

**HEALTH STATUS AND SOCIAL AND DEMOGRAPHIC  
DETERMINANTS OF LIVING ARRANGEMENTS  
AMONG THE KOREAN ELDERLY\***

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*This study explores a critical issue related to aging — living arrangements of the elderly and the factors that influence these arrangements. The study uses the 1984 Korean Elderly Survey and findings from previous studies on living arrangements, and draws on cultural factors and particular situations in Korea. Hypotheses are tested using logit analyses.*

*Results indicate that living arrangements of the Korean elderly reflect gender-role differences in caregiving and performance of household activities, primary caregiving or support relations in old age, and family life cycle stage. Being married is far more advantageous for men than women at old ages, since the wife continues to take care of the husband and household work. Severe disability of the wife seriously limits the couples' ability for independent living, while disability of the husband imposes a less imminent need for coresidence as long as the wife can take care of him and there are no other serious difficulties facing the couple. Elderly persons' economic resources are the greatest determinant of their living arrangements, due in part to poor public assistance programs, the high cost of housing, typical extravagant spending on children's weddings and education, and early retirement. The second strongest determinant is availability of a son. The absence of a son greatly increase the likelihood of living without children even among the elderly who have daughters, which indicates the persistence of the patriarchal family system in Korea. Availability of unmarried children is closely related to living with these children only, in order to avoid household crowding and due to these children's dependency on parents.*

Due to rapid modernization, the Korean elderly have experienced rapid changes in family structure and social norms in recent decades, and the tradi-

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tional extended family system and familistic orientations appear to have weakened considerably. In their place, a nuclear family system and individualism are emerging, but most of the Korean elderly are not well prepared for these changes. Since the early 1980s, the Korean Government has promoted the establishment of a welfare society as one of the nation's goals, but government income assistance and health care for the elderly from the Government have remained at a minimum level. Only 2.6 percent of the Korean elderly received any form of pension payment in 1988 (Park 1989). About 65 percent of the elderly have not made any financial preparation for their later life (Economic Planning Board 1988). Consequently, the support and care of elderly persons still have to be borne by the family. Nevertheless, changes in family structure and intergenerational relationships have increased concerns about the well-being of elderly persons. These concerns are heightened by the fact that the proportion of the Korean population aged 65 and older is projected to increase from 4.3% in 1985 to 11.4% by 2020 (Lee 1989). Living arrangements of the Korean elderly are among the most important aspects of their well-being, since the sharing of physical space is highly related to caregiving and support when the elderly need such care (Hermalin *et al.* 1990).

The traditional family practice — elderly parents residing with their married eldest son — remains the most common living arrangement of elderly persons in contemporary Korea, but in recent years there has been an increase in the proportions of elderly people living alone or with their spouse only, or living with a married daughter (Lee 1989). This change has occurred despite the fact that demographic change in Korea makes the traditional living arrangement more rather than less possible. Mortality improvements across all ages have prolonged the later years of the life course among elderly people, which increase the possibility for extended living in multiple generation households. Lower fertility has increased the potential for children to live with their elderly parents as well (United Nations 1986).

According to the 1984 Korean Elderly Survey, among children who lived with their elderly parents, most eldest sons reported that they felt obligated to live with their parents, while other children reported that they resided with their parents because there was nobody else to take care of them. Not many children said they wanted to take care of their elderly parents (Lim *et al.* 1985). Moreover, the relationship between an elderly mother and the daughter-in-law in the family can be a major cause of psychological troubles and emotional separation. Some women may avoid dating an eldest son, precisely because marriage may require living with parents-in-law. Many young women may deliberately avoid living with their parents-in-law in order not to care for them when they became frail. Also, as young women increasingly

participate in the labor force, some women are not available as caregivers for their parents-in-law. Hence, it is expected that if children do not feel obligated to live with their parents, and parents have access to more care, many children will decide to live separately from their parents.

It may be, however, that children benefit from coresidence. The typical assumption of the elderly's dependence in cases of coresidence may not be true, depending on the family life stage of the elderly. Given expensive housing along with relatively low wages for young workers in Korea, for the Korean elderly with unmarried or young married children, coresidence may cater to these children's needs rather than their own. Unmarried children, particularly, usually stay with parents until they get married, unless they have to leave home for education, jobs, or army service (Kong *et al.* 1987).

Other surveys have studied life satisfaction among elderly people. It has been found that the highest degree of emotional satisfaction is among the elderly who live in a nuclear family, and that the lowest satisfaction is among those who live with the eldest son in three-generational families (Bae 1987). This suggests that a substantial proportion of elderly people would prefer to have a living arrangement other than living with the married eldest son.

One of the factors that undoubtedly constrains independent living, however, is poor health. For personal care over a long time period, the elderly seek help first from spouses, then from children, then from siblings (Day 1985). Gender-role differences may be reflected in living arrangements depending on who has poor health among the married couple. As in most societies, women in Korea are more likely than men to be socialized to roles of nurturing and home-making. Among the married elderly couples, when the husband has poor health and limitations in carrying out daily life, the need for caregiving outside of the couple can be relatively low, as long as the wife can take care of him and perform household activities. But what if the wife has poor health? Can she be equally well taken care of by the husband?

The recent increase of one-generation households among the elderly suggests a need to investigate why elderly people increasingly decide to live alone or only with their spouse. We use the 1984 Korean Elderly Survey, collected by the Korean Institute for Population and Health, to investigate what influences non-traditional living arrangements among the Korean elderly, and in particular how health of spouse affects living arrangements among elderly married couples. An analysis is conducted separately for the married and unmarried Korean elderly, because a test of spouse's health on living arrangements requires couple data, including both spouses' characteristics. This separate modelling allows us to examine gender-role differences in spousal caregiving by investigation of the effects of both spouses' health on

living arrangements, as well as gender differences in living arrangements among the unmarried elderly. In the following section, we review recent findings from Korea and other countries that are of relevance to this study, and suggest hypotheses for the analysis of elderly living arrangements.

## BACKGROUND

Information on the living arrangements of the Korean elderly mostly comes from national statistics or surveys in Korea rather than research studies. According to the 1988 National Population and Health Survey, most Korean elderly households contained stem families (53.3%) — two married couples of different generations, or a single parent living with a married child. Compared to the entire population, there were fewer conjugal family households (31.7%) and more one-person households (9.6%) among the elderly. Furthermore, the survey reported that Korean elderly persons were more likely to live with married children and their grandchildren than with unmarried children. Elderly households with a married son — the traditional living arrangement — were more common in cities than in rural areas, reflecting in part the rural out-migration of young adults to the city for education and jobs. Elderly households with unmarried children were also less common in rural areas than in cities (Lee *et al.* 1989).

From the 1970 and 1980 census, De Vos and Lee (1988) found that, although the prevalence of extended family living declined in the 1970s for all age groups in Korea, the decline was only slight among persons 75 years and older, but substantial among persons under age 70 years. Among the elderly, the decline in extended family living was much greater among the currently married than among the unmarried, and for men than for women, although women actually experienced more of a decline than men when other factors (i.e., age, marital status, urban/rural residence, education, migration status) were controlled in the analysis. Rural residents and the elderly with no education were less likely to live in extended families in 1980 compared to 1970.

The 1984 Elderly Survey revealed that most coresidence among the Korean elderly was permanent, based on traditional caregiving obligations among children, particularly the married eldest son. Ninety-seven percent of married children living with parents planned to do so permanently, and temporary coresidence was more frequent among the elderly living with married other sons and daughters than with the married eldest son (Lim *et al.* 1985).

Few multivariate studies have been conducted on living arrangements among the Korean elderly to investigate the causes or consequences of these

observed patterns. Martin (1989) examined the socioeconomic, cultural, and demographic determinants of living arrangements among the Korean elderly, compared to the Fijian, Malaysian, and Filipino elderly. Her main finding pointed to the crucial importance of economic resources in determining living arrangements: those Korean elderly who own their dwelling are less likely to live with children. Martin also concluded that religious Korean elderly are more likely to live with children, but this finding is compromised by the small sample size and questionable representativeness of the national elderly population.

There have been numerous studies in recent years on living arrangements among elderly persons in Western countries, which are of relevance to the Korean situation. Marital status, health status, and economic resources of elderly persons have been found to be the most influential determinants of living arrangements in the U.S. and elsewhere. Married elderly are far more likely than unmarried elderly to live without children than to live with children (Aquilino 1990; Kobrin 1981). Chappell (1991) found among the Canadian elderly that married couples perceive their spouse as the person to turn to in times of need, and when assistance is needed, it is the spouse from whom one receives assistance. Among the unmarried elderly, children are named most frequently as the primary person actually providing care. Hermlin *et al.* (1990) also confirmed that the spouse is the most important caregiver among Taiwanese elderly couples who lived in a nuclear family, and children are the most important caregivers among the unmarried and married elderly in an extended family.

With respect to health status, severe disability may prohibit living alone regardless of income, preferences, or family resources (Lawton 1981; Soldo *et al.* 1984). It would be expected that poor health increases the need for caregiving from children and coresidence with children among the Korean elderly, since formal care facilities — i.e., state-supported home helpers, supportive home services, home care, and day care centers — have not developed to meet the needs of the elderly (Kim 1983).

Severe restrictions on normal activities, however, do not diminish the probability that an older man will continue to reside in an independent household with his wife. Among the American elderly, more than one of three disabled men are cared for by their wives, while only one of ten disabled women are cared for by their husbands. These findings reflect gender-role differences in caregiving among married couples as well as the fact that women tend to marry men older than themselves and live an average of seven years longer than men (Day 1985). While gender-role differences in living arrangements among married couples have not been investigated, typical differences in

caregiving and performing household tasks suggest that the elderly couple would be more in need of extended living when the wife cannot manage these tasks.

Previous research on gender differences in living arrangements presents somewhat ambiguous results, because differences in gender-based roles result in different needs for extended family living. Men are more likely to have been involved in the labor force and to have control of economic assets, potentially resulting in less need for financial support. On the other hand, men are more in need of non-financial support, since they are usually accustomed to relying on women to do household activities (De Vos and Lee 1988).

Widowed fathers may also be welcome insofar as they are less likely than widowed mothers to interfere in household management. Given that fathers generally command considerable respect in patriarchal Korean society, they may be able to invoke their authority and induce their children to take them into their household. On the other hand, women are usually closer emotionally to children, so their being widowed provokes more assistance from children than in the case of widowed men. Since women are the ones who have taken care of children and household duties, they can usually remain helpful to children, e.g., helping with household chores and baby-sitting grandchildren.

Previous studies on elderly living arrangements have not distinguished the effect of gender by marital status. To see gender differences on living arrangements clearly, however, analyses should be conducted separately for the married and unmarried elderly, since needs for caregiving among couples may not result in extended family living when these needs can be met by the spouse.

Separate living, other things being equal, is more expensive than coresidence both in terms of financial and time costs. Likewise, independent living is normally found to be associated with higher personal income (Goldscheider and DaVanzo 1989; Pampel 1983; Jacobson and Pampel 1987; Michael *et al.* 1980). If elderly persons cannot afford to establish their own household in spite of their preference, they have a very low chance of accomplishing independent living in Korea, where government and public income assistance programs are virtually nonexistent. However, it is out of the question for most children to provide sufficiently for separate housing for parents, because most often children have to struggle through financial difficulties to establish their own households, due to extremely expensive housing prices in Korea. Living together is a common and practical solution if children have to substantially support their parents.

Age has been found to be a strong predictor of living arrangements at older ages, because of its direct association with the probability of functional health impairments and widowhood (Soldo 1981). Age is also closely related with the family life cycle of elderly. The presence of unmarried children at early stages of the family life cycle is positively related with living with children (Crimmins and Ingegneri 1990). Sandefur and Tuma (1987) reported that age variation in the percentage of individuals who live alone in the United States is U-shaped among the unmarried, with the peak usually occurring at ages 70-74.

Although it has been argued that calendar age of the elderly is not always a good indicator of aging, age in years does imply need for care due to its close association with physical frailty, retirement, and widowhood. Therefore, it is possible that when health, economic, and marital status are controlled in an analysis, the effect of age on the likelihood of living in an extended family may be weakened considerably. On the other hand, one may find a positive relationship between age and coresidence with married children independent of other elderly characteristics if very advanced age is perceived as an indication of imminent need for caretaking.

The availability of children to live with should also be an important factor influencing living arrangements of the elderly. Obviously, the elderly without any surviving children do not have the option of living with children, whereas availability of children increases the opportunity for considering and potentially implementing a coresidential living arrangement strategy (Kobrin 1976; Wolf and Soldo 1988; Thomas and Wister 1984; Speare *et al.* 1988; Stinner *et al.* 1990). In Korea, those elderly who do not have a son may not be able to live with children after their daughters marry, since the traditional family practice is to live with the married eldest son. Married daughters may want to live with and take care of their parents, but if their husbands are the eldest son, they are obligated to live with their parents-in-law. When other things are equal, for those elderly with many children, caregiving and coresidence may be more available, since they can be divided among children with more human and financial resources.

The presence of unmarried children has been found to be an important determinant of living with a child (Crimmins and Ingegneri 1990). Independent living is not a prevalent living arrangement among young people in Korea due to high rent prices and well-developed public transportation. As noted earlier, unmarried children in Korea coreside with their parents until they get married, unless they seek a job or education somewhere distant from their parent's home (or enter army service). Among never-married children, daughters are probably more likely than sons to stay with their parents. As in

Japan, living outside the home is less desirable for young women, due to the double standard in norms about sexual and other behaviors, as well as the perception of a higher risk of victimization (Kojima 1989). Therefore, those elderly with unmarried children actually do not have a choice to live without them unless these children leave the parents' residence. In the same vein, those elderly with unmarried children are less likely to also live with married children, presumably to avoid household crowding.

## METHODS

### *Data*

This study uses the 1984 Korean Elderly Survey (KES), conducted by the Korean Institute for Population and Health (KIPH) from May 28 to July 10, 1984. Three thousand and fifty households (3050) containing at least one elderly person were selected by cluster sampling, and probability sampled proportional to size of place, with random sampling for the whole country. Three thousand seven hundred and four individuals (3704) aged 60 years and over were interviewed. The KES was designed to explore living conditions of the Korean elderly, their attitudes toward aging, and their caretakers' attitudes toward supporting them. Questions on the household were usually answered by the wife; if she was not available, the questions were answered by any qualified person in the household. Questions pertaining to elderly persons were answered individually by all household members aged 60 years or over. In cases where all parents were unavailable or unable to answer, children were interviewed (Lim *et al.* 1985).

The KES is the most appropriate source of data available for studying the determinants of living arrangements among the Korean elderly. It is nationally representative with a relatively large sample size, which allows one to study the married and unmarried elderly separately. It classified types of living arrangements into most common outcomes of the elderly in Korea, and gathered information on all elderly in the household aged 60 years and over, making it possible to incorporate each spouse's characteristics in the analyses of married couples.

### *Sample*

For the following analysis of living without children compared to living with children, the samples are those who have at least one surviving child to be at risk of living with children. Thus, 588 married couples (1,176 individuals) and 1494 unmarried elderly persons were selected. The analyses for the total



sample include randomly one member of married couples, and unmarried persons (2,082). A large drop-out also stems from the exclusion of the married elderly whose spouse is younger than 60 years old, because the survey only interviewed persons 60 years old and over (i.e., due to the absence of information on spouse).

For the analysis of living in a nuclear family compared to living in an extended family, the sample is the Korean elderly who are most likely to have at least one married child (i.e., elderly persons whose first child is over age 30), so that all of the elderly are at risk of living with married children; unfortunately, marital status of living children is not indicated by the data. Thus, 570 married couples (1,140 individuals) and 1,432 unmarried elderly persons were selected.

### *Variables*

Table 1 presents the definition and percentage distribution of variables used in the analyses. Living arrangements of the Korean elderly are classified into three major types: (1) without children (living alone/only with spouse), (2) with married children, and (3) with unmarried children. Two outcomes of living arrangements are to be analyzed in this study: (1) living without children versus with children (married and unmarried children combined), (2) living in a nuclear family (living alone or only with spouse, or with unmarried children) versus in an extended family (living with married children). About two-thirds of the Korean elderly respondents lived with married children (i.e., 48% with the married eldest son, 15% with married other sons, and only 3% with married daughter), whereas one-third lived in a nuclear family (20% alone or with spouse only, and 14% with unmarried children). Unmarried elderly persons were far more likely than elderly couples to live with married children (74% compared to 49%).

Elderly couples represent 28% of the sample. The proportion of married elderly in this study is about 20% lower than the elderly age 60 and over recorded by the Korean Elderly Survey, since the married elderly whose spouse is under age 60 are excluded from the study to establish married couple data. The relatively high percentage of elderly person who are unmarried also reflects adherence to the traditional norms of not remarrying among widows. The unmarried elderly are mostly widowed: 95.9% of women are widowed, compared to 86.3% of men. The proportion divorced is very small, and hence not very useful analytically. Remarriage among the Korean elderly is very low: Only 4.2% of the married elderly were remarried, and only 5.6% of the unmarried were married more than once. Among the unmarried elderly, men (16.6%) are far more likely than women (4.3%) to have experienced

TABLE 1. DEFINITION AND PROPORTIONAL DISTRIBUTION OF VARIABLES<sup>a</sup>

	Married Elderly Husband	Married Elderly Wife	Unmarried Elderly	Total
<i>Living Arrangements</i>				
Living without children		0.308	0.154	0.197
Living with unmarried children		0.206	0.108	0.141
Living with married children		0.486	0.738	0.661
<i>Health Status</i>				
No IADL <sup>b</sup>	0.667	0.551	0.414	0.454
1-2 IADL	0.231	0.369	0.415	0.399
3-5 IADL	0.102	0.080	0.171	0.147
<i>Economic Resources</i>				
Ability to self-support				
Self-support		0.514	0.175	0.271
Supported by children or by others		0.486	0.825	0.729
Ownership of a dwelling				
Own		0.807	0.430	0.538
Did not own		0.193	0.570	0.462
<i>Demographic Characteristics</i>				
Marital status of the elderly				
Married		—	—	0.284
Unmarried		—	—	0.716
Marital history				
Married more than once		0.042	0.056	0.052
Married once only		0.958	0.944	0.948
Gender				
Male		—	0.120	0.116
Female		—	0.880	0.884
Age of the elderly				
60-64	0.195	0.488	0.244	0.300
65-69	0.379	0.293	0.252	0.266
70-74	0.263	0.139	0.217	0.203
75+	0.163	0.080	0.287	0.231
Age of the youngest child				
Under 20		0.102	0.051	0.066
21-24		0.298	0.117	0.168
25-29		0.328	0.205	0.239
30 and over		0.272	0.628	0.527
Number of living children				
1 or 2		0.093	0.214	0.180
3 or 5		0.455	0.521	0.501
6 and more		0.452	0.265	0.319

	Married Elderly Husband	Married Elderly Wife	Unmarried Elderly	Total
Having a living son				
No living son		0.024	0.091	0.072
Having a living son		0.976	0.909	0.928
Place of residence				
Rural		0.678	0.581	0.609
Urban		0.322	0.419	0.391
Migration after age 60				
Migrated		0.092	0.184	0.152
Not migrated		0.908	0.816	0.848
<i>Values and Preferences</i>				
Education				
Illiterate	0.253	0.527	0.626	0.591
Literate without schooling	0.363	0.252	0.495	0.256
Literate with schooling	0.384	0.221	0.121	0.153
Sample size	588	588	1,494	2,082

<sup>a</sup>Based on the samples used in the logit analyses of living without children compared to living with children.

<sup>b</sup>Instrumental Activities of Daily Living.

multiple marriages, which again, reflects deep-rooted abhorrence of remarriage for women in premodern Korea.

The vast majority of the unmarried elderly are women (88%), which reflects their longer life expectancy and lower remarriage in Korea. Fifty-seven percent of the respondents are ages 60 to 69, whereas 43% are ages 70 and over. Among elderly couples, husbands are usually older than wives. Only seven percent of Koreans over age 60 have children under age 20, and 53% have all of their children over 30. However, married elderly are far more likely than the unmarried to have children under age 30 (73% compared to 37%). This is probably because married elderly are younger and have more living children than the unmarried. The Korean Elderly Survey reports that mean age is 71 for the unmarried, compared with 69 for current husbands and 66 for current wives; the unmarried elderly have 4 living children on average, compared to 5 among married couples.

Over nine percent of the unmarried elderly do not have a son, compared to just two percent of the married. Likewise, the unmarried elderly are less likely than married couples to have few sons; the unmarried elderly have an average of two sons, and the married elderly have three sons. This indicates the historical preference in Korean society for many children to increase the

number of sons, since ongoing family succession by a male line is necessary for ancestor-worship and the inheritance of family property. In traditional Korean society, if a woman could not bear a son, she could be legally expelled from the family (Kim 1987). When married couples do not have a son, they sometimes adopt a son from relatives, seek a surrogate mother, or get divorced, with men usually remarrying younger women to carry a son. This may explain the higher incidence of having a son among the married elderly. The higher proportion having no son among the unmarried elderly reflects the irreplaceability of deceased children among widowed women who usually stay unmarried.

It should also be recognized that "availability of children" does not indicate physical proximity of children. Those children living outside Korea at the time of the survey, for example, are not available for elderly parents to live with. Therefore, although the sample is based on the elderly with available children, a small proportion of elderly persons may not, in fact, have a child available to live with.

About 61% of the elderly live in rural areas, compared to 39% in the four big cities (i.e., Seoul, Pusan, Incheon, Daegu) and mid to small-sized cities (24% and 15% respectively). This indicates that many elderly persons remained in rural areas while Korea urbanized rapidly since the 1960s to a level of 70 percent by 1988 (Choe 1989). The elderly in rural areas have fewer children available to live with due to selective rural-urban migration of young people, whereas those in urban areas have more children available to live with, not only because of few migratory losses but also due to housing shortages and low wages among young people. The greater availability of children for the elderly in urban areas is not due to higher fertility or lower child mortality in urban than rural areas of Korea in recent decades. In fact, mean number of surviving children is greater among the rural than urban elderly (4.6 and 4.2 children, respectively).

Migration status refers to change of residential location after age 60. This variable is created by matching present and previous types of place of residence, and incorporating duration at the present residence and age of the elderly. It represents a rough measure of migration which does not indicate migration stream (e.g., between rural and urban areas), and other types of migration — i.e., return migration, circular migration, and multiple migration. Nevertheless, it may still be of value in explaining living arrangements of the elderly. The majority of Korean elderly did not move after age 60 (85%). Among the elderly who moved, the unmarried elderly (18%) are far more likely than the married (9%) to have done so. Among the elderly in the U.S., Australia, and Italy, Bartiaux (1988) also found that living with one's

spouse, regardless of the presence of other household members (if any), contributes to lower mobility.

Health status is assessed by the IADL (Instrumental Activities of Daily Living), which assesses an old person's ability to do "activities needed for independent living" (Lawton and Brody 1969). The IADL measures difficulties in preparing a meal, shopping for personal items and managing money, using the telephone, cleaning house and doing laundry, and taking a bus or train. Over 45% of the elderly have no IADL problems, compared to 40% with 1 or 2 IADL and 15% with 3 to 5 IADL difficulties. Unmarried elderly are more likely than married couples to have IADL difficulties. Among elderly couples, husbands are more likely than wives to have no IADL difficulty, but they are also more likely than wives to have 3-5 IADL difficulties.

Economic resources are measured by ownership of a dwelling and ability to self-support. Unfortunately, indicators of income and asset wealth, generally preferred measures of economic resources, are unavailable in the Korean Elderly Survey. Nevertheless, ownership of a dwelling and ability to self-support indicate whether resources are available to live separately, or whether they are dependent on their children or others. Ownership of a dwelling is classified into two types: (1) owned by the elderly respondent, or (2) owned by children or others. Ability to self-support is also classified into two types: (1) living expenses are self-supported by the elderly, or (2) supported by children or others, which includes government pension. About one-fourth of the elderly support their entire living expenses; thus, the majority of the Korean elderly are not financially independent. The Korean elderly spend most of their life savings on childrearing and for children's education and weddings, and an early retirement system and lack of government income assistance programs in their old age makes their economic condition insecure. However, this is a more acute problem for the unmarried elderly, and may partially explain their high level of coresidence. As Table 1 shows, 51% of the married elderly, compared 18% of the unmarried elderly, are financially self-sufficient. Consistent with this, 81% of the married elderly, compared to 43% of the unmarried, own their dwelling. The proportion having a rented place or living in someone else's home is relatively low among the elderly (12.3%), but twice as high among the unmarried than the married elderly.

Values and preferences are measured by education, although this is, admittedly, a crude indicator. It is assumed here, however — consistent with a wide body of demography literature — that education can profoundly influence personal attitudinal or behavioral characteristics (Caldwell 1979; Casterline 1985; Easterlin 1975), such as those that would affect living arrangement decisions.

### *Analytic Methods*

This study analyzes the determinants of living arrangements among the Korean elderly in two dichotomous living arrangement models (1) living without children vs. with children, and (2) living in a nuclear family vs. an extended family. Logit regression is performed using the PROC LOGIST procedure in SAS. It employs dummy coding, which treats the omitted category of a variable as the reference category, and estimates of each categorical variable are relative to the reference category (the estimation of the reference category is zero).

Logit regression is preferred for multiple regression analysis with a qualitative (dichotomous) dependent variable which violates the assumptions of normality and homoscedasticity of ordinary least square analysis. Logit is a non-linear alternative to the Linear Probability Model, which is a linear regression model with a dependent variable that is either zero or one (Aldrich and Nelson 1984).

## RESULTS

### *Analysis of Living without Children*

Table 2 presents exponentiated parameter estimates of logit models of the risk of living without children compared to living with children among the Korean elderly. It shows that the marital status of the elderly has a significant effect on the likelihood of living without children. Elderly couples are about 42 percent more likely than unmarried elderly to live without children. The result implies that living alone is more difficult for the unmarried elderly, since they used to live with family (i.e., with spouse and with children); and they may be easily incorporated in a child's household even with limited living space (De Vos and Lee 1988). Thus, marital status represents the primary caregiving relation in old age with regard to living arrangements (Chappell 1991). Since elderly couples have a spouse — the most dependable primary caregiver — they can accommodate more than the unmarried elderly their own and their children's circumstances and wishes for separate residence, if there are no overwhelming constraints on independent living. However, for the unmarried elderly children are the primary caregivers, and their long-term caregiving decision is typically followed by coresidence, because it is physical location which makes long-term care possible or impossible (Walter 1985).

Health status has a significant effect on the likelihood of living without children, an effect which differs among the married and unmarried elderly.

TABLE 2. EXPONENTIATED PARAMETER ESTIMATES OF LOGIT MODELS OF LIVING WITHOUT CHILDREN

	Married	Unmarried	Total
<i>Health Status</i>			
No IADL difficulty		1.373	1.192
1 or 2 IADL difficulties		1.000	1.000
3 to 5 IADL difficulties		0.378***	0.381****
<i>Wife's health status</i>			
No IADL difficulty	0.919		
1 or 2 IADL difficulties	1.000		
3 to 5 IADL difficulties	0.429*		
<i>Husband's health status</i>			
No IADL difficulty	1.044		
1 or 2 IADL difficulties	1.000		
3 to 5 IADL difficulties	1.545		
<i>Economic Resources</i>			
Self-support	7.641****	9.375****	8.074****
Own a dwelling	1.547	1.994***	1.852****
<i>Demographic Characteristics</i>			
Married			1.423**
Married more than once	1.308	0.957	1.148
Male		1.078	1.094
<i>Number of living children</i>			
1 or 2	0.657	1.557**	1.221
3 to 5	1.000	1.000	1.000
6 and more	0.781	0.719	0.782
No living son	5.201**	6.730****	6.634****
Rural residence	1.318	1.543**	1.422**
Migration after age 60	2.615**	1.208	1.453*
<i>Age of the elderly</i>			
60-64		0.664*	0.760*
65-69		1.000	1.000
70-74		0.706	0.854
75 and over		0.545**	0.503***
<i>Wife's age</i>			
60-64	1.232		
65-69	1.000		
70-74	1.183		
75 and over	0.388*		

	Married	Unmarried	Total
<b>Husband's age</b>			
60-64	0.476**		
65-69	1.000		
70-74	1.011		
75 and over	0.804		
<b>Age of youngest child</b>			
Under 20	0.286**	0.412**	0.384***
21-24	0.353***	0.704	0.528***
25-29	0.573	1.202	0.887
30 and over	1.000	1.000	1.000
<i>Values and Preferences</i>			
<b>Education</b>			
Illiterate		0.911	0.929
Literate without schooling		1.000	1.000
Schooling		0.925	0.882
<b>Wife's education</b>			
Illiterate	0.979		
Literate without schooling	1.000		
Schooling	0.956		
<b>Husband's education</b>			
Illiterate	1.364		
Literate without schooling	1.000		
Schooling	1.225		
Intercept (coefficient)	-1.996****	-2.946****	-2.666****
-2*Log likelihood ratio	589.71****	921.67****	1552.28****
DF	563	1475	2062
Number of cases	588	1494	2082

Note: \*denotes significant at .10 level; \*\* .05 level; \*\*\* at .01 level; \*\*\*\*at .001 level.

Among the unmarried, those with 3 to 5 IADL difficulties are about 62 percent less likely than those who have 1 or 2 IADL difficulties to live without children, and those with no IADL difficulty are 37 percent more likely than those who have 1 or 2 IADL problems to live without children (although this difference is not significantly different from zero). The tendency to live with children among the unmarried elderly increases as they have more health problems. This is consistent with results from most of the studies in the U.S., which show that disability has a significant positive association with coresidential living arrangements among the elderly (Crimmins and Ingeneri 1990; Mutchler 1990; Speare *et al.* 1988; Stinner *et al.* 1990).

Among elderly couples, however, wife's health status has a significant effect on the likelihood of living without children, whereas husband's health



status does not. Wives who have severe IADL difficulties are about 57 percent less likely than those with 1 or 2 IADL difficulties to live without children, and the likelihood of living without children does not differ between wives with no IADL problems and those with 1 or 2 difficulties. Although effects of husband's health on living arrangements among the Korean married elderly are not important, they are congruent with the findings from studies on the U.S. elderly, that the wife provides major caregiving for the sick husband, but, in turn, when she is ill, she is more often cared for by another family member rather than the husband (Altergott 1984; Day 1985). Husbands as caregivers have significantly more paid help in the home than do wives, while a wife is more likely to continue to perform those duties herself (Barber 1989). Thus, the wife's disability puts more serious constraints on independent living than the husband's disability.

Table 2 indicates the overwhelming importance of economic resources for independent living among both married and unmarried elderly persons. Elderly parents who can support their own living expenses are more likely than those who cannot to live without children, by about 7.6 times among married couples and 9.4 times among the unmarried. However, ownership of a dwelling has a significant effect on living without children only among the unmarried. The unmarried who own a house are about twice as likely as those without a house to live without children. These findings are consistent with the finding from many studies on living arrangements among the U.S. elderly, that higher income has a strong positive association with independent living (Bishop 1986; Goldscheider and DaVanzo 1989; Jacobson and Pampel 1987; Kobrin 1981; Michael *et al.* 1980; Pampel 1983), and low-income necessitates that elderly persons live with relatives (Troll 1971; Soldo 1981). Among the U.S. elderly, however, Speare and Avery (1991) found that economic need does not have a significant effect on the coresidence of married couples with their children, while it has a strong effect on the coresidence of unmarried elderly persons. Therefore, the effect of economic resources on independent living may be greater among the Korean elderly than among the U.S. elderly, because social programs to assist elderly welfare are still in their infancy in Korea.

Along with economic resources, non-availability of a son has a great effect on living arrangements among the Korean elderly. The elderly who do not have a living son are more likely than those who do to live without children. These findings confirm that the Korean elderly living with children are mostly living with married sons, who are traditionally responsible for caregiving of their parents; the elderly who live with married daughters do so mostly when they do not have a living son, and such cases are very few. Those elderly without a son often are forced to live without children because their married

daughters may not be available for coresidence. For example, if their daughters are married to an eldest son, or their sons-in-law are responsible for caregiving of their own parents, the elderly are more likely to live without children after all their daughters get married. Thus, the strong effect of availability of a son on living arrangements reflects that the Korean elderly still strongly adhere to traditional patriarchal family values in modern Korea, where, as noted earlier, male-line of succession is crucial for the ongoing existence of a family.

After elderly persons' other characteristics — such as health status and economic resources — are controlled, age of elderly still has a significant effect on living arrangements. Among the unmarried elderly, those between ages 60-64 are 33 percent less likely than those aged 65-69 to live without children; however, those age 75 and over are also less likely to live without children (55%). Among married couples, husband's young age has a significant effect on the likelihood of living without children. Husbands aged 60-64 are about 52% less likely than those aged 65-69 to live without children. However, wife's age does not influence the likelihood of living without children, which is probably due to the age-difference between the husband and wife, i.e., that husband's age represents an earlier family life cycle stage than the similar age of the wife.

Age of the Korean elderly, therefore, represents their position in the life course and the changing dependency relationship between coresiding parents and children, when health status, socio-economic and demographic characteristics are controlled. This is especially the case among the unmarried elderly. Younger age of the elderly indicates a higher probability of having unmarried children, who need coresidence with parents. The very advanced age of the elderly, however, reflects parents' need for coresidence and their dependence on children. These results are consistent with Wolf's and Pinnelli's (1989) study of Italian older women, hypothesized to have strong family relationships, which found a U-shaped relationship between age and coresidence with children. Among the U.S. elderly, Sandefur and Tumma (1987) also found that age variation in the percentage of individuals who live alone is U-shaped, with the peak usually occurring at ages 70-74.

The age of the youngest child has a significant effect on the likelihood of living without children. The Korean elderly with a child under age 25 are far more likely than those whose children are all over age 25 to live with children. The age of the youngest child — along with the elderly's own age — represents the effect of the elderly's family life cycle on their living arrangements, and indicates the presence of unmarried children and their need for coresidence. The results reveal that married couples increasingly live without

children as these children marry (even though these children include the married eldest son), while the unmarried elderly begin to live alone increasingly as these children marry, but soon start to live with children as they have more married children available.

Elderly persons in rural areas are less likely than those in urban areas to live with children, by 54 percent among the unmarried elderly and 32 percent among married couples. Heavy rural-to-urban migration among young unmarried people in Korea makes these children less available to coreside with parents in rural areas. Thus, rural/urban residence almost certainly represents availability of children rather than traditional/modern values, with regard to living without children compared to living with children.

The elderly's migration status after age 60 has a significant effect on living with children among married couples. Elderly couples who moved after age 60 are 2.6 times more likely than those who did not move to live without children. Among the unmarried elderly, their migration status does not have a statistically significant effect on living arrangements, although the effect is similar in magnitude to that of married couples. It is difficult to interpret these findings without knowing previous living arrangements. However, we can speculate that many elderly persons who lived without children may be more likely to undertake migration than those who lived with children because they probably want to live close to their children, but they do not coreside in order to honor their own and their children's privacy and independence. In contrast, those who lived with children probably have less incentive or ability to move in their old age. For those who do not move, life stage experiences of children (e.g., school enrollment and employment opportunities) may dictate remaining sedentary. Many of these elderly may be deterred from migrating by their current and future reliance on daughters-in-law in their old age.

Gender and education do not have any noteworthy effect on the likelihood of living without children among the Korean elderly. The unimportance of education suggests that schooling in Korea in the early decades of the century did not import "modern" notions regarding life style and adherence to tradition.

### *Analysis of Living in a Nuclear Family*

In this section, we focus on the effects of determinants of living in a nuclear family (living without children or with unmarried children only) vs. living an extended family (living with married children), compared to the multivariate analyses of living without children vs. with children in the previous section. In other words, here we have recategorized living with unmar-

ried children, from living with children to living in a nuclear family. It is necessary to examine living in a nuclear family because living with married children and living with unmarried children only are hypothesized to be fundamentally different living arrangements, influenced by different factors. Significant differences in the size of estimated effects of variables here than in the previous section would, therefore, suggest differences of effects on the likelihood of living with unmarried children. Unfortunately, virtually no studies of the U.S. elderly have distinguished married from unmarried children (i.e., analyses are based on living with or apart from children in general), so additional comparison with results from other studies cannot be made in this section.

Table 3 presents exponentiated parameter estimates (relative risks) of logit

**TABLE 3. EXPONENTIATED PARAMETER ESTIMATES OF LOGIT MODELS OF LIVING IN A NUCLEAR FAMILY**

	Married	Unmarried	Total
<i>Health Status</i>			
No IADL difficulty		1.030	1.054
1 or 2 IADL difficulties		1.000	1.000
3 to 5 IADL difficulties		0.340****	0.351****
<i>Wife's health status</i>			
No IADL difficulty	1.166		
1 or 2 IADL difficulties	1.000		
3 to 5 IADL difficulties	0.426*		
<i>Husband's health status</i>			
No IADL difficulty	1.060		
1 or 2 IADL difficulties	1.000		
3 to 5 IADL difficulties	1.196		
<i>Economic Resources</i>			
Self-support	7.294****	10.286****	8.334****
Own a dwelling	1.562	1.602***	1.567***
<i>Demographic Characteristics</i>			
Married			1.215
Married more than once	1.023	1.204	1.243
Male		0.624*	0.866
<i>Number of living children</i>			
1 or 2	0.899	1.307	1.175
3 to 5	1.000	1.000	1.000
6 and more	0.889	1.039	0.997

	Married	Unmarried	Total
No living son	13.677***	4.685****	5.023****
Rural residence	0.541**	0.674**	0.614****
Migration after age 60	1.542	1.483*	1.417*
Age of the elderly			
60-64		1.074	1.028
65-69		1.000	1.000
70-74		0.820	0.858
75 and over		0.656*	0.571***
Wife's age			
60-64	1.256		
65-69	1.000		
70-74	1.052		
75 and over	0.285**		
Husband's age			
60-64	0.550**		
65-69	1.000		
70-74	0.847		
75 and over	0.916		
Age of youngest child			
Under 20	1.281	3.963****	2.636***
21-24	1.074	2.641****	1.912****
25-29	1.096	1.822****	1.624***
30 and over	1.000	1.000	1.000
<i>Values and Preferences</i>			
Education			
Illiterate		0.954	1.012
Literate without schooling		1.000	1.000
Schooling		1.177	1.231
Wife's education			
Illiterate	1.017		
Literate without schooling	1.000		
Schooling	1.180		
Husband's education			
Illiterate	1.676*		
Literate without schooling	1.000		
Schooling	1.498		
Intercept (coefficient)	-1.294**	-1.913****	-1.729****
-2*Log likelihood ratio	619.17****	1210.31****	1876.76****
DF	545	1413	1982
Number of cases	570	1432	2002

Note: \*denotes significant at .10 level; \*\* .05 level; \*\*\* at .01 level; \*\*\*\*at .001 level.

models of living in a nuclear family for the Korean elderly. The major differences compared to the previous analyses on the determinants of living without children come from factors related to family life cycle stage — ages of the youngest child and the elderly.

We found in the previous section that having unmarried children (indicated by age of the youngest child) significantly reduces the likelihood of living without children. Here, having unmarried children significantly increases the likelihood of living in a nuclear family among the unmarried elderly, but not among the married. Among the unmarried elderly, compared to those whose children are all over age 30, those with younger children are more likely to live in a nuclear family, by 4 times when there is a child under age 20, by 2.6 times when the youngest child is aged 21-24, and by 1.8 times among those with the youngest child aged 25-29. These results suggest that, since the elderly in these analyses are most likely to have a married child, the unmarried elderly are more likely than married couples to live with unmarried children only when they have both married and unmarried children. This is supported by the Korean Elderly Survey, which reports that 13.7 percent of married couples and 7.5 percent of the unmarried elderly live with both married and unmarried children. It may reflect higher dependency of young married children among the married elderly (which is also indicated by the significant effect of husband's young age), who are usually economically better off than the unmarried elderly.

Age of the elderly represents the family life cycle effect on the likelihood of living without children when we do not distinguish unmarried from married children. With respect to living in a nuclear family, age of the elderly reveals effects of needs of caregiving or coresidence not explained by health status, economic resources and preferences. Table 3 shows that, after health status and economic resources are controlled, very old age significantly reduces the likelihood of living in a nuclear family. Among the unmarried elderly, those age 75 and over are only 66 percent as likely as those between ages 65-69 to live in a nuclear family. Among the married elderly, a very old age of the wife and a young age of the husband have significant effects. Wives aged 75 and over are only 28 percent as likely as those ages 65-69 to live in a nuclear family. Husbands ages 60-64 are 55 percent as likely as those ages 65-69 to live in a nuclear family, but an advanced age of the husband does not decrease the likelihood of living in a nuclear family. The significant effect of husbands' young age reflects their young married children's dependency. The finding of no significant age effect between ages 60-64 to 70-74 for the sample overall indicates that age does not automatically increase the elderly's needs of caregiving or support except at very advanced ages.

Although rural residence has a positive effect on the likelihood of living without children, it has a significant negative effect on the likelihood of living in a nuclear family. Compared to the urban elderly, the rural elderly are 54 percent as likely among elderly couples and 67 percent as likely among the unmarried elderly, to live in a nuclear family. Again, this result reflects heavy out-migration of unmarried young people from rural areas, and perhaps different values among rural and urban elderly with regard to living in a nuclear family.

With regard to living without children, schooling does not have a clear association, but it has a positive effect on the likelihood of living in a nuclear family (although the effect is not significant). Among the unmarried elderly, those elderly with schooling are 18 percent more likely than those literate without schooling to live in a nuclear family (not significant). Among married couples, wife's education shows a consistent effect, but the effect of husband's education is unclear. Nevertheless, this weak association again convinces us that education has not significantly influenced the elderly's values, or, alternatively, that values do not influence living arrangements among the Korean elderly.

Compared to no gender effect on the likelihood of living without children (in the previous section), being male has a significant negative effect on the likelihood of living in a nuclear family. Unmarried men are only 62 percent as likely as unmarried women to live in a nuclear family. This indicates that unmarried men need more caregiving from married children than do unmarried women, reflecting gender-role differences in managing household activities. The weak association of being male and living with married children without controls for elderly persons' other characteristics in the previous section may obscure the true effect of being male on the likelihood of living in a nuclear family, since financial resources strongly increase the likelihood of living in a nuclear family, and men are typically in a much better financial situation than women.

Once an elderly person's other characteristics are controlled in this multivariate analysis, the effect of marital status on the likelihood of living in a nuclear family becomes insignificant, although it is still large. This indicates that the married elderly are also distinguished from the unmarried by other characteristics associated with nuclear family living, the most important being younger age (associated with better health and having more dependent children), and superior financial conditions.

With respect to living in a nuclear family, the effect of economic resources, availability of a son, and health status are similar as for living without children. These findings suggest that married children mostly provide caregiving

or support when parents need help, but unmarried children do not, since parents mostly take care of unmarried children.

## DISCUSSION

Traditional living arrangements in Korea have taken care of the elderly's basic needs — housing and physical, economic, and emotional support. This study confirms that extended family living still caters to these needs of the Korean elderly. The elderly who cannot meet their needs without children to fall back on are, therefore, in the most unfortunate situation in Korea, since the public sector hardly recognizes its responsibilities in this sphere.

Adherence to traditional family values among the elderly and widespread individualism among the younger generation have created problems when children consider coresidence as nothing but an obligation toward parents who raised them. With economic development, education and employment opportunities also separate many extended families in distant localities. Therefore, the increasing trend of nuclear family living in Korea will continue, even though coresidence with parents can be a life strategy for young married children to overcome economic difficulties.

Unfortunately, given the economic structure and political situation in Korea (e.g., high job turnover, early retirement, and large military expenditures), substantial expansion or improvements in public support programs for the elderly should not be anticipated in the near future. However, the increasing proportion of elderly among the Korean population, combined with continued economic growth and increased democratization, may direct higher levels of public expenditure toward the aged in the future. In the United States, for example, the political presence and growth of the aged has been a major contributing factor to elderly program growth (Hudson 1988). Nevertheless, the enormous significance of financial ability on living arrangements among the Korean elderly revealed by this study suggests that personal economic security in old age will be the major key to independent living in the immediate future. Those elderly who own their dwelling may be able to capitalize on the recent real estate boom throughout Korea in the 1980s.

The significant effect of spouse's health on living arrangements implies that men's life-long dependency on women for caregiving and household activities leaves them in a vulnerable position upon widowhood or when the wife cannot perform these functions. On the other hand, women's financial dependency on men can also leave them in an unfavorable situation upon widowhood. Therefore, it is not realistic to expect increases in independent living by single elderly in Korea, unless both men and women have been



equally involved with caregiving and as labor force participants.

Since the cost of housing throughout the country has risen remarkably since the 1988 Seoul Olympics, parent-child dependency may increase. If parents continue to spend large amounts of money on children's education and weddings without preparation for their own later years, their economic situation may worsen. As long as children increasingly prefer privacy and separate living, however, this anticipated situation will not reverse the trend towards a nuclear family system.

With low fertility among the younger generations, adherence to traditional living arrangements with the married eldest son will weaken considerably when these young generations reach old age, and living with married daughters will become more common, since many of the future elderly will not have a son. The improved economic condition and high educational attainment among the population as a whole may also induce many elderly to seek privacy and independent living in the future.

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