

# IMPACTS OF RESIDENTIAL ENVIRONMENTS ON HOUSING SATISFACTION AMONG KOREAN AMERICAN ELDERS

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## Abstract

*The purpose of this study was to identify important aspects of residential environments on housing satisfaction among Korean American elders. Using Shea and Inman's ecological model for the assessment of housing for older adults, this research utilized the subjective perceptions of various aspects of their residential environments as an intervening variable to predict housing satisfaction. A total of 177 Korean American elders participated in this study. In the analysis of quantitative data collected in 2003 using a self-administered questionnaire, the psychological (a sense of belonging to one's neighborhood) and social (neighborhood social environment and community services) aspects of residential environments were positively related to housing satisfaction. The physical environment was not significantly related to housing satisfaction. The results of this study supported the importance of community involvement at the neighborhood level.*

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## Introduction

Along with the increase of the older population in general, racial and ethnic diversity among the elderly population is expected to increase. In 2003, 83% of America's older adults were non-Hispanic White, 8% Black, 6% Hispanic or Latino, and 3% Asian American. By 2050, projections indicate the composition of the older population will be 61% non-Hispanic White, 12% Black, 18% Hispanic or Latino, and 8% Asian American (U.S. Bureau of the Census, 2004). This increase in diversity raises issues related to the different social, cultural, economic, and housing needs of elderly ethnic groups. However, diversity among ethnic minority elderly persons has not been addressed by policymakers and

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researchers. Especially when the population size of an ethnic group is small, its social status is low, and its members are newcomers (i.e., Korean Americans), very little research has been conducted (Kang & Kang, 1995).

While the population of Korean Americans is relatively small, they are one of the fastest growing ethnic populations in the U.S. The number of Korean Americans has increased from 797,304 in 1990 to 1,076,872 in 2000 (U.S. Bureau of the Census, 2000). Between 1980 and 1990, the number of Korean Americans aged 65 and over grew from 8,614 to 35,247 (U.S. Bureau of the Census, 1990). The U.S. immigration of Koreans and family reunification, combined with aging among immigrants who came to the U.S. in the 1960s and 1970s, have significantly increased the number of Korean American elders (Moon, Lubben, & Villa, 1998). More research is needed for this underrepresented elderly group.

This study aimed to reduce the gap between increasing diversity among the elderly by evaluating Korean American elders' residential environments. The objectives of the research were to:

1. Identify demographic and housing characteristics that predict perceptions of various residential environments (i.e., psychological, physical, and social aspects).
2. Examine the relationship between housing satisfaction and characteristics of demographics and housing.
3. Determine whether perceptions of various residential environments mediate the association between demographic and housing characteristics, and housing satisfaction.

## **Review of Literature**

### ***Cultural Values and Korean American Elders***

The majority of older Koreans in the U.S. are foreign born. There are two categories of Korean elders living in the U.S. One consists of those who immigrated to the U.S. at the invitation of their adult children who had settled here. The other group consists of those who immigrated as young adults and who have recently reached retirement age (Min, 1998). These two groups of Korean elders living in the U.S. are very different. The first group spent most of their lives in Korea and gave up their jobs upon coming to the U.S. (Olson, 2001). Indeed, most of these older persons have only a limited employment history in the U.S. (Kim & Hurh, 1993). They are highly dependent on their adult children and the government for economic support, and are not Americanized (Olson, 2001).

On the other hand, the second group who immigrated as young adults or youth has a longer work history in the U.S. and greater resources (Min, 1998). Since they have worked in the U. S. they tend to be familiar with the American

system (Olson, 2001). They are more likely to be better off financially and psychologically than the first group of Korean elders (Min, 1998). Although existing data do not identify which group is dominant, it is presumed that a great majority of the Korean elders in the U.S. are among those who were sponsored by their adult children to immigrate (Olson, 2001). This assumption implies that many Korean American elders rely on the government and their children for resources and services.

Historically, the cultural value of respecting older adults, embodied in filial piety, has been responsible for Koreans taking care of their older parents. In a society where filial piety is practiced, the elderly are revered and valued. Filial children need to uphold their responsibility to their family and they learn to put family first rather than as an individual (Sung, 1990). Many Korean American elders have already aged in their mother country with no need to learn English, and thus have a difficult time adjusting to American mainstream culture (Hurh, 1998). Language barriers often result in very limited social contacts for Korean American elders, who may become extremely dependent on their adult children. With limited income sources and language barriers, it may be difficult for Korean American elders to obtain the necessary information to locate appropriate alternative housing.

### ***Determinants of Housing Satisfaction***

Most empirical studies of housing satisfaction measure the effects of various housing, neighborhood, and demographic characteristics on housing satisfaction (Baillie & Peart, 1992; Galster, 1987; Ha & Weber, 1991; Marans & Rodgers, 1975). Some studies analyzed housing satisfaction for special population groups such as single-parent families (Bruin & Cook, 1997; Cook, Bruin, & Laux, 1994) or households at risk of serious housing problems (Crull, 1994). Other studies were specific to residential locations such as urban Black elders in public housing (Moore & Husaini, 1991), residents in rural communities (Combs & Vrbka, 1993), older women in Florida (Baillie & Peart, 1992), and elderly residents in subsidized housing (Johnson, Lovingood, & Goss, 1993).

Overall, these empirical studies have identified a number of important predictors of housing satisfaction for older adults. The most important factors were health, income, housing and neighborhood characteristics, social relations, and social support (Brown, 1995; Campbell, Converse, & Rodgers, 1976; Cutler, 1997; Groves & Wilson, 1992; Lawton, 1983; Morris & Winter, 1978; Zhu & Shelton, 1996). For example, older homeowners living in single-family houses tended to be more satisfied than elderly renters (Brown, 1995; Campbell et al., 1976; Morris & Winter, 1978). Age, health status, and neighborhood satisfaction were positively related to housing satisfaction (Brown, 1995; Morris & Winter, 1978), whereas a negative relationship existed between persons-per-room and housing satisfaction (Campbell et al., 1976; Morris & Winter, 1978).

Racial and ethnic differences also affected housing satisfaction. In a study of an assessment of public housing, levels of housing satisfaction varied in terms of ethnic background (Mackin, 1994). Zhu and Shelton (1996) found that there were significant differences associated with housing satisfaction between the majority of European American households and non-White households. Only European American elderly homeowners who paid more for housing reported greater satisfaction with their housing (Zhu & Shelton, 1996).

Even though there has been consistent agreement that certain factors contribute to housing satisfaction for the elderly, there are also inconsistent findings for several variables. For instance, in early research on housing satisfaction, researchers argued for the importance of the psychological, physical, and social aspects of the residential environment. Some insisted that factors regarding the physical environment (i.e., design features) were more important than the psychological and social environments (Binstock & Shanas, 1985; Lawton, 1986). On the other hand, others argued that the social environment, such as one's network, safety, activities, privacy, and services, were more important factors (Lawton & Nahemew, 1979; McAuley, 1987; Tuken, 1994). No research appears to have examined the link between the perceptions of different residential environments and housing satisfaction.

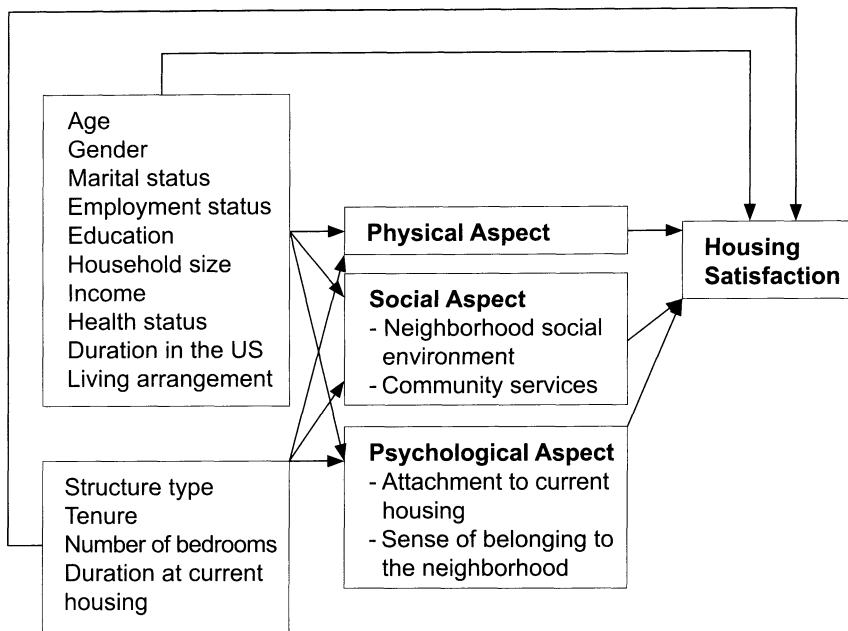
### **Conceptual Framework**

This study focuses on the relations among older Korean Americans' perceptions of their residential environments and housing satisfaction. Satisfaction reflects people's feelings, evaluations, and behaviors, which are the result of a complex interaction of cultural, social, and psychological factors (Golant, 1986). Thus, housing satisfaction is a good predictor to measure the response to a surrounding environment. The underlying assumption comes from an individual's interactions with the various aspects of residential environments.

Interactions with the various aspects of residential environments are divided into several levels, from micro- to macro- perspectives. In understanding the housing behavior of older adults, Shea and Inman (1994) suggested four levels of residential environments reflecting psychological (microsystem), physical (mesosystem), social (exosystem), and cultural (macrosystem) criteria. The microsystem referred to psychological criteria, including a sense of belonging and attachment as perceived by older adults. The mesosystem referred to physical criteria, including public and private spaces and floor plans. The exosystem referred to social criteria, including interactions with neighbors, family support systems, and community services. Finally, the macrosystem referred to the overarching ideology, values, norms, and customs of a society (Shea & Inman, 1994).

Although Shea and Inman's work provided a conceptual model to study housing for older adults, this model was not developed for an empirical test.

Therefore, in order to measure perceptions of the different aspects of residential environments (see Figure 1) the key elements of Shea and Inman (1994) were used in this research. For example, the psychological aspect was measured by attachment to one's current housing and sense of belonging to one's current neighborhood. The physical aspect was measured by size of private space, floor plan, autonomy, and temperature control. The social aspect was measured by community services (i.e., knowledge and utilization of community services, and willingness to use services when needed). These different aspects of residential environments were interpreted from the cultural context.



**Figure 1. The Empirical Model**

Integrating the various aspects of residential environments is extremely important for analyzing housing behavior of the ethnic minority elders because this makes it possible to show how these different aspects interact with the various levels of residential environments. It is easier to evaluate the success of programs which target different population groups (Nathan, 1995). This approach helps policymakers identify to what extent housing subsidies and social linkage programs are needed. Ultimately, this provides the guidelines to develop culturally appropriate housing and service programs for Korean American elders, as well as to improve their well-being in the long run.

## Method

### Sample

The population for this study was comprised of Korean Americans aged 55 and older living in the Twin Cities metropolitan area in Minnesota. Since there was considerable evidence that one's housing and mobility decisions for old age were often made before retirement (Junk & Dillman, 1990), it was reasonable to include people aged 55 and older. A non-random sampling procedure was used. Since Korean American elders constituted a very small portion of the Twin Cities' Korean population, a conventional sampling procedure would be inefficient.

Using the *2000-2001 Korean Directory of Minnesota* and the *Directory of 2003 Korean Elders Association of Minnesota*, a total of 400 questionnaires were mailed in 2003, with 184 (response rate of 46%) being returned. Seven questionnaires either did not meet the age requirements for this study or were not complete enough; therefore, 177 questionnaires were used for the statistical analysis.

### Variables and Measures

The independent variables were measured by either a single measure or a composite measure made up of several separate items. The composite combined several questions to build a summary score or scale for the concept. The composite measure was constructed to measure perceptions of psychological, physical, and social aspects of residential environments.

The *demographic characteristics* of the Korean Americans elders included age, gender, marital status, employment status, education, household size, income, health status, living arrangement, and duration in the U.S. They were measured by either categorical or continuous variables as shown in Table 1.

**Table 1. Demographic Characteristics**

Variable	Measurement and units
Age	Continuous variable measured in years
Gender	Male (1); female (0)
Marital status	Married (1); divorced (2); separated (3); widowed (4); never married (5)
Employment status	Full time (1); part time (2); full time & part time (3); not employed (4); retired (5)
Education	No formal schooling (1); elementary school (2); junior high school (3); high school (4); some college (5); college (6); graduate or professional degree (7); other (8)
Household size	Continuous variable
Annual household income	\$0 to 4,999 (1); \$5,000 to 9,999 (2); \$10,000 to 19,999 (3); \$20,000 to 29,999 (4); \$30,000 to 49,999 (5); \$50,000 to 69,999 (6); \$70,000 to 89,999 (7); \$90,000 or more (8)
Health status	Very poor (1); poor (2); so so (3); good (4); excellent (5)
Living arrangement	Alone (1); with my spouse (2); with my son's family (3); with my daughter's family (4); with my relatives (5); with my friends (6); other (7)
Duration in the U.S.	Continuous variable measured in years

The *housing characteristics* included the structure type, tenure, number of bedrooms, and duration at current housing. The structure type was categorized into seven possibilities as shown in Table 2 and tenure was based on owning or renting the structure. The number of bedrooms and duration of current housing were treated as continuous variables.

**Table 2. Housing Characteristics**

Variable	Measurement and units
Structure type	Single-family house (1); government-subsidized apartment (2); rental apartment (3); mobile home (4); row or town house (5); room (6); other (7)
Tenure	Owned (1); rented (0)
Number of bedrooms	Continuous variable
Duration at current housing	Continuous variable measured in years

The *psychological aspect* was measured by attachment to current housing and sense of belonging to one's current neighborhood. To measure the perceptions of the participants' attachment to their current housing, a question asked whether or not the respondents felt that their current housing was really "my home" using a five-point Likert scale: "1" for strongly disagree to "5" for strongly agree. To measure the participants' perceptions of belonging to their current neighborhoods, a question asked whether or not the respondents felt that their current neighborhoods were really "my neighborhood" using a five-point Likert scale: "1" for strongly disagree to "5" for strongly agree.

To measure the *physical aspect* (perceptions of one's physical environment), five variables were used: appropriateness of size of current housing, convenience of floor plan, appropriateness of temperature, control over inside of one's living environment, and accessibility. These variables were measured using five-point Likert scales: "1" for strongly disagree to "5" for strongly agree.

The *social aspect* was measured by neighborhood social environment and a community service index. To evaluate one's neighborhood social environment, six items referring to relationships with neighbors were emphasized: one's similarity with the neighbors, safety, recognition of the neighbors, recognition of next-door neighbors, close relationships with next-door neighbors, and comfortableness with getting help from neighbors in an emergency. These variables were also measured using five-point Likert scales: "1" for strongly disagree to "5" for strongly agree. To evaluate community services, four variables were used: proximity of the ethnic service center, knowledge about getting information, utilization of community services, and willingness to use services. These variables were measured using five-point Likert scales: "1" for strongly disagree to "5" for strongly agree.

The dependent variable is *housing satisfaction*. To measure the levels of housing satisfaction, overall housing satisfaction was used. Overall housing

satisfaction was measured on a five-point Likert scale: “1” for very dissatisfied to “5” for very satisfied.

### **Statistical Analyses**

Descriptive statistics were computed on the demographic and housing characteristics for the sample description. Then, a series of ordinal regression models were analyzed to address the research objectives. To run the regression models, some items were combined to measure the perceptions of different levels of residential environments based on the theoretical framework, as shown in Table 3. Each index was formed by adding the related items together, and then dividing by the number of items. For example, to measure the perceptions of physical environment, all values of five items were added and divided by five. To measure the perceptions of neighborhood social environment, all values of six items were added and divided by six. To measure the perceptions of community services, all values of four items were added and divided by four. Missing data were not treated. Therefore, the number of observations varied across the model testing.

**Table 3. Variables Used in Regression Analyses**

<b>Index</b>	<b>Component Variables</b>	<b>Reliability</b>
Physical Environment	Size, Floor plan, Heating, Inside, Stairs	.6811
Neighborhood Social Environment	Race, Safety, Neighbors, Next-door neighbors, Relationship, Emergency contact	.6275
Community Service	Proximity, Knowledge, Utilization, Willingness	.6691
Single Variables	Attachment to current housing Sense of belonging to one's current neighborhood Housing satisfaction	

## **Results**

Frequencies and percentage distributions were first calculated to examine demographic and housing characteristics, perceptions of one's different aspects of residential environments, and satisfaction with housing. Then, ordinal regression models were developed to analyze the relationship between the perceptions of different aspects of residential environments on housing satisfaction.

### **Characteristics of Respondents**

The demographic characteristics included age, gender, marital status, education, employment, household income, living arrangement, household size, health status, and duration in the U.S. The ages of the respondents ranged from

55 to 93 years, with a mean of 69 years and a standard deviation of 9.2. Over half (59.0%) of the respondents were female. Sixty-one percent of the respondents were married, 34.2% widowed, and the remainder either divorced or separated. The level of education was high with about a third (31.7%) of the respondents being college graduates. Over half of the respondents (54.7%) were employed at the time they participated in the survey. In terms of household income levels, 39.6% reported incomes from \$5,000 to \$49,999 per year and 23.6% reported incomes between \$50,000 and \$90,000 per year.

The most frequent living arrangement was participants living with a spouse. Forty-four percent responded that they lived with a spouse, 41.0% lived alone, and the remainder lived with other family members. Household size ranged from 1 to 8; 46.1% of the respondents reported their household size was two. Most respondents felt that they were healthy, with 56.7% stating that they were healthy while 30.7% were not certain about their health status. Duration in the U.S. ranged from 2 to 50 years. About two thirds (63.0%) of the respondents had lived in the U.S. for 20 years, and about 27.4% had lived in the U.S. between 10 and 20 years.

Housing characteristics included dwelling type, tenure status, number of bedrooms, and duration at current housing. Over half of the respondents (53.8%) reported living in single-family housing while 29.5% lived in government-subsidized apartments and 9.2% lived in other types of rental apartments. In terms of tenure status, 58.0% of respondents owned their housing.

The number of bedrooms in the respondents' current housing ranged from 1 to 6: 36.2% lived in one-bedroom units and 35.0% reported having four or more bedrooms in their current housing. The respondents' duration at current housing varied from 5 months to more than 35 years, with a mean of 12 years. About half of the sample had lived in their current housing for less than 10 years, 33.7% had lived in their current housing between 10 and 20 years, and the remainder had spent over 20 years living in their current housing.

### **Regression Analyses**

It was hypothesized that demographic and housing characteristics would directly influence respondents' perceptions of different aspects of their residential environments. The respondents' perceptions of their residential environments consisted of five components reflecting two psychological aspects (attachment to current housing and a sense of belonging to current neighborhoods), one physical aspect, and two social aspects (neighborhood social environment and community services).

**Psychological aspect—attachment to current housing.** As displayed in Table 4, the results of the ordinal regression showed that six exogenous variables were significantly related to the respondents' attachment to current housing at the  $p < .05$  level. Income and health status had a positive relationship, meaning that if income

increased and if one's subjective health condition was perceived as good, there was a higher likelihood of attachment to current housing. On the other hand, household size, education, and the number of rooms had a negative relationship, meaning that if the size of household and the number of bedrooms were both small, and if the level of education was low, there was a higher likelihood of the respondent to have a strong attachment to his or her current housing. In terms of tenure status, owners tended to rate themselves as having a higher attachment to their current housing. About 20% of the variance was explained by the exogenous variables ( $p < .001$ ).

**Table 4. Ordinal Regression Analysis of Attachment to Current Housing on Demographic and Housing Characteristics**

Variables	Estimate	Wald
<b>Demographic Characteristics</b>		
Age	6.041E-02	1.904
Gender, female	.848	1.535
Gender, male	omitted	omitted
Marital status, married	1.658	.956
Marital status, divorced or separated	1.076	.590
Marital status, widowed	omitted	omitted
Employment status, employed	1.080	2.456
Employment status, unemployed	omitted	omitted
Household income	1.164	7.708*
Education	-.711	5.751*
Health status	1.405	11.031***
Household size	-3.027	5.025*
Living arrangement, alone	.185	.004
Living arrangement, with a spouse	.865	.079
Living arrangement, with family members	omitted	omitted
Duration in the U.S.	2.495E-03	.005
<b>Housing Characteristics</b>		
Structure type, multi-family housing	-1.589	1.552
Structure type, single-family housing	omitted	omitted
Tenure, owner	omitted	omitted
Tenure, renter	-4.786	8.524**
Number of rooms	-.852	3.840*
Duration at current housing	-5.800E-03	3.482
-2 Log-Likelihood Value	213.059***	
Pseudo-R <sup>2</sup>	.199	
Observations	94.00	

Note: The Pseudo-R<sup>2</sup> is based on the McFadden measure.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

***Psychological attachment—sense of belonging to current neighborhood.***

As displayed in Table 5, the results of the ordinal regression showed that only one exogenous variable, employment status, was significantly related to the respondents' sense of belonging to current neighborhood at the  $p < .05$  level. Employed respondents tended to feel a greater sense of belonging to current neighborhood. About 10% of the variance was explained by the exogenous variables ( $p < .05$ ).

***Physical aspect.*** The results of the ordinal regression showed that no exogenous variables were significant (see Table 6).

**Table 5. Ordinal Regression Analysis of Sense of Belonging to Current Neighborhood on Demographic and Housing Characteristics**

Variables	Estimate	Wald
<b>Demographic Characteristics</b>		
Age	.036	2.115
Gender, female	.542	2.230
Gender, male	omitted	omitted
Marital status, married	1.622	2.339
Marital status, divorced or separated	-.757	1.086
Marital status, widowed	omitted	omitted
Employment status, employed	.889	5.125*
Employment status, unemployed	omitted	omitted
Household income	.004	.002
Education	-.054	.203
Health status	.223	1.855
Household size	-.842	2.540
Living arrangement, alone	-1.402	.829
Living arrangement, with a spouse	-2.671	2.982
Living arrangement, with family members	omitted	omitted
Duration in the U.S.	.009	.155
<b>Housing Characteristics</b>		
Structure type, multi-family housing	-.245	.146
Structure type, single-family housing	omitted	omitted
Tenure, owner	omitted	omitted
Tenure, renter	-.574	.704
Number of bedrooms	.001	.000
Duration at current housing	.002	2.158
-2 Log-Likelihood Value	244.383*	
Pseudo-R <sup>2</sup>	.100	
Observations	96.00	

Note: The Pseudo-R<sup>2</sup> is based on the McFadden measure.

\* $p < .05$

**Table 6. Ordinal Regression Analysis of Physical Environment on Demographic and Housing Characteristics**

Variables	Estimate	Wald
<b>Demographic Characteristics</b>		
Age	-5.304E-02	3.801
Gender, female	-2.678E-02	.005
Gender, male	omitted	omitted
Marital status, married	-.892	.562
Marital status, divorced or separated	-1.352	2.860
Marital status, widowed	omitted	omitted
Employment status, employed	-3.468E-02	.008
Employment status, unemployed	omitted	omitted
Household income	.284	1.623
Education	5.132E-02	.088
Health status	.331	2.848
Household size	-.515	.475
Living arrangement, alone	-.484	.094
Living arrangement, with a spouse	.431	.064
Living arrangement, with family members	omitted	omitted
Duration in the U.S.	7.449E-03	.092
<b>Housing Characteristics</b>		
Structure type, multi-family housing	.473	.411
Structure type, single-family housing	omitted	omitted
Tenure, renter	.823	.738
Tenure, owner	omitted	omitted
Number of bedrooms	8.947E-02	.127
Duration at current housing	-2.427E-05	.000
-2 Log-Likelihood Value	179.994	
Pseudo-R <sup>2</sup>	.72	
Observations	82.00	

Note: The Pseudo-R<sup>2</sup> is based on the McFadden measure.

**Social aspect—neighborhood social environment.** As Table 7 presents, the results of the ordinal regression showed that only one housing characteristic, tenure, had a significant effect at the  $p < .05$  level on neighborhood social environment. Renters were more likely than owners to perceive their relationships with neighbors positively. Almost 7% of the variance was explained.

**Table 7. Ordinal Regression Analysis of Neighborhood Social Environment on Demographic and Housing Characteristics**

Variables	Estimate	Wald
<b>Demographic Characteristics</b>		
Age	-1.857E-02	.623
Gender, female	-6.559E-02	.040
Gender, male	omitted	omitted
Marital status, married	-.598	.515
Marital status, divorced or separated	-.256	.124
Marital status, widowed	omitted	omitted
Employment status, employed	-.579	2.727
Employment status, unemployed	omitted	omitted
Household income	.161	.690
Education	.161	.690
Health status	.131	.717
Household size	-3.918	.004
Living arrangement, alone	.185	.018
Living arrangement, with a spouse	.259	.033
Living arrangement, with family members	omitted	omitted
Duration in the U.S.	1.606E-02	.550
<b>Housing Characteristics</b>		
Structure type, multi-family housing	-.252	.167
Structure type, single-family housing	omitted	omitted
Tenure, owner	omitted	omitted
Tenure, renter	1.756	5.801*
Number of bedrooms	.425	3.605
Duration at current housing	-1.512E-03	1.114
-2 Log-Likelihood Value	224.904	
Pseudo-R <sup>2</sup>	.069	
Observations	92.00	

Note: The Pseudo-R<sup>2</sup> is based on the McFadden measure.

\*  $p < .05$

**Social aspect—community services.** As displayed in Table 8, the results of the ordinal regression showed that two demographic characteristics, age and health, had a significant effect on perceptions of community services. Both characteristics were statistically significant at the  $p < .05$  level; that is, age and health were significantly related to perceptions of community services. Approximately 11% of the variance ( $p < .05$ ) was explained by the exogenous variables.

**Housing satisfaction.** It was hypothesized that housing satisfaction was directly affected by the respondents' perceptions of their residential environments and indirectly affected by the exogenous variables. Results of the ordinal regression analysis of housing satisfaction on the demographic and housing characteristics and respondents' perceptions of various residential environments are summarized in Table 9. The first step of the regression analysis included the exogenous variables; in the next step, the variables for the respondents' perceptions of residential environments were added.

**Table 8. Ordinal Regression Analysis of Community Services on Demographic and Housing Characteristics**

Variables	Estimate	Wald
<b>Demographic Characteristics</b>		
Age	8.769E-02	3.769*
Gender, female	-.314	.304
Gender, male	omitted	omitted
Marital status, married	-1.501	.894
Marital status, divorced or separated	-2.635	2.196
Marital status, widowed	omitted	omitted
Employment status, employed	-1.145	3.601
Employment status, unemployed	omitted	omitted
Household income	.434	1.522
Education	-.471	2.740
Health status	.792	5.434*
Household size	-.202	.035
Living arrangement, alone	.919	.143
Living arrangement, with a spouse	1.192	.218
Living arrangement, with family members	omitted	omitted
Duration in the U.S.	-2.868E-02	.471
<b>Housing Characteristics</b>		
Structure type, multi-family housing	.888	.733
Structure type, single-family housing	omitted	omitted
Tenure, owner	omitted	omitted
Tenure, renter	-1.161	.855
Number of bedrooms	.304	.636
Duration at current housing	-2.926E-03	1.365
-2 Log-Likelihood Value	222.799*	
Pseudo-R <sup>2</sup>	.112	
Observations	90.00	

Note: The Pseudo-R<sup>2</sup> is based on the McFadden measure.

\* $p < .05$

In the first step of the regression analysis, the demographic and housing variables had a significant effect on housing satisfaction. Two variables were significant at the  $p < .05$  level: duration in the U.S. and tenure. Duration in the U.S. was positively related to housing satisfaction, and renters were less likely to be satisfied with their housing. About 22% of the variance was explained at this step ( $p < .001$ ).

In the second step of the regression analysis, by adding the perceptions of various residential aspects, the model was strengthened (-2 Log-Likelihood = 91.889,  $p < .001$ ). A total of 43.4% of the variance was explained in this manner. There was a positive relationship in terms of health status, duration in the U.S., number of bedrooms, neighborhood social environments, community services, and a sense of belonging to the neighborhood. A negative relationship existed in terms of age, income, and household size.

**Table 9. Ordinal Regression Analysis of Housing Satisfaction on Demographic and Housing Characteristics and Perceptions of Residential Environments**

Variables	Model 1: Demographic and housing characteristics		Model 2: Residential environments	
	Estimate	Wald	Estimate	Wald
<b>Demographic Characteristics</b>				
Age	3.809E-02	.533	-.655	4.824*
Gender, female	7.517E-03	.000	5.282E-03	.000
Gender, male	omitted	omitted	omitted	omitted
Marital status, married	5.192	2.044	11.921	1.342
Marital status, divorced or separated	-1.120	.865	-1.435	.045
Marital status, widowed	omitted	omitted	omitted	omitted
Employment status, employed	1.290	2.319	6.155	2.081
Employment status, unemployed	omitted	omitted	omitted	omitted
Household income	.545	1.580	-7.365	5.528*
Health status	.647	3.156	4.041	4.146*
Household size	-1.169	.581	-7.255	3.016*
Living arrangement, alone	-5.591E-02	.000	-14.334	.130
Living arrangement, with a spouse	-6.716	2.603	-22.390	.300
Living arrangement, with family members	omitted	omitted	omitted	omitted
Duration in the U.S.	.168	7.530*	1.590	6.293*
<b>Housing Characteristics</b>				
Structure type, multi-family housing	2.013	1.013	11.388	4.612
Structure type, single-family housing	omitted	omitted	omitted	omitted
Tenure, renter	-4.875	4.896*	-3.469	.856
Tenure, owner	omitted	omitted	omitted	omitted
Number of bedrooms	.117	.060	4.632	4.494*
Duration at current housing	-6.919E-03	3.651	-3.203E-03	.092
<b>Residential Environments</b>				
Physical environment			1.336	.809
Neighborhood social environment			2.862	5.426*
Community services			17.308	5.862*
Attachment to current housing			-.723	.947
Sense of belonging to the neighborhood			2.862	4.390*
-2 Log-Likelihood Value	191.195***		91.889***	
Pseudo-R <sup>2</sup>	.216		.434	
Observations	103.00		73.00	

Note: The Pseudo-R<sup>2</sup> is based on the McFadden measure.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## Discussion

The purpose of this study was to analyze the relationships of various aspects of residential environments and satisfaction with housing. The focus was placed on the individual's perceptions of psychological, physical, and social aspects of residential environments to housing satisfaction.

The first objective was to identify the significant factors contributing to Korean American elders' perceptions of their residential environments. Those factors reflect the various aspects of housing, consisting of the psychological, physical, and social aspects. Nine exogenous variables had significant direct effects on perceptions of residential environments: age, marital status, health status, education, household size, employment status, living arrangement, tenure, and number of bedrooms. In terms of one psychological aspect, attachment to current housing, five variables (education, health status, household size, tenure, and number of bedrooms) were significant. On the other hand, the psychological aspect of a sense of belonging to one's current neighborhood was significantly related to only one variable, employment status. Although there was no significant variable determining the perceptions of physical environment, tenure status as a renter increased the likelihood of being socially involved with neighbors for Korean American elders in Minnesota. Age and health status were positively related to perceptions of the social aspect of residential environments.

The second objective was to explore how the demographic and housing characteristics affected one's satisfaction with housing. Six exogenous variables had direct effects on housing satisfaction: age, household income, health status, household size, duration in the U.S., and number of bedrooms. Tenure was indirectly related to housing satisfaction through the neighborhood social environment, and employment status through a sense of belonging to one's current neighborhood.

An interesting result was that being a renter was positively related to the social aspect, but negatively related to place attachment (psychological aspect) and housing satisfaction. This result must be interpreted from a larger context. Many Korean American elders knew where they could find social service programs provided by bilingual staff. In a study involving adaptation of older tenants in Minneapolis, Kang (1991) found that the number of contacts with family, close friends, and service providers was positively associated with older tenants' attitudes toward tenant integration and adaptation. Lawton and Nahemow (1979) revealed that tenant activity participation, housing satisfaction, friendship behavior, and higher neighborhood age density were significant predictors of well-being among older adults living in multi-family housing, especially in federally assisted housing.

The third objective was to examine the relationship between housing satisfaction and the perceptions of various aspects of the residential environment. The social aspect (neighborhood social environment and community services) and psychological aspect (a sense of belonging to one's current neighborhood)

played a substantial role in predicting housing satisfaction. The social aspect was important in predicting housing satisfaction among Korean American elders. In fact, these networks and supports have been known as important determinants of individual well-being (Ward, LaGory, & Sherman, 1988). By the same token, access to social networks and the individual's use of such networks should not be underestimated. Here the social linkage programs, namely the role of the ethnic service center to connect individuals with society, are emphasized. Neighborhood, for instance, may be a source for basic resources and social interactions. Social support services enable older adults with limited resources to feel more confident and to better manipulate their surrounding environments. Some researchers saw low utilization of community support services among the Korean American elders as reflecting their large supportive family network and preferences for family support (Mindel & Wright, 1982). However, when these Korean American elders use a neighborhood as a resource, this neighborhood could be interpreted as an extended family.

The psychological aspect was positively related to housing satisfaction. Neighborhood is not only defined as a physical place reflecting territory; it is also a social community where residents share collective values and norms (Hallman, 1984). Social interactions can be gleaned. The definition of neighborhood among Korean American elders might be expanded to the Korean community in Minnesota, where many social and organizational interactions occur in ethnic churches, the ethnic service center, and other ethnic organizations. All of these activities increased the respondents' sense of belonging to their defined neighborhoods. The role of social environment, indeed, was seen as a main source of community satisfaction. In research on federally subsidized low-income rental housing communities, Tuken (1994) found that local social relationships were important predictors of community satisfaction. She concluded that despite poor housing conditions, subjective social indicators were a better measurement regarding the quality of life. Social bonds to friends, relatives, and ethnic organizations were important for the participants in this study. Active social engagement and good relationships with neighbors were, in fact, identified as important variables for housing satisfaction, and further for quality of life (Campbell et al., 1976).

Nevertheless, attachment to home was not significant in predicting housing satisfaction for this study. The high satisfaction and preference to aging in place may indicate a strong attachment of the elderly to their homes, considering their high homeownership rates (Altman & Low, 1992). For many elders, "home" means a symbol of security and independence, and homes provide a means of continuing their relationships and associations with loved ones (Howell, 1983). They cherish past memories, and this provides the continuity which becomes an important factor in one's attachment to place. Three demographic variables (education, health status, and household size) were found to be significant in

perceiving attachment to current housing; however, attachment itself did not have an impact on housing satisfaction.

Another interesting result from this research was that the physical environment did not contribute to housing satisfaction. Previous studies indicated that physical characteristics were important in predicting housing satisfaction and mobility decisions (Kaye, 1994; Serow, 1988; Wiseman, 1980). However, the physical aspect of residential environments was not a determinant in housing satisfaction for this study, and none of the demographic and housing variables had any effect on the physical environment. Only psychological and social aspects were significantly related to housing satisfaction.

### **Conclusion**

It is interesting to see the role that the psychological and social aspects played in analyzing housing satisfaction among Korean American elders. Due to cultural values centered on family, many Korean American elders are reluctant to use formal community services. Many of them believe that using community services means a failing of family responsibilities. It is complex to analyze how cultural values play a role in predicting housing satisfaction, but accessibility to such services could make it different. Many of the respondents knew where they could find information regarding community services. Part of the reason that they knew about this was because they knew where an ethnic service center was located. They knew the place where culturally targeted services were provided in Korean. This availability of services facilitates knowledge of community services and naturally leads to greater utilization of them.

The use of multiple dimensions to evaluate Korean American elders' perceptions of their residential environments provided a more inclusive model. This approach addressed the specific aspects of residential environments. All of these aspects were focused on the respondents' current residential environments. Their past experiences should be explored further to analyze life-long impacts of residential environments on housing satisfaction.

For older adults, housing is more than merely a physical container; it is a complex phenomenon interacting with psychological, physical, and socio-cultural aspects. In this study Korean American elders' housing satisfaction was tested and interpreted in the context of a hierarchy of various dimensions of one's residential environment, through both theoretical and empirical linkages. Considering the positive relationships of the psychological and social aspects of one's residential environment to housing satisfaction, developing community resources is important.

Although this study attempted to address the holistic approach, interactions of various aspects of residential environments were not the focus of this study. Culturally valued questions such as "To what degree do Korean American elders

want to be involved with neighbors and community services?” and “If they want more involvement, how would they like to be involved, and how do they make such decisions?” should be explored further.

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