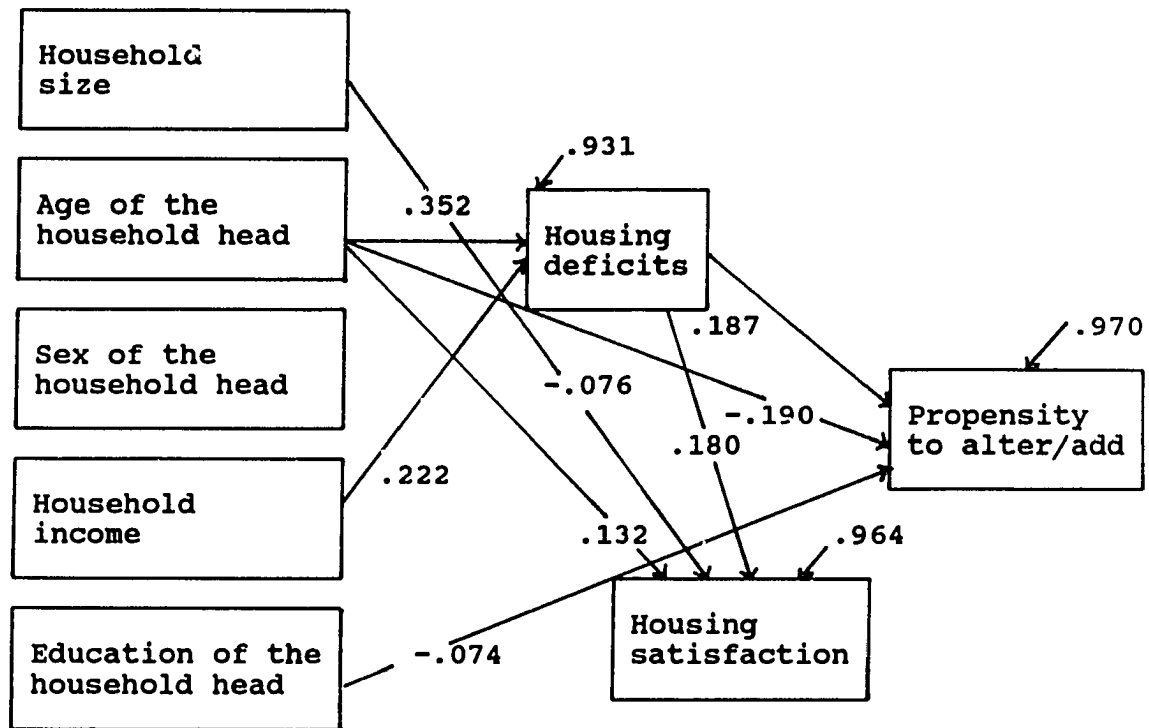


Figure 5. Significant paths of the proposed model of propensity to alter and/or add using the Mexican data (The values for the noncausal relationships between pairs of exogenous variables are given in the correlation matrix in Table 11.)

decomposition analysis, it can be concluded that the effect of household size is also direct rather than indirect. On the other hand, age of the head and education of the head have quite strong indirect effects through intervening variables, especially the housing deficits scale, even though their direct effects are still stronger than the indirect effects.

In relation to the effects of the exogenous variables, housing deficits and housing satisfaction on propensity to alter and/or add, unexpectedly, there is no significant direct effect from housing satisfaction. On the contrary, direct effects are found from the housing deficits scale, age of the head, and education of the head, although age of the head and education of the head have very slight indirect effects on propensity to alter/add through the housing deficits scale.

The U.S. sample

Housing deficits The results of the regressions of the three deficits on the exogenous variables using the U.S. data are shown in Table 25. The amount of explained variance is: 5 percent for structure type deficit, 8 percent for tenure deficit, 20 percent for space deficit. Age has significant and direct positive relationships with all of the three deficits. Households who have younger heads are more likely to live in nonsingle-family dwellings, be renters, and have insufficient bedrooms than those with older ones. Tenure deficit is also significantly affected by household size and

household income. Large households and households with high income are more likely than small households and those with low income to be owners. Household size, household income, and education of the head have significant effects on space deficit. Small households, households with high income, and households with a head who has a high level of education tend to have more bedrooms than needed.

Table 25. Regression analyses of structure type deficit, tenure deficit, and space deficit on the exogenous variables using the U.S. data

Independent variables	Structure type deficit		Tenure deficit		Space deficit	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	.069	1.282	.101	1.894*	-.234	-4.733*
Age of the head	.213	3.768*	.229	4.115*	.274	5.311*
Sex of the head	.012	.222	-.021	-.402	-.059	-1.243
Household income	.058	1.038	.152	2.752*	.206	4.025*
Education of the head	.093	1.610	-.053	-.940	.102	1.940*
Constant	-.395		-.339		-.624	
R ²	.048		.075		.204	
Adjusted R ²	.036		.063		.194	
df	5 & 379		5 & 379		5 & 379	
F-ratio	3.850*		6.181*		19.433*	

*Significant at $p < .05$, one-tailed test.

Table 26 presents the results of the regression of the housing deficits scale on the exogenous variables. About 21 percent of the variance in housing deficits is explained by

Table 26. Regression analysis of the housing deficits scale on the exogenous variables using the U.S. data

Independent variables	Beta	t-value
Household size	-.113	-2.294*
Age of the head	.350	6.798*
Sex of the Head	-.047	-.996
Household income	.225	4.392*
Education of the head	.084	1.599
Constant	-1.358	
R ²	.206	
Adjusted R ²	.196	
df	5 & 379	
F-ratio	19.699*	

*Significant at $p < .05$, one-tailed test.

the explanatory variables. Three variables in the model have significant t-values: household size, age of the household head, and household income. Among them, age of the head has the greatest influence on housing deficits with a beta of .350, followed by household income with a beta of .225 and household size with a beta of -.113. It appears that larger households, younger households, and households with lower income tend to have more negative housing deficits than

smaller households, older households, and those with higher income.

Housing satisfaction As with the other two data sets, housing satisfaction is first regressed on the five exogenous variables and in the second step the housing deficits are added. The regression coefficients of housing satisfaction without the housing deficits scale are presented in the first two columns of Table 27. The R^2 is .056, meaning that about six percent of the variance in housing satisfaction is explained. Among the exogenous variables, age of the head and household income have significant coefficients.

When the housing deficits scale is included in the regression model, the resulting coefficients are shown in the last two columns of Table 27. Unexpectedly, the housing deficits scale does not have a significant effect on housing satisfaction. Consequently, there is no significant increase in R^2 value.

Age of the head loses its significance after adding the housing deficits scale. Household income still remains significant. Because of the insignificance of the effect of housing deficits, the effect of household income on housing satisfaction can be interpreted to be direct rather than indirect through housing deficits.

Table 27. Regression analyses of (1) housing satisfaction on the exogenous variables, and (2) housing satisfaction on the exogenous variables and the housing deficits scale using the U.S. data

Independent variables	(1)		(2)	
	Beta	t-value	Beta	t-value
Household size	-1.93E-03	-.036	5.01E-03	.092
Age of the head	.118	2.107*	.097	1.630
Sex of the Head	.070	1.360	.073	1.415
Household income	.168	3.005*	.154	2.691*
Education of the head	-.050	-.873	-.055	-.960
Housing deficits	-	-	.061	1.093
Constant	5.022		5.125	
R ²	.056		.059	
Adjusted R ²	.044		.044	
df	5 & 379		6 & 378	
F-ratio	4.528*		3.974*	

*Significant at $p < .05$, one-tailed test.

Propensity to move The results of propensity to move on the exogenous variables, the housing deficits scale, and housing satisfaction are presented in Table 28. The first two columns show the coefficients of the model utilizing only the exogenous variables. Age of the head and household income are significantly related to propensity to move. The amount of explanatory power of the model is about 7 percent.

Table 28. Regression analyses of (1) propensity to move on the exogenous variables, (2) propensity to move on the exogenous variables and the housing deficits scale, and (3) propensity to move on the exogenous variables, the housing deficits scale, and housing satisfaction using the U.S. data

Independent variables	(1)		(2)		(3)	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	-.022	-.407	-.043	-.809	-.041	-.829
Age of the head	-.211	-3.769*	-.145	-2.482*	-.111	-2.027*
Sex of the head	.053	1.033	.044	.871	.070	1.461
Household income	-.152	-2.741*	-.110	-1.960*	-.057	-1.066
Education of the head	-.029	-.513	-.013	-.239	-.033	-.618
Housing deficits	-	-	-.188	-3.414*	-.166	-3.227*
Housing satisfaction	-	-	-	-	-.348	-7.348*
Constant	.807		.637		1.597	
R ²	.065		.093		.207	
Adjusted R ²	.053		.079		.192	
df	5 & 379		6 & 378		7 & 377	
F-ratio	5.274*		6.461*		14.026*	

*Significant at $p < .05$, one-tailed test.

When the housing deficits scale is added to the regression equation, the explanatory power is increased slightly to about 9 percent. It appears that age of the head, household income, and the housing deficits scale are significantly related to propensity to move.

The resulting regression coefficients of the recursive model of propensity to move are presented in the last two columns. Three variables in the model have significant t-values: age of the head, the housing deficits scale, and housing satisfaction. Housing satisfaction has the strongest direct effect on propensity to move. Households who are dissatisfied with their dwelling are more likely than those who are satisfied to have desires to move. The effect of the housing deficits scale is also direct, and its indirect effect through housing satisfaction is quite weak.

Age of the head has a significant direct effect on propensity to move. The addition of the intervening variables to the model does not make the effect of age of the head insignificant. Its negative effect indicates that younger households tend to have a higher propensity to move than older households. Household income loses its significance when the housing deficits scale and housing satisfaction are included.

The R^2 is increased by a statistically significant amount to .207 when housing satisfaction is entered into the regression equation. Adding housing satisfaction doubles the explanatory power of the model. Almost 21 percent of the variance in the propensity to move is explained.

Propensity to alter and/or add The regressions of propensity to alter and/or add using the U.S. data show somewhat unexpected results (Table 29). When the exogenous

variables are first included in the model, household size and age of the head have significant effects on propensity to alter and/or add. The R^2 value is .089.

Table 29. Regression analyses of (1) propensity to alter and/or add on the exogenous variables, (2) propensity to alter and/or add on the exogenous variables and the housing deficits scale, and (3) propensity to alter and/or add on the exogenous variables, the housing deficits scale, and housing satisfaction using the U.S. data

Independent variables	(1)		(2)		(3)	
	Beta	t-value	Beta	t-value	Beta	t-value
Household size	.147	2.766*	.154	2.885*	.154	2.880*
Age of the head	-.184	-3.329*	-.206	-3.530*	-.209	-3.557*
Sex of the head	.018	.348	.021	.407	.019	.369
Household income	.059	1.080	.045	.797	.041	.719
Education of the head	.038	.672	.032	.574	.034	.598
Housing deficits	-	-	.064	1.169	.063	1.138
Housing satisfaction	-	-	-	-	.026	.506
Constant	.511		.590		.494	
R^2	.089		.092		.093	
Adjusted R^2	.077		.078		.076	
df	5 & 379		6 & 378		7 & 377	
F-ratio	7.384*		6.387*		5.501*	

*Significant at $p < .05$, one-tailed test.

The addition of the housing deficits scale does not make any significant contribution to the model, and, of course, the effect of housing deficits is not statistically significant. In addition, the change in the R^2 value and the coefficients are negligible.

Housing satisfaction also does not contribute to the prediction of the propensity to alter and/or add. Its effect is not significant, and consequently, there is little change in the R^2 value. Household size and age of the head are still significantly related to propensity to alter/add. That is, it can be interpreted that their effects are not indirect but direct. Large households and young households tend to have higher propensities to alter and/or add than small and old households.

Decomposition of effects The effects among the variables using the U.S. data are decomposed into direct and indirect effects for the elaborated interpretations. The results are summarized in Table 30. Figure 6 and Figure 7 display the path diagrams of the two dependent variables, propensity to move and propensity to alter and/or add.

Three exogenous variables are found to have significant direct effects on the housing deficits scale: household size, age of the head, and household income. Age of the head is the strongest determinant of housing deficits.

Table 30. Decomposition of effects among the variables using the U.S. data

Dependent variables	Explanatory variables	Indirect effects due to		Direct effects	Total effects
		Housing deficits	Housing satisfaction		
Housing deficits	H. size	-	-	-.113*	-.113*
	Age of head	-	-	.350*	.350*
	Sex of head	-	-	-.047	-.047
	H. income	-	-	.225*	.225*
	Edu. of head	-	-	.084	.084
Housing sat.	H. size	.000	-	.000	-.000
	Age of head	.021	-	.097	.118*
	Sex of head	-.003	-	.073	.070
	H. income	.014	-	.154*	.168*
	Edu. of head	.005	-	-.055	-.050
	H. deficits	-	-	.061	.061
Prop. to move	H. size	.021	-.002	-.041	-.022
	Age of head	-.066	-.034	-.111*	-.211*
	Sex of head	.009	-.026	.070	.053
	H. income	-.042	-.053	-.057	-.152*
	Edu. of head	-.016	.020	-.033	-.029
	H. deficits	-	-.022	-.166*	-.188*
	H. satisfaction	-	-	-.348*	-.348*
Prop. to alter/add	H. size	-.007	.000	.154*	.147*
	Age of head	.022	.003	-.209*	-.184*
	Sex of head	-.003	.002	.019	.018
	H. income	.014	.004	.041	.059
	Edu. of head	.006	-.002	.034	.038
	H. deficits	-	.001	.063	.064
	H. satisfaction	-	-	.026	.026

*Significant at $p < .05$, one-tailed test.

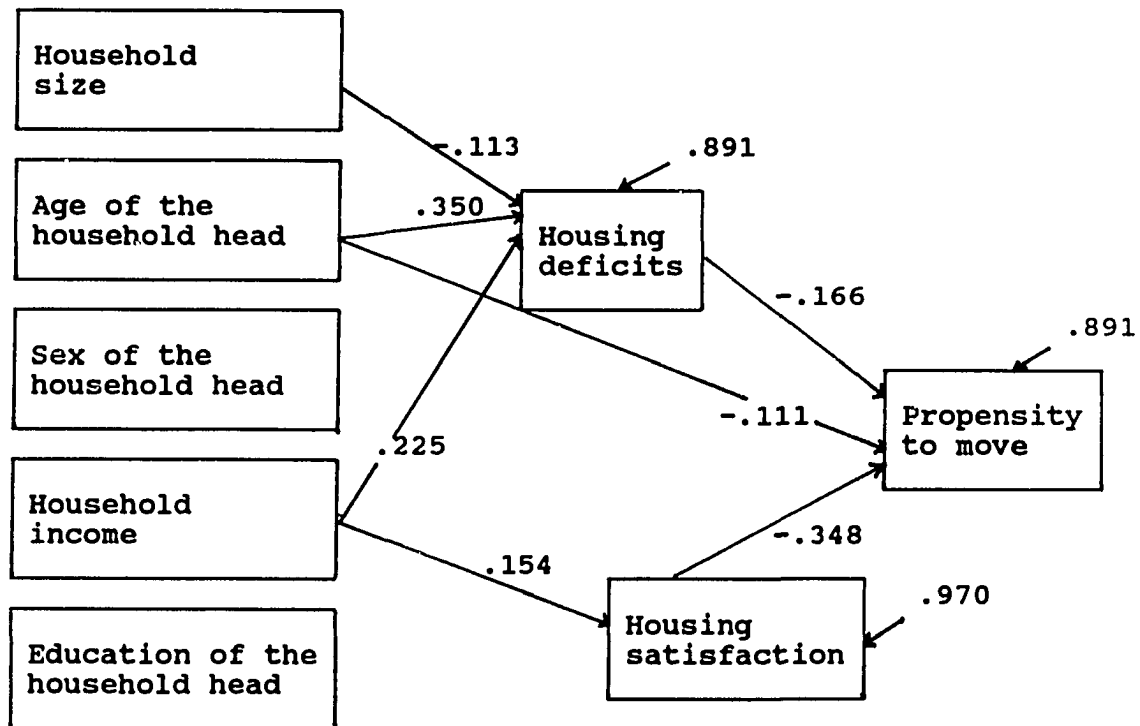


Figure 6. Significant paths of the proposed model of propensity to move using the U.S. data (The values for the noncausal relationships between pairs of exogenous variables are given in the correlation matrix in Table 12.)

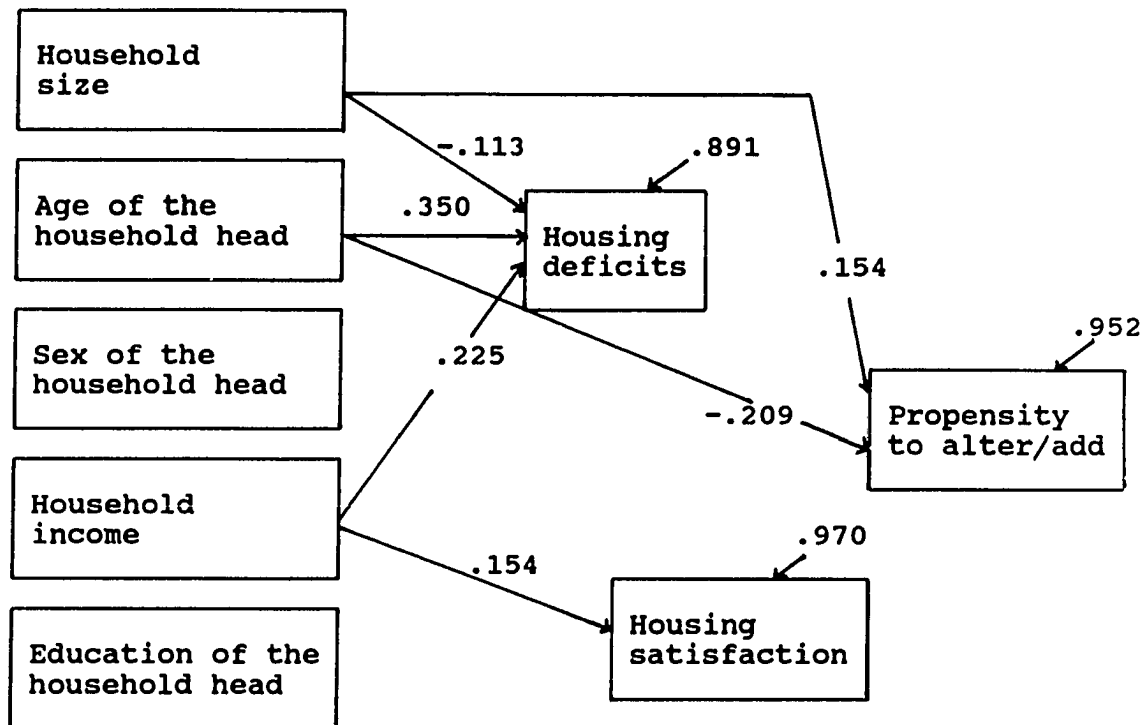


Figure 7. Significant paths of the proposed model of propensity to alter and/or add using the U.S. data (The values for the noncausal relationships between pairs of exogenous variables are given in the correlation matrix in Table 12.)

In relation to the effects of the exogenous variables and housing deficits on housing satisfaction, the hypothesized direct effect of the housing deficits scale is not found. Rather, household income has a strong direct effect.

Housing satisfaction has a strong direct effect on propensity to move. Its effect is the strongest among the significant determinants. The total effects of the housing deficits scale are decomposed into the direct effect with a beta of $-.166$ and the indirect effect with a beta of $-.022$, which can be interpreted that the housing deficits scale has a stronger direct effect on propensity to move than an indirect effect through housing satisfaction. Age of the head is another variable that has a strong direct effect ($-.111$) on propensity to move, but it also has notable indirect effects, one ($-.066$) via the housing deficits scale and the other ($-.034$) via housing satisfaction. However, there is no evidence that housing deficits and housing satisfaction are intervening variables between age of the head and propensity to move, because the direct effect of age of the head is still strong and statistically significant.

In the model of propensity to alter and/or add, the hypothesized direct effect from housing satisfaction and indirect effect from the housing deficits scale are not found. The unexpected direct effects are from two exogenous variables, household size and age of the household head. Age

of the head has some amount of indirect effect on the dependent variable through the effect on the housing deficits scale, but its direct effect is much greater than the indirect effect.

Testing of the directional hypotheses

In the directional hypotheses in Chapter 2 (Table 1), the housing deficits scale was hypothesized to be negatively related to household size. A significant negative relationship is found in the U.S. data. In other two data sets, no relationship is found. Age of the head is found to be positively related to the housing deficits scale in every data set. The housing deficits scale was also hypothesized to have positive relationships with sex of the head, household income, and education of the head. It is found that sex of the head has no relationship with the housing deficits scale. The positive relationship between household income and the housing deficits scale is supported in the U.S. data, but not in the other two data sets. Only the Mexican data support the positive relationship between the housing deficits scale and education of the head.

Housing satisfaction was hypothesized to have negative relationships with household size and sex of the head. The significant negative effect of household size is supported in the Mexican data. None of the three data sets supports the

negative effect of sex of the head on housing satisfaction. The positive relationship between age of the head and housing satisfaction is found in the Mexican data, but not in the other two data sets. Household income is supported in the Korean and the U.S. data to be positively related to housing satisfaction. No effect of education of the head on housing satisfaction is found in any data set. The Mexican data support the significant positive relationship between the housing deficits scale and housing satisfaction.

It was hypothesized that propensity to move has negative relationships with all of the explanatory variables. In the Mexican data, education of the head is found to be positively related to propensity to move. The significant negative effects on propensity to move are from household size in the Mexican data, age of the head and the housing deficits scale in the Mexican and the U.S. data, and housing satisfaction in all of the three data sets.

The positive relationship between household size and propensity to alter/add is supported in the U.S. data. Age of the head is found in the Mexican and the U.S. data to have the hypothesized negative relationship with the propensity to alter/add. As hypothesized, sex of the head in the Korean data is positively and education of the head in the Mexican data is negatively related to the propensity to alter/add. All of the data sets support the hypothesis that there is no

relationship between household income and propensity to alter/add. Also, it is found that the housing deficits scale has an inconsistent effect on propensity to alter/add according to the data sets: a negative effect in the Korean data, a positive effect in the Mexican data, and no effect in the U.S. data. Therefore, only the Korean data support the hypothesis. The negative relationship between housing satisfaction and propensity to alter/add is supported in the U.S. data.

Comparison of the results

One of the objectives of this dissertation is a comparison of housing adjustment among the Korean, Mexican and American samples, how the adjustment model fits each culture, how the processes are different, and what factors underlying each culture produce such differences. In Table 31, the relationships found in the path analysis within each data set are compared.

Basically, it appears through the R^2 values that the proposed model does not fit the Korean data well compared with the other two data sets. The R^2 values for the models with the Korean data are generally low ranging from .030 to .068. Less than 7 percent of the variance in each of the endogenous variables with the Korean data are explained by the variables in the model. And most explanatory variables have

insignificant effects. The significant effects are found in the relationships between age of the head and the housing deficits scale, household income and housing satisfaction, housing satisfaction and propensity to move, housing satisfaction and propensity to alter/add, the housing deficits scale and propensity to alter/add, and sex of the head and propensity to alter/add. The facts of the low R^2 values and insignificant explanatory variables may imply that there are many other factors not considered that determine the housing adjustment of the Korean households.

The U.S. and Mexican data show relatively larger R^2 values for the models than the Korean data. The ranges of the R^2 values are: from .060 to .226 for the Mexican and from .059 to .207 for the U.S. data. These two sets of data have roughly similar ranges of the values.

Similarities Most similarities are found in the insignificant effects of the explanatory variables on the endogenous variables except for the two relationships between age of the head and the housing deficits scale, and housing satisfaction and propensity to move. Every data set shows the significant positive effect of age of the head on the housing deficits scale. Younger households tend to have more negative housing deficits than do older ones. The direct negative effect of housing satisfaction on propensity to move is also consistent in every data set. Households who are less

Table 31. Comparison of results from path analysis

Explanatory variable	Housing deficits			Housing satisfaction		
	Korea	Mexico	U.S.A.	Korea	Mexico	U.S.A.
Household size	0	0	-	0	-	0
Age of head	+	+	+	0	+	0
Sex of head	0	0	0	0	0	0
Household income	0	0	+	+	0	+
Educ. of head	0	+	0	0	0	0
Housing deficits	x	x	x	0	+	0
Housing sat.	x	x	x	x	x	x
R-squared	.030	.134	.206	.047	.070	.059

+ positive relationship 0 insignificant relationship
 - negative relationship x not in model

(continued)

Explanatory variable	Propensity to move			Propensity to alter/add		
	Korea	Mexico	U.S.A.	Korea	Mexico	U.S.A.
Household size	0	-	0	0	0	+
Age of head	0	-	-	0	-	-
Sex of head	0	0	0	+	0	0
Household income	0	0	0	0	0	0
Educ. of head	0	+	0	0	-	0
Housing deficits	0	-	-	-	+	0
Housing sat.	-	-	-	-	0	0
R-squared	.068	.226	.207	.047	.060	.093

+ positive relationship 0 insignificant relationship
 - negative relationship x not in model

satisfied with their dwellings tend to have higher propensities to move to a different dwelling than those who are more satisfied with their dwellings.

It appears in all three data sets that sex of the head has an insignificant relationship with the housing deficits scale. In the prediction of housing satisfaction, two of the exogenous variables, sex of the head, and education of the head are insignificant. Also no difference is found in the insignificant effects of sex of the head and household income on propensity to move. In every data set, household income is shown to have an insignificant effect on propensity to alter and/or add.

Differences The regression of the housing deficits scale shows that household size and household income are not significant in both the Korean and the Mexican data, but significant in the U.S. data. For the American households, household size and household income are directly related to the housing deficits scale, that is, larger households and households with lower incomes tend to have more negative housing deficits. Education of the head has a significant effect in explaining housing deficits for the Mexican households.

In the prediction of housing satisfaction, household size, age of the head and housing deficits are significant only in the Mexican data, which indicates that large

households, young households and households with negative housing deficits tend to have lower housing satisfaction than do smaller households, older households and those with no deficits or positive deficits. The significant effect of household income on housing satisfaction appears in the Korean and the U.S. data. The positive relationship between household income and housing satisfaction implies that households with higher incomes are more likely to be satisfied with their dwelling than are those with lower incomes.

In the relationships of age of the head and the housing deficits scale with propensity to move, the Korean data show insignificance compared with significance in the other two data sets. For the Mexican and the American households, those with a younger head and with more negative housing deficits tend to have higher levels of propensity to move than those with an older head and with positive housing deficits. Using the Korean and the U.S. data, household size and education of the head, which are not significant in predicting propensity to move, are significant in the Mexican data. The responses of the Mexican households to the propensity to move are explained by the negative relationship with household size and positive relationship with education of the head.

Household size is significant only in the U.S. data in the prediction of propensity to alter and/or add. Larger households tend to have higher propensities to alter/add. Age

of the head has a significant negative relationship with propensity to alter/add in both the U.S. and Mexican data, but it is insignificant in the Korean data. The significant effect of sex of the head is found in the Korean data, which means female-headed households are less likely to have desires to engage in alteration behavior. The unhypothesized negative effect of education of the head is found in the Mexican data.

The two intervening variables, the housing deficits scale and housing satisfaction, show inconsistent relationships to propensity to alter/add according to the data sets. In the U.S. data, there is no significant effect of the housing deficits scale, whereas a positive relationship is found in the Mexican data and a negative one in the Korean data. Housing satisfaction is significant in the Korean data, but insignificant in other two data sets. For the Korean households, the lower the housing satisfaction, the higher is the intention of alteration and/or addition.

CHAPTER IV. SUMMARY AND IMPLICATIONS

Summary of the Results

The purposes of this dissertation are to compare the housing adjustment propensities of Korean, Mexican, and American households, and to identify the cultural factors that determine the differences among the three cultures. The theoretical framework of this study is the Morris and Winter model of housing adjustment. Housing and housing behavior are common aspects every culture has, and every household in every culture is assumed to perform a sequence of housing adjustment behaviors to attain desired housing. The purposes of this dissertation have been accomplished through an analysis of three data sets from different sources.

Hypotheses were tested for 1) the direct effect of housing satisfaction on propensity to move or propensity to alter and/or add; 2) the indirect effect of housing deficits on propensity to move or propensity to alter and/or add through housing satisfaction; 3) the direct effect of housing deficits on housing satisfaction; 4) the indirect effects of the exogenous variables on housing satisfaction through housing deficits; and 5) the direct effects of the exogenous variables on housing deficits. Path analysis was mainly used to test the hypotheses, and the same procedures were performed individually with the three sets of data.

Before discussing the findings of the hypotheses testing, the cultural housing norms of the three cultures need to be mentioned. As has been shown in previous studies, the majority of American and Mexican households in the present samples identified single-family dwelling for the cultural structure norm in each country, whereas half of the Korean sample thought that nonsingle-family dwelling was the ideal structure type in Korea rather than single-family dwelling. There may be several reasons for this. One of them is related to the efficiency of land use. Because of the shortage of land in Korea, since the late 1970s, most of housing construction by either public or private housing companies have been concentrated on developing mid- or high-rise apartment housing complexes to increase the supply of housing. This may affect thinking about the ideal structure type for ordinary Korean households. Tenure norms for home ownership were consistent regardless of cultures. For space norms in terms of the number of bedrooms, Mexican households report the lowest requirements, followed by American and Korean households. This result is interesting when considering the previous studies (Suh, 1988; Morris et. al., 1989) stating that the quantity aspects of the dwelling are more important for Mexican households than are the quality aspects. Presumably, this resulted from the low level of expectations.

The Korean households in the present sample apparently show somewhat different patterns of housing adjustment compared to those in the other two samples. According to the results of the path analysis, most of the hypothesized relationships between the variables were not supported with the Korean data, as shown by the low R^2 values and very few significant explanatory variables in the model. Namely, the empirical model of housing adjustment did not explain well the propensity to move or propensity to make alterations/additions of Korean households.

On the other hand, the results of the analysis of propensity to move with the U.S. and Mexican data provided moderate support for the model, while the model of propensity to alter and/or add was still not as strong in the Korean data. There seemed to be some similarities in adjustment patterns between the households in the U.S. and Mexican samples even if there were small differences in the effects of the explanatory variables.

All of the data sets showed a consistent result in terms of the direct and negative effect of housing satisfaction on propensity to move as has been shown in many previous studies. Regardless of cultures, households have desires to move to a different dwelling when they have low satisfaction with the current dwelling. The effect of housing satisfaction on alteration propensities was found only in the Korean sample.

The negative effects of housing deficits on propensity to move were found in the U.S. and Mexican samples. However, unexpectedly, the effects were direct rather than indirect through housing satisfaction. Households with negative housing deficits are more likely to have desires to move than those with no or positive housing deficits. Also, the housing deficits scale was found to be directly and positively related to propensity to alter and/or add for the households in the Mexican sample. That is, households with more negative housing deficits are less likely to have alteration propensities. That result may be an artifact of the method used to measure the concept of housing deficits. Because the present housing deficits are concerning structure type, tenure and number of bedrooms, these are quite difficult to be eliminated by alterations. Therefore, moving to a different dwelling could be considered as an alternative, and this was shown in the relation between housing deficits and propensity to move. However, the housing deficits scale showed a negative relationship with propensity to alter/add in the Korean data.

The hypothesized direct effects of housing deficits on housing satisfaction were supported only in the Mexican data. Households who have no or positive housing deficits tend to have higher housing satisfaction.

Three of the exogenous variables, household size and age of the head in the Mexican data and household income in the Korean and the U.S. data had significant relationships with housing satisfaction. However, there was no evidence that housing deficits intervene between these three exogenous variables and housing satisfaction. Namely, their effects on housing satisfaction were more likely to be direct rather than indirect.

Some of the hypothesized relationship between the exogenous variables and the housing deficits scale were significant. The positive effect of age of the head was consistent in all three sets of data. Households with a younger head tend to have more negative housing deficits. Education of the head was the strong predictor of housing deficits for the Mexican households, while household size and household income were strong predictors for the U.S. households.

In addition, the unhypothesized direct effects of the explanatory variables on the dependent variables were found. For the Korean sample, the effect of sex of the head on propensity to alter/add was significant. For the Mexican households, those with higher desires to move have a smaller household size, a younger household head, and a head highly educated, while propensity to alter/add was negatively related to age of the head and education of the head. For the U.S.

households, age of the head was the only significant variable of propensity to move. Higher propensities to alteration behaviors were found in the U.S. households with a larger household and a younger household head.

Implications

This study is an attempt to apply a cross-cultural perspective on housing adjustment. Because housing is one of the phenomena every culture has, it is obvious that housing conditions and behavior are judged and decided by the society's own standards which have been derived through long historical developments involving social, economic and other cultural conditions. Therefore, there are likely to be no uniform standards across cultures in an absolute sense, and any specific housing behavior can be socially desirable and acceptable in its own situation, even if sometimes not in other cultures.

A major implication comes from the results of the path analysis using the Korean data. Why the present model did not explain the housing adjustment behavior of Korean households well, whereas it worked on Mexican and American households is an inquiry that should be considered.

One of the possible reasons may be the omission of variables that are particularly important to the current housing situation in Korea. This study only considered

general socioeconomic-demographic and housing characteristics. Besides these, however, in Korea, market constraints such as demand/supply and price factors in the housing market may be more influential in propelling housing adjustment behavior, especially residential mobility. Such constraints are often determined by economic-political instability and inconsistent housing policies. In that sense, it may be suspected that the housing adjustment of Korean households is performed as a result of involuntary factors rather than typical voluntary ones. Further housing research in Korea needs to be done to explore those factors.

The other potential reason is the limited sampling within Seoul, the capital of Korea. Even if about one quarter of the national population are residing in Seoul, its area is less than 1 percent of the total area. This implies a peculiar housing situation in the city which may produce distinctive thinking of the people, and further, could bias the results. A future study conducted with a larger and more well-proportioned sample would enable researchers to reach more general and different results for the Korean households.

All three sets of data showed that the very small amount of variance in propensity to make alterations/additions is explained by the five exogenous variables, the housing deficits scale and housing satisfaction. This may be due to the use of same explanatory variables, especially the housing

deficits scale, as in the model of propensity to move. However, as the previous studies stated, there are differences between residential mobility and alterations/additions, and residential alterations are more limited in applicability. Namely, they are only useful in removing space and quality deficits, and structure-type or tenure deficits cannot be overcome by alterations. The fact that housing deficits in this study concern structure-type and tenure besides space may yield such results.

Additionally, the relative contributions of various housing deficits, for example, space, structure-type, tenure, quality, etc., to the causal relationships among the variables of housing adjustment model would be interesting to be explored. According to the situation in each culture, there might be differences in performing housing adjustment. For example, in the United states, becoming a home owner of a single-family detached dwelling or obtaining high quality housing is a primary consideration, while in Mexico, quantity in terms of the number of rooms has a greater effect. These differences may result in different adjustment patterns. However, the traditional path analysis applied to the present data did not allow for multiple indicators of the same concept. Some other statistical program, like LISREL (Joreskog and Sorbom, 1984), which can allow for simultaneous

analysis of the multiple endogenous variables in the model needs to be considered.

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APPENDIX

List of the Selected Questions

The Korean dataQuestion used to measure propensity to move

14. Which of the following statements best describes your feelings about moving from your present dwelling?

- ☐ 1 have never thought about moving from this dwelling
- ☐ 2 have thought about moving from this dwelling
- ☐ 3 desire to move from this dwelling in the next year
- ☐ 4 expect to move from this dwelling in the next year
- ☐ 5 have definite plans to move from this dwelling

Question used to measure propensity to alter/add

15. Which of the following statements best describes your feelings about making changes, alterations or additions to your present home?

- ☐ 1 have never thought about making changes to this dwelling
- ☐ 2 have thought about making changes to this dwelling to this dwelling
- ☐ 3 desire to make changes to this dwelling in the next year
- ☐ 4 expect to make changes to this dwelling in the next year
- ☐ 5 have definite plans to make changes to this dwelling

Question used to measure housing satisfaction

12-M. In general, how satisfied or dissatisfied are you with your current housing?

- ☐ 1 very satisfied
- ☐ 2 satisfied
- ☐ 3 mixed
- ☐ 4 dissatisfied
- ☐ 5 very dissatisfied

Questions used to measure cultural norms for housing

1-A. What do you think would be the best kind of housing structure for the average Korean family?

- ☐ 1 single-family dwelling
- ☐ 2 row house, town house
- ☐ 3 mid-rise apartment
- ☐ 4 high-rise apartment
- ☐ 5 villa
- ☐ 6 a house with shops
- ☐ 7 a house occupied by two or more households
- ☐ 8 other _____

1-B. Which of the following would be the best ownership or rental arrangement for the average Korean family?

- ☐ 1 conventional ownership
- ☐ 2 monthly rental
- ☐ 3 yearly rental
- ☐ 4 other _____

1-C. How many bedrooms do you feel are needed by the average Korean family of the same size, sex and ages, as your family?

____ (number)

Questions used to measure household norms for housing

2-A. What do you think would be the best kind of housing structure for your family right now?

- ☐ 1 single-family dwelling
- ☐ 2 row house, town house
- ☐ 3 mid-rise apartment
- ☐ 4 high-rise apartment
- ☐ 5 villa
- ☐ 6 a house with shops
- ☐ 7 a house occupied by two or more households
- ☐ 8 other _____

2-B. Which of the following would be the best ownership or rental arrangement for your family right now?

- ☐ 1 conventional ownership
- ☐ 2 monthly rental
- ☐ 3 yearly rental
- ☐ 4 other _____

2-C. How many bedrooms do you feel your family needs right now?

___ (number)

Questions used to measure current housing conditions

8-A. Which of the following best describes your home?

- ___ 1 single-family dwelling
- ___ 2 row house, town house
- ___ 3 mid-rise apartment
- ___ 4 high-rise apartment
- ___ 5 villa
- ___ 6 a house with shops
- ___ 7 a house occupied by two or more households
- ___ 8 other _____

8-D. Which of the following best describes your tenure status?

- ___ 1 conventional ownership
- ___ 2 monthly rental
- ___ 3 yearly rental
- ___ 4 other _____

8-G. How many bedrooms are there in this house?

___ (number)

The Mexican data

Questions used to measure propensity to move

103. Do you have definite plans to move to a different dwelling within the next twelve months?

- ___ 0 no
- ___ 5 yes (GO TO 108)

104. Do you expect to move to a different dwelling within the next twelve months?

- ___ 0 no
- ___ 4 yes (GO TO 108)

105. Do you want to move to different dwelling within the next twelve months?

☐ 0 no
☐ 3 yes (GO TO 108)

106. Do you want to move within the next 3 years?

☐ 0 no
☐ 2 yes (GO TO 108)

107. Have you ever thought about moving from this dwelling unit?

☐ 0 no (GO TO 109)
☐ 1 yes

Questions used to measure propensity to alter/add

109. Do you have definite plans to make alterations, additions, remodeling, or major repairs to this dwelling within the next twelve month?

☐ 0 no
☐ 5 yes (GO TO 114)

110. Do you expect to make alterations, additions, remodeling, or major repairs to this dwelling within the next twelve months?

☐ 0 no
☐ 4 yes (GO TO 114)

111. Do you want to make alterations, additions, remodeling, or major repairs to this dwelling within the next twelve months?

☐ 0 no
☐ 3 yes (GO TO 114)

112. Do you want to make alterations, additions, remodeling, or major repairs to this dwelling within the next three years?

☐ 0 no
☐ 2 yes (GO TO 114)

113. Have you ever thought about making alterations, additions, repairs, or remodeling this dwelling?

___ 0 no (GO TO 115)
___ 1 yes

Question used to measure housing satisfaction

090. How satisfied or dissatisfied are you with the overall housing situation of you and members of your household?

___ 1 very dissatisfied
___ 2 dissatisfied
___ 3 mixed
___ 4 satisfied
___ 5 very satisfied

Questions used to measure cultural norms for housing

061. Which do you think would be best for the average Oaxacan household, owning or renting their dwelling?

___ 0 renting
___ 1 owning

062. Which do you think would be the best type of dwelling for the average Oaxaca household?

___ 1 a detached single-family dwelling
___ 2 an attached single-family dwelling
___ 3 an apartment in a house with two or three apartments
___ 4 an apartment in a building with four or more apartments
___ 5 room
___ 6 or some other type of dwelling (please describe) _____

063. Now, think of the average Oaxacan family that has same number of people of the same ages and sexes as your household. How many bedrooms do you think they should have in their dwelling?

___ bedrooms

Questions used to measure household norms for housing

066. Which do you think would be best for you and the members of your household right now, owning or renting your dwelling?

- ☐ 0 renting
☐ 1 owning

067. Which do you think would be the best type of dwelling for you and the member of your household right now?

- ☐ 1 a detached single-family dwelling
☐ 2 an attached single-family dwelling
☐ 3 an apartment in a house with two or three apartments
☐ 4 an apartment in a building with four or more apartments
☐ 5 room
☐ 6 or some other type of dwelling (please describe) _____

068. If you have exact number of bedrooms you need in this dwelling, how many would that be?

☐ bedrooms

Questions used to measure current housing conditions

001. Do you own this dwelling, rent it, or do you live here free?

- ☐ 1 own
☐ 2 rent
☐ 3 live here free

035. Is this building ---

- ☐ 1 a jacal
☐ 2 a room
☐ 3 a vecindad
☐ 4 an apartment in a building with four or more apartments
☐ 5 an apartment in a house with two or three apartments
☐ 6 a detached single-family house
☐ 7 other _____

042. How many bedrooms do you have here altogether?

___ bedrooms

The U.S. data

Questions used to measure propensity to move

169. Do you have definite plans to move within the next twelve months?

___0 no
___1 yes

170. Do you have any desires to move from this residence during the next twelve months?

___0 no
___1 yes

Questions used to measure propensity to alter/add

167. Do you have definite plans to remodel, alter, or enlarge this dwelling during the next twelve months

___0 no
___1 yes

168. Do you have any desires to remodel, alter, or enlarge your residence during the next twelve months?

___0 no
___1 yes

Question used to measure housing satisfaction

130. How satisfied or dissatisfied are you with your housing?

___1 very dissatisfied
___2 dissatisfied
___3 somewhat dissatisfied
___4 mixed
___5 somewhat satisfied
___6 satisfied
___7 very satisfied

Questions used to measure cultural norms for housing

158. What do you think is the best kind of housing for the average American family?

- ☐ 1 a single family house
- ☐ 2 a duplex or two-family house
- ☐ 3 a building with three or more apartments
- ☐ 4 a rowhouse or townhouse
- ☐ 5 a mobile home
- ☐ 6 other _____

159. What do you think is the best ownership or rental arrangement for the average American family?

- ☐ 1 regular home ownership
- ☐ 2 condominium ownership
- ☐ 3 cooperative ownership
- ☐ 4 regular rental
- ☐ 5 other _____

163. Now, think of the average American family that has the same number of people as your family. How many bedrooms do you think they need?

___ (number)

Questions used to measure household norms for housing

160. What do you think is the best type of housing for you and your family right now?

- ☐ 1 a single family house
- ☐ 2 a duplex or two-family house
- ☐ 3 a building with three or more apartments
- ☐ 4 a rowhouse or townhouse
- ☐ 5 a mobile home
- ☐ 6 other _____

161. What do you think is the best ownership or rental arrangement for you and your family right now?

- ☐ 1 regular home ownership
- ☐ 2 condominium ownership
- ☐ 3 cooperative ownership
- ☐ 4 regular rental
- ☐ 5 other _____

162. If you could have the exact number of bedrooms you need in this house, how many would that be?

___ (number)

Questions used to measure current housing conditions

120. Do you own or rent your dwelling?

___ 1 own
___ 2 rent
___ 3 live here free

121. I'd like to know how many bedrooms are there in your dwelling?

___ (number)

153. What type of residence is this?

___ 1 a single-family detached house
___ 2 a duplex or house with two apartments
___ 3 a row house or townhouse
___ 4 a building with 3 or 4 apartments
___ 5 an apartment building with 5 or more units
___ 6 an apartment in a commercial building
___ 7 a mobile home
___ 8 other _____