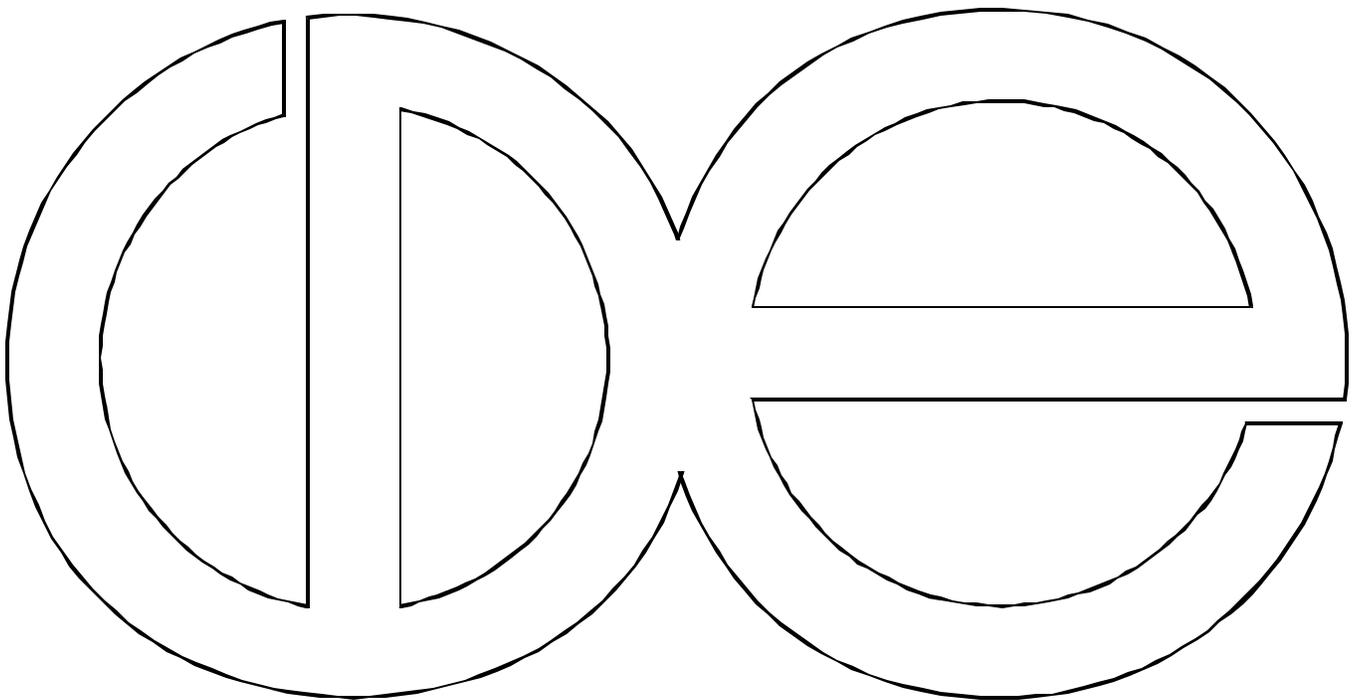


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**Leaving Parents Behind: Migration and
Elderly Living Arrangements in Mexico**

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Abstract

Unlike industrialized countries, where parents expect to spend some portion of mid- to later-life without children at home, traditional patterns of living arrangements in Mexico reflect high levels of family caregiving for the elderly and a high degree of continuity of parent-child coresidence over the lifecycle. Living alone is uncommon due both to structural constraints, fed by economic instability and limited services or institutional coverage for the poor and the elderly, and to social norms that emphasize the importance of the family. But, because U.S. migration is an age-specific phenomenon of growing prevalence in many parts of Mexico, I argue that it may disrupt such traditional arrangements and increase the likelihood that the elderly live alone. This analysis discusses the complicated processes through which U.S. migration might influence elderly living arrangements, and the exploratory results provide evidence suggesting that the migration of adult children, especially married children, may raise the chances of living alone by nearly twofold in 52 origin villages.

Leaving Parents Behind: Migration and Elderly Living Arrangements in Mexico

Social and economic changes are key to understanding historical shifts in household and family structure. Social change arising from urbanization, industrialization and migration alters traditional patterns of household formation. According to some theorists these forces lead to the rise of nuclear over extended household structures because smaller households more efficiently meet modern world demands for mobility and flexibility. Changing individual preferences also contribute to these structural shifts, and those who can afford it increasingly choose independent living over coresidence with other family members (Kobrin 1976, Kramarow 1995, Ruggles 1996).

The elderly have always been central to discussions of household structure. As the populations of North America, Latin America, Europe and Asia rapidly grow older, researchers have sought to understand living arrangements of the elderly because both reliance on and expected relative benefits of living with children or family presumably increase as people age, move out of the labor force, and physically become more frail. Epidemiologists and demographers have studied the benefits to health and longevity enjoyed by older individuals with strong social support networks, recognizing that, although social support extends outside the household, coresident members represent an important pool of emotional and material resources (House et al. 1982, Berkman et al. 1979, Martin 1989, Wolf 1994, Kanaiaupuni, Thompson-Colón and Donato 1999).

In developed countries, rising standards of living and changing preferences have increased independent living among the elderly (Kramarow 1995). This trend is less apparent in developing

regions where social security in older ages is less certain and average rates of poverty and hunger are higher. Under such conditions, extended family living arrangements are critical to elderly survival (Martin 1989, Kinsella 1988, Tout 1989).

This exploratory analysis uses data from Mexico to examine patterns of elderly living arrangements. The primary research question asks to what extent do processes associated with international migration influence household structure in origin villages. The analysis examines the extent of adult children's migration from elderly households, and the impact of U.S. migration of adult children on the risks of living alone. The main findings suggest that elderly parents rely primarily on single and non-migrant children to help finance their old age, and that U.S. migration of married children heightens the risks that parents live alone.

THEORETICAL BACKGROUND

Socio-Demographic Change and the Elderly

Theoretically, elderly living arrangements in developing countries warrant special attention for several reasons. The first is the rapid pace of the aging process, which stems from recent steep fertility and mortality declines, combined with an institutional context that is inadequately structured to meet the needs of an expanding older population (Ham-Chande 1999, Palloni 2000). The proportion of elderly in extended families is likely to be high under institutional regimes characterized by great market uncertainty, little private savings, few social services, such as pension plans or health insurance, and -- for example, in Mexico's recent past -- substantial wage deflation and economic instability.

As in other parts of Latin America, twentieth-century Mexico underwent dramatic demographic shifts, including rapidly falling mortality and fertility rates. Life expectancy almost doubled in its first 50

years (from 25 to 48 years), and grew to approximately 70 and 75 years by 1995, for men and women respectively (CONAPO 1995, Camposortega Cruz 1997.). Although by 1996 fertility had fallen to 2.7 children (from 6.7 in 1970), the age structure of the population remains relatively young (Mendoza Victorino 1998). The 65-plus age group is, however, the fastest-growing component of the population, projected to continue its rapid ascension from 4.2 percent in 1995 to about 12 percent by 2030 (Ordorica 1997).

These demographic changes have accompanied the process of economic development in Mexico, which allowed the Ministry of Health (established in 1940) to offer limited public health services to increasing numbers of Mexicans. Although the Mexican economy expanded rapidly up through the 1980s, it has since experienced significant recessionary setbacks that may generate greater rates of coresident living. In addition, socioeconomic disparities have increased over time, bringing less certain health and longevity outcomes for individuals in poorer households (Bobadilla et al. 1993), which, coupled with low rates of pensioned elderly (about 13 percent-- Solís 1999), increase reliance on kin and social networks. Under these conditions, elderly Mexicans look to their children for old-age security.

Also calling attention to elderly living arrangements are contemporary and future trends in health status and well-being in developing countries such as Mexico. Although life expectancy has increased in developing regions, it is not clear that the additional years will be healthy ones, especially given the prevalence of early childhood disease and exposure to other risk factors among individuals that currently comprise the elderly (see Palloni, Devos and Pelaez 1999). For example, recent data suggest poorer health status among elderly individuals in nine Latin American countries compared to those in the

United States (Palloni 2000). In this context, the elderly may require greater assistance and care as they age, and in the absence of institutionalized care, may be forced to rely heavily on their families.

The effects of migration on these processes adds further complexity to evaluating future trends and needs of the elderly. We know very little about the extent to which children's migration influences elderly living arrangements. In many developing regions, most elderly parents will live with their adult children at some point, but what can we say about those whose children have emigrated temporarily or permanently? Some elderly may seek alternative living arrangements with other relatives or alone if they are unable to join their children in the destination, but what types of negotiations accompany migration decisions of adult children?

For example, do adult children migrate only if other siblings or relatives are able to coreside with elderly parents, and/or do they substitute financial support via migrant earnings instead of coresiding with parents? Do they return to origins when parents become ill or disabled? These questions have practical and theoretical implications for current and future demographic trends in developing countries, and motivate the present exploratory analysis of Mexican elderly.

Effects of Migration on Living Arrangements

The primary hypothesis of this paper is that migration influences living arrangements in Mexico, bringing shifts in both normative expectations of family caregiving and in the traditional patterns of parent-child coresidence. A number of recent studies have focused on immigrant living arrangements in the United States, in which cultural explanations and family-oriented values are used to explain more numerous kinship ties and extended households among Mexican and other Latino immigrants in the

United States, relative to Anglos (non-Hispanic whites).¹ Although these studies tend to gloss over variation by national origin and often rely on a few “catch-all” indicators (Hispanic ethnicity, English language proficiency, and/or nativity), they present a large accumulation of ancillary evidence suggesting that *migration* is an important determinant of living arrangements among U.S. immigrants.

Migration is a fluid process, however -- one that not only influences social behavior in U.S. destinations, but also lives and lifestyles across the border in Mexico. Although we might hear more about immigrants living and working in U.S. cities, the vast majority of Mexican immigrants and/or their families do not move to the United States permanently. In fact, Mexico-U.S. migration most commonly involves individuals leaving their households to engage in temporary or recurrent U.S. migration strategies that are characterized by short-term stays and repeat trips.² Emerging from this social process are transnational communities, involving spatial, economic, and social ties that link residents between the two countries (Glick-Schiller, Basch and Blanc-Stanton 1992, Rouse 1992). Yet the influence of such processes on elderly living arrangements in origins is not well-understood.

Theoretically, international migration creates several distinct patterns of parent-child living arrangements that are specific to needs generated at different stages of life. First, in many developing

¹ Typically researchers examining this relationship assume that cultural preferences shift unilinearly from Latino (or more typically Hispanic) to Anglo culture as immigrants acculturate (e.g., Gordon 1964, and more recently, Burr and Mutchler 1993). The widespread application of this stereotypical view in the social science literature has received extensive critique from scholars, Chicanas/os and Latinas/os in particular (e.g., see Vega 1990, Baca Zinn 1979, Zavella 1987, Andrade 1982, Facio 1996).

² Historically, this widespread phenomenon was fostered over a long history of labor relations between U.S. industry and Mexican laborers, predominantly men. In 1946, the U.S.-initiated Bracero Program helped to fill a growing demand for Mexican labor that dated back to the late-nineteenth century. Since the end of this program (officially, in 1964), migration has increased notably: in 1996, approximately seven million Mexican-born people were in the United States, about half of these permanently (report of the Binational Study on Migration, 1996, Massey et al. 1987).

areas of the world, single, adult children are expected to migrate to urban destinations and send earnings home as part of a household income-generating strategy (Lauby and Stark 1985, Stark 1993). Thus, migration may disrupt parent-child coresidence, but at the same time raise financial support transfers to the elderly. Second, migration may create extended households in areas where married sons migrate to generate income to purchase a home or provide for the family. During their absences, spouses and children may reside with parents or in-laws (Solien de González 1961, Arias and Mummert 1987). However, the net effect of this strategy may mean that adult children have greater earnings with which to finance independence from their parents.

Third, at some point in later life most elderly parents will look to their children for old age support, but some will find a limited set of alternatives given the prevalence of migration. Thus, migration may cause a rise in the number of elderly living alone or seeking alternative types of living arrangements to meet their needs. The discussion below first describes traditional patterns of living arrangements and intergenerational support in Mexico; then examines migration patterns and begins to assess their consequences for elderly living arrangements; and finally presents findings from data collected in fifty-two Mexican villages.

Living Alone and Parent-Child Support

Two characteristics of family life in Mexico underlie prevailing patterns of elderly living arrangements, and are potentially altered by U.S. migration processes: family caregiving for the aging and ailing, and continuity of parent-child coresidence over the lifecycle. First, reflecting social norms

that stress family care for the elderly, most of the elderly live with extended family members.³ The proportion elderly living alone has remained relatively constant since the 1970s (five to eight percent) (DeVos 1995, Solís 1999, Zuñiga and Hernández 1994). The prevalence of extended family living for the vast majority of households, especially poorer households, reflects the advantages of pooling income and expenses (Selby, Murphy, and Lorenzen 1990, González de la Rocha 1994, Logan 1981).

Additionally, parent-child coresidence is characterized by a high degree of continuity throughout the parental lifecourse in Mexico. Parents typically share residence sequentially or simultaneously with one or more grown children for their entire lives, a pattern that deviates substantially from the “empty nest” patterns in developed nations, where parents typically live alone after children are grown. Such continuity reflects the fluidity of social support and living arrangements between domestic groups.

After marrying, most newlyweds spend at least a few years residing in parental households and accumulating savings before moving on to independent living arrangements. Traditionally, a couple would reside in the patrilocal household, but today it is not uncommon to find uxorilocal (with bride’s parents) residence (Arias and Mummert 1987, Selby et al. 1990, LeVine 1993, Robichaux 1997). While living with parents, young men contribute income to the household and their wives assume some of the domestic labors, thereby freeing up other members to agricultural or wage labor. For the lucky parents, the economic support of their children carries through the majority of their adult lives as each young couple moves out and is replaced by a younger sibling and his/her new spouse (Zuñiga and Hernández 1994). Traditionally, the youngest son, with his spouse and family, remains and eventually

³ Extended families include multiple nuclear units (e.g., parents and married children) or other relatives; I use the term interchangeably with complex households, except that the latter may include unrelated individuals.

inherits the parental residence (Robichaux 1997).

More recently, however, ethnographic findings suggest that help from one's children has become much less certain in an eroding economic context (LeVine 1993). Additionally, the support derived from children rarely permits parents to stop working even in advanced ages, and elder males frequently continue to function as primary economic breadwinners. Where possible, unemployed elderly also offer child care and other assistance to working offspring, thus raising the value of coresidence for both parties (Zuñiga and Hernández 1994).⁴

Mexico-U.S. Migration and Consequences for Household Structure

Migration is demographically consequential to living arrangements because it is an age-related phenomenon, selective of the young and able-bodied. In origin communities, the vast majority of international migrants fall into three categories of men: 1) adventurers -- young, unmarried men who migrate for the adventure and to work; 2) the newly married -- young male migrants who are responding to the pressures of growing families; and 3) breadwinners -- somewhat older household heads who remit and save earnings to spend or invest in Mexico.⁵ (Massey, Alarcón, Durand and Gonzalez 1987). Although women's migration has grown, especially since the 1970s, women account for less than twenty percent of all Mexico-U.S. migrants (Durand, Massey and Zenteno 1998). Most are married at the time of the trip (although the risk of making a first trip is higher among single women)

⁴ Less is known about non-coresident transfers, which may also provide an important source of support. For example, it is possible that children will reside adjacent to or near by their elderly parents, thereby remaining accessible for daily assistance and care despite having separate living quarters. It is also common for adult offspring to entrust their children to elderly parents during working hours, and sometimes more permanently, even if they reside separately.

⁵ Settlers account for a small fraction of migrants (Massey and Singer 1995).

and report fewer but longer trips, relative to men (Kanaiaupuni 2000).

Recent decades, however, have witnessed notably increasing internal migration of young, single women in response to rising demand for female labor in manufacturing industries (De Oliveira 1984, Corona Vázquez 1999). Young women typically engage in domestic service or factory work in nearby cities or urban centers or work in the maquilas along the Mexico-U.S. border (De Oliveira 1984, Escobar, Gonzalez, and Roberts 1987). They are expected to give all or most of their earnings to their parents, especially because, unlike men, they are not expected to support a family in the future.⁶ Labor force participation rates also have increased among married women, who migrate much less frequently unless it is part of a more permanent move.⁷ Once married, women generally do not move, although their husbands may continue a pattern of circular, repeat migration (Mummert 1994, Arias and Mummert 1987, Kanaiaupuni 2000).

Patterns of contemporaneous U.S. migration among younger generations also have changed, however. More women accompany their husbands across the border to work in agriculture or in manufacturing and services (Reichert and Massey 1980, Kanaiaupuni 2000, Donato 1993). Field evidence in Mexico and local U.S. newspapers alike document Mexican families moving to work in meat packing factories in Nebraska and Iowa (e.g., see Branigin 1998, Sherry 1999, Simon 1999). Many of these families eventually return to Mexico, yet their departure even for a few years may disrupt traditional patterns of household formation as well as normative expectations of coresident living

⁶ Similar patterns are found in other developing countries, for example, the Philippines (see Trager 1984).

⁷ It is much more difficult for married women to find stable employment, however; “they are dismissed when they marry and this enables employers to avoid the costs of maternity payments..., salary increases..., and old-age pensions” (Arizpe 1981: 197).

arrangements.

Four possible developments for household structure could emerge as a result of migration, all of which should raise the probability of living alone by disrupting the continuity traditionally found in parent-child coresidence. These are: interrupted nuclear living arrangements, rising numbers of neolocal households, greater rates of elderly abandonment, and substitution effects. Over the long run, these shifts may contribute to deeper social changes in the normative obligations shared by adult children to their aging parents.

First, by postponing entry into marriage, migration of unmarried offspring may disrupt nuclear living arrangements while simultaneously providing greater financial support to parental households (Mummert 1994, De Oliveira 1984, Nutini and Murphy 1970). In fact, in many villages, parents encourage their children to migrate because it increases the possibility of financial support (Arizpe 1981, Arias and Mummert 1987, Zuñiga and Hernández 1994). The earnings and assistance migrant children provide to elderly households are very important:

“In critical harvesting periods they send money to cover the farming costs or return to do the labor. Migrant children, principally those who are single, also are critical to the daily maintenance of the elderly: regularly sending money or food and clothing. Likewise, these children enable their parents to obtain medical attention for chronic and degenerative illnesses” (Zuñiga and Hernández 1994: 226, author’s translation).

To help ensure children’s support, case studies reveal that parents and relatives mobilize their networks to encourage young migrant men seeking marriage to return home to choose a spouse, thus further solidifying migrant linkages and filial obligations to origin communities (Cardenas 1982, Arias and Mummert 1987). In this way, “the peasants, holding on to their ever-shrinking land plots, control the circulation of their only ‘capital’: *their children*” (Arizpe 1981: 209; italics added).

However, migration strategies that pay off when parents are younger may bring negative consequences at older ages. In some villages, ethnographic evidence suggests that increasing international migration has accompanied a trend toward neolocality, in part because it enables couples to amass enough earnings to be independent more quickly than in the past (Mummert 1994, Trigueros 1992).⁸ Initially, migration of married men may involve extended family living arrangements in which young brides and eventually grandchildren reside patrilocally or matrilocally (Arizpe 1981, Solien de González 1961, Urrea and Castañeda 1987). While husbands are away, parents provide for the absent member's family, and migrant remittances are usually sent directly to the parents for investment purposes (e.g., in land that the son may work and some day inherit, or in constructing his new home) as well as other sustenance needs (Cárdenas 1982, Kanaiaupuni 1999).⁹ Sometimes children will build adjacent living quarters thereby attaining their independence while preserving the advantages of extended living arrangements (Trigueros 1992). Yet, in the longer term, these adult children may have a greater tendency to leave parents behind because, with migrant earnings, they can more quickly amass the capital necessary to achieve financial and residential independence.

In the long run, social change stemming from migration may also erode crucial sources of instrumental and emotional support traditionally derived from reciprocal exchanges with friends and family (Kanaiaupuni et al. 1999). Recent figures suggest that Mexico has experienced a systematic net

⁸ While husbands cross the border in pursuit of cash, young brides typically move home or reside with in-laws to avoid town gossip about infidelity (real or perceived) and the dangers of living alone as young women (see Kanaiaupuni 1999, Fernandez 1998).

⁹ Some migrants would obviously prefer to keep their savings with them until they return rather than relinquish control over their earnings, but the daily needs of their families at home plus the frequency with which they are robbed at the border or on the way home makes this an exceedingly risky venture.

population loss due to international migration since 1960 (Report of the Binational Study on Migration, 1996). Thus, migration may not only mean that many villages are left bereft of their young and able-bodied, but also that some elderly parents may be abandoned entirely or living alone.

Higher risks of alternative living arrangements (alone or with others) may result from increasing rates of migration and labor force participation of single and married daughters, in particular, because permanent emigration is much more likely when women accompany migrant spouses to the United States (Massey et al. 1987, Chavez 1988). Fewer older parents wish to assume the uncertainties of following their children across international borders, especially if they or their children have no legal documents. Instead, as Angel et al. observe, “older people tend not to move, and sending areas often become old as the young migrate and leave their parents and grandparents behind” (1999: 60).

Migration also could cause a substitution effect, where living alone and receiving remittances from children takes the place of traditional forms of parent-child coresidence. Evidence from ongoing research by this author in several rural Mexican communities suggests high proportions of elderly individuals residing alone, some of whose livelihoods depend solely on sporadic U.S. migrant remittances from departed children (also see case studies by Hernandez Santiago 1985, López Castro 1986). Although the data do not permit me to do so here, more research is necessary to evaluate some of the questions raised earlier, in particular, the extent to which households substitute migrant remittances for coresidence, and the subsequent effects on elderly well-being.

DATA, METHODS AND EXPECTED RESULTS

Data for this analysis come from the Mexican Migration Project (MMP), which has collected randomly sampled household data from Mexican villages every year since 1983 (there are currently 52

communities). Sampled communities include a range of economic and cultural characteristics, population sizes, and rural/urban location. Migration prevalence also varies substantially, at the time of the survey it ranged from 11 to 73 percent of village populations over age 15. In each village, a simple random sample of 150-200 households is drawn, and households interviewed during December and January because these months are the best times to locate U.S. migrants returning to Mexico for the holidays. Thus, the sample is representative of housing units occupied in these villages during the winter months of these years (for further details, see MMP 1999 and referenced website).¹⁰

The project gathers from household heads demographic information for all household members and *all* surviving children of the head, including age, education, marital status, first and most recent internal and international trips (e.g., date of entry, duration, occupation, wage, destination, legal status, and total number of trips) and current household membership status. The remainder of the survey gathers complete migration, labor and assets histories for household heads and spouses. Additionally, extensive community contextual data were assembled from archival and census materials.

From the household, fertility and migration rosters, data are available on the elderly and their children, but because the data were not specifically gathered to assess living arrangements, several limitations should be noted. First, and most generally, an implicit assumption in much of the living arrangements literature is that individuals who are living alone are generally worse off than those who can rely on the support of other household members (see Palloni 2000). Although there are no health data to test this assumption, I include information on education, work status, and socioeconomic assets.

¹⁰ Tests for the effects of survey year were insignificantly related to any living arrangements category.

But, without longitudinal data, it is also impossible to determine whether characteristics such as income and assets are a result of, or a cause of migration or living arrangements. Also, the data provide no information on direct transfers, making it impossible to assess whether remittances act as a substitute for parent-child coresidence.¹¹

The MMP data yield a cross-section of 6,519 elderly individuals (aged 50+), of whom all persons (couples or single individuals) heading households are included in the analyses. I also include all non-head parents or parents-in-law (n=317) residing in households. A total of 152 other non-heads were eliminated, accounting for less than 2.5 percent of the entire sample of elderly individuals. This restriction is imposed because it is impossible to ascertain the availability and characteristics of any children (e.g., migration status, number surviving) of these 152 adult household members.¹²

The living arrangements of these elderly are categorized as living alone (including elderly couples living alone) versus other living arrangements (coresiding with adult children, or coresiding with others -- relatives in over 90% of cases).¹³ For this exploratory analysis, I use logistic regression methods to estimate the likelihood of living alone relative to living in other household arrangements. Standard errors were examined for differences due to clustering at the community and household levels

¹¹ However, our ongoing work on health and migration provide data that address these gaps, first by collecting detailed information on all incoming household income sources (including U.S. transfers), and also, because they are longitudinal, we can examine shifts in the composition of households over time.

¹² The relative dominance of householder status among elderly parents reflects the fact that property is usually passed from parents to children and that older parents are typically considered household heads (especially if property owners), even if others in the household contribute more or equal earnings to the domestic group.

¹³ The elderly living alone with young children under ten were classified as living alone to reflect their lack of adult coresident support.

(the significance levels of all variables were unchanged, and I report robust standard error estimates).¹⁴

I also examined the data for cross-community variation using multi-level methods (HLM), which simultaneously handle technical problems in the error-structure produced by non-independent observations (O’Rand and Campbell 1999: 73). I found little evidence of significant variation between communities in the probability of living alone, and all other effects remained stable except one (it is noted in the findings section).

Critiques of prior research on living arrangements stress the importance of examining not only the characteristics of the elderly, but also of their children (Wolf 1994, Martin and Kinsella 1994). For example, living arrangements are influenced by the number of available children, their marital status, and age (Aquilino 1990, Casterline et al. 1991, Soldo et al. 1990, Martin and Kinsella 1994). The structural analysis that follows first examines a baseline model of living alone, given individual attributes and the availability of children. I then enter migration characteristics of the elderly into the models and finally the migration characteristics of children.

I conducted two sets of analyses. The first set, presented below, examines the propensity to live alone among the randomly selected population of household heads and spouses (comprising *93 percent* of all elderly in the data). For this group, full information exists about the availability and characteristics of children. I focus primarily on the effects of U.S. migration experiences by marital status, which creates different needs for adult children.

¹⁴ Because these data are cross-sectional, it is not possible to distinguish between age and cohort effects (Kertzer 1986). Without further information about the timing of living arrangements, I also am unable to estimate choice-based models. Therefore, I use these models to discriminate states, rather than a choice-based approach (see Maddala 1983: 86).

Four measures sum the number of single and married sons and daughters with current and prior U.S. migration experiences. Although the data are insufficient to examine all of the questions raised in the introductory section of this paper, I am able to look at the underlying relationships. If migration is associated with greater abandonment of elderly in origin villages, we should find higher likelihoods of living alone among parents of current migrants. On the other hand, if migration is a temporary, target earning strategy used to subsidize household incomes, we should find that children's migration lowers or is unrelated to the odds of elderly solitary living. Additionally, if migration enables earlier fission of parent-child domestic groups, for example, by shortening the time period that younger newlyweds need to finance their independence, we should find that prior migration experience of children is related to higher odds of living alone.

Because parent-child living arrangements also are influenced by shifting needs of the elderly, I include household characteristics and measures of elderly independence, based on age, current employment (versus disabled, unemployed or retired), education, marital status (where applicable), and prior migration experience. In general, those who are younger, employed, and with spouse present should be less dependent on their children.¹⁵ Personal migration experience is expected to decrease dependence as it usually signifies greater accumulated assets over the lifecourse (Kanaiaupuni 1999, Kanaiaupuni and Donato 1999). I also control for those who are childless, those whose youngest child is under age 15, and socioeconomic assets. Assets are measured with an index that counts whether households own property, businesses, vehicles (the first two holdings in each of the latter categories are

¹⁵ It is possible, however, that we may not see a change in the probability of living with children if adult children are benefitting from co-residence with a dependent parent.

counted), five or more hectares of land, and telephone service (1 if yes, otherwise 0). Accordingly, assets range from 0 to 8.

Limited degrees of freedom constrained the number of community-level explanatory variables (level-2) used in the multi-level analysis, and I kept the same variables in the logistic regression models for comparative purposes. The factors considered most pertinent were the size of the origin village, labor market opportunities and prevalence of migration (measured by the village population over age 15 that has ever migrated to the United States as a fraction of the population over age 15 alive at the time of the survey). This variable is categorized into a dummy indicator, where communities with migration rates in the 75th percentile are coded as high (= 1), and others as low (= 0). Two dummy variables categorize community populations into hamlets (less than 3,000), villages (3,000-10,000), and all larger towns and cities. I expected to find that high village levels of migration raise the probability of living alone, however, multi-level models testing for cross-community variation proved insignificant. I also tested for effects of economic opportunities measured by the level of male labor force participation but found insignificant effects (labor force participation is excluded for the sake of parsimony).

The second set of models (not shown) addressed an issue raised by the selection of household head couples for the analysis described above. That is, the selection of heads and partners may slightly overestimate the odds of living alone through the elimination of other non- household heads in the data (though this bias is likely to be relatively small because the selection excludes only 7 percent of the elderly). Thus, I conducted a more limited analysis of the full sample including all heads and spouses and all non-head parents or parents-in-law living in households. This analysis required making each elderly person the center of the household and reorienting the relationships of all other household

members from his or her perspective.

This analysis limited the information about children, because for parents who were not household heads, the only available child data were for the child that they resided with (one of the household head couple). Thus, the characteristics of the child were derived from information about the household head (for parents of the head), and the spouse (for parents-in-law of the head), and were then used to assess the effects of migration on living arrangements. This method produced four variables, age of the child, sex, marital status, and migration status that were all based on information from one focal child for each elderly individual.¹⁶ Childless heads and spouses were excluded (274 people, 53 percent were female). The effects of children's migration were consistent in direction and significance with the results of the first set of analyses, thus this paper focuses on the first set of models containing full information for children.

FINDINGS

The remainder of the paper provides the results of the descriptive and multivariate analyses. I begin with a description of the general tendency to live alone in the entire sample of elderly, and then move to discuss more specifically the extent and effects of children's U.S. migration among elderly parents.

Descriptive Results

Table 1 displays the living arrangements of men and women in the sample. The vast majority,

¹⁶ To create comparable data for households heads and spouses, I tested two alternative treatments for the selection of one focal child whose characteristics would be used in the analysis. The first used the characteristics of one adult child randomly selected from all living adult children, and the second used the characteristics of the youngest living adult child. Based on the information from the focal child, the same four variables were created, and added to the non-head data for a pooled analysis of the odds of living alone (no differences emerged by selection of focal child).

74 percent of men and nearly 73 percent of women, lives with adult children over age 15. Most of these elderly reside with their unmarried children. Relatively few nuclear families exist, but a much larger proportion comprises elderly who reside alone with their spouse. Women more often live alone without a spouse (51 percent of women compared to 13 percent of men living alone).¹⁷ A much smaller proportion of people live with other relatives or friends. The proportion of women in this group is larger than the proportion of men and more often women are unmarried -- three-quarters of the men have a spouse present, whereas only 42 percent of the women are currently married. Many elderly in this group share households with their grandchildren. Note also that a fair share of these households comprise families with spouses and young children that have opened their doors to other members, perhaps in order to pool resources through coresidence.

TABLE 1 ABOUT HERE

As we might expect, the overall risks of living alone in Mexico increase with age and with childlessness. Figure 1 shows the proportion of the elderly living alone by age group, indicating rising proportions of solitary living among older individuals, from 11 to 13 percent of those under age 55 to more than 35 or 40 percent of those 80 and over. Note that the proportion is higher when all the elderly are included because of childless individuals and those few who may live alone with young children. However, reflecting the continuity of parent-child coresidence patterns, most of the elderly with a youngest child under age 15 also live with other adult children – 82 percent (not shown).

FIGURE 1 ABOUT HERE

¹⁷ The overall proportion living alone is higher here than in other previously cited studies because I include elderly couples who live alone.

Table 2 displays the high fertility levels of this sample and the relative odds of living alone by number of children. The vast majority of these elderly cohorts (4,171 of 6,050 individuals) have at least five children and the lowest odds of living alone. Only about 4.5 percent are childless, and their odds of living alone are nineteen times as high as those of someone with five or more children. The odds ratios drop considerably for those with at least one living child and continue to fall with each additional child. Similar patterns obtain after selecting for those with no children under age 15.

TABLE 2 ABOUT HERE

The data also provide an idea of how many elderly households are affected by U.S. migration. The percentage distribution of all households with migrant children is presented in Table 3 (cell percentages shown), indicating the widespread prevalence of U.S. migration in the sampled Mexican communities. Nearly half of all households with an elderly head have U.S. migrant children, and fully 11 percent have five or more children that have ever traveled to the United States. The data also indicate some specialization -- the vast majority (72 percent) of households with migrant children primarily pursue U.S. migration strategies, having one or no Mexico migrant children. Internal migration tends to be less specialized. Only 11 percent of households have only Mexico migrant children, and although over one-third of all households have at least one Mexico migrant child, two-thirds of those also have a U.S. migrant child(ren).

TABLE 3 ABOUT HERE

It is important to note that migration is a fluid arrangement in many of these households, attesting both to the strength of normative ideals about parent-child coresidence and to the transnational nature of migration processes. Migrant members, especially spouses and unmarried children, are only

absent in the physical sense, but in all other ways are still considered household members (see Kanaiaupuni 1999). For example, a large proportion of children currently living abroad are considered household members. This view is most commonly expressed of single children in the United States (45 percent of sons and 31 percent of daughters), whose migration is perceived simply as a temporary departure from the household. For the purpose of this analysis of living arrangements, I recoded all current migrants as absent from the household, however this change did not alter the chances of living alone. In other words, all of the elderly who reported living with current U.S. migrant children also lived with other household members. Data presented in Table 4 also suggest that the elderly with current U.S. migrant children who are single are significantly less likely to live alone than other elderly persons. This finding implies initial support for the idea that current migration of single children may constitute a household strategy to help finance the households of elderly parents and other siblings. These parents are somewhat younger, however, than those with married children currently abroad and who are most likely to live alone.

Table 4. Living Arrangements and Household Size of the Elderly with adult children currently in the United States...

	Alone (%)	Mean Household Size	Mean Age	N
Single children only	5.9	6.0	58.0	358
Married children only	23.1	4.3	64.4	1004
Single and married children	17.5	4.8	62.1	1965
None	20.4	4.7	61.86	4085

Table 5 provides the sample characteristics by living arrangements for men and women.

Individuals living alone, with others and with currently married children tend to be older. They also share other characteristics suggesting higher levels of dependency. A larger proportion are over eighty and unmarried. Among men, these groups are somewhat more likely to be unemployed, and those living with others often have no prior U.S. migration experience, whereas among women, prior U.S. experience is most likely in the categories living alone and with others. This is consistent with prior research that finds greater likelihoods of U.S. migration among previously and never conjugal women (Kanaiaupuni 2000). Finally, individuals living alone and with others have the fewest surviving adult sons and daughters.

TABLE 5 ABOUT HERE

Living arrangements across the various community types are covered in Table 6. A slightly larger proportion of the elderly live alone in small villages with 10,000 or fewer residents. Additionally, where female employment is low, the percent living alone is slightly higher and the percent living with adult children is about 5 percent higher in high female employment areas. High migration areas have fewer elderly in households with adult children, and more living with others or alone.

TABLE 6 ABOUT HERE

Given the widespread practice of U.S. migration among children, there are differences in the probability of living alone between individuals with and without migrant children. For the elderly with surviving children, the overall proportion living alone is about 8 percent higher among those with at least one migrant child. Over three-quarters of parents living alone have migrant children, relative to about 69 percent of the elderly in other types of living arrangements (not shown). Table 7 shows the bivariate relationship between living alone and the number of children with U.S. migration experience with no

controls. As the total number rises, the odds of living alone increase slightly, however, when represented categorically, the main increases are evident among the elderly who have five or more children with U.S. experience. Among this group, the odds of living alone are 74 percent higher than they are among those with no migrant children.

Table 7. Odds of Living Alone by Number of Children with U.S. Migration Experience (excluding childless individuals)

Children with U.S. migrant experience...	Exp(B)	B	SE
Total number	1.08	0.076	0.029
None (reference category)			
One or two (0/1)	1.09	0.086	0.109
Three or four (0/1)	0.83	-0.186	0.163
Five or more (0/1)	1.74**	0.555	0.177

Multivariate Results

We now examine these effects while simultaneously considering attributes of the elderly, household socioeconomic status and community-level characteristics. The results presented in Table 8 indicate support for the hypothesis that children’s migration is associated with elderly living arrangements in Mexican origins. The first two columns of the multivariate logistic regression models show the baseline model with no U.S. migration effects; the second model adds individual migration attributes, and the third adds child migration characteristics.

TABLE 8 ABOUT HERE

Model 2 reveals that the odds of living alone are higher among the elderly with prior U.S.

migration experience, and strong evidence emerges in model 3 suggesting that marital status and current location of migrant children are key to understanding U.S. migration effects on living arrangements. The elderly are no more likely to be living alone as the number of unmarried children currently in the United States climbs, and those with unmarried children who have traveled across the border and *returned* to Mexico are significantly less likely to live alone (separate indicators for sons and daughters revealed insignificant differences by sex).

Net of the total number of surviving children, however, having married children who are U.S. migrants has a more final ring to it. Each additional married child with U.S. experience raises the odds of living alone among elderly (by 42 to 45 percent), even when children return to Mexico. Thus, among married sons and daughters, prior U.S. experience may indeed be a vehicle for gaining independence from the parental household, whether they live in the U.S. or in Mexico.

The final model also controls for internal migration, which may be simultaneously influencing elderly living arrangements.¹⁸ The total number of current internal migrants is unrelated to the risks of living alone (however, small significant rises emerge with the number of absent married daughters—not shown), providing support for other findings suggesting that many of these adult children are members of pooled households that farm out the labor of adult married sons to other parts of the country. The chances of living alone are higher among the elderly with many prior migrant children, however, and these effects are dominated by married children who have migrated internally and returned to the origin village.

¹⁸ Note that the magnitude, direction and significance of the U.S. migration variables are virtually unaffected by adding/removing these two indicators for internal migration.

Other individual and household attributes are significantly related to living alone. The likelihood of living alone increases with each age category, relative to the reference group of 50 to 54. Elderly parents who live alone thus tend to be older, married, childless or with fewer surviving children, and employed with somewhat higher education than those in other living arrangements. The full model also shows that those whose youngest child is under 15 years old are more likely to live alone, although we will see in the next table that this effect is significant only for the youngest group of the elderly (aged 50-59).

The findings also suggest that the wealthiest and the poorest households more often comprise elderly persons living alone. The wealth effect may suggest that individuals or couples who are able to live alone do so, but it is also possible that some of those assets represent transfers from adult (or migrant) children. The poorest -- with no assets, however, have odds of living alone that are 44 percent higher than those with some assets. Finally, the community-level indicators suggest that those living in areas where U.S. migration is prevalent have lower overall likelihoods of living alone. This latter effect should be evaluated with caution, as it loses significance in the multi-level model specification referred to earlier in the data section.

Because the elderly are likely to have fewer single children and more married children as they age, it is instructive to examine whether some of these effects are simply due to changing household structure over the lifecycle. For example, the younger subset of elderly individuals may have more single children – who may or may not be migrating. The oldest-old, in contrast, are more likely to have married children and fewer single children. Table 9 breaks down the sample by broad age categories, showing roughly similar patterns to those presented in Table 8. The risks of living alone in all three

groups are inversely related to the number of single return migrants, whereas they are positively related to the number of married return migrants. A few variations emerge by age group, however, suggesting that living alone is influenced by current migration among the oldest-old (aged 70 plus), whose chances of living alone decrease significantly as more single children are currently abroad. This may suggest that other non-migrant children or relatives step in to fill the void when children leave older parents. It is also notable that the effects for single migrant children on the probability of living alone increase in magnitude across the age groups, indicating the importance of the migration behavior of single children to elderly households.

TABLE 9 ABOUT HERE

The results also show that unemployment is significantly related to living alone among youngest age group, and that in the oldest group, the probability of living alone is unaffected by increasing age, compared to age 70-74. Additionally, unlike younger individuals under age 70, the oldest elderly who live alone are more likely to represent both ends of the socioeconomic spectrum, as found in Table 8, and to have U.S. migration experience themselves (most of these probably participated in the Bracero program). Finally, the controls for child availability reflect similar patterns across the three age groups, however, having young children under age 15 is significantly only among those 50-59 years old. The latter effect is not surprising, as it reflects the greater independence of the younger elderly who are more likely to have younger children and who are more likely to be living in the few nuclear households in the sample.

A final test of these data examines whether the effects of U.S. migration remain stable if we restrict the analysis to the elderly with married children. It is possible, for example, that these effects

are driven by the behaviors of married children -- who may be less available in general to care for their elderly parents because they must meet the needs of their own growing families. First, 5,114 of the 6,050 elderly have one or more married children, thus the effects are quite stable. Second, with each additional married child with U.S. experience, the chances of living alone rise by 0.318, SE 0.038 (current migrants) and 0.337 log-odds, SE 0.050 (prior migrants), relative to those whose married children have no U.S. migration experience.

These findings are summarized with predicted probabilities in Table 10, showing 1) higher risks of living alone among the oldest group, and 2) that rising numbers of married U.S. migrant children strongly raise the probability of living alone among the elderly, whereas 3) having single migrant children lowers the chances that the elderly are living alone (several cells in the bottom right of each panel of the grid deserve caution because of few observations).¹⁹

TABLE 10 ABOUT HERE

The significant effects attributable to the *number* of migrant children are also interesting in light of the fact that when modeled as variables indicating the presence (or not) of each category of migrant children, many of the effects were insignificant (not shown). This finding would suggest that whether an elderly person has migrant children is less important to the odds of living alone than the question of how many migrant children they have. It is consistent with the especially high risks among the elderly with many migrant children compared to those with only a few migrant children. In both panels of Table 10, the predicted probabilities indicate that relative to those with no married children who have migrated,

¹⁹ Predicted probabilities of living alone were generated from model 3 in Table 8. Also, note that in only one combination were all children with migration experience absent from the origin village (men and women in last US column with three MX migrant children).

the probability of living alone is nearly twice as high among those with many married migrant children.

DISCUSSION AND CONCLUSIONS

Traditional patterns of living arrangements in Mexico reflect high levels of family caregiving for the elderly and a high degree of continuity in parent-child coresidence trends, such that a parent is likely to live with one or more children for a significant portion of his/her lifetime. This pattern is less commonly found in industrialized countries where parents expect to spend some portion of mid- to later-life without children at home. In contrast, parent-child coresidence patterns in Mexico are much more similar to other developing country contexts, where living alone is uncommon due both to structural constraints, fed by economic instability and limited services or institutional coverage for the poor and the elderly, and to social norms that emphasize the importance of the family. Because U.S. migration is an age-specific phenomenon of growing prevalence in many areas of Mexico, I have argued that it may disrupt such traditional arrangements and increase the likelihood that the elderly live alone. The results of this study just begin to scratch the surface of the complicated processes through which U.S. migration influences elderly living arrangements, but they do provide strong evidence that the migration of adult children may increase the chances of living alone in origin villages.

Migration may bring both advantages and disadvantages to elderly parents. As was recently reported, migration is “a means of accumulating cash quickly, either for productive investment...or for financing the purchase of a high-cost consumer good (an appliance, a car, video/audio equipment, or housing)” (Massey 1998: 24). The results presented here suggest that households also may be using migration as a means of financing old age, particularly through the U.S. migration of unmarried children.

The main findings suggest that the local presence of unmarried children who have previously

migrated substantially reduces the risks that the elderly live alone. In addition, current unmarried children who are abroad are unrelated to the chances of living alone. In contrast, married children who migrate do appear to be leaving their parents behind, whether they choose to take up residence north of the border, or to use their migrant earnings to finance their own independent residence in the origin community. Thus, in the present context of a rapidly aging population and few social services designed to meet the needs of the elderly, the findings suggest that non-migrant children and unmarried children, especially those who have returned home from the United States, may bear the brunt of old-age care.

Together, these findings carry several implications for our understanding of migrant social capital. Migrant networks are usually described as providing positive social capital to both sending communities and potential new migrants, yet here we have evidence that this source of social capital also may be negative in Mexican origins (if we assume that the majority of the elderly who live alone as a result of U.S. migration are worse off compared to others who coreside with children). At minimum, these findings suggest a more complex picture than that presented by most discussions of migrant social capital. I find less evidence, however, that the elderly are more likely to live alone if they live in communities with greater migration rates. As migration grows increasingly prevalent, therefore, it may be that it becomes less selective of people who are forming their own families, and increasingly involve household strategies in which young, unmarried children cross the border to earn wages that they will then share with their families at home.

We also can conclude that socioeconomic status is an important component to understanding elderly living arrangements. Overall, the elderly living alone were slightly more educated, more often prior U.S. migrants, and some were relatively wealthy. But the findings also revealed higher levels of

unemployment among them and that many were quite poor -- especially those who were in the oldest age groups. These bifurcated effects suggest the difficult circumstances encountered by the majority of individuals living alone who have little or no resources to draw upon, yet they also are consistent with prior studies that find higher risks of solitary living among wealthier individuals (e.g., pensioners and property-owners) in Mexico (see Solís 1999). It is probable that some of the assets among the latter group were accumulated through prior U.S. experiences of the elderly, and it is also possible that some of them were provided through children, who may be substituting capital or asset transfers to their parents instead of coresiding with them.

An important issue to examine, then, is whether the elderly who receive capital substitutes for coresidence are better off than they would have been if their children were available to meet their daily needs at home. The trade-offs between living alone and receiving remittances or more traditional forms of coresiding with adult children imply different types of support to the elderly. For example, one may have fewer reliable sources to call upon for daily assistance, errands, or to fill other emotional and physical needs if one's grandchildren and children live elsewhere. However, one may also have greater financial resources to spend on medicine and medical care. Further research is necessary to examine the effects of these trade-offs on elderly well-being.

Finally, the results indicate that although the sex of children does not appear to determine elderly living arrangements, there are some advantages to having very large families, which lowers the risks of living alone. In more recent generations, however, as fertility continues to fall in Mexico, these families are becoming less common. Thus, greater attention to the well-being of future generations of the elderly may be required in areas that are simultaneously feeling the impact of low fertility, climbing

U.S. migration and longer life expectancies. More detailed longitudinal and event history analysis is necessary to examine the combination of processes and precursors that lead up to solitary living arrangements in this population, including the behaviors and preferences of children, the timing of shifts in household structure and migration behaviors, and subsequent effects on elderly well-being.

REFERENCES

- Andrade, Sally. 1982. "Social Science Stereotypes of the Mexican American Woman: Policy Implications for Research," Hispanic Journal of Behavioral Sciences 4(2).
- Angel, Ronald, Jacqueline Angel, Geum-Yong Lee, Kyriakos Markides. 1999. "Age at Migration and Family Dependency among Older Mexican Immigrants: Recent Evidence from the Mexican American EPESE." The Gerontologist 39(1): 59-65.
- Aquilino, William. 1990. The Likelihood of Parent-Adult Child Coresidence: Effects of Family Structure and Parental Characteristics. Journal of Marriage and the Family 52: 405-19.
- Arias, Patricia and Gail Mummert. 1987. "Familia, Mercados de Trabajo y Migración en el Centro-Occidente de México [Family, Labor Markets and Migration in Central Mexico]." Nuevo Antropología 9(32):104-127.
- Arizpe, Lourdes. 1981. "Relay Migration and the Survival of the Peasant Household," in Balán, J. (ed), Why People Move: Comparative Perspectives on the Dynamics of Internal Migration. Paris: UNESCO Press.
- Baca Zinn, Maxine. 1979. "Chicano Family Research: Conceptual Distortions and Alternative Directions." Journal of Ethnic Studies 7(3).
- Berkman, L. and S. Syme. 1979. "Social Networks, Host Resistance and Mortality: A Nine-year Follow Up Study of Alameda County Residents." American Journal of Epidemiology 123: 559-62.
- Binational Study on Migration. 1996. Report of the Binational Study on Migration. Washington DC: U.S. Commission on Immigration Reform.
- Bobadilla, J., J. Frenk, R. Lozano, T. Frejka, and C. Stern. 1993. "The Epidemiologic Transition and Health Priorities." Pp. 51-63 in Disease Control Priorities in Developing Countries, edited by Jamison et al. Oxford: Oxford University Press.
- Branigin, William. 1998. "Immigrants Question Idea of Assimilation." Washington Post May 25: A01.
- Burr, J. and J. Mutchler. 1993. "Ethnic Living Arrangements: Cultural Convergence or Cultural Manifestation?" Social Forces 72: 170-179.
- Camposortega Cruz, Sergio. 1997. "Cien Años de Mortalidad en México [100 Years of Mortality Mexico]." DEMOS 10: 11-13.
- Cárdenas, Macrina. 1982. "La función social de las esposas de los migrantes: el caso de Chavinda, Michoacán [The Social Function of Migrants' Wives: The case of Chavinda Michoacán]." Paper presented in the IV Coloquio de Antropología e Historia Regionales, El Colegio de Michoacán, Zamora.
- Casterline, J.B., L. Williams, A. Hermalin, M.C. Chang, N. Chayovan, P. Cheung, L. Domingo, J. Knodel, and M.B. Ofstedal. 1991. "Differences in the Living Arrangements of the Elderly in Four Asian Countries: The Interplay of Constraints and Preferences." Comparative Study of the Elderly in Asia Research Reports 91-10. Population Studies Center, University of Michigan.
- Chavez, Leo. 1988. "Settlers and Sojourners: The Case of Mexicans in the United States." Human Organization 47(2).

- CONAPO (National Population Council). 1995. *Situation of Women: Challenges for the Year 2000*. Mexico: National Population Council.
- Corona Vázquez, Rodolfo. 1999. "Comportamiento de los migrantes entre 1960 y 1995 [Migration Behavior between 1960 and 1995]." DEMOS 12:15-17.
- De Oliveira, Orlandina. 1984. "Migración Femenina, Organización Familiar y Mercados Laborales en México [Female Migration, Family Organization and Labor Markets in Mexico]." Comercio Exterior 34(7): 676-687.
- DeVos, Susan. 1995. Household Composition in Latin America. New York: Plenum Publishing.
- Donato, Katharine. 1993. "Current Trends and Patterns of Female Migration: Evidence from Mexico." International Migration Review.
- Durand, Jorge, Douglas Massey, and Rene Zenteno. 1998. "Reconsidering the 'Changing Profile' of Mexican Migrants to the United States." Paper presented to the Population Association of America, Chicago, IL.
- Escobar, Augustin, Mercedes González and Bryan Roberts. 1987. "Migration, Labour Markets, and the International Economy." In J. Eades (ed.) Migrants, Workers and the Social Order, ASA Monographs 26, New York: Tavistock Publishers.
- Facio, Elisa. 1996. Understanding Older Chicanas. Thousand Oaks, CA: Sage Publications.
- Fernandez, Leticia. 1998. "Male Migration and Female Control of Resources: Case Study of a Zacatecas Rural Village." Paper presented to the Population Association of America.
- Glick-Schiller, Nina, Linda Basch, and Cristina Blanc-Stanton (eds.). 1992. Towards a Transnational Perspective on Migration: Race, Class, Ethnicity, and Nationalism Reconsidered, New York, N.Y. : New York Academy of Sciences.
- González de la Rocha, Mercedes. 1994. The Resources of Poverty: Women and Survival in a Mexican City. Oxford: Blackwell Press.
- Gordon, D.M. 1964. Assimilation in American Life: The Role of Race, Religion, and National Origins. New York: Oxford University Press.
- Ham-Chande, Roberto. 1999. "El Futuro de las Pensiones [The Future of Pensions]." DEMOS 12: 35-36.
- Hernandez Santiago, Joel. 1985. "Tlazazalca, país de golondrinos [Tlazazalca, country of swallows]." Relaciones 23:
- House, J., Robbins, C., and Metzner, H. 1982. "The Association of Social Relationships and Activities with Mortality: Prospective Evidence from the Tecumseh Community Health Study." American Journal of Epidemiology 117: 384-396.
- Kanaiaupuni, Shawn Malia. 1999. Non-Migrant Women and Origin Networks in U.S.-Mexico Migration. Manuscript under review.
- Kanaiaupuni, Shawn Malia. 2000. "Reframing the Migration Question: Men, Women and Gender in Mexico." Social Forces 78(4).
- Kanaiaupuni, Shawn Malia and Katharine Donato. 1999. "Migradollars and Mortality: The Effects of U.S. Migration on Infant Mortality in Mexico." Demography 36.
- Kanaiaupuni, Shawn Malia, Theresa Thompson-Colón and Katharine Donato. 1999. "Do Extended Family Ties Really Help? A Multidimensional Analysis of Social Networks on Child Well-

- being.” Paper presented to Population Association of America.
- Kertzner, David. 1986. “A Life Course Approach to Coresidence.” Current Perspectives on Aging and the Life Cycle 2:1-22.
- Kinsella, Kevin. 1988. Aging in the Third World. International Population Reports Series P-95 #79. Washington DC: U.S. Bureau of the Census.
- Kobrin, F. E. 1976. “The Fall in Household Size and the Rise of the Primary Individual in the United States.” Demography 13:127-38.
- Kramarow, Ellen. 1995. “The Elderly who Live Alone in the United States: Historical Perspectives on Household Change.” Demography 32(3): 335-52.
- Lauby, Jennifer and Oded Stark. 1985. “Individual Migration as a Family Strategy: Young Women in the Philippines.” Population Studies 42: 473-486.
- LeVine, S. 1993. Dolor y Alegría: Women and Social Change in Urban Mexico, Madison, Wisconsin: University of Wisconsin Press.
- Logan, Kathleen. 1981. “Getting by with Less: Economic Strategies of Lower Income Households in Guadalajara.” Urban Anthropology 10(3):231-46.
- López Castro, Gustavo. 1986. La Casa Dividida: Un Estudio de Caso sobre la Migración a Estados Unidos en un Pueblo Michoacano [The Divided House: A Case Study of U.S. Migration in a Michoacán Village]. Mexico: Asociación Mexicana de Población, El Colegio de Michoacán.
- Maddala, G.S. 1983. Limited-dependent and Qualitative Variables in Econometrics. New York: Cambridge University Press.
- Martin, Linda. 1989. “Living Arrangements of the Elderly in Fiji, Korea, Malaysia and the Philippines.” Demography 26:627-644.
- Martin, Linda and Kevin Kinsella. 1994. “Demography of Aging in Developing Countries.” In L. Martin and S. Preston (eds), Demography of Aging. Washington D.C.: National Academy of Sciences, pp. 156-97.
- Massey, Douglas and Audrey Singer. 1995. “New Estimates of Undocumented Mexican Migration and the Probability of Apprehensions.” Demography 32:203
- Massey, Douglas, Rafael Alarcón, Jorge Durand and H. González. 1987. Return to Aztlán: The Social Process of International Migration from Western Mexico. Berkeley, CA: University of California Press.
- Massey, Douglas. 1998. “March of Folly.”
- Mendoza Victorino, Doroteo. 1998. “Los Factores Determinantes de la Disminución de la Fecundidad [The Determinants of Fertility Decline].” DEMOS 11: 8-9.
- Mexican Migration Project. 1999. University of Pennsylvania: <http://lexis.pop.upenn.edu/mexmig>.
- Mummert, Gail. 1994. “Del Metate al Despate: Rural Mexican Women’s Salaried Labor and the Redefinition of Gendered Spaces and Roles.” In Women of the Mexican Countryside, 1850-1990: Creating Spaces, Shaping Transition. Heather Fowler-Salamini & Mary Kay Vaughan (eds). Tucson : University of Arizona Press.
- Nutini, H. and T. Murphy. 1970. “Labor Migration and Family Structure in the Tlaxcala-Pueblan Area, Mexico.” In The Social Anthropology of Latin America: Essays in Honor of Ralph Beals. W. Goldschmidt and H. Hoijer (eds), Los Angeles, pp. 80-103.

- Palloni, Alberto. 2000. "Living Arrangements of the Elderly." Paper presented at the United Nations Technical Meeting on Population Aging and Living Arrangements of Older People, NYC: February 8-10.
- Palloni, Alberto, Susan DeVos and Marcha Pelaez. 1999. "Aging in Latin America and the Caribbean." Center for Demography Working Paper 99-02. University of Wisconsin - Madison.
- Ordorica, Manuel. 1997. "Cambios en la Estructura Por Edad de la Poblacion [Changes in the Population Structure by Age]." DEMOS 10: 8-10.
- O'Rand, Angela and R. Campbell. 1999. "On Reestablishing the Phenomenon and Specifying Ignorance: Theory Development and Research Design in Aging." In Handbook of Theories of Aging. Bengtson, Vern, K. and Warner Schaie (eds). New York: Springer Publishing Co, pp 59-80.
- Reichert, Joshua and Douglas Massey. 1980. "History and Trends in U.S.-Bound Migration from a Mexican Town." International Migration Review 14:475-91.
- Robichaux, David. 1997. "Residence Rules and Ultimogeniture in Tlaxcala and Mesoamerica." Ethnology 36(2): 149-71.
- Rouse, Roger. 1992. "Making Sense of Settlement." In Glick-Schiller, Nina, Linda Basch, and Cristina Blanc-Stanton (eds.), 1992, Towards a Transnational Perspective on Migration: Race, Class, Ethnicity, and Nationalism Reconsidered, New York: New York Academy of Sciences.
- Ruggles, Steven. 1996. "Living Arrangements of the Elderly in America. In Hareven (ed.) Aging and Generational Relations over the Life Course: A Historical and Cross-Cultural Perspective. New York: Walter de Gruyter & Co., pp. 254-71.
- Selby, Henry, Arthur Murphy, and Stephen Lorenzen. 1990. The Mexican Urban Household: Organizing for Self-defense. Austin: University of Texas Press.
- Sherry, Mike. 1999. "INS Insists Probe Of Plants Still On." Omaha World-Herald May 29: 1.
- Simon, Stephanie. 1999. "An Insular Iowa Town, a Jolt of Worldliness." Los Angeles Times January 26. (cf. CISNEWS, Center for Immigration Studies 01/26/99).
- Soldo, Beth, Douglas Wolf and Emily Agree. 1990. "Family, Households and Care Arrangements of Frail Older Women: A Structural Analysis." Journal of Gerontology 45(6): 238-49.
- Solien de González, N.L., 1961, "Family Organization in Five Types of Migratory Labor," American Anthropologist 63: 1264-1280.
- Solís, Patricio. 1999. "Living Arrangements of the Elderly in Mexico." Paper presented to the Population Association of America, March.
- Stark, Oded. 1993. The Migration of Labor. Cambridge/Oxford: Basil Blackwell.
- Tout, Ken. 1989. Ageing in Developing Countries. New York: Oxford University Press.
- Trager, Lilian. 1984. "Family Strategies and the Migration of Women: Migrants to Dagupan City, Philippines." International Migration Review 28(4).
- Trigueros, Patricia. 1992. "Unidades Domesticas y Papel de la Mujer en un Poblado Rural en el que se practica la Migración a Estados Unidos [Domestic Units and the Role of Women in a Rural village that practices U.S. Migration." En Serie documentos de investigación No. 2, La investigación sobre la mujer: informes en sus primeras versiones. Salles, V. y McPhail, E.

- (coorda.), México: PIEM - El Colegio de Mexico.
- Urrea, Fernando and Alberto Castañeda. 1987. "Características Socioeconomicas de los Hogares Colombianos con Miembros Migrantes en el Exterior y Posible Impacto de la Migración Internacional Sobre los Mismos [Socioeconomic Characteristics of Colombian Households with Migrant Members in the Exterior, and the Possible Impact of Internacional Migration]." In Torrealba (ed.) Migraciones Internacionales en Las Americas. Caracas, Venezuela: CEPAM.
- Vega, William. 1990. "Hispanic Families in the 1980s: A Decade of Research." Journal of Marriage and the Family 52 (Nov. 1990): 1015-1024.
- Wolf, Douglas. 1994. "The Elderly and Their Kin: Patterns of Availability and Access." In Demography of Aging, S. Preston and L. Martin (eds). Washington D.C.: National Academy of Sciences, pp. 146-94.
- Zavella, Patricia. 1987. Women's Work and Chicano Families: Cannery Workers of the Santa Clara Valley. NY: Cornell University Press.
- Zuñiga, Elena and Daniel Hernández. 1994. "Importancia de los Hijos en la Vejez y Cambios en el Comportamiento Reproductivo [Importance of Children in Aging and Changes in Reproductive Behavior]." Estudios Demográficos y Urbanos 9(1):211-236.

Table 1. Detailed Living Arrangements of Elderly Individuals in Randomly-sampled Households in 52 Mexican Communities*

	Men	Women
Alone	700 (21.9%)	681 (21.5%)
Spouse Present	623 (89.0)	501 (73.6)
With Adult Children (>=15 years)	2336 (73.1%)	2279 (71.8%)
Never Married Only	1695 (72.6)	1532 (67.2)
Currently Married Only	242 (10.4)	399 (17.5)
Never and Currently Married	399 (17.1)	348 (15.3)
With Others⁺	158 (5.0%)	213 (6.7%)
With Grandchildren	64 (40.5)	102 (47.9)
With Siblings/In-laws/Cousins	24 (15.2)	35 (16.4)
With Young Children	34 (21.5)	25 (11.74)
Spouse Present	128 (81.0)	107 (50.23)
N Observations	3,194	3,173

* Persons aged 50 years or older

⁺ Sub-categories are not mutually exclusive

Source (of these and all tabled data): Mexican Migration Project, 1999

Table 2. Odd Ratios of Living Alone by Number of Surviving Children*

Elderly with...	Total #	All Elderly			Elderly with adult children only		
		Exp(B)	B	SE	Exp(B)	B	SE
No children	274	19.21	2.96	0.22	--	--	--
One child	243	2.74	1.01	0.14	3.12	1.14	0.18
Two children	373	2.49	0.91	0.13	2.74	1.01	0.17
Three children	403	2.14	0.76	0.15	2.17	0.77	0.16
Four children	578	1.70	0.53	0.16	1.84	0.61	0.18
Five plus children (reference category)	4171						

*Adjusted for individual attributes of the elderly: sex, married, age, education, migration experience, employment and socioeconomic assets.

Table 3. Elderly Households with International and Internal Migrant Children (%)*

Percent with MX Migrant Children	Percent with U.S. Migrant Children						Total
	None	One	Two	Three	Four	Five plus	
None	34.95	9.20	6.64	4.53	3.25	6.28	64.85
One	5.64	2.79	1.54	1.46	1.02	2.18	14.63
Two	3.43	1.56	1.26	0.85	0.54	1.20	8.84
Three	1.95	1.10	0.82	0.49	0.26	0.64	5.25
Four	1.33	0.56	0.36	0.41	0.31	0.28	3.25
Five plus	1.15	0.74	0.38	0.23	0.26	0.41	3.18
Total	46.45	16.96	10.99	7.97	5.64	10.99	100.00
N	1891	623	429	311	220	429	3903

* Excludes Childless Individuals

Table 5. Descriptive Statistics by Detailed Living Arrangements and Sex: Elderly Individuals in 52 Mexican Villages

	WOMEN						MEN				
	N	With Adult Children					Alone	With Adult Children			
		Alone	Never Married	Curr. Married	Never & Curr. Marr	With Others		Never Married	Curr. Married	Never & Curr. Marr	With Others
Individual Attributes	N	681	1532	399	348	213	700	1695	242	399	158
Age											
50-54 (%)		14.0	31.7	9.8	32.2	18.3	15.3	30.0	10.3	27.1	14.6
55-59		15.3	25.3	14.8	26.4	14.6	13.9	25.1	8.3	24.1	16.5
60-64		20.3	18.2	21.3	17.2	20.2	14.9	17.9	17.4	20.8	16.5
65-69		18.4	11.5	17.3	11.2	16.4	20.6	11.8	22.7	12.5	20.9
70-74		16.0	6.5	16.0	6.6	13.2	14.6	7.3	15.7	7.0	13.3
75-79		8.2	2.8	7.5	2.3	9.9	9.1	4.2	10.3	3.5	8.2
80-84		4.7	2.4	7.3	3.2	5.2	7.6	2.1	7.9	2.8	5.1
85 plus		2.2	1.7	6.0	0.9	2.4	4.1	1.6	7.4	2.3	5.1
Marital Status (%)											
Never Conjugal		3.4	1.0	2.0	0.0	17.4	2.7	0.4	0.8	0.0	12.7
Conjugal (w/partner)		74.3	74.7	47.6	78.2	51.2	89.0	94.6	81.8	93.7	81.0
Formerly Conjugal		22.3	24.4	50.4	21.8	31.5	8.3	5.0	17.4	6.3	6.3
Education (years completed)		2.5	2.7	1.9	2.1	2.5	2.8	3.1	2.1	2.6	2.2
No Migration Experience (%)		86.3	92.4	89.7	94.5	85.0	52.3	53.8	55.8	63.2	46.8
Unemployed (%)		85.0	84.6	85.5	84.8	77.0	27.7	15.0	35.5	14.0	23.4
Headship (%)											
Head		26.6	21.6	22.3	22.7	50.2	99.9	99.0	75.6	100.0	99.4
Spouse		73.4	73.2	37.1	77.3	49.8	0.1	0.0	0.0	0.0	0.6
Parents/parents-in-law		0.0	5.2	40.6	0.0	0.0	0.0	1.0	24.4	0.0	0.0
Socioeconomic assets: None		68.3	55.9	63.9	57.8	70.0	65.4	56.5	61.2	59.4	65.8
Low (reference category)		21.9	31.6	27.8	30.5	24.4	23.3	29.9	29.8	27.6	27.2
Mid-level		8.1	10.6	7.3	10.3	4.2	8.7	11.0	8.3	11.5	5.7
High		1.8	1.8	1.0	1.4	1.4	2.6	2.6	0.8	1.5	1.3
Adult Children Characteristics^a											
Childless		14.2	0.0	0.0	0.0	24.9	12.6	0.0	0.0	0.0	22.8
Youngest child < 15 years old		8.8	24.4	13.9	23.6	11.7	21.3	40.5	16.9	36.1	21.5
Average Age of Youngest		25.4	20.2	26.4	20.2	21.3	21.8	16.7	25.0	17.5	17.9
Avg. # of Adult Daughters		2.2	3.3	2.7	3.7	1.9	2.0	3.1	2.8	3.5	2.0
Avg. # of Sons		2.2	3.3	3.0	3.7	2.0	2.0	3.1	3.1	3.6	2.2

^a Households heads and partners only (information unavailable for other non-heads)

Table 6. Community Attributes of Elderly Persons over Age Fifty (Number of Communities = 52)

Community Characteristics	Percent Elderly Living in Households...		
	With Adult Children	With Others	Alone
Hamlet	70.7	6.6	22.7
Village	69.8	7.3	22.9
Town	74.2	5.4	20.4
City	75.8	3.7	20.5
High Male Employment (75 th %)	73.7	5.1	21.2
Low Male Employment	72.1	6.0	21.8
High Female Employment (75 th %)	76.8	3.5	19.8
Low Female Employment	71.1	6.6	22.3
High Migration (>23% of population)	68.8	8.9	22.3
Low Migration Prevalence	73.9	4.6	21.5

Table 8. Logistic Regression Coefficients Predicting Chances of Living Alone among Elderly Individuals, 50 years and older

Explanatory Variables	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Individual Migration Characteristics						
Ever US migrants (1=yes)			3.720**	0.103	0.191**	0.096
Lives in high migration village (1=yes)			-0.062	0.134	-0.361**	0.110
Migration Characteristics of Children						
Single in US (#)					-0.131	0.090
Single, prior US migrants					-0.642**	0.157
Married in US (#)					0.352**	0.037
Married, prior US migrants					0.374**	0.046
Current MX migrant children (#)					0.102	0.064
Prior MX migrant children					0.184**	0.056
Other Individual and Household Attributes						
Sex (1=female)	-0.029	0.068	0.108	0.067	0.025	0.068
Married (1=yes)	0.527**	0.150	0.544**	0.150	0.589**	0.154
Education (years)	0.015	0.010	0.018*	0.010	0.013	0.010
Age 55-59 (reference category: 50-54 yrs)	0.279**	0.124	0.276**	0.123	0.254*	0.131
60-64	0.680**	0.138	0.677**	0.137	0.559**	0.139
65-69	1.162**	0.135	1.161**	0.138	0.972**	0.151
70-74	1.480**	0.143	1.479**	0.146	1.269**	0.156
75-79	1.477**	0.160	1.486**	0.158	1.263**	0.166
80-84	1.530**	0.238	1.526**	0.241	1.269**	0.252
85+	1.481**	0.185	1.488**	0.187	1.400**	0.197
Unemployed (1=yes)	0.269**	0.094	0.269**	0.093	0.210**	0.089
Socioeconomic assets: None	0.319**	0.131	0.338**	0.129	0.363**	0.121
Low (reference category)						
Mid-level	0.268*	0.142	0.249*	0.142	0.230	0.156
High	0.545**	0.276	0.498*	0.276	0.495*	0.296
Number of Surviving children	-0.206**	0.020	-0.210**	0.020	-0.324**	0.023
Childless (1=yes)	0.968**	0.210	0.957**	0.210	0.851**	0.203
Youngest child under 15 years old (1=yes)	0.018	0.113	0.017	0.115	0.261**	0.112
Community Size (reference category: towns)						
Hamlet (1=yes)	0.167	0.182	0.144	0.174	-0.037	0.156
Village (1=yes)	-0.002	0.127	-0.012	0.138	-0.020	0.137
Intercept	-1.725**	0.202	-1.885**	0.215	-1.430**	0.215
-2 Log Likelihood	-2788.08		-2778.30		-2631.09	
Chi-square	637.47		701.10		1654.24	
N	6050		6050		6050	

** p<.05; * p<.10

^a 0.0002

Table 9. Logistic Regression Coefficients Predicting Chances of Living Alone among Elderly Individuals, by Age Groups 50-59, 60-69, and 70 years and older

Explanatory Variables	Age 50-59		Age 60-69		Age 70 plus	
	B	SE	B	SE	B	SE
Individual Migration Characteristics						
Ever US migrant (1=yes)	-0.048	0.140	0.255	0.168	0.356**	0.161
Lives in high migration village (1=yes)	-0.522**	0.176	-0.539**	0.152	0.073	0.188
Migration Characteristics of Children						
Single in US (#)	0.067	0.174	-0.008	0.119	-0.775**	0.217
Single, prior US migrants	-0.406*	0.228	-0.732**	0.212	-0.740**	0.328
Married in US (#)	0.384**	0.084	0.381**	0.051	0.215**	0.060
Married, prior US migrants	0.492**	0.115	0.342**	0.060	0.301**	0.061
Current MX migrant children (#)	0.301**	0.098	0.146	0.095	-0.116	0.085
Prior MX migrant children	-0.008	0.121	0.267**	0.071	0.129**	0.063
Other Individual and Household Attributes						
Sex (1=female)	-0.222	0.146	0.155	0.126	0.104	0.135
Married (1=yes)	0.631**	0.247	0.728**	0.242	0.364**	0.184
Education (years)	-0.010**	0.017	0.017	0.018	0.029	0.027
Age 55-59 (reference category: 50-54 yrs)	0.354**	0.145				
65-69 (reference category: 60-64 yrs)			0.422**	0.142		
75-79 (reference category: 70-74 yrs)					0.001	0.153
80-84					0.022	0.208
85+					0.104	0.204
Unemployed (1=yes)	0.368**	0.177	0.179	0.143	0.118	0.140
Socioeconomic assets: None	0.241	0.166	0.290**	0.158	0.636**	0.176
Low (reference category)						
Mid-level	-0.001	0.252	0.244	0.202	0.631*	0.369
High	-0.382	0.431	0.608	0.587	1.775**	0.485
Number of Surviving children	-0.505**	0.048	-0.290**	0.041	-0.201**	0.033
Childless (1=yes)	0.877**	0.263	0.937**	0.277	0.640*	0.347
Youngest child under 15 years old (1=yes)	0.663**	0.154	0.150	0.234	-0.350	0.389
Community Size (reference category: towns)						
Hamlet (1=yes)	-0.067	0.228	-0.226	0.221	0.241	0.259
Village (1=yes)	0.031	0.244	-0.112	0.183	0.082	0.138
Intercept	-0.627*	0.300	-1.150**	0.346	-0.811**	0.296
-2 Log Likelihood	-895.79		-963.20		-701.40	
Chi-square	502.15		479.91		289.17	
N	2837		2000		1213	

** p<.05; * p<.10

^a 0.0002

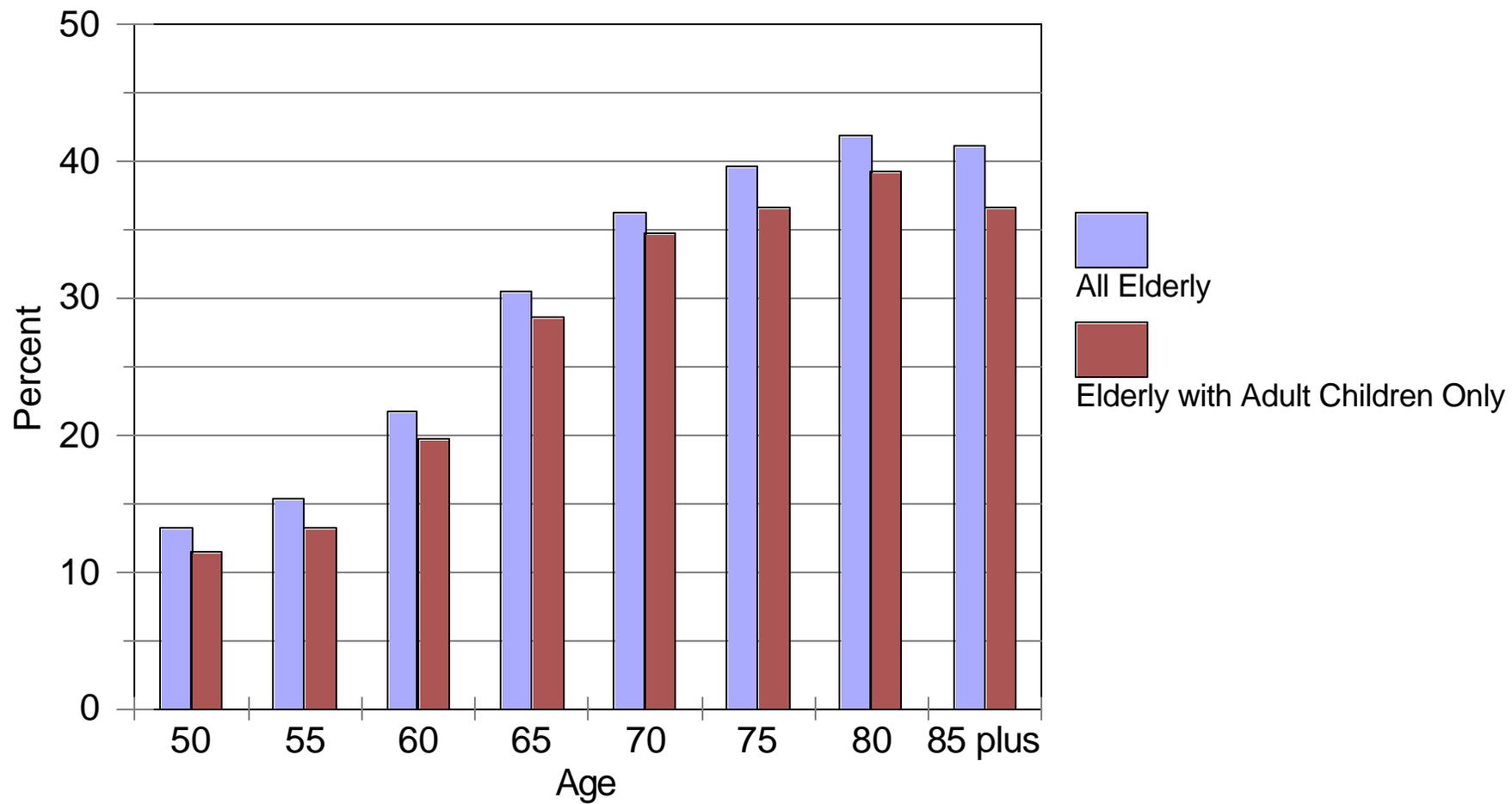
Table 10. Predicted Probabilities of Living Alone among the Elderly by Number of Children with U.S. Migration Experience

Number of Married US Migrant Children	Number of Single U.S. Migrant Children				
	None	One	Two	Three	Four plus
Full Sample: 50 years and older⁺					
None	0.26	0.12	0.07	0.04	0.02
One	0.23	0.13	0.09	0.05	0.04
Two	0.26	0.16	0.09	0.05	0.02
Three	0.30	0.18	0.08	0.08	0.04
Four	0.39	0.15	0.12	0.14	0.08
Five	0.41	0.26	0.15	0.11	0.02
Six	0.36	0.35	0.18	0.18	n/a
Seven plus	0.57	0.31	0.20	0.31	0.09
Oldest Sample: 70 years and older⁺⁺					
None	0.35	0.17	0.08	0.04	0.02
One	0.35	0.20	0.10	0.04	0.02
Two	0.37	0.24	0.12	0.04	0.01
Three	0.43	0.25	0.11	0.06	0.02
Four	0.50	0.23	0.13	0.06	0.04
Five	0.55	0.32	0.14	0.04	0.05
Six	0.59	0.40	0.22	0.06	n/a
Seven plus	0.66	0.43	0.16	0.12	0.03

⁺ Based on coefficients reported in Table 8, last two columns

⁺⁺ Based on coefficients reported in Table 9, last two columns

Figure 1. Percent of The Elderly Living Alone by Age Category



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