

# Childlessness and Extended Family Living Among Elderly Women 60+ in Latin America

Susan De Vos

Center for the Demography of Health and Aging

Department of Sociology

University of Wisconsin-Madison

## INTRODUCTION

This is a broad statistical overview of childlessness and its possible relation to living arrangements among elderly women 60+ in several Latin American countries. One reason childlessness and the living arrangements of childless elders is so important in Latin America is the general expectation that older, and often widowed, people there will live with, and be cared for, by their adult children (e.g., Bialik, 1992; Nugent 1990; United Nations, 2005). But what happens when elders do not have adult children – are they simply left to fend for themselves, often in a compromised way, possibly leading to a premature death? Or are there cultural mechanisms, perhaps incorporated into the meaning of the extended family, that cover the possibility that an older person in need may have no living child with whom to live or from whom to receive care?

Given all the attention to fertility in Latin America, it might seem reasonable to expect researchers to have also written about *not* having children there. But that does not seem to be the case. The irony is that researchers have paid more attention to the issue of childlessness in countries with *low* fertility where older people may *not* be expected to live with or be cared for by adult children than in places with *higher* fertility or where older people often *are* expected to

reside with or be cared for by adult children. This overview then is meant to broaden our scope, to suggest that there is an issue here that needs our attention. Not only that, it suggests that looking at the situation in Latin America can help prevent people from making erroneous generalizations based on observations from very different cultural areas, even if those areas have similar levels of economic development.

### **Childlessness on the International Level**

From a cross-national perspective, one of the only demographic works on childlessness around the world appears to be that of Poston and Trent's 1982 paper that tried to *explain* a population's level of childlessness. They amassed 1970 data for 65 different countries on Children Ever Born (CEB) among married women 15-59. Those who had 0 or an unknown CEB were considered childless. Nine of those countries were in Latin America. According to the figures, Peru and Chile had a high level of childlessness with 17 and 15 percent childless respectively. Mexico, Colombia, Puerto Rico and Brazil had an intermediate level of childlessness – 12, 11, 11 and 10 percent respectively. Argentina, Panama and Costa Rica had a relatively low level of childlessness – 9, 9 and 6 percent respectively.

Those data are updated and calculated for ALL women 60 YEARS AND OLDER in Table WP1 (also see Figure 1.) Figures were the most recent available although still are sometimes from as early as the 1980s.<sup>1</sup> They are for 87 countries, and are for Children Ever Born (CEB) among women. Fifteen of those countries were in Latin America. According to these figures, three of the countries had a high level of childlessness (or 0/unknown CEB) – Bolivia, Ecuador and Uruguay at 16, 18, and 18 percent respectively. Ten countries had an intermediate level of

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<sup>1</sup> Sources were a) Table 3 of a UN Special Census Topic 2000 Round – <http://unstats.un.org/unsd/demographic/products/dyb/dybcens.htm> (as of September 2010; see also U.N. 2005 Chapter 2), b) for 8 European countries (Denmark, France, Germany, Greece, Italy, Netherlands, Spain, and Sweden) from Börsch-Supan et al. 2005 Table 2A.18 – [http://www.share-project.org/t3/share/uploads/tx\\_sharepublications/SHARE\\_FirstResultsBookWave1.pdf](http://www.share-project.org/t3/share/uploads/tx_sharepublications/SHARE_FirstResultsBookWave1.pdf) (as of September 2010), c) for 6 more European areas from Rowland, 2007 Table 1 (Belgium, Bulgaria, Ireland, Norway, and England & Wales), and d) for 6 Latin American countries (Argentina, Brazil, Chile, Colombia, Costa Rica, and Ecuador) from the IPUMS-International censuses used extensively in this study. While most figures refer to women 60 and over, some refer to a slightly different age group out of necessity.

childlessness – Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Rep., El Salvador, Panama, Puerto Rico, and Venezuela at 13, 11, 12, 14, 11, 14, 14, 12, 13, and 11 percent respectively. Two countries had a low level of childlessness – Mexico and Paraguay at 9 percent. (A simple average for Latin America using country as the unit was 13.1%.; 11.6% in proportion to the country’s population in 2000.)

The updated figures for all older women in Table WP1 provide a rather different picture from the one painted by Poston and Trent for married women 15-59 because only 3 Latin American countries – Brazil, Colombia and Puerto Rico – exhibit broadly similar levels of childlessness in both their and my forays. Rather, whereas Poston and Trent found both Peru and Chile to have high levels of childlessness, I find Chile to have an intermediate level of childlessness and could not find figures for Peru. Whereas they found Argentina, Panama and Costa Rica to have low levels of childlessness, I found those countries also to have intermediate levels of childlessness. Whereas Poston and Trent found Mexico to have an intermediate level of childlessness, I found Mexico’s level to be low. Poston and Trent did not have any figures for Latin American areas I identify as having high levels of childlessness – Bolivia, Ecuador and Uruguay. The disparity between their figures and mine could be attributed to the different populations or times examined – married women 15-59 in 1970 vs. all women 60 and over in 1986 or later. However, data quality is the more likely reason. Early data from Latin America are rather suspect, and even the later figures used here must be viewed somewhat skeptically.<sup>2</sup> The study is undertaken with the idea that the data are good enough to be viewed carefully, but you be the judge.

As imprecise as the figures may be, the main points of either Poston and Trent’s figures, or my later ones, are that 1) the data tend to be limited to women although men are childless as well, and 2) childlessness is *not* a particularly uncommon situation in which to find oneself in

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<sup>2</sup> I initially downloaded multiple data sets for each of the 8 Latin American countries from IPUMS-International with the idea of assessing trends over time, similar to what Rowland had so nicely done for Europe (2007). How naïve I was. I found the early data too shaky to use (the proportion with an “unknown” number of Children Ever Born was often much larger than the proportion with 0 Children Ever Born; see also Chapter 2 of United Nations, 2005.) That is no longer the case in most of the latest data sets I use, but even the latest data for Colombia, Ecuador and Venezuela, while better than nothing, seem tenuous. [The Colombia 2005 census data are now available but were not at the time I started.]

old age in Latin America despite Poston and Trent's focus on married women only, and despite the tendency for many gerontologists to ignore the many elders who do not have children (see e.g. Fokkema and Liefbroer, 2008). "Why include people who had no children when looking at family solidarity" is their question, implicitly saying that the only extended family tie among older people that matters is the one between parents and biological children. And anthropologist Nydegger (1983) would seem to agree, averring that childless elders around the world had a particularly wretched old age. (Was such a generalization warranted?) Well, if you believe such people as Leo Simmons (1945), or Ruly Marianti (2004), *most* people have had a wretched old age, whether they had children or not. Their research tells us that **the ability to wield power, whether spiritual, emotional or economic, directly or indirectly, may have more effect on well-being in old age, than whether someone had a biological child** (see also Takagi and Silverstein, 2011; Wenger et al., 2007).

Instead of assuming that the only extended family tie of import for older people is the one between a parent and biological child, that one could not sometimes substitute lateral ties for direct intergenerational ones, or that there could not be important non-biological kin ties instead of strictly biological ones, our question is "What is the position of childless elders in their socially-defined extended family?" Our question implicitly suggests that there can be important kin ties other than the biological parent-child one, and that to neglect this could give a very distorted picture. Empirically, we are unfortunately limited to considering childlessness in terms of Children Ever Born, although mortality, remarriage, and adoption can have a huge effect on the proportion of people childless by the time they reach old age, and we are limited to considering extended family ties in terms of co-residence although proximity, rather than an absolute coresidence, can also be tremendously important. These and other data limitations will be discussed again later.

## **The Importance of Culture in the Interpretation of Biological Childlessness**

Since childlessness is not particularly uncommon even in high fertility populations, it would be natural to expect it to be a topic of both anthropological and sociological concern. However, my investigation of the literature suggests that, while not totally ignored, the topic has not been given as much attention as might be expected (see also Van Balen and Inhorn, 2002). And when attended to, it can be subjected to rather myopic analysis, as it often is when using explanations such as “voluntary” and “involuntary” after limiting the analysis to “married” women. A much better treatment begins with an analytic approach to fertility such as that of Davis and Blake (1956) (although it too, mostly neglects the situation of the childless individual). In their paper entitled “Social Structure and Fertility: An Analytical Framework,” Davis and Blake outline the various factors involved in having a live birth: (1) Factors Affecting Intercourse: (i) age of entry into unions, (ii) permanent celibacy, (iii) time between unstable unions & post-widowed celibacy, (iv) voluntary abstinence, (v) involuntary abstinence; (2) Factors Affecting Conception: (vi) involuntary sterility, (vii) contraception, (viii) sterilization, etc; and (3) Factors Affecting Gestation & Successful Parturition: (ix) foetal mortality - involuntary, (x) foetal mortality - voluntary (p. 211). Not only does such a framework consider marriage-related factors important, such a framework can emphasize that childlessness can be the unintended side effect of what in general is a pro-natalist cultural orientation (see also Cain, 2001, Rowland, 2007).

According to Davis and Blake, marriage-related variables such as age at marriage, widowhood, remarriage, and celibacy can be extremely important institutional mechanisms that control fertility when marriage in turn controls women’s exposure to pregnancy and successful parturition. Indeed, many people credit its “marriage rule” for the relatively low fertility of historical Northwestern Europe, especially in times of economic downturn (Hajnal, 1965; Rowland, 2007). To neglect this by focusing only on marital fertility does not consider the whole picture. Further confusing the issue is that in Latin America, there is a range of informal

marriages called “consensual unions” (Martin, 1997), and it would be a huge mistake to ignore them.

Confusion over the whole topic of marriage in Latin America caused William Goode to omit the region from his classic treatise on “World Revolution and Family Patterns” (1963) that dealt with family change worldwide. There had been, and continues to be, insufficient research on both what the marital patterns in Latin America are, and on how those patterns have been affected by a combination of pre-Columbian, Catholic, African, and socio-economic status factors. All we know is that the outward manifestations of traits that conflicted with Catholic teaching, such as polygamy, or marriage between close kin, were suppressed (see Bernard and Gruzinski, 1996). We also know that there generally has been a persistence of patterns of early and near-universal union formation when consideration is given to consensual unions (Fussell and Palloni, 2004; see also United Nations, 1990). So, although omitting the region from his global study, Goode also thought that, in general, the family systems in Latin America could be considered “Western” because the cornerstone of the Western family was the primacy of a monogamous conjugal unit. He thought that the conjugal unit in Latin American families was based on an emotional bond, and was relatively equalitarian (emphasis on “relatively”). This in turn had ramifications for the relative importance of other family bonds such as those between older parents and adult children, between biological or affinal kin outside the nuclear family, and between “fictive” kin who might not be strictly related biologically or through cross-sex marriage.

Yet even if we were to ignore for a moment all the confusion surrounding union formation in Latin America, and were to think of Latin American family systems as basically “Western,” we would still confront the important cultural fact that Goode’s idea of a “Western” family preceded the widespread entertainment of the rather iconoclastic view that the “Western” family type itself was better described as two systems, a Northwest European family system and a Southern European, or Mediterranean, family system (Reher, 1998; Viazzo, 2010). According to Reher,

Southern European family ties are stronger, and an individual's welfare is more often considered a family responsibility than the individual's alone. Whereas Northern Europeans tend to place higher value on such factors as independence and individuality, Southern Europeans tend to place higher value on such factors as cohesiveness and, importantly for us, the family care of vulnerable members. This view echoed that of anthropologist Alan Macfarlane (1980; from Viazzo, 2010) who divided Europe into three major cultural areas based on such historical demographic factors as the age of marriage, the extent of never marriage, and household composition: East, Northwest and Southwest. Subsequent study of the family in Europe has largely corroborated Reher's ideas (i.e. Naldini on the structure of welfare systems [2003], Glaser and colleagues on intergenerational kinship relations [2004] and Fokkema et al. on intergenerational solidarity [2008]; see also Höllinger and Haller, 1990; Litwin, 2010; Murphy, 2008). According to this view, differences are cultural, not just a function of economic development. And in this scenario, Latin American families would be more similar to the Mediterranean or Southern European family than to the family of Northwestern Europe.

The implications a Northern/Southern European cultural family divide might have regarding childless elders in Europe is alluded to by anthropologist Philip Kreager in his edited cross-cultural volume on "Ageing Without Children" with Elisabeth Schröder-Butterfill (2004), but unfortunately, the book focuses almost exclusively on Northwestern Europe and Indonesia. The volume has only one case study from Southern Europe—a chapter describing the situation of a childless aunt on a Greek island in the 1960s (Hionidou, 2004). According to the article, it seemed natural for the aunt to turn to her niece for a reciprocal arrangement—in return for care in her old age that included coresidence, the aunt would bequeath her farm to her niece. The author did not try to generalize to other places in Europe.

Looking elsewhere, what I found for other South European countries was less clear. When describing the situation of a childless couple in a rural village of Spain in the 1960s, Brandes noted that the couple helped pay for the education and other needs of a young relative, without

necessarily expecting anything in return (1975). There was never any mention of adoption or the “borrowing” of a child to help with tasks. In a different piece on the same Spanish village, Brandes also described some of the reasons people might never marry (1976). But again, he never mentioned the implications of non-marriage for someone’s situation in old age, only that non-marriage was not considered a desirable fate. And unlike Hionidou, he was observing a population in which the bequeathment of a farm was not the valued bargaining chip it may have been at one time in a rural area because most youth saw the future to lie in urban areas, not on a farm. In describing the family situation of a village in southern Italy some decades later, Capello and Colcough could note: “Caring is centered on children, who are at the heart of family life. ... In the local value system, for married couples not to have children is deemed a failure and a disappointment” (2010). Yes, children are important for many reasons, but again, no mention is made of the old age implications of childlessness.

While Viazzo (2010; see also Viazzo and Zanotelli, 2010) traces the idea of a North-South divide in Western Europe back to the findings of such historical demographers as Hajnal (1965) and Laslett (1972), I would actually go back a little further to the work of Ernest Burgess published in 1960. Surveying European family law related to old age welfare, he found that most countries limited legal responsibility for elders to such immediate kin as adult children, and maybe grandchildren. However, he found Italian law to be different because it considered siblings and the offspring of siblings responsible as well. (Naldini [2003: 124-125] alludes to siblings in the Spanish civil code as well.) If such legal code merely formalized what had been common custom, then we are seeing a long-held cultural orientation toward familial responsibility that goes beyond the immediate family in the Mediterranean family. **Since almost everyone has biologically-based extended kin of some sort, it would appear that most elders in a Southern European family model, childless or not, would still be able to rely on kin for care in old age.**

### *Adoption and 'Fictive Kinship'*

The Northwest European and Southern European/Mediterranean family types may be distinguished by the relative importance of biological kinship bonds beyond the immediate family, but a cultural feature that appears common to both types of family systems is the rarity and ambivalent kinship situation of *non-biologically or affinely based* bonds, the seldom-mentioned use of adoption or “fictive” kinship to simulate “true” kin relations. Amusingly, Segalen makes a point about how the traditionally narrow view of family in Europe may be widening, even as she emphasizes the continued importance of the biological parent-child relation (2010). And Allen and colleagues talk about a relatively fluid definition of extended family by older people in the contemporary United States as if doing so is rather curious and ‘new’ (2011; see also Rubinstein et al., 1991). The ethnocentric myopia may be most evident in the omission of the topic of adoption in sociological introductions to what is supposedly a cross-cultural study of kinship (e.g. Pasternak, 1976), or when Western social scientists call non-biologically based kinship “fictive” (Fallers, 1965).<sup>3</sup> In describing the parent-child bond in Europe for instance, scholars often write about a “natural child” when they mean “biological child,” as if an adopted child is somehow “unnatural”(?). A brilliant reflection on this whole curious state of affairs is the nicely articulated piece written decades ago by David Schneider in his critique of American kinship entitled “The Fundamental Assumption in the Study of Kinship: ‘Blood is Thicker than Water’” (1984). Although the situation may be starting to change, his words are still quite germane almost 30 years after he wrote thoughts that in turn had incubated for years.

In my limited search of the literature on European kinship, I could not find much mention of adoption. But what I *did* find suggested similar outlooks in Northwestern and Southern Europe with extensions of the same to Anglo America and Latin America. What I *did* find were emphases on legality and the severance of parental rights for birth parents, a focus on the welfare

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<sup>3</sup> Actually, as Fallers noted, Levy was well-versed on the Chinese family system, but that system also had the same view about biologically-based kinship.

of the adopted child, a dominance of child welfare workers, and little attention to the old age needs of the adopting parent. What I *did* find was the use of adoption as a way to deal with infertility or illegitimacy in a secretive manner, and exchanges that often involved strangers who did not expect to see each other again. I *did not* find an open, positive mechanism for strengthening bonds between relatives who “shared” their children, mechanisms for strengthening bonds between birth and adopting parents, or even a way for birth parents and the children they “gave up” for adoption to maintain some kind of relationship. For instance, Howell (1976) mentioned adoption as a legal strategy for transmitting the right to farm land to younger adults in Middle Ages post-plague England, but did not mention that the older person received anything in return as a result, did not mention that there was a social bond being strengthened by the adoption. Cooper (1976) mentioned adoption in light of biological limits to inheritance custom among the landowner class in 15th-18th century Western Europe, but again, did not mention adoption as a mechanism for strengthening bonds, this time between landowning kinsmen. Naldini (2003) mentioned that child adoption in the family law of Southern European countries often included the stipulation that it include adequate provision for education, but did not speak to the issue of bonds between birth parent and adopting parent, or how an adoption was seen by the larger kin group. Ironically, despite the supposed focus on the child’s welfare of American adoption laws (at the state level), the right of an adopted child to inherit the wealth of his/her adoptive parent was sometimes denied even as adopted children were supposed to be the same as a ‘natural’ child in the eyes of the law (Modell, 1994). And even when inheritance rights have been legally recognized in North America, an adoptee might not be recognized as “one of us” by the larger kin group (Kirk, 1981). That adoption was seen as ‘unnatural’ by the law and culture is clear.

Contrast this rather severe and legalistic attitude toward adoption in Europe and North America with the situation in other parts of the world (Carroll, 1970; Djamour, 1952; Schröder-Butterfill, 2004). In Oceania and South East Asia for instance, adoption has occurred openly,

without any attempt to hide the identity of the birth parents or discourage occasional contact between the child and his/her biological parents. Birth parents are often siblings of the adopter, who is often a married individual with other children in his/her own right, not an unknown barren couple, a step-parent or the grandparent of an illegitimate child. Legality is not a major element. Similar to marriage in some respects, adoption can be a good way to cement bonds; or it can be a mechanism for distributing people in accordance with personnel requirements (Brady, 1976). And rather than being a rare 'last resort' solution to a problem, adoption can be something engaged in by a significant proportion of the population for the betterment of everyone, perhaps by 40 percent of a population (Terrell and Modell, 1994).

There is little reason to think that the dominant family systems of Latin America treat adoption differently from in North America or Europe. The one example of adoption about which I read in Costa Rica (Jenkins, 2002) mentioned illegitimacy, the transfer of a baby between strangers, the severance of parental rights for the birth parent, the importance of legal issues, and the barrenness of the adopting couple. One example hardly justifies generalization of course. But Cardoso mentioned that 'informal adoption' was widespread among people in the Caribbean and Latin America who had links to African cultures, inadvertently emphasizing its rarity among other ethnic groups in the area (1984). Also, descriptions of the pre-Columbian custom of *compradazgo*, the special spiritual bonding between adults committed to caring for a child, and between a child and a non-parental adult (e.g. Ossio, 1984) suggests to me that in some senses, the custom of *compadrazgo* was used in lieu of adoption—children were “shared” in a sense, but the biological parents remained the parents. And while I can find discussions of the legality of women inheriting or owning property historically in Latin America (e.g. Wilson, 1984), I cannot find reference to the legality of inheritance depending on whether the child was adopted or not. Finally, while I can read about how important household and bilateral kin organization was to the social and economic organization of many Andean peoples, I cannot find mention of adoption as a mechanism for filling a specific demographic slot, as seemed to be the

case in Oceania (Brady, 1976; Kuznesof, 1998; Lambert, 1977; Mayer, 2002).

Given the ability of some cultures to be rather flexible in their definition of kinship or kin-based groupings, some demographers (including myself) have been tempted to think of adoption as an old age security mechanism that can be invoked in cases of infertility, morbidity or unanticipated mortality. After all, researchers have indeed found that barren individuals or couples are more likely to adopt than people who have children (Carroll, 1970; Kirk, 1983; Rutstein and Shah, 2004). But they have also found that a lot of childless people do *not* adopt, while some people who already have children adopt nonetheless. Of the many reasons people adopt, old age security is rarely mentioned. But perhaps the most convincing argument against seeing adoption as a comprehensive old age security measure on the part of childless individuals has been made by Schröder-Butterfill based on research in East Java (2004; see also Marianti, 2004). She argues that, just as many biological children cannot be depended on to provide support in old age due to alienation, migration, morbidity or socioeconomic situation, adopted children too may not help older parents for one reason or another. Or their help is insufficient. Actually, if adoption typically occurs among kin in cultures in which it is common, the idea that kin such as grandchildren or siblings might bear responsibility for the well-being of an individual, (as in Mediterranean cultures) might be as effective as adoption in providing old age security. In both cases, the ideal is family support, not charity or public assistance.

## **Summary**

What this discussion has done has been to help motivate two sets of questions that can be addressed in part by this study. First are questions about the woman's relationship with co-resident kin: "Do many childless older women live in extended family households even when they do not have their own biological adult children with whom to live?" "If so, how are they related to the head of the household?" The second set of questions is: 1) Do standard demographic and socio-economic characteristics of elderly childless women help predict

whether or not she lives in an extended family household? 2) Is living in an extended family household more likely if the woman has resources that she can share with relatives?

It is important to stress the words “in part” in the first sentence of the previous paragraph. Notions about “the ability to wield power” noted on page four above assume two people: the one with more power and the one with less power. But we only know one side of the equation - the characteristics of the woman herself. While the data can tell us something of importance, what they can tell us is only a part of the total picture. For instance, if a woman is in obvious need of assistance, but her relatives cannot even share their residence because of distance, poverty or something else, then it does not matter what **her** characteristics are. Obversely, if a woman has assets to share, but her relatives do not want those assets, having them is meaningless. It is only when there is a combination of assets and need, as was the case both in Greece around 1960 or in Java more recently, that there can be co-residence (Hionidou, 2004; Schröder-Butterfill. 2004).

## THE STUDY

The empirical part of this study uses census data for eight Latin American countries. The study focuses on people living in private households, excluding people living in such institutional settings as nunneries. Each data set is treated separately but also pooled with the others into a ninth, regional, data set. Children Ever Born information is used to measure childlessness, and extended family status is based on household “relation to head” information. The statistical method is two-fold. The first part is purely descriptive, using simple frequency distributions. The second part involves estimation of a multivariate logit regression model of extended family living given various demographic and socioeconomic characteristics. The study finds that a majority of elderly childless women live in extended family households, often as “another” relative of the head. When it is possible to examine the ‘relation to head’ in more detail, as is the case in half the data sets, many of the “other relative” elderly women appear to

be siblings or aunts of the head. The multivariate results differ for each country of course, but they tend to be similar in showing an increased likelihood of extended family living among women who lived in a home owned by someone in the household (in 5 of the 8 countries), and a much lower likelihood of extended family living among women with more than a primary school education (in all 8 countries).

## **Data**

### **Census Data for Eight Countries in Latin America**

Data are the private household populations of the population and housing census samples of Latin American countries with ‘Children Ever Born’ information available from the University of Minnesota’s comparative International IPUMS data base project in 2008 – Argentina (2001) Brazil (2000), Chile (2000). Colombia (1993), Costa Rica (2000), Ecuador (2000), Mexico (2000), and Venezuela (1990).<sup>4</sup> I emphasize the word COMPARATIVE because that quality enables us to perform the same analysis in each country and to pool the data into a ninth regional data set (weighting the records in accord with a country’s proportion of the elderly population in the 8-country region in the year 2000.) No set of countries can be “representative” of Latin America as a whole of course, but study countries include some of the largest and smallest in Latin America, some of the wealthier and poorer, and some with lower or higher fertility and mortality. See Table WP2. For example, Brazil is estimated to have had a 2000 population of over 176 million and Mexico a 2000 population of almost 100 million while Costa Rica had less than 4 million people and both Chile and Ecuador had less than 16 million people. If we use Per Capita Gross Domestic Product as an indicator of general wealth, then the World Bank estimated

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<sup>4</sup> Data source: <https://international.ipums.org/international/>; Minnesota Population Center. Integrated Public Use Microdata Series - International: Version 3.0. Minneapolis: University of Minnesota, 2007. The IPUMS project in turn obtained its data from Argentina’s National Institute of Statistics and Censuses; Brazil’s Institute of Geography and Statistics; Chile’s National Institute of Statistics; Colombia’s National Administrative Department of Statistics; Costa Rica’s National Institute of Statistics and Censuses; Ecuador’s National Institute of Statistics and Censuses; Mexico’s National Institute of Statistics, Geography, and Informatics; and Venezuela’s National Institute of Statistics. The IPUMS project in turn made these data as comparative as possible, coding home ownership into four categories: 1) owns; 2) not owns; 3) not in universe; and 4) unknown. It was thus a straightforward matter to eliminate the “not in universe” cases as well as the small number (in a few countries only) of “unknown” cases.

the 2000 average for Latin America and the Caribbean to be \$3,960.29. Three countries under that average included Brazil, Colombia and Ecuador. Countries modestly over the average included Chile, Costa Rica, Mexico and Venezuela. Argentina was close to twice the average. Another oft-used indicator for relative well-being is the “infant mortality rate” or per mil number of infant deaths within one month of birth. Of the 8 countries, only Mexico had a 2000 rate above the average at 31.6. Chile had the lowest rate in 2000 of 9.7. Argentina may have had the highest per capita GDP (and % living in urban areas) but that did not translate into the lowest rate of infant mortality (which was 19.1). See Table WP2.

Information on Life Expectancy at birth, the Total Fertility Rate, the proportion of the population urban, and the percent of the population 60 years and over are other indicators that help describe the countries. Both Costa Rica and Ecuador in 2000 had the lowest proportion of residents living in urban areas at less than two thirds of their populations. But the average Life Expectancy at birth in Costa Rica was the highest of the 8 countries at well over 76 years while that of Ecuador was the lowest at 70.5. Again, Ecuador had the highest Total Fertility Rate (2.93) while Chile (not Costa Rica) had the lowest—2.08. See Table WP2.

### **Focusing on Childless Elderly Women 60+ in the Latest Available Census**

This study focuses on women 60 years and older who had 0 or an unknown number of children ever born (CEB). CEB information is not ideal for indicating childlessness, but can still tell us a lot. For instance, men may be as likely to be childless as women, but most censuses limit fertility information to adult women. So we focus on women. Further, census fertility information is usually limited to live births, not to whether those live births are still alive at the time of the census. Finally, some people without biological children nevertheless had children through marriage or adoption<sup>5</sup> while others who *did* have live births end up *de facto* childless

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<sup>5</sup> This appears to be a minor issue here, although kin relations in blended families has become a big issue in many European and European-origin populations. In cross-tabulations not shown, few women with 0 CEB were found to have a “parents (in-law)” relationship to the household head even when she lived in an extended family household. Of the various censuses, only Chile considered step-children in a separate ‘relation to household head’

because the children became alienated (Rubinstein, 1987). (Nor is it possible to assess the reliability of the census measures because data from earlier censuses tend to be very different, even for the same cohorts.<sup>6</sup>) The study uses information from the latest available census.<sup>7</sup>

The study considers old age in these populations to start at age 60 instead of 65. According to best estimates (U.S. Census International Data Base - <http://www.census.gov/population/international/data/idb/informationGateway.php>) the average life expectancy at birth in 2000 was only 70.9 years in Latin America and the Caribbean region compared to 75.6 in the “more developed countries.” Also, although the countries differ, most Latin American countries consider women eligible for some type of “old age” assistance or pension at age 60 or even earlier, not age 65

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category, and only Mexico considered step-parents a ‘relation to household head.’

<sup>6</sup> For instance, here is the percentage of women 60+ years of age who had a reported Children Ever Born of 0 or an unreported number for recent censuses in the 8 countries:

0 and Unknown Levels of Children Ever Born in the Recent Censuses of 8 Latin American Countries

	1990			2000				
	CEB	0	Unk	Total	CEB	0	Unk	Total
Argentina*	19.5	0.2	19.7	13.0	--	13.0		
Brazil	11.4	9.5	20.9	11.2	--	11.2		
Chile	12.4	3.3	15.7	10.4	2.6	13.0		
Colombia*	6.6	7.0	13.6					
Costa Rica*				8.1	3.1	11.2		
Ecuador*	8.6	5.2	13.8	11.9	6.4	18.3		
Mexico*	9.8	5.2	15.0	8.3	1.2	9.5		
Venezuela*	9.1	9.8	18.9					

\*The exact census years were 1991 and 2001 for Argentina; 1990 and 2000 for both Brazil and Chile; 1993 for Colombia; 2000 for Costa Rica; 1990 and 2000 for Ecuador; 1990 and 2000 for Mexico and 1990 for Venezuela.

I also had access to survey data for samples of older men and women gathered in 2000 in 7 cities of Latin America and the Caribbean (from the SABE sample – see Palloni and Peláez, 2004). Four countries overlapped. For example, the Argentinian census of 2001 provides a national estimate of childlessness of 13% whereas the survey sample for Buenos Aires estimated 12.9%. The Brazilian 2000 census estimated 11.2% whereas the survey sample for São Paulo estimated 10.2%. The Chilean 2000 census provided a national estimate of 10.4% whereas the survey sample for Santiago gave an estimate of 9.6%. Finally, the 2000 Mexican census gave a national estimate of 8.3% whereas the survey of Mexico City gave an estimate of 5.6%.

<sup>7</sup> Unfortunately, the latest census data we have for Colombia is 1993, and for Venezuela is 1990, in which 7 and 10 percent of the women had an unknown CEB. While there were no unknown CEB data in Argentina or Brazil in their 2000 censuses, the level of unknown CEB in the 2000 Ecuador census was over 6 percent. See information in note #6.

(<http://www.ssa.gov/policy/docs/progdesc/ssptw/2006-2007/americas/index.html>).

## **A Pooled Sample**

Although the eight countries cannot be particularly representative of Latin America as a whole (that might well be impossible), it is nonetheless of interest to pool the data into one ‘regional’ data set. We did that, weighting each sample according to the country’s proportion of the elderly population in the eight-country region in the year 2000. As to be expected, Brazil dominates, having roughly 42 percent of the region’s 60+ population. Mexico comes in at half that, and Argentina constitutes a little over 15 percent. On the other extreme, tiny Costa Rica constitutes less than 1 percent of the pooled sample, and Ecuador comes in at under 3 percent.<sup>8</sup>

## **The Variables**

The samples are described further in terms of the percentile distributions shown in Table WP3. The data contain information on extended family living, ‘relation to household head,’ the demographic characteristics of age and marital status, the geographical characteristic of urban/rural residence (except in Ecuador) and the socioeconomic characteristics of home ownership and educational attainment. While most characteristics apply to the individual herself, it is important to note that information on home ownership refers to ownership by anyone in the household, not necessarily the woman herself. Home ownership is the one indicator we have that can refer to the general material well-being of the entire household, and provides us a sense that people may think in terms of a family homestead rather than a home that belongs to any one individual, especially if that individual is an older woman. That is, while household headship is usually assigned to the home owner, enumerators in Latin America were often instructed to assign headship to the oldest male, irrespective of his economic status in the

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<sup>8</sup> According to estimates from the U.S. Census Bureau’s International Data Base, the 60+ population of the eight countries in 2000 totaled 32.5 million people. The proportional composition was 42.3% Brazil, 21.2% Mexico, 15.3% Argentina, 8.2% Colombia, 4.8% Venezuela, 4.7% Chile, 2.6% Ecuador and 0.8% Costa Rica.

household.<sup>9</sup> We try to minimize the male bias by creating a category of “co-head” in which the spouse or partner of the head is considered a head along with the man, but this mainly pertains to women who are currently married, a relatively small portion of our population.

### *Extended Family Living and Relation to Household Head*

A household that contained kin of the household head was considered extended.<sup>10</sup> That is, the data sets were all organized so that everyone in a household was enumerated, allocated a household Identification Number (ID), and given a ‘relation to head’.<sup>11</sup> Census-specific, all the different ‘relation to head’ variables had seven basic categories: head, spouse/partner, child (in-law), parent (in-law), other relative, non-relative, and domestic servant. This information (for everyone) was used to develop a variable for household extension that emphasized the household’s **FAMILY** nature (ignoring the presence of people unrelated to the household head such as domestic servants; Hammel and Laslett, 1974; De Vos, 2004).

We can see from Table WP3 that on average over half (58%) of the samples of childless elderly women lived in an extended family household despite not having had any biological children. While the average roughly describes four of the eight countries, it does not do a good job describing the situation in the other four. In both Argentina and Chile for example, a majority of the women DID NOT live in extended family households while over THREE FOURTHS *did* in Ecuador and Venezuela. We shall explore these findings in more detail in the next section.

An average of about half of the women were household heads themselves (55%; I consider spouses and/or partners co-heads), this being greatest in Argentina, Brazil and Chile. See Table

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<sup>9</sup> United Nations, 1998. There is little statistical relationship between home ownership and household headship anywhere.

<sup>10</sup> Although some censuses defined a household (*familia*) in terms of a group sharing a common budget whereas others defined it in terms of eating meals together or sleeping under the same roof, all the definitions produced near identical results in a practical sense (De Vos, 1995; United Nations, 1998).

<sup>11</sup> Half the censuses separated out siblings from “other relatives” although the distributions shown in Table WP3 consider sibling relations in the “other relatives” category in order to be comparable. In a later section, the further detail is examined at greater length.

WP3. Small proportions of the childless women were themselves the children (in-law) or parent (in-law) of the head – on average about 3.3 and 4.2 percent. Much more noteworthy was that almost a third were some ‘other relative’ of the head while an average of 4.2 percent were unrelated to the head.<sup>12</sup> On average, about one and a half percent were domestic servants, this being somewhat less in Argentina and somewhat more in Colombia.

### *Other Study Variables*

A third family variable, often also considered a basic demographic variable along with age, is **marital status**. As mentioned before, coding marital status in Latin America does not simply follow traditional census categories. First, since many unions among lower income people are not formalized, we consider both informal and formal unions “marriage.” Some women were currently in a marriage (as defined here) while other women who had been married but were not married at the time of the census--widows, separated women or women from annulled marriages--were all considered “formerly married.” But some women who were no longer in an informal arrangement considered themselves “single” instead of “formerly married” and the data do not enable us to distinguish between those who had never been in a union from others who had been but were not in a union at the time of the census. (That many “single” women had been in a union at one time is evident from the fact that many had had live births.) We thus use a three-category marital status variable of 1) currently married, 2) formerly married, and 3) single (rather than never-married). Looking at the sample this way, we find that on average, roughly a fourth (22%) of the elderly childless women were currently married and another fourth (23%) were formerly married. On average, roughly half (55%) were single. This could accord with the samples’ age distribution: about a fourth of the samples were 60-64 years of age, almost 40 percent were 65-74 years of age, and about a third were 75 years old or older. The Colombian

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<sup>12</sup> Figures for Colombia were 7 and 8 percent respectively being “other nonrelative” (non-domestic servant) of the household head, reinforcing the notion that the ‘household’ (not necessarily the family) has been a major institution of Andean society.

sample was somewhat younger than the others. See Table WP3.

**Geographic** variables were the **country** and **urban/rural residence** within the country. We already mentioned the diversity of the countries, how small the Costa Rican sample is in particular, and the reason we ‘chose’ the eight countries (available data). What had not been mentioned before is that the definition of ‘urban’ varies, sometimes being defined in terms of a population as small as 2,500 people, other times being defined as any place with some kind of administrative structure such as a school or hospital. (The Ecuador sample did not have ANY urban/rural variable.) With such a low bar when the variable even exists, it may be of no surprise that, on average, over four-fifths (83%) of the sample was urban. In fact, over 90 percent of the Argentinian sample was urban while Mexico’s sample had a “low” of only 75 percent “urban.” See Table WP3. In fact, instead of a simple two-category measure (urban or rural) some censuses develop a four- or six-category measure that can capture more clearly a sense of gradient between big city and totally rural living as many people can live in “villages” of 5,000 people that do not have such “urban” qualities as being a county seat, having a school or hospital, etc. But such gradients cannot be used here since we need to be as comparable as possible.

**Socioeconomic** variables were **education** and **home ownership**. It is challenging to try to assign socioeconomic status to older, often unmarried, women. Although social scientists commonly think in terms of education, occupation AND income when they think of standard socioeconomic indicators, we are assigning socioeconomic status to someone who may never have had an occupation outside of homemaker nor controlled any income attached to working outside the home. So we are left to using educational attainment, and use an international standard that refers to *level* rather than *number of years* of schooling (see Martelin, 1994; De Vos, 2005a). However, despite the temptation to use education to help indicate class as well as status, the education of women especially, may do more to help indicate less acceptance of a dogmatic patriarchal ethos often associated with the traditional extended family. Higher

education especially may expose individuals to the power of logic and reasoning, and may convey a sense of personal separateness inimical to a traditional family outlook. Just the experience of attaining more than a primary school education may have required a young woman to live in a household away from her parents unless they lived close to a school, separating her from her family physically as well as mentally.

Given that more than a primary school education is not average in most of the populations we study, education is measured here with a trichotomous variable based on the attainment of a primary school education (< primary completion, primary school graduate, > primary school).<sup>13</sup> Half our samples on average did not attain a primary school level of education, while close to a third did. Only 15 percent on average attained more than a primary school education although that figure grossly under-estimates the level of educational attainment in Argentina and Chile while grossly over-estimating educational attainment in Venezuela. See Table WP3.

Home ownership is indicative of accumulated wealth rather than income. Perhaps wealth is a more appropriate indicator of socioeconomic status among elderly people except that we do not know who owns the home. We *do* know however, that almost four-fifths (79%) of the women resided in an owned home. See Table WP3.

## METHOD AND MODEL

The statistical method is two-fold. The first part is purely descriptive, using simple percentile or frequency distributions. We were able to show a basic “relation to household head” variable for all eight countries and the region in Table WP3. In the next section, we can examine “relation to head” information in more detail in select countries, still using simple percentile or frequency distributions. Then, in a second part, we estimate a binomial multivariate logistic model of extended family living (yes/no). Multi-category independent variables are converted into a set of

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<sup>13</sup> Illiterate women were coded as having less than a primary school education.

dummy variables in which contrasts with an omitted category are estimated using the STATA 10 statistical software. Results are first reported in terms of log odds and their standard errors because those are the terms in which the statistical package makes estimates. Given the sample sizes, significance is assessed at  $p < .001$ . As the logistic model is multiplicative, we then convert the log odds into more interpretable likelihoods, the exponential value of the log odds. The entire results are reported in Appendix Table A-1. Likelihoods are reported in the text in Table WP5.

The full multivariate model regresses extended family living (yes/no) on age, marital status, education, home ownership (yes/no) and urban/rural residence. The model is identical in each country except that it was not possible to control for urban/rural residence in Ecuador (the variable did not exist). The pooled sample regresses extended family living on age, marital status, education, home ownership AND country. Our main focus is on the independent effects of education and home ownership, but controlling for age, marital status and in most countries, urban/rural residence is important. For instance, age has a well-known relationship with education, younger people having more education. Younger elders are also more likely to have spouses/partners or siblings still alive with whom to live, and still have the health to help with the daily functioning of a household. Conversely, older elders may need the care best provided by coresidence. Ideally, such factors could be identified specifically, but at least we can help take them into account by controlling for age.

Or consider marital status (currently-, formerly- and never-married [or single]). The conjugal unit has a special status: Not only are people who are currently married expected to be emotionally, socially and economically self-sufficient, but they almost always have a companion without having to be part of an extended family household [or live in group quarters]. People who are formerly married and do not want to live alone are in more need of extended family residence than currently married people (although they can also live with unrelated people of course). But by marrying, formerly-married women had weakened their ties with their family of

origin while also having had the experience of heading their own household, and the authority that entails. They may also have saved some resources from when they *were* married with which to stay independent. Women with the least resources but also the most right to care from other family members might be those who never married, perhaps because they themselves were the primary caregivers for others in their family when they were younger (see Brandes, 1993). It would be difficult to interpret a relationship between education or home ownership and extended family living without controlling for such factors.

Urban/rural residence can be an important control too, even if it is poorly understood and non-standardized. In some places, urban environments are more crowded, motivating people who might otherwise live separately to live together. In other places, rural families may be more likely to incorporate childless relatives (see Martin and Kinsella, 1994; United Nations, 2005). Buchowski articulates our ambivalence and confusion well: "... we live in a 'post-peasant' society, and the sharp urban/rural dichotomy, overemphasized and ideologically used and abused in the past, is no longer valid" (2010:297). But whatever the difference might actually be, controlling for urban/rural residence helps us better specify a model focused on the NET effects of education and home ownership. Ideally, instead of a simple two-category measure (urban or rural) it would be better, as some censuses have done, to have a four- or six-category measure that can capture more clearly a sense of gradient between big city and totally rural living<sup>14</sup> but that does not yet exist for a comparative study such as this one, so we use what is available.

## FINDINGS

### **Another Look at Extended Family Living and 'Relation to Household Head' of Childless Elderly Women**

When describing the variables in the study, we noted that an average of 58 percent of the

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<sup>14</sup> Many people can live in suburban towns while others can live in "villages" of 5,000 or more that lack such urban characteristics as being a governmental center, having a school or housing a jail or hospital.

childless elderly women in the eight countries lived in extended family households (Table WP3); that four of the eight countries exhibited a figure fairly close to this average; and that four others did not. Less than half of the women lived in extended family households in Argentina and Chile, while more than three quarters did in Ecuador and Venezuela. The Argentinian figure of 41 percent makes sense, since, compared to its neighbors, the country apparently has a generally lower level of family co-residence among elders (Kaplan and Redondo, 1992). But the extremely low Chilean figure (25%) is a mystery (I checked that it was not a mistake), especially since the Chilean census has one of the more detailed 'relation to head' variable, suggesting that the census designers were aware of the importance of family co-residence. And the high figure in Ecuador (82%) is consistent with the ideas expressed by Bolton, Mayer and others that the household is the central unit of social organization in Andean societies (e.g. Bolton and Mayer, 1977; see also Mayer, 2002). But again, I cannot find literature that would suggest a reason for the high figure in Venezuela (76%).

How can most of these women live in extended family households when they themselves did not have biological children with whom to live in old age? Panel 1 of Table WP4 shows the women's basic relationship to the household head for those living in extended family households. On average, almost a third (32%) of the women headed the households, either alone or with a spouse/partner. Is it reasonable to assume that those heads also owned the house when the home is owned? Yet if about a third headed the household, that also means that on average, two-thirds did *not* head the household and may *not* have owned the house (although we had noted the ambiguity surrounding the notion of headship). Almost half lived as a relative of the head other than as a child (in-law or grandchild) or parent (in-law). Another near-7 percent respectively lived as a child or parent of the head (reinforcing the notions that some women remained in their parents' household rather than starting a family of their own, and that others who never gave birth themselves nonetheless became parents through marriage or adoption). A small proportion of the women were unrelated to the head, sometimes as a domestic servant.

As with the average figure on extended family living, the brief summary of “relationship to head” data masks some noteworthy differences in individual countries (Panel 1 of Table WP4). For instance, compared to the average proportion of 6.9 percent, the proportion of women listed as a parent of the household head appeared high in Costa Rica (10.5%) and noticeable in Colombia (9.5%). Compared to the average proportion of 6.6 percent, the proportion of women listed as a child of the household head appeared especially high in Chile (14.9%), somewhat high in Colombia (9.5%), and especially low in Ecuador (2.8%) and Venezuela (2.2%). Is this related to the relatively low or high overall levels of extended family living in these countries? Could the relatively high proportions in Chile and Colombia also be related to their elevated proportions of women listed as non-relatives of the head—11.6 percent in Chile and 11.5 percent in Colombia compared to an average of 5.9 percent?<sup>15</sup> Finally, and of potentially special interest, compared to the average of 48.7 percent, the proportion of women listed as “another relative” of the household head was quite high in Ecuador (72.0%) and rather low in Colombia (33.8%).

Who *are* these “other relatives” who comprise on average half the childless women residing in extended family households? Four of the eight countries separated out siblings from other relatives, something noteworthy in itself, as census questions can do much to reflect cultural orientation.<sup>16</sup> The category proves to be important (Panel 2 of Table WP4). An average of half the “other relatives” (neither parent nor child) were siblings of the head. This was more than half in Brazil and Mexico, and less than half in Chile and Venezuela.

This leaves us to ask who those non-sibling “other relatives” are. Only Mexico provides an

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<sup>15</sup>  $9.0+2.6=11.6\%$  in Chile;  $8.5+3.2=11.5\%$  in Colombia; and an average of  $4.4+1.5=5.9\%$ .

<sup>16</sup> As the coding of “relation to head” is country-specific, “siblings” in some cases include in-laws or half siblings while in other cases they do not. Unfortunately, census designers trained in a Northwest European census mode tend to omit the additional category altogether because it is not important for Northwest European populations. Another example of the cultural dimension to census coding is how ‘race’ is identified by the Brazilian census. Brazilians themselves often consider race in a complex fashion and use many categories to indicate just how much European or African ‘blood’ someone might have. But Western-trained census designers often suggest following the misguided United States model of making race a dichotomy of “white/non-white” even as the United States census now indicates “ancestry” with many categories (see De Vos, 2005b).

answer. Panel 3 of Table WP4). In Mexico in 2000, most of the women who were still other relatives of the head after taking siblings into account were aunts of the household head. A few were cousins or nieces. Even rarer were siblings of siblings-in-law or godparents (although it is noteworthy that the relations are even mentioned). We must resist applying this knowledge to other countries in the region of course, as each country clearly exhibits its own household situation. But it stands to reason that a child of a sibling would assume responsibility for housing a relative when the sibling him/her self was no longer the head of the household, and that people might refer to a kinship relation when justifying coresidence, no matter how distant that kin relation might appear to be.

### **Predicting Extended Family Living Among Childless Elderly Women**

The results of our multivariate model regressing extended family living on education and home ownership controlling for several other factors, are shown in terms of likelihood in Table WP5. Significant estimates are in bold. The likelihoods have been converted from the log odds estimated by the statistical software and shown in Appendix Table A-1. All the models are significant at  $p < .001$  although Pseudo- $R^2$ s range from a paltry .017 in Chile to a more reasonable .149 in Colombia.

Unexpectedly, education had a NEGATIVE relationship with the likelihood of living in an extended family household. See Table WP5. Childless elderly women with less than a primary school education were significantly more likely than those who had completed primary school to live in an extended family household in four of the eight countries (Brazil, Chile, Colombia, Costa Rica) and the pooled sample. The contrast was smallest in Brazil where a woman without a primary school education was 35% more likely to live with extended family. It was largest in Costa Rica where she was 42 percent more likely to live with extended family. The contrast for women with more than a primary education was even more striking. The difference between women who had more than a primary school education compared to those who only went so far

as to complete primary school was significant in all eight countries. Again, it was smallest in Brazil where a childless elderly woman was only 79 percent as likely as her counterpart with a primary school education to live with extended family. But this time, instead of Costa Rica, the contrast was largest in Venezuela where she is estimated to be only 40% as likely to live with extended family.

In contrast, and consistent with expectations, home ownership was POSITIVELY related to the likelihood of living in an extended family household in five of the eight countries (the EXCEPTIONS being Chile, Ecuador and Venezuela) and in the pooled sample. See Table WP5. The smallest difference was in Colombia, where a childless elderly woman was 23 percent more likely to live with extended family if her home were owned. The difference was greatest in Mexico where she was 141 percent more likely. For the region overall, she was 65 percent more likely.

While the control variables cannot speak directly to the hypothesis that childless women with more resources were also more likely to live in an extended family household, they are of interest in their own right. (Table WP5.) For instance, we find age to be important almost everywhere, in a curvilinear manner in which younger and older elderly women (those 60-64 or 70+) tended to be more likely to live with kin than 65-69 year olds. Likewise, marital status was almost always important, single childless women most likely to live with kin, followed by formerly-married childless women, and least likely among currently married women (where marriage can be formal or informal).<sup>17</sup> Finally, and as expected, urban/rural residence was only significant in three of the seven countries for which there were data. In two of the countries (Argentina and Brazil) rural residents were much more likely to live with kin. In Mexico however, urban residents were more likely to live with kin although the difference was not great (9 percent).

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<sup>17</sup> Results for Colombia seemed very strange but I could not find an error in my data handling. Nor could I find an explanation for the results I obtained. I report what I found in the hope that some reader can make sense of the figures.

## DISCUSSION AND CONCLUSION

In Latin America, a majority of older people live in extended family households, usually with an adult child. However, more than 11 percent of elderly women 60 and over may never have had any biological children with whom they could live. This level of childlessness, of ALL women, is NOT particularly uncommon from an international perspective. Nor is it simply a matter of voluntary or involuntary fertility. It is a confluence of a whole set of proximate determinants of fertility, some of which are mainly due to social factors. If they have no children with whom to live, do childless elders still live in extended families?

If we were studying a population largely influenced by the culture of Northwestern Europe, the answer would be “No. Childless elders do NOT live in extended families.” The cultural emphasis in such populations is on independence and individuality. The idea of family responsibility does not generally extend beyond parents and children. People without living children are often left to their own devices, while even elders with living children tend to live separately, even alone. But in Southwest European or Mediterranean countries, the answer is often “yes” because the extended family is responsible for ALL members including those without children. And sharing a residence can be a major way to fulfill that responsibility. Independence there is not necessarily a virtue, and the interests of the group may trump those of the individual.

Latin American families are more similar to Mediterranean families than to those of Northwest European origin regarding cultural attitudes toward the meaning of extended family relations. Using comparative census data from the University of Minnesota’s International IPUMS data set, we found that in six of the eight countries examined in this study (Brazil, Colombia, Costa Rica, Ecuador, Mexico and Venezuela but not Argentina or Chile), a majority of childless elderly women 60+ years lived in extended family households. Even in the two countries in which extended family living was not lived in by a majority of childless elderly

women, it was still quite common. Of those childless elderly women living in extended family households, almost a third were head/co-head of the household but a higher percentage were classified as 'other relative' of the head. In the four countries for which there was information, many of the 'other relatives' were the sibling of the household head. In Mexico, where there was even more detail, many of the 'other relatives' who were not siblings, were aunts (or siblings of the parents) of the household head.

At the same time, a common family characteristic of Northwestern Europe, Mediterranean Europe, and Latin America appears to be the rarity of adoption. Adoption has been commonly engaged in by people in Oceania and parts of South East Asia, and not just by childless people. In contrast, it is rarely mentioned in Europe or in Latin America. In this study, we found that only about 7 percent of biologically childless elderly women living in extended family households were the parent/parent in-law of the head (adopted through marriage?). This is very indirect information of course, but the best we could tease out of the data. There is obviously need for much better information on adoption in Latin America.

While a majority of childless elderly women may have lived in extended family households in most of our study countries, the arrangement was not so universal that it did not make sense to ask what characteristics might be related to the likelihood that they did so. The study's main hypothesis was that the likelihood was higher if the childless women had more resources to command over others, whether those resources were spiritual, emotional or economic. We used household composition to indicate extended family living. We used home ownership and educational attainment to indicate socioeconomic status. We performed binomial multivariate logistic regressions in which extended family living (yes/no) was regressed on education and home ownership, controlling for age, marital status and urban/rural residence.

Results were only partly consistent with expectations. If the home were owned, the woman was MORE likely to live in an extended family household. If she were better educated, she was LESS likely to. These findings tended to be fairly consistent across the Latin American countries

in the study, if the actual size of contrasts varied somewhat. Such findings inevitably raise more questions than they answer because they could mean that the hypothesis is wrong, that our understanding of the indicators is wrong, or some mixture of these factors.

Let us first consider the hypothesis because it was based on an understanding of traditional notions that may not operate in a more modern context. That is, in his study of historical trends in the United States, Ruggles found that as the country developed economically and become more urbanized, the relationship between co-residence and socio-economic status changed (2001). In the mid-nineteenth century, older persons with higher status were more likely than others to live in extended family households. Over time however, the relationship between socio-economic status and coresidence weakened and eventually reversed.<sup>18</sup> Commenting on the fairly recent situation in the industrial urban area of São Paulo Brazil, Ramos suggested that coresidence was engaged in primarily by poorer people, that the coresident elderly individual was often an old, disabled and poor unmarried woman who may have originally lived in a rural area (1994). Since that is NOT the traditional situation, we could be seeing discordant results in the present study because the situation is in the process of changing along the lines of the transition described historically for the US.

Is using data on co-residence the best way to indicate extended family living? The present study defined extended family living in terms of residing in the same household as other kin. And census household data fit naturally with this idea. But limiting ourselves to coresidence may be missing the point. Litwak advanced the notion of a “modified extended family” that fit better with the demands of an urban/industrial society because it dropped the coresidence requirement (1965). He argued that it was no longer necessary for family members to live together in order for them to have frequent contact because they could stay in touch through phone conversations, mail, *and now with other mechanisms as well such as skype and email* (italicized comment added by author). Others have emphasized the importance of **physical** proximity even when

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<sup>18</sup> His study used information on income and occupation to help indicate socioeconomic status whereas we use information on home ownership and educational attainment.

literal coresidence does not occur, perhaps measured in terms of living in the same building (but with separate entrances), living on the same block, or even living in the same neighborhood (e.g. kin) (e.g., Börsch-Supan et al., 2008; Kohli et al., 2010). This enables people to visit often, be instantly available in case of an emergency, help with chores, and even commonly share meals together while still living in separate spaces. Taking this idea even further, one could argue that co-residence is neither necessary nor sufficient if someone needs constant care -- Ghezzi suggested that caring relatives who were able, would hire *badante* to constantly care for elderly family members in Milan, Italy, whether or not those relatives also co-resided (2010). On the other hand, research on the issue of contact between elderly parents and their adult children in the United States between 1962 and 1984 found that a decline in coresidence may have been the beginning of a gradual erosion in contact of any kind (Crimmins and Ingegneri, 1990). Will the same thing happen elsewhere (generalized from parents and children to all elders and their extended family)? Is “modified” really the “beginning of the end”?

The practical problem for quantitative research has been having to make a tradeoff between sample size on the one hand, and the level of detail regarding contact on the other. Censuses have traditionally gathered large samples that make it reasonable to study a relatively small subsample such as childless elderly women, but they also provide only household information. Census cannot provide the kind of detail on potential or actual contact outside the household that one might wish for. On the other hand, special surveys focusing on older people can collect more detailed information, but generally are not large enough for us to submit a minor subsample of cases to multivariate analysis. For instance, a survey of elderly people in six urban areas in Latin America conducted in 2000 not only gathered information on co-residence but also information on the proximity of siblings and other important relatives (same household, same neighborhood, same city, same country, elsewhere). But the survey in any one urban area did not have a sample size sufficient for subjecting a small subset of the sample to multivariate

analysis.<sup>19</sup> And without a study such as the present one, there would be little justification to support the pooling of all the survey data into a regional data set. Although dated, there now appears good reason to study the “modified” extended family situation of childless elders in urban Latin America.

Even if future research used a different indicator for “extended family living,” would our choice of indicators for socioeconomic status still produce discordant results? In five of the eight countries, a childless elderly woman was MORE likely to live in an extended family household if the home were owned. This could be consistent with expectations **except that** we do not know whether the woman herself owned the home.<sup>20</sup> Who actually owns the home could tell us who moved in with whom, and who might ultimately hold the upper hand in relationships.

Then there is the socioeconomic status indicator of education. In all eight countries, a childless elderly woman with more than a primary school education was LESS likely to live in an extended family household than was a childless elderly woman with less education. Why does education, especially higher education (more than primary school), have such a clear negative effect even after controlling for such factors as age and urban/rural residence? After all, education is often used as a proxy for income or consumption in studies that do not have a more direct measure (see e.g. Montgomery et al., 2000). Would that effect be similar even if we considered a “modified” extended family that did not necessarily involve coresidence? Even as education helps indicate more resources, does it also inevitably make women less inclined to accept the constraints imposed by extended family living? Does education make women value independence more? Do relatives somehow feel less responsibility toward a more educated

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<sup>19</sup> Buenos Aires (1,039), Havana (1,905), Mexico City (1,247), Montevideo (1,444), Santiago (Chile, 1,301), and São Paulo (2,143).

<sup>20</sup> Traditionally, censuses assign headship to the owner of the household. Unfortunately, that was not the case here as the oldest male was supposed to be allocated headship whether or not he also owned the home. So although we found that about a third of the extended family households lived in by a childless elderly woman were headed by those women and two-thirds were not, we do not know if some or most of those non-heads were the actual owners, whether relatives moved in with the women or she moved in with relatives. (I found [figures not shown] that the women who headed the households tended to be better educated than their counterparts who did not head.)

woman? On a grand scale, women's education (or education in general) may be one of the largest engines for economic development there is. Does that mean that development and extended family living inevitably conflict? If so, why?

If this statistical overview has at least convinced the reader that the family situation of childless elders is a subject ripe for study, involving perhaps over 10 percent of all elderly women, then it will have succeeded. Ironically, to date, the topic of childlessness has received relatively little attention from either demographers or gerontologists, despite their concern over fecundity, fertility or the family situation of elders who have living children. This inattention may be the consequence of a culturally-based bias ill-suited for understanding aging among many populations, including those of Latin America, for whom important family extensions are not confined to parents and children.

The inattention has also caused some censuses and surveys to go **backward** when they eliminate 'sibling' as an important category from their 'relation to head' variable. They are copying the census design of countries where the sibling category is not important. But it *is* important in most Latin American societies, and probably elsewhere as well. In Latin America, a majority of childless elderly women 60+ still reside in extended family households in 2000, often as the sibling or aunt of the household head. In fact, a way **forward** would be to collect information on extra-household contact as some surveys are now doing.

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Table WP1. Percent Childless (CEB=0 or Unknown) Among Women 60+ Around the World

High (CEB > .15)			Intermediate (CEB = .10-.15)			Low (CEB < .10)		
COUNTRY	PERCENT	DATE	COUNTRY	PERCENT	DATE	COUNTRY	PERCENT	DATE
Uganda	15.0	1991	Netherlands	10.4 SHARE (50+ in 2004)		South Korea	2.2	2000
Austria	15.3	2001	Serbia	10.6	2002	Singapore	2.6	2000
Burkina Faso	15.5	1985	Ukraine	10.6	2001	China	3.3	1990
Romania	15.8	2002	Belarus	10.7	1999	Maldives	5.0	2000
Switzerland	16.0 Rowland (b. 1935-39)		Venezuela	10.7	1990	Turkey	5.3	2000
Bolivia	16.5	1992	Nepal	11.0	2001	Kazakhstan	5.9	1999
Canada	16.7	1991	Costa Rica	11.2	2000	Malawi	5.9	1998
Germany	16.8 SHARE (50+ in 2004)		Benin	11.2	1992	Kyrgystan	6.0	1999
Azerbaijan	17.3	1999	France	11.2 SHARE (50+ in 2004)		Cambodia	6.2	1998
Ecuador	18.3	2000	Brazil	11.2	2000	Iraq	6.2	1997
Uruguay	18.3	1996	Saudi Arabia	11.4	1989	Macedonia (Yug)	6.8	2002
Ireland	19.0 Rowland (b. 1940-44)		Philippines	11.5	1990	Belize	7.0	2000
Australia	21.0	1996	Hungary	11.6	2001	Bulgaria	7.0	2001
Latvia	21.2	2000	Slovenia	11.7	2002	Bahrain	7.2	2001
Portugal	21.9	1991	Egypt	11.9	1986	Swaziland	8.1	1997
Finland	22.4	2000	Chile	12.0	2000	Armenia	8.2	2001
New Zealand	23.0	1996	United States	12.2	1990	Sudan	8.3	1993
Thailand	23.6	2000	Panama	12.4	1990	Burundi	8.4	1990
Luxembourg	26.2	2001	Puerto Rico	12.6	1990	Sweden	8.5 SHARE (50+ in 2004)	
Zambia	24.6	1990	Mozambique	12.8	1997	Botswana	8.8	1991
CAR	31.3	1988	Argentina	13.0	2001	Norway	9.0 Rowland (b. 1935-39)	
Gabon	36.7	1993	United Kingdom (E&W)	13.0 Rowland (b. 1935-39)		Paraguay	9.2	2002
			India	13.1	1991	Cyprus	9.2	1992
			Greece	13.1 SHARE (50+ in 2004)		Czech Rep	9.3	2001
			Fiji	13.3	1986	Mexico	9.4	2000
			Russia	13.3	1989	Spain	9.7 SHARE (50+ in 2004)	
			Croatia	13.4	2001	Slovakia	9.8	2001
			Yemen	13.5	1994			
			Lithuania	13.5	2001			
			Colombia	13.6	1993			
			Dominican Rep.	13.7	2002			
			El Salvador	13.8	1992			
			Bahamas	13.9	1990			
			Belgium	14.0 Rowland (b.1935-39)				
			Italy	14.0 SHARE (50+ in 2004)				
			Moldova	14.1	1989			
			Denmark	14.2 SHARE (50+ in 2004)				
			Jamaica	14.6	1991			
			Estonia	14.7	2000			
			Tonga	14.8	1986			

Table WP2. Selected Indicators for Study Countries Around the Year 2000

	Gross Domestic Product per capita	Infant Mortality Rate	%Pop<60	Life Expectancy at birth	Total Fertility Rate	% Urban	Population
Argentina	\$7,703.00	19.10	13.3	73.8	2.46	90.1	37,336,000
Brazil	\$3,701.77	28.20	7.8	68.3	2.39	81.2	176,320,000
Chile	\$4,880.05	9.70	10.2	75.6	2.08	85.9	15,156,000
Colombia	\$2,364.27	21.32	6.9	71.9	2.56	72.1	38,910,000
Costa Rica	\$4,058.86	12.50	7.5	76.7	2.40	59.0	3,711,000
Ecuador	\$1,295.48	27.00	6.9	70.5	2.93	60.3	12,446,000
Mexico	\$5,934.98	31.60	6.9	73.0	2.70	74.7	99,927,000
Venezuela	\$4,818.71	20.45	6.6	73.3	2.83	89.7	23,493,000
Latin America and the Caribbean (Average)	\$3,960.29	29.30	8.0	71.5	2.65	75.4	50,912,375

Data for %Pop>60 and for LE at birth come from the U.N., 2002 publication "World Population Ageing 1950-2050" Dept. of Social and Economic Affairs.

Source for everthing else is World Development Indicators On-Line (as of Sept. 14, 2009) --

Table WP3. Sample Distributions of Demographic and Socioeconomic Variables Used in Study -- in Percents Childless Women 60+

	Argentina 2001	Brazil 2000	Chile 2000	Colombia 1993	Costa Rica 2000	Ecuador 2000	Mexico 2000	Venezuela 1990	Pool	Average
Extended Family Household										
Yes	37.9	53.8	23.0	73.7	60.4	80.1	65.1	75.8	54.3	58.7
No	62.1	46.2	77.0	26.3	39.6	19.9	34.9	24.2	45.7	41.3
Relation to Head										
Head/Spouse/Partner	67.4	62.7	59.8	47.3	53.6	26.4	53.5	37.4	57.0	51.0
Child/in-law/grandchild	2.0	3.1	3.5	6.6	2.8	2.2	10.8	1.3	4.3	4.0
Parent/parent-in-law	1.3	2.5	2.3	5.4	6.4	4.3	4.0	9.5	3.4	4.5
other relative	18.9	23.4	21.9	31.3	26.8	57.9	28.7	43.0	27.0	31.5
domestic	0.5	1.0	1.7	2.5	1.2	1.1	1.3	1.6	1.2	1.4
other nonrelative	9.7	7.3	10.9	6.9	9.2	8.0	1.7	7.1	7.0	7.6
Marital Status										
Currently Married	18.9	21.2	22.6	21.7	23.8	24.3	22.2	21.6	21.3	22.0
Formerly Married	28.0	22.7	21.7	22.2	19.8	22.4	22.3	24.7	23.6	23.0
Single	53.1	56.0	55.7	56.1	56.4	53.3	55.5	53.7	55.1	55.0
Age										
60-64	20.9	27.8	23.6	32.5	24.8	20.4	28.0	22.5	26.2	25.1
65-74	39.4	42.3	40.8	40.9	40.6	35.0	40.7	37.4	40.7	39.6
75+	37.0	29.8	35.6	26.6	34.7	44.6	31.3	40.1	33.1	35.0
Urban/Rural Residence										
Urban	94.1	85.7	88.8	78.2	75.2		74.9	85.1		83.1
Rural	6.9	14.3	11.2	21.8	24.8		25.1	14.9		17.0
Home Ownership										
Owns	77.3	79.2	78.6	80.0	79.0	73.4	83.8	79.4	79.5	78.8
Not owns	15.5	15.8	14.9	18.2	14.8	23.7	13.9	13.4	15.8	16.3
NIU (not in universe) or UNK	7.2	5.1	6.5	1.8	6.1	2.9	2.3	7.2	4.8	4.9
Education										
< Primary	28.0	73.7	38.0	56.3	53.4	57.8	59.3	58.1	58.6	53.1
Primary	45.0	9.4	38.3	33.3	28.8	29.3	30.2	38.1	24.5	31.6
> Primary	27.0	16.9	23.7	10.4	17.8	12.9	10.5	3.9	16.8	15.4
Sample Size	36,548	52,026	12,474	15,933	1,775	10,542	40,100	10,744	180,142	

Table WP4. The Relationship to Household Head of Childless Elderly Women 60+ Living in Extended Family Households

Panel 1

	Argentina 2001	Brazil 2000	Chile 2000	Colombia 1993	Costa Rica 2000	Ecuador 2000	Mexico 2000	Venezuela 1990	Average
Relation to Head									
Head/Spouse/Partner	37.8	41.9	24.7	36.9	35.8	15.6	34.5	27.7	31.9
Child/in-law/grandchild	5.3	5.8	14.9	9.5	4.7	2.8	7.7	2.2	6.6
Parent/parent-in-law	3.5	4.6	7.3	8.1	10.5	5.2	6.3	9.4	6.9
other relative	50.0	43.5	41.4	33.8	44.3	72.0	48.7	56.0	48.7
domestic	0.5	1.1	2.6	3.2	1.0	1.0	1.1	1.7	1.5
other nonrelative	2.9	2.9	9.0	8.5	3.7	3.4	1.5	3.0	4.4

Panel 2

	Brazil 2000	Chile 2000	Mexico 2000	Venezuela 1990	Average
Co-Head	41.9	24.7	34.5	27.7	32.2
Child	5.8	14.9	7.7	2.2	7.7
Parent	4.6	7.3	6.3	9.4	6.9
Sibling	<b>25.1</b>	<b>19.4</b>	<b>32.0</b>	<b>17.3</b>	<b>23.5</b>
Other Relative	<b>18.4</b>	<b>22.0</b>	<b>16.7</b>	<b>38.7</b>	<b>24.0</b>
Domestic	1.1	2.6	1.1	1.7	1.6
Other Nonrelative	2.9	9.0	1.5	3.0	4.1

Panel 3

Mexico  
2000

Co-Head	34.5
Child	7.7
Parent	6.3
Sibling	32.0
Aunt	12.1
Niece	<b>0.7</b>
Cousin	<b>1.3</b>
Sibling of sibling-in-law	<b>0.04</b>
Godparent related to head	<b>0.1</b>
Other relate, not specified	<b>2.4</b>
Domestic	1.1
Other Nonrelative	1.5

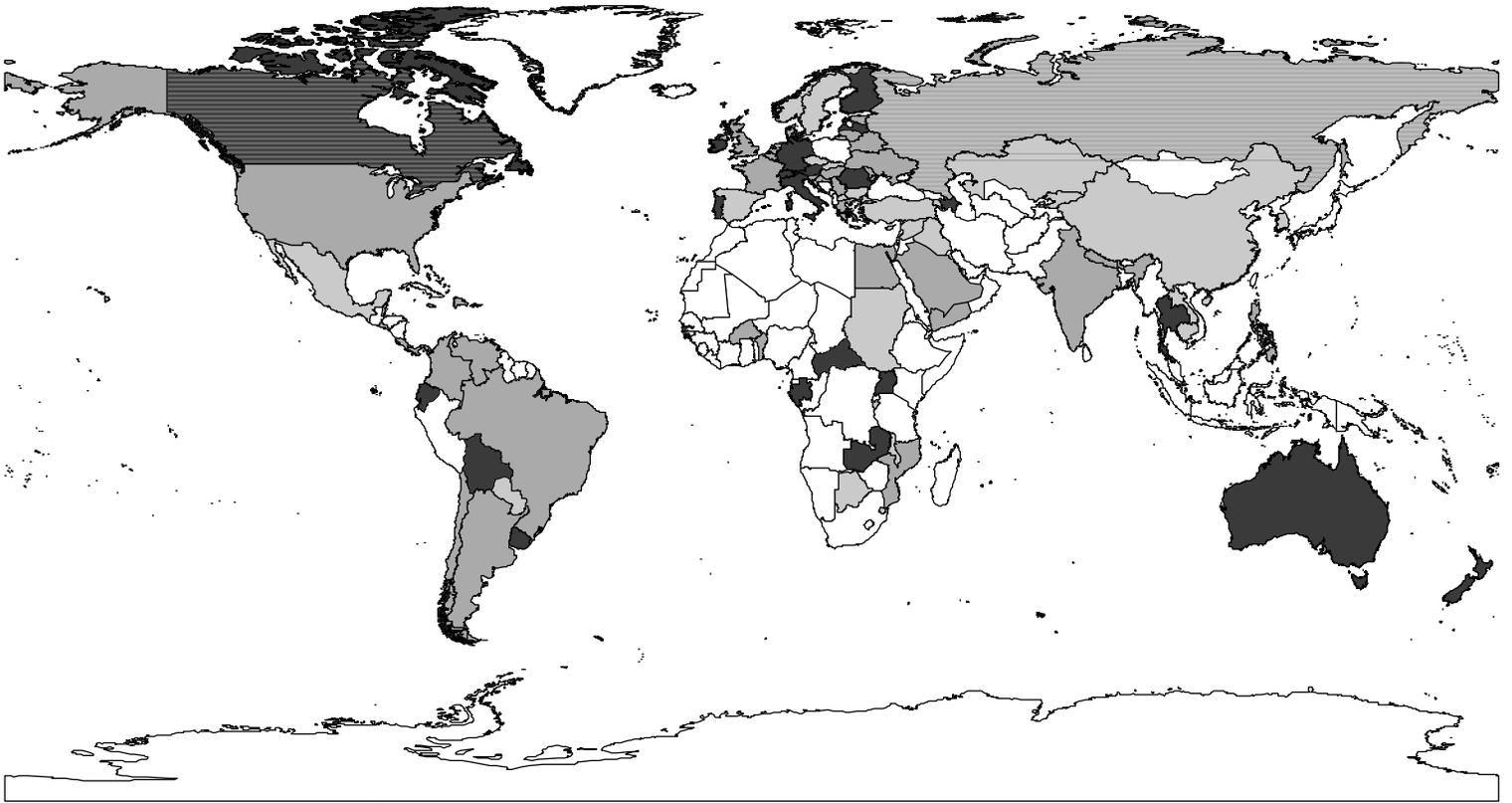
Table WP5. Likelihood Results from Logit Regression of Living in Extended Family on Household on Age, Marital Status, Education, Urban Residence\* and Home Ownership Among Childless Elderly Women 60+

	Argentina	Brazil	Chile	Colombia	Costa Rica	Ecuador	Mexico	Venezuela	Pooled
	Likelihood	Likelihood	Likelihood	Likelihood	Likelihood	Likelihood	Likelihood	Likelihood	Likelihood
Model Significance									
Age (65-69 = contrast)									
60-64	<b>1.15</b>	<b>1.19</b>	<b>1.39</b>	<b>1.16</b>	1.39	1.20	<b>1.25</b>	1.19	1.19
75+	<b>1.12</b>	<b>1.25</b>	<b>1.20</b>	<b>1.38</b>	1.04	<b>1.70</b>	1.13	<b>1.63</b>	1.25
Marital Status (nev. married=contrast)									
formerly married	<b>0.43</b>	<b>0.92</b>	1.07	<b>1.16</b>	<b>0.58</b>	<b>0.68</b>	<b>0.50</b>	<b>0.41</b>	0.51
currently married	<b>0.16</b>	<b>0.19</b>	<b>0.76</b>	<b>16.61</b>	<b>0.20</b>	<b>0.36</b>	<b>0.14</b>	<b>0.17</b>	0.29
Education ( primary = contrast)									
>Primary	1.11	<b>1.35</b>	<b>1.36</b>	<b>1.36</b>	<b>1.42</b>	1.03	1.05	0.83	1.19
> Primary	<b>0.68</b>	<b>0.79</b>	<b>0.64</b>	<b>0.63</b>	0.68	<b>0.67</b>	<b>0.72</b>	<b>0.40</b>	0.70
Urban/rural (rural=contrast)									
	<b>0.61</b>	<b>0.79</b>	1.13	1.01	1.07		<b>1.09</b>	0.87	
Home Ownership (not owning = con)									
	<b>1.75</b>	<b>1.82</b>	1.14	<b>1.23</b>	<b>1.54</b>	1.16	<b>2.41</b>	1.17	1.65
Country (Arg=constant)									
Brazil									1.75
Chile									0.44
Colombia									1.62
Costa Rica									2.64
Ecuador									7.24
Mexico									2.27
Venezuela									4.81
constant	<b>1.17</b>	<b>1.28</b>	<b>0.23</b>	0.49	1.72	<b>4.95</b>	1.28	6.55	<b>0.63</b>
Sample Size	33,901	49,607	11,660	14,901	1,666	9,981	31,350	8,282	164,135
Pseudo-R(2)	0.085	0.089	0.017	0.149	0.089	0.042	0.128	0.101	0.098

The likelihood is the natural log of the log odds.  
 figures in bold are significant at p < .001

# FIGURE 1

Childlessness Among Women 60+ Circa 1990-2000



Percent    no data    <10%    10% - 15%    >15%

Appendix Table A-1

Logit Regression of Living in Extended Family Household on Age, Marital Status, Education, Urban Residence\* and Home Ownership Among Childless Elderly Women 60+

	Argentina			Brazil			Chile			Colombia			Costa Rica			Ecuador		
	Log Odds	S.E.	likelihood	Log Odds	S.E.	likelihood	Log Odds	S.E.	likelihood									
Model Significance																		
Age (65-69 = contrast)																		
60-64	<b>0.14</b>	0.03	1.15	<b>0.17</b>	0.03	1.19	<b>0.33</b>	0.06	1.39	<b>0.15</b>	0.04	1.16	0.33	0.14	1.39	0.18	0.07	1.20
75+	<b>0.11</b>	0.03	1.12	<b>0.22</b>	0.02	1.25	<b>0.18</b>	0.05	1.20	<b>0.32</b>	0.04	1.38	0.04	0.13	1.04	<b>0.53</b>	0.06	1.70
Marital Status (nev. married=contrast)																		
formerly married	<b>-0.85</b>	0.03	0.43	<b>-0.09</b>	0.02	0.92	0.07	0.06	1.07	<b>0.15</b>	0.04	1.16	<b>-0.55</b>	0.14	0.58	<b>-0.39</b>	0.07	0.68
currently married	<b>-1.84</b>	0.04	0.16	<b>-1.68</b>	0.03	0.19	<b>-0.27</b>	0.06	0.76	<b>2.81</b>	0.07	16.61	<b>-1.63</b>	0.13	0.20	<b>-1.03</b>	0.06	0.36
Education ( primary = contrast)																		
>Primary	0.10	0.03	1.11	<b>0.30</b>	0.04	1.35	<b>0.31</b>	0.05	1.36	<b>0.31</b>	0.04	1.36	<b>0.35</b>	0.13	1.42	0.03	0.06	1.03
> Primary	<b>-0.38</b>	0.03	0.68	<b>-0.24</b>	0.04	0.79	<b>-0.45</b>	0.06	0.64	<b>-0.46</b>	0.07	0.63	-0.39	0.13	0.68	<b>-0.40</b>	0.09	0.67
Urban/rural (rural=contrast)																		
	<b>-0.49</b>	0.05	0.61	<b>-0.24</b>	0.03	0.79	0.12	0.07	1.13	0.01	0.05	1.01	0.07	0.13	1.07			
Home Ownership (not owning = con)																		
	<b>0.56</b>	0.03	1.75	<b>0.60</b>	0.03	1.82	0.13	0.06	1.14	<b>0.21</b>	0.05	1.23	<b>0.43</b>	0.15	1.54	0.15	0.06	1.16
Country (Arg=constant)																		
Brazil																		
Chile																		
Colombia																		
Costa Rica																		
Ecuador																		
Mexico																		
Venezuela																		
constant	0.16	0.06	1.17	<b>0.25</b>	0.05	1.28	<b>-1.48</b>	0.10	0.23	<b>-0.72</b>	0.07	0.49	0.54	0.21	1.72	<b>1.60</b>	0.08	
Sample Size		33,901			49,607			11,660			14,901			1,666			9,981	
Pseudo-R(2)		0.085			0.089			0.017			0.149			0.089			0.042	

figures in bold are significant at p &lt; .001

Log Odds	Mexico		Venezuela			Pooled		
	S.E.	likeli-hood	Log Odds	S.E.	Like-lihood	Log Odds	S.E.	likeli-hood
<b>0.22</b>	0.04	1.25	0.17	0.08	1.19	<b>0.17</b>	0.01	1.185
0.12	0.04	1.13	<b>0.49</b>	0.08	1.63	<b>0.22</b>	0.01	1.246
<b>-0.70</b>	0.04	0.50	<b>-0.89</b>	0.09	0.41	<b>-0.67</b>	0.01	0.512
<b>-1.94</b>	0.04	0.14	<b>-1.75</b>	0.08	0.17	<b>-1.24</b>	0.02	0.289
0.05	0.04	1.05	-0.19	0.09	0.83	<b>0.17</b>	0.01	1.185
<b>-0.33</b>	0.06	0.72	<b>-0.91</b>	0.16	0.40	<b>-0.36</b>	0.02	0.70
<b>0.09</b>	0.04	1.09	-0.14	0.07	0.87			
<b>0.88</b>	0.05	2.41	0.16	0.10	1.17	<b>0.50</b>	0.02	1.649
						<b>0.56</b>	0.02	1.751
						<b>-0.83</b>	0.03	0.436
						<b>0.48</b>	0.02	1.616
						<b>0.97</b>	0.05	2.638
						<b>1.98</b>	0.03	7.243
						<b>0.82</b>	0.02	2.27
						<b>1.57</b>	0.04	4.807
<b>0.25</b>	0.07		<b>1.88</b>	0.13	6.55	<b>-0.46</b>	0.02	0.631
	31,350			8,282			164,135	
	0.128			0.101			0.098	