The Dissertation Committee for Heeju Shin

certifies that this is the approved version of the following dissertation:

Female-Headed Households, Living Arrangements, and Poverty in Mexico

Committee:

Bryan R. Roberts, Supervisor

Andrés Villarreal, Supervisor

Thomas W. Pullum

Arthur Sakamoto

Kelly Raley

Steven J. Trejo

Female-Headed Households, Living Arrangements, and Poverty in Mexico

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Heeju Shin, B.S.; M.A.

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To my family

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Female-Headed Households, Living Arrangements, and Poverty in Mexico

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Given the growth of households headed by women, one of the biggest social concerns is the high poverty level within these households. Studies have shown that individuals living in female-headed households are more likely to be in poverty than those in other types of households due to women's disadvantaged position in the labor market. However, the disadvantage of women in the labor market does not necessarily lead to poverty within households headed by women. The livelihood of female-headed households is determined by contextual factors as well as the labor market condition, because the labor market, family and welfare policies all contribute to family well-being within a particular national context. Using both quantitative

and qualitative method, I examine various components that are associated with social and family life of Mexican female heads and single mothers: living arrangements, household practices, the labor market, and welfare policy. Interview data with Mexican single mothers provide this research with basic research questions as well as evidences supporting the findings of quantitative analyses about the association between poverty and those women. Quantitative data analyses show that kinship network is important resources of welfare of female-headed or single-mother households in Mexico. First, the prevalence of female-headed households in Mexico is associated with gender-specific migration, increased economic opportunities for women, and marriage-market conditions. Second, Mexican female heads have household income relatively higher than or equivalent to that of male heads, and this peculiarity is attributed to the financial support to female-headed households provided by family networks, and to the selection process of single mothers. Third, extended family members residing with mothers affect their time allocation, and the effects vary by the gender of the extended family member and the mothers' marital status.

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Chapter 1

Introduction

Although family composition has varied across time and space, the nuclear family headed by an adult male is regarded as the 'standard' household composition of the modern era. Thus, other types of headship or households are viewed as 'abnormal' in many societies (Baylies 1996; Chant 1998). A significant increase in other types of households composition, such as female-headed and single-person households, however, suggests that the widespread about the traditional nuclear family being the only 'normal' form of household composition is under challenge. Multigenerational households, which have been regarded as characteristic of the family within traditional societies, are also widespread in many developing countries. A number of scholars are challenging the idea that households are entities centered around married couples. They support an alternative definition of the family unit: "the household, in all its different cultural connotations, is the primary social living unit. In it are encapsulated a cluster of activities of people who live together most of the time and provide mutual physical, socio-psychological, and developmental support and functions within the broader organization and environment of the community." (Masini

1991)

Within the household, women are regarded as the most stable and essential members for production and reproduction. At the same time, however, women's economic status has been viewed as subordinate to that of male wage earners (usually their husbands) based on the traditional gender division of labor model. In the conventional and dominant model of stratification, the social position of the family is determined by the occupational status of the dominant breadwinner (Sørensen 1994; Erikson 1984; Mann 1986). For this reason, women's class status, as well as the economic position of other household members, tends to be determined by the occupational and social status of the household male breadwinner. Therefore, many studies fail to capture the various economic activities and inputs by other household members (Diprete and McManus 2000). Additionally, mainstream stratification researchers typically focus on the relationship of the individual worker to the capitalist production system. Female household members not participating in the labor market are thus generally ignored in this research.

A person's economic position should be considered at both the individual and contextual levels simultaneously, though, because social and economic practices are embedded within the social structures where individuals are placed (Szelenyi 2001). Given that the household is the primary unit within which an individual is situated, different household structures place their members into very different relationships with the wider economy. As individual's changing role within a given economic and social context can also affect the household structure. Consequently, the household occupies a key position between the individual and the economy, mediating social

changes for individual household members (Chant 2003).

This perspective is important because the number of alternative family or household types is increasing throughout the world. Such types of households have not been incorporated effectively into stratification research. As previously mentioned, families based on the authority by the adult male head of the family have declined, while alternative types of families have increased worldwide. Among these alternative forms of household structure, the female-headed or single-mother household is one of the most prominent (Buvinic and Gupta 1997; Chant 2003).[1] Accordingly, the failure to incorporate a diverse perspective on household structure renders studies of women and stratification incomplete. In recent years, an extensive number of stratification studies on female-headed households have been conducted within a U.S context, yet there is relatively little examination of the relationship between poverty, household, and stratification in developing countries. Although anthropological research has significantly enhanced our understanding of gender and stratification issues in Latin America, these studies have not been incorporated into stratification theories. The paucity of reliable statistical information about developing countries has hindered analytical exploration of gender and stratification as well. Although this dissertation focuses primarily on female-headed households and single

[1]Although there are many cases of being both types, *female-headed household* and *single-mother household* are different categories. Basically, female head refers to a woman who is thought as household head regardless of the presence of her male partner, while single mother refers to a woman who divorced, separated, or never married and is living with children under eighteen years without a male partner in the same household. For this reason, not all single mothers are household heads or not all female heads are single mothers. For example, a woman whose male partner is living outside the household for work can be identified as a head of household but not as a single mother. On the other hand, a never married or divorced woman with a young child, living in the household headed by her father, is a single mother but not a household head.

mothers, I also consider women in coupled households (married or cohabiting) for comparison. In this way my research contributes to the intersection between family and stratification research, too.

"Feminization of Poverty" and Female-Headed Households

Given the growth of households headed by women, one of the biggest social concerns is the high poverty level within these households. Studies have shown that individuals living in female-headed households are more likely to be in poverty than those in other types of households. According to the "Feminization of Poverty" theory, there are several reasons for this situation. First, households headed by women have fewer adult wage earners because they usually lack a male partner. So, female heads and their household members tend to be more dependent upon welfare resources outside of their households than households headed by men. Second, the average level of earnings by female heads is lower than that of male heads due to differences in the opportunities available to men and women in the labor market (Buvinic and Gupta 1997; Danziger et al. 1994). Female heads of households often face time and mobility constraints in the labor market due to domestic responsibilities, and as a result choose informal, part-time, or low paying jobs to reduce the opportunity costs for domestic obligations, especially child care (Chant 2003; Buvinic and Gupta 1997). Due to the structural constraints, as well as a lack of access to available welfare transfer systems, female-headed households are the poorest among various types of family structures in the United States. (London 1998).

However, the disadvantage in the labor market does not necessarily lead to

poverty within female-headed households. Some researchers allude to possibly higher incomes in such households compared to those of their male counterparts in many developing countries (Marcoux 1998; González de la Rocha 1999; Chants 2003, Muñiz and Hernandez 2000; Gómez de León and Parker 2000; Moser 1996). Few studies have examined poverty among women in Mexico in a comparable way to those on women in the United States or European countries. In Mexico, both the proportion of households headed by women and the number of single mothers have been increasing rapidly in recent decades. In contrast to the United States and Europe, however, welfare provisions are not well developed in Mexico. Instead, family or kinship ties are quite strong there, so private networks, rather than the government, provide a safety net.

A number of anthropological studies have shown that households develop various types of subsistence strategies (Sticher 1990). In developing countries, households utilize several types of assets to manage economic vulnerability in times of crisis (Moser 1996). In these societies, the formation of extended households is one of the strategies most frequently adopted to manage economic hardship. Through this household arrangement, family members expand the pool of income sources and share domestic labor.

Accordingly, the livelihood of female-headed households is determined by contextual factors, as well as by the labor market, because the labor market, family, and welfare policies all contribute to family wellbeing within a particular national context (Esping-Anderson 1999). These three components interact with each other, limiting or expanding the utilization of other components. Household factors can affect the

labor market –both directly through labor supply, and indirectly through employer demands. The continuous interplay between households and the labor market also determines female labor-force participation through the development of specific family strategies (Stichter 1990). Additionally, family welfare policies are an important component of both women's employment and the selection of living arrangements (Esping-Anderson 1999).

Method

In my study, I employ both quantitative and qualitative research methods: statistical data analysis and in-depth interviews with single mothers. For quantitative data analyses, I use information from three different surveys due to the limited information about important issues in each data set: National Survey of Household Income and Expenditure (*Encuesta Nacional de Ingresos y Gastos de los Hogares, ENIGH*), National Survey of Demographic Dynamics (*Encuesta Nacional de la Dinámica Demográfica, ENADID*), and Mexican Family Life Survey (*Encuesta Nacional sobre Niveles de Vida de los Hogares*, MxFLS1). The quantitative data analyses focus primarily on living arrangements, family practices, and women's employment.

Although this research is based primarily on quantitative data analysis of several Mexican household surveys, I also conducted field research in Mexico City to add qualitative analysis to the dissertation. The most important reason for which I combine the two research methods is to examine the results of the quantitative data analyses from the view of qualitative research, and support the arguments. The narratives by single mothers themselves describe the ways in which the family net-

works actually operate in concrete circumstances, as well as their decision processes and experiences in living and working arrangements. On the other hand, they also illustrate the peculiarity of exceptional cases unexplained by the general relationships obtained from quantitative data analyses between family networks and single mothers or female heads. As Weiss has noted, interviews

> ...can inform us about the nature of social life. We can learn about...cultures and the values they sponsor and about the challenges people confront as they live their lives. We can learn what people perceived and how they interpreted their perception..., [and] how the events affected their thoughts and feeling[s]. We can learn meanings to them of their relationship their families, their work, and their selves. (Weiss 1994:1)

Thus, in-depth interview data illustrate people's thoughts, feelings, and values regarding important family issues, and can thus serve as an important supplement to the main findings derived from quantitative data analysis.

I conducted the first field research in Mexico from August to November 2005, and the second follow-up field research from May to August 2006. The field research has been done in collaboration with many governmental and nongovernmental organizations, as well as research institutes. My primary research method was semistructured in-depth interviews. A detailed interview plan covering the entire field research was set up at the beginning of the study in Mexico City, where I planned to interview women living with a child but without a male partner in various socioeconomic conditions at various ages between 18 to 55. The first group of women for interviews was identified using snowball sampling. I obtained contacts for three initial interviewees of various socioeconomic backgrounds with the help of scholars from *Colegio de*

Mexico and *Centro de Investigaciones y Estudios Superiores en Antropología Social*. Then I asked interviewees to identify other single mothers among people they know. Snowball sampling did not always work ideally, however. Several times I had to depend on my personal network to find appropriate interviewees. In total, fourteen single mothers living in Mexico City and Mexico state were interviewed.

The other category of interviewees came from Oportunidades beneficiaries. To meet these people, I collaborated with SEDESOL, which provided me with a list of Oportunidades beneficiaries. I then selected interviewees based on their age and family composition, and conducted interviews with their permission. Using information about Oportunidades beneficiaries, I interviewed sixteen individuals from highly marginalized delegations in Mexico, such as *Tlalapan*, *Xochimilco*, *Milpa Alta*, and *Cuajimalpa*. In addition, several governmental organizations in Mexico City, such as *Equidad y Dessarrollo Social de D.F.* and *DIF-DF (Sistema para el Dessarro Integral de la Familia del Districto Federal)*, provided me with help in formulating the interviews. I included the decision-making process for household headship, the variations in decision making for household composition and headship, marriage and working history, income and consumption patterns, and perceptions about welfare policy, as well as demographic characteristics of single mothers and household members (see appendix). In all quotes, I used pseudonyms for interviewees to maintain confidentiality as well as to protect their privacy. Also, when I translated the transcripts from Spanish into English, I tried to leave the meaning of the interviewees' statements as intact as possible.

Composition of Dissertation

This dissertation is composed of three analytical chapters, each exploring some aspect of socioeconomic and structural conditions, livelihood, and poverty among female household heads and other family members in Mexico. The main findings are from survey data analyses. However, some cases from interviews are also presented to support results, show decision making processes by single mothers in several issues, or illustrate the exceptional examples that do not follow general findings from quantitative data analyses in each chapter.

In chapter 2, I provide an overview of the pattern and changes in Mexican female-headed households, considering the social, economic, and demographic peculiarities of that country. Among various social factors, the most frequently cited predictors of the growth of female-headed households are welfare benefits, the marriage market, and increased economic opportunities for women. Welfare incentives, however, are not a good predictor in this context due the absence of family provisions provided by the government for single mothers. Instead, international migration has been an important aspect of change in Mexican society. In this chapter, I examine whether migration is related to the increase in female-headed households in Mexico, and if so, how it is associated with this change in family structure. I also consider how the marriage market and economic opportunities operate in relation to women's living arrangements. The analysis in chapter 2 forms the basis for questions I address in later chapters. First, what is the nature of poverty within Mexican female-headed households, and how does migration affect the welfare of stay-behind households in Mexico? Second, what is the role of families as a resource in Mexico and how is it

extended beyond the boundaries of physical residence?

Chapter 3 deals with the economic paradox of female-headed households in Mexico and the role of family networks. Female-headed households are among the most disadvantaged in the United States. Statistics, however, show that households headed by single mothers in Mexico have median per capita income levels that are the same or higher than those headed by men, and are no more likely to be living in poverty. To account for the economic paradox of female-headed households, I propose four explanations. First, female heads in Mexico are in relatively later life stages compared to male heads, and hence have more access to additional sources of income such as retirement pensions, child support from previous partners, or larger returns on investments. Second, female heads may receive greater economic assistance from extended family members than their male counterparts. Third, international remittances from partners of female heads may contribute significantly to the household income of female heads. Fourth, the selection processes, which is actually the most important hypothesis, implies that single mothers with higher income potential are selected into headship, while those with lesser income-producing capability move into households headed by others. This study shows that some types of family networks contribute significantly to the income of female-headed households. The higher income levels of such households may also be partly the result of a selection process by which single mothers with higher incomes select into headship while others live dependently in households headed by someone else.

In chapter 4, I investigate the effects of coresident extended family members on time allocation by employed Mexican single mothers. Time is an important resource

in determining an individual's well-being. It reflects the change of structural factors influencing the effectiveness of time use, as well as the quality-of-life information provided by the way an individual performs work. An important question in the study of poverty and inequality, then, is why people allocate their time to particular activities, because the way they manage their time indicates what they are lacking and how they make up for a shortage of material resources. The main question of this chapter is; what is the role of extended family members in employed single mother's time allocation? Although kinship networks play an important role by providing a safety net, female adult extended family members have a greater influence on the time allocation of single mothers than do male extended family members. I find that the effect of female extended family members on mothers' time for child care or domestic work is particularly important for single mothers, compared to mothers with partners.

Chapter 2

Migration, Labor Market, and Prevalence of Female-Headed Households in Mexico

With few exceptions, there is a general increase in households headed by women in the developed world due to changes in lifestyle, the labor market, and fertility since the late 1960s (Heuveline, Timberlake, and Furstenberg 2003; González 2005). Statistics provided by the U.S Census Bureau show that the proportion of households headed by single mothers was 8 percent in 1960. This figure has increased steadily, up to about 23 percent of all family households with children under eighteen years old in 2005. Many developing countries have also experienced a notable expansion in female-headed households. A significant number of countries in developing regions included between 20 to 30 percent of female-headed households in the late 1980s and 1990s (Buvinic and Gupta 1997; Garcia and Rojas 2001; see also Ono-Osaki 1991; United Nations 1995).

One of the main social concerns about the growth in female-headed households is that they are frequently associated with poverty. As one of the most disadvantaged groups in the United States, households headed by women without a partner

have much lower income levels and are more likely to house those living in poverty compared to those headed by men (DeNavas-Walt, Cleveland, and Roemer 2001; Short and Garner 2002). Households headed by women also have a higher rate of welfare use (Sigle-Rushton and McLanahan 2002). In developing countries, women are more disadvantaged in choice of work, wage level, employment benefits, and heavier domestic burdens, especially where they have lower educational attainment. The prevalence of female-headed households has thus been an important policy issue. Many researchers have tried to explain the factors contributing to this increase.

A large number of studies have examined the circumstances that have led to a higher incidence of female-headed (or single-mother) households in the United Sates and other Western societies. Three explanations are most frequently proposed in the literature: First, welfare benefits motivate women with children to remain single rather than form unions. Second, increased economic opportunities enable women to live independently with their children. Third, an increase of single-mother or female-headed households is associated with marriage market conditions such as the availability of marriageable men. Among these three explanations, welfare incentive has been the main and most important research topic related to an increase of single mothers in the United States because of the policy implications. Studies also have emphasized the effects of two other factors on the increase of single mothers in connection with those of welfare incentive. Few studies have actually investigated the same topic in nonwestern contexts, however, although an increase in female-headed households is an important social issue in many developing countries. Since the value of family varies, and family practices are based on different social contexts, the

changes in family should also be studied from the viewpoint of the social, economic, and cultural characteristics of each society. On this point, combinations of welfare benefits, economic opportunities for women, and marriage market factors may not be applied to other societies, especially most developing countries, without significant welfare benefits for single mothers.

In this chapter, I examine the trend in female headship in Mexico during recent decades, and explore the social factors related to the incidence of female-headed households. In particular, I will focus on three social and demographic peculiarities of Mexico, which may affect changes in marriage patterns, family composition, and living arrangements: migration, the marriage market, and increased economic opportunities for women.

2.1 Welfare Incentive and Migration in Mexico

From studies about the prevalence of single women in the United States and European countries, three general (interrelated) explanatory factors are hypothesized. First, a large number of studies have focused on the welfare incentive factor, modeling the incidence of single motherhood or woman headship as a function of welfare benefits (Murray 1984; Moffitt 1994, 2001; Hoynes 1997; Blau, Kahn, and Waldfogel 2004; Rosenzweig 1999). Although the findings of the studies are mixed, and results vary by demographic characteristics, researchers have shown that welfare benefits have a negative effect on marriage. In particular, several studies have focused on the impact of welfare benefits on headship of single mothers: higher welfare benefits are

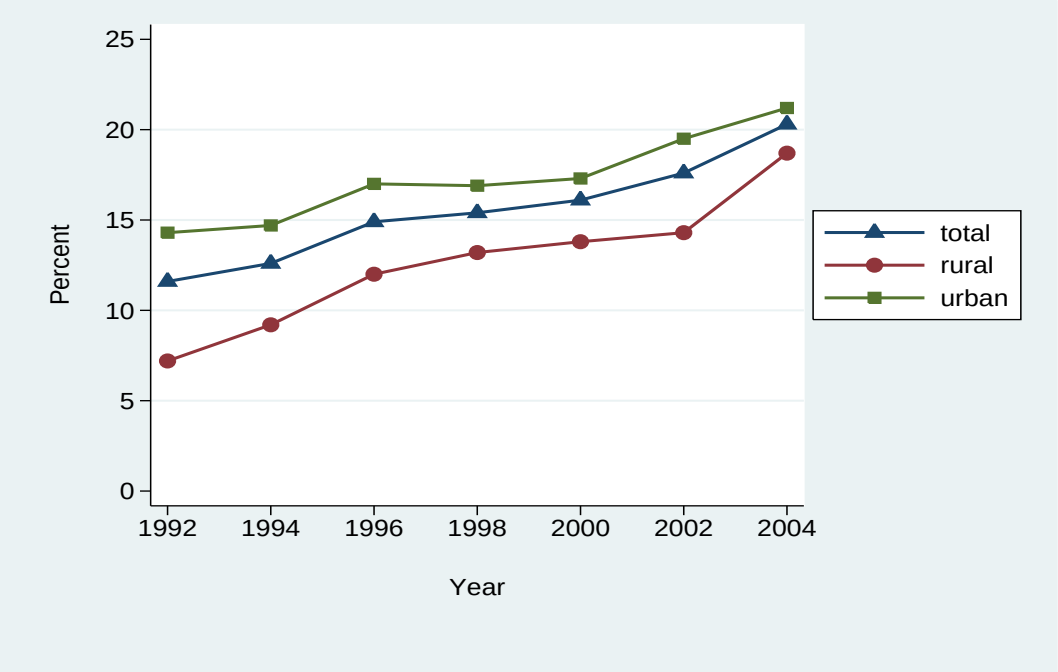
thought to encourage single mothers to be household heads rather than to stay with other family members (Danziger, Jakubson, Schwartz, and Smolensky 1982; Ellwood and Bane 1985; Moffitt 1994).

Second, the economic opportunity theory argues that women's wage levels and employment opportunities would enable them to support their children on their own (McLanahan 1994; Blau, Kahn, and Waldfogel 2000). According to Blau et al., more favorable economic conditions for women leads to a lower probability of single women getting married. Women are also better prepared to support themselves economically when there are further economic opportunities for them, thus contributing to the increase in female-headed households (Blau, Kahn, and Waldfogel 2000).

Third, some studies attribute the prevalence of single mothers to a reduced supply of marriageable men (South and Lloyd 1992; Lichter, McLaughlin, Kephart, and Landry 1992; Brien 1997). Using the indicator of *marrigeability* of a man (Wilson 1987) – defined as a man's ability to support a family– these studies suggest the availability of marriageable men may influence women's behavior for marriage, divorce, and nonmarital fertility, factors that together create female-headed households. Lichter et al. (1997) combine marriage market research and studies of welfare incentive effects to explain unions in the United States.

As have many other countries, Mexico has experienced a rapid increase in female-headed households during the last several decades. According to the statistics of the National Institute of Statistics, Geography, and Informatics (Instituto Nacional Estadística, Geografía, e informática, INEGI), the percentage of households headed by women was 13.7 in 1970, and it increased to 23.1 percent in 2005.

Figure 2.1: **The Increase of Female-Headed Households in Mexico**



Source: ENIGH, 1992-2004.

Figure 2.1 presents the change in female-headed households in Mexico from 1992 to 2004, calculated using the National Survey of Household Income and Expenditure (Encuesta Nacional de Ingresos y Gastos de los Hogares, ENIGH), based on the *de facto* female head living with children. Although rural and urban areas have different rates of increase, the proportion of female-headed households in Mexico has grown in both areas during this time period.

Although the Mexican trend in female-headed households is similar to that of the United States, the possible social factors relevant to the prevalence of female-headed households are different. First, welfare incentives are not an appropriate explanation in Mexico, due to the absence of public programs supporting female

heads or single mothers equivalent to those available in the United States.[1] The *Oportunidades* program is the principal poverty alleviation program implemented by the Mexican government. This program evolved from a previous one known as PROGRESA. Although originally intended for rural residents, the program was extended to urban areas in 2001. *Oportunidades* does not target single-mothers' households. However a significant number of its beneficiaries include households with single-mother heads. This program operates by creating incentives, with a cash transfer conditional on regular health clinic visits and regular school attendance by the recipients' children. The cash transfer is small, however, although it has been evaluated as effective in preventing poor children from leaving school and entering the labor market. For this reason, *Oportunidades* can hardly be thought of as an important factor attracting women to the decision of headship or single motherhood.

> Yes, I'm in the program [Oportunidades], and receive 320 pesos [about 32 dollars] every two months...Well, it is not bad. It is more than nothing...No, I don't get any baby food for my kid. They said that it is provided until the baby is 5 years old. My kid just became 6 years old and not eligible for it. They provide registration feel for kindergarden, no, actually they seem to do it. Anyway, I don't pay for kindergarden. Other than that, I don't get any other help from the Oportunidades. (Laura, 44, domestic worker)

> Oprotunidades gives my daughter 220 pesos [22 dollars] and 330 pesos [33 dollars] for me to buy food [every two months]. I don't have any other assistance...the scholarship is only for Vani [her eldest daughter]...because

[1] A public support program for female-headed households was launched in Mexico City in 1999, when the Democratic Revolutionary Party (PRD) candidate was elected as mayor. Yet it covers a very limited segment of the population, being implemented only within the Federal District.

> they [her two children] are not third year yet. The scholarship is given from third year of primary school and after. I don't have any savings...life insurance, no, no, any social security, nothing for future... No, I don't think one cannot expect anything from her kids. Even when I get old, I will just keep working as long as I can. That's what I was given by God. (Patricia, 44, vendor)

Single mothers make up a significant portion of the beneficiaries of the poverty subsidy program, Oportunidades, in Mexico. However, Oportunidades has been criticized because of its insufficient resources (the total budget of the Mexican poverty program is much less than 1 percent of the GDP) and inefficient implementation (Laurell 2000). Also, it is regarded as one of the preferred methods of attracting popular support from the rural and urban poor instead of from the labor sector (Dion 2006), which was the greatest supporter of the corporatist government. For this reason, the Mexican welfare policy for the poor is seen as not providing minimum protection for the disadvantaged population.

The second important peculiarity of Mexican society with the potential to be related to marriage patterns and family composition is the steady increase in gender-specific migration (Fussell and Palloni 2004). In many developing countries, inputs to household reproduction from family members who live out of the household may be greater than those from within the household (Chant 1998). In Mexico, international migration in particular has been an important resource of national revenue for the last century.

International migration from Mexico to the United States has increased both in scale as well as the range of Mexican sending regions. Historically, the traditional

international migrant-sending communities have been the rural areas of Western Mexico–such as Guanajuato, Jalisco, Michoacan, and Zacatecas–which began in the late nineteenth century (Massey, Goldring, and Durand 1994; Reichert 1982; Lee 2006). Workers from these regions were destined primarily for agricultural work in the United States. The Bracero Program initiated in 1942 sought to bring Mexican guest workers for seasonal agricultural labor to the United States. This program established pattern of migration from Mexico to the United States that has continued up to the present (Fussell 2004). Increasing demand for low-wage immigrant workers in the United States in the post-war era motivated Mexican migrants and helped consolidate migrant networks in rural Mexican communities. This network further encouraged the migration stream expansion (Fussell and Massey 2004; Fussell 2004).[2] Over the last decades, the migration process has diversified and the sending regions extended to cover the Federal District, Puebla, Veracruz, Guerrero, Oaxaca, and Yucatan. With this expansion, the scale of immigration rapidly increased. According to U.S Census Bureau statistics, the number of Mexican immigrants was about 800,000 in 1970, increasing to about 7.9 million in 2000 –multiplying almost ten times during three decades. The increase was the most rapid during the last ten years: The number of Mexican migrants was 4.3 million in 1990, thus increasing by 3.6 million in 10 years.

Many female-headed households in the rural areas of developing countries are

[2]The Mexican economic crisis of the 1980s, and the 1987 U.S. Immigration Reform and Control Act, are other important incentives of Mexico-U.S. migration discussed by many researchers (Donato and Massey 1992; Massey, Durand, and Malone 2002). Especially, fundamental changes in the urban labor market caused by recurrent Mexican economic crises diversified the migrant stream as it created new pools of potential migrant labor in urban as well as rural areas.

units in which male heads have migrated to urban areas or overseas to work while their wives took over the role of heads, a capacity that Chant called *de facto* female head. As shown in figure 2.1, the increase in female heads seems to be more rapid in rural than in urban areas. The proportion of female heads was considerably smaller in rural areas (7.2 percent) than in urban areas (14.3 percent) in 1992. The gap between urban and rural in the proportion of households headed by women was substantially reduced over the following twelve years, however. By 2004, female-headed households accounted for 18.7 percent of total rural households compared to 21.2 percent of urban households. This pattern partly supports the idea presented by Chant, suggesting that gender-specific migration may be related to changes in household composition in rural Mexico.

2.2 Method

The descriptions and data analysis offered in this chapter about the prevalence of female-headed households in Mexico are based on the National Survey of Household Income and Expenditure (ENIGH). This survey has been conducted by INEGI for the years 1987 and 1989, and then every second year from 1992 to 2004. The ENIGH is based on a nationally representative, stratified, multistage clustered sampling design. The survey contains a wide range of information about the income and expenditures of all household members, as well as their demographic characteristics. One of the main problems with these data is that marital status is not available until 1996 because the marital status of women is one of the key pieces of information in my

study. For this reason, I limit my statistical analysis to the years between 1996 and 2004.

A crucial concept in this dissertation is female headship and single motherhood. Yet the ENIGH survey does not contain the information necessary to determine whether a woman is a single mother or not, because the survey does not identify either the biological father or the mother of children living in the household. Instead, headship is established from the respondent's answer to a question about the relationship of individuals to the household head. For this reason, my analysis focuses on households headed by women as identified by survey respondents. Using this information, I include all women heads, as well as wives (or female partners) of male heads of households living with at least one child. Among those women, I categorize as female head anyone who was reported as a household head and not living with a male partner at the time of the interview. I divided women's age into six categories: under 25, 25 to 34, 35 to 44, 45 to 54, and over 65. In the sample for the regression analysis, however, I included only women between 25 and 54 years of age for more efficient estimation. Women's marital status is categorized as single (never married single mother), married, divorced or separated, and widowed, following the answer for marital status in the questionnaire. Here, married female head needs a special attention. In 2004, married female heads account for about 12 percent of total households managed by women. Considering that the sample does not regard women living with their male partners as household heads, I assume that a significant proportion of these married women may have migrant male partners living in other regions or countries and that these women lead their own households.

In addition, I use nonwage household income to examine the effects of other income sources besides labor on female headship. For this purpose, I first calculated the total household income by summing up all types of income received by household members except wages. Next, I divide this total nonwage household income into the weighted household size in which the economies of scale and ages of the children are considered. I discuss this equivalized measure of household income per capita in detail in the following chapter, which deals with the poverty of female-headed households.

Two state-level variables are employed to examine the effects of economic opportunity for women and marriage market conditions on the prevalence of female heads: women's wage level and the index for marriageable men. For women's wage level, I calculate the average wage of working women by state and age, and for urban and rural areas, using an aggregate sample. Following the standard used by the Ministry of Social Development (Secretaría Desarrollo Social, SEDESOL), I regard cities or towns with 15,000 residents or more as urban, and those with less than 15,000 as rural. Because this measure indicates the wage level of working women, I excluded the individuals with zero salary. Following work by Wilson (1987), I calculated a measure of the marriageable pool index as the number of employed men divided by the number of total women in the same age category residing within the same state.

To estimate the effect of women's wage levels and the local marriage market on the probability of women being household heads instead of remaining as parts of male-headed households, I use a multinomial logit model. The analysis uses pooled

data from the ENIGH surveys from 1996 to 2004. In this model, I define four possible outcomes (one nonhead category and three categories of female head) which take into account women's headship and marital status: married nonhead, married female head, single female head, and divorced (or separate) female head. Married nonhead woman is the base category for the multinomial logit model in this study. I estimate each probability of an individual woman being a single-mother female head, divorced/separate female head, or married female head, therefore, rather than being married and living with a male partner. Separate relative risk ratios are determined for all dependent variables for each category of the independent variable.

2.3 Results

2.3.1 Migration and Female-Headed Households

As mentioned in the method section, the effect of migration on the increase of female-headed households in Mexico can be evaluated by looking at an increase of married female heads, because married female heads might indicate that they have migrant male partners. Those married female heads are different from single-mother heads of households in that they are not divorced, separated, or never married. Rather, the male partners are living away from their families. The ENIGH does not provide information about migration itself: migrant family members as well as relationship of migrant to household head, destination of migration, and so on. It includes detailed information about the extent of direct transfers, however, including domestic and international transfers received by each household member as part of household

income. From this information, I assume that married female heads can be regarded as household heads with migrant partners and are receiving remittances from them. For this purpose, I use two indicators for type of transfer received by household head (not for other members), and the mean/median age of female heads.

Table 2.1: **International and Domestic Transfers of Married Female Heads**

	Total		Rural		Urban	
Type of Transfer	Freq.	Percent	Freq.	Percent	Freq.	Percent
Both Transfers	18	5.1	7	4.0	11	6.2
International transfer only	178	50.3	115	65.3	63	35.4
Domestic transfer only	93	26.3	38	21.6	55	30.9
No transfers	65	18.4	16	9.1	49	27.5
Total	354	100	176	100	178	100

Table 2.1 shows the number of married female heads and their percentages by type of transfers they receive, calculated based on the 2004 ENIGH data. Among total married female heads, about 82 percent were receiving some type of transfer from household members in 2004. In total, 55 percent are receiving some amount of international transfers (alone or in conjunction with domestic transfers), and more than 30 percent are getting domestic transfers. These proportions of married female heads with migrant family members abroad are much more likely to receive international transfers than are other types of female heads. Urban-rural differences reveal distinctive features of migration and transfers of married female heads by region. In rural areas, almost 70 percent of married female heads receive remittances from household members living out of the country, and 26 percent receive domestic transfers, leaving only 9 percent of households headed by married women without

any type of transfer. Meanwhile, about 40 percent of married female heads have household members sending them remittances, and 37 percent of those are receiving financial transfers from household member(s) living in other regions of Mexico.

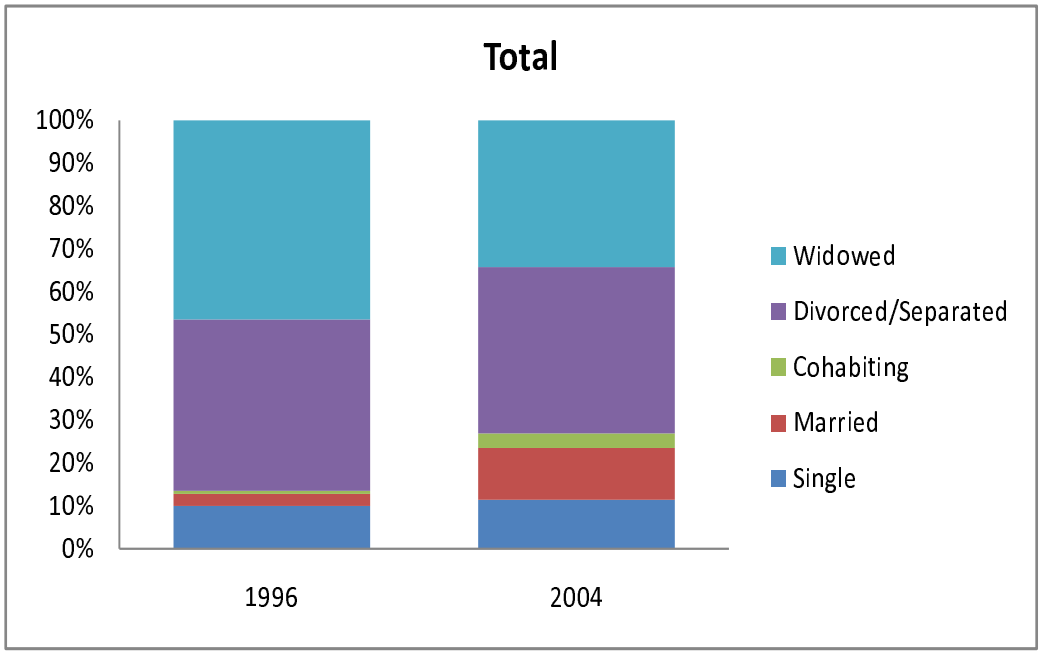
Who are those providing financial transfers to married female heads then? Because the sample includes all female heads over 18 years of age, migrant family members can be male partners or adult children. Table 2.2 presents the mean and median ages of female heads by marital status. The median age of never-married female heads is 39 and of divorced/separated female heads is 43, while married female heads are relatively young compared to other categories of female heads. Although these figures do not provide sufficient information about the identity of those people sending remittances to married female heads, they indicate that a large proportion of migrant family members of households headed by married women might be male partners of female heads, rather than adult children.

Table 2.2: **Mean and Median Age of Female Heads by Marital Status**

Marital Status	Median	Mean
Single	39	40.0
Married	35	38.0
Divorced/separated	43	45.2
Widowed	62	61.2
Total	47	48.9

Figure 2.2 presents changes in the percentage of female-headed households by marital status between 1996 and 2004 in Mexico. Overall, in 1996, widowed women

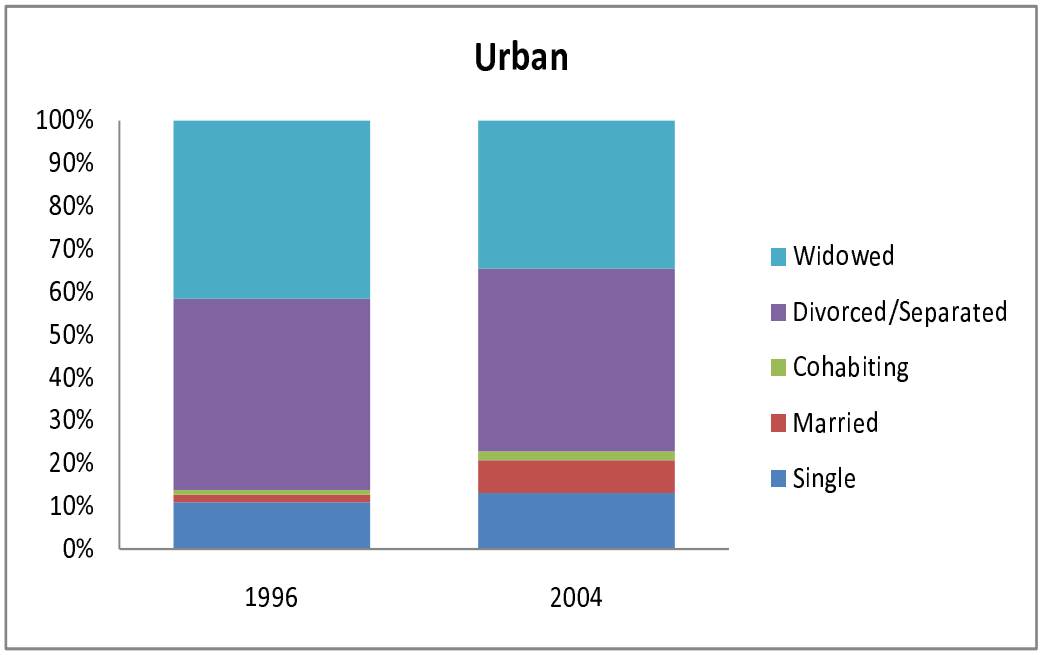
Figure 2.2: **Percentage of Female Heads by Marital Status from 1996 to 2004 (Total)**



constituted the majority of female heads, followed by divorced/separated women. The proportion of widowed female heads decreased significantly in 2004, however, and divorced/separated single mothers became a major part of female heads. On the other hand, among female heads, households headed by never-married single mothers accounted for about 10 percent of total female heads in 1996, and the percentage of these single mothers increased to 11.5 percent. The biggest change, however, is observed in the proportion of married female heads. In 1996, only about 3.5 percent of households were being headed by married (including cohabiting) women living with children. The proportion of these mothers increased to 15.5 percent in 2004, though, indicating an important change in the living arrangements of married couples. A

possible explanation is an increase in migration of the male partners.

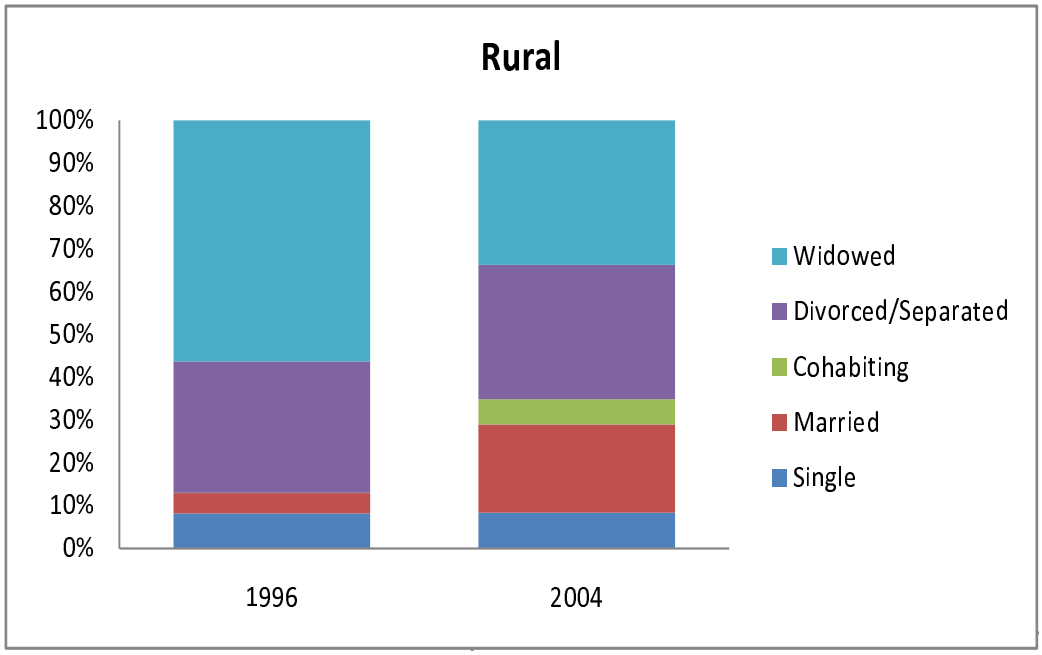
Figure 2.3: **Percentage of Female Heads by Marital Status from 1996 to 2004 (Urban)**



To investigate further the pattern of migration by the male partners of female heads, I look at changes in the marital status of female heads in urban and rural areas separately. Figures 2.3 and 2.4 reveal different patterns of changes in the proportion of female-headed households by marital status between urban and rural areas. Although there is a significant decrease in the percentage of widowed women among female heads, the overall trend in urban areas is almost the same as the total changes in distribution. Yet there are drastic changes in the percentages of each category in rural areas.

First of all, the percentage of households headed by married mothers increased

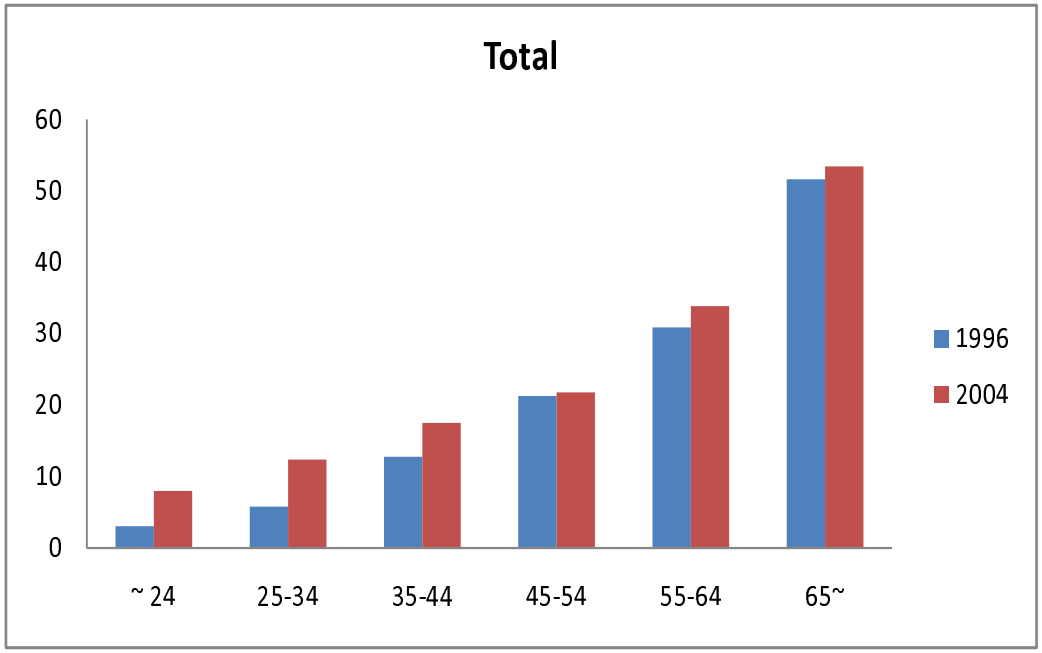
Figure 2.4: **Percentage of Female Heads by Marital Status from 1996 to 2004 (Rural)**



substantially between 1996 and 2004. In 1996, the proportion of married or cohabiting female heads in rural areas was less than five percent of total female-headed households, but it has increased to about 20 percent in 2004. Taking the increase in total households headed by women into account during this time period, the increase in absolute numbers of female heads in this category should be much higher. Considering the fact that Mexico-U.S. migration occurs mostly in rural areas and that the Mexican rural population has migrated on a large scale especially during recent years, this figure indicates that the migration of male adults affected the household composition, particularly in rural areas of Mexico.

Now let us look at the distribution of female heads by age group. Figure

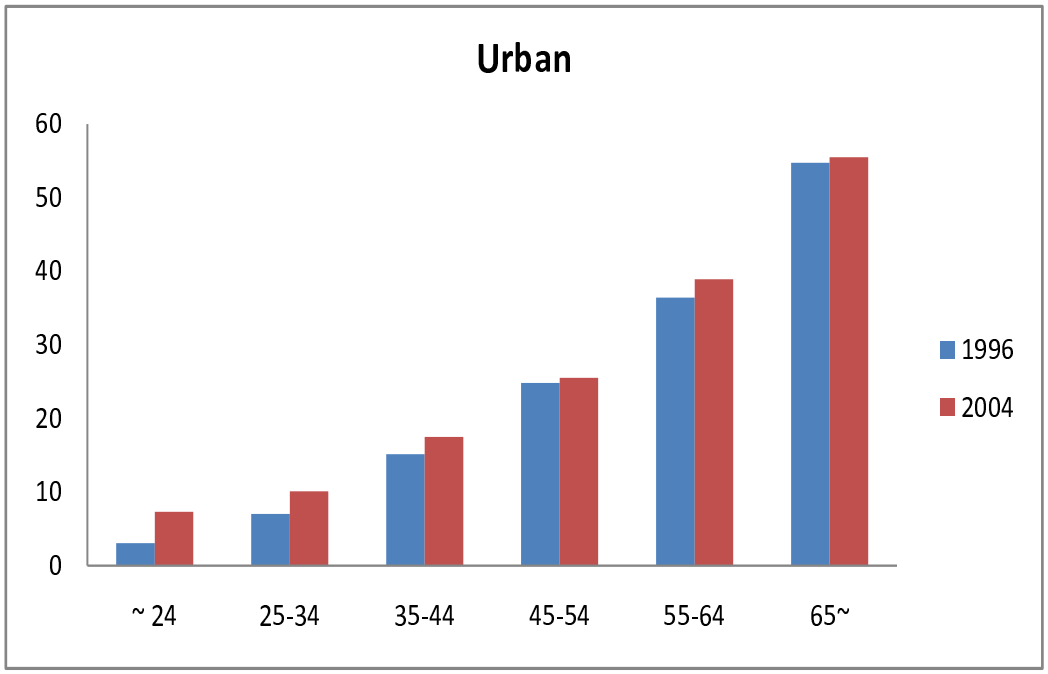
Figure 2.5: **Changes in the Distribution of Female Heads by Age Group (Total)**



2.5 presents the changes in the rate of age-specific female headship compared to all women in the sample, which takes into account the age structure of the population in Mexico from 1996 to 2004. All age groups had experienced an increase in female-headed households during this time period.[3] The increase in percentages of female-headed households, however, are outstanding in groups of relatively young women. Among those under 24 years and living with children, female heads accounted for only 3 percent in 1996, and increasing to 8 percent in 2004. Female heads aged

[3]I conducted a t-test for differences in the percentage of female heads between 1996 and 2004 by pairing these two years for each age group. In the national sample, all age categories yielded significant differences in the percentages of female-headed households between 1996 and 2004 at the 0.01 level. All descriptions of figures for the proportion of female-headed households in urban and rural areas presented in the following pages are based on the results of the t-test.

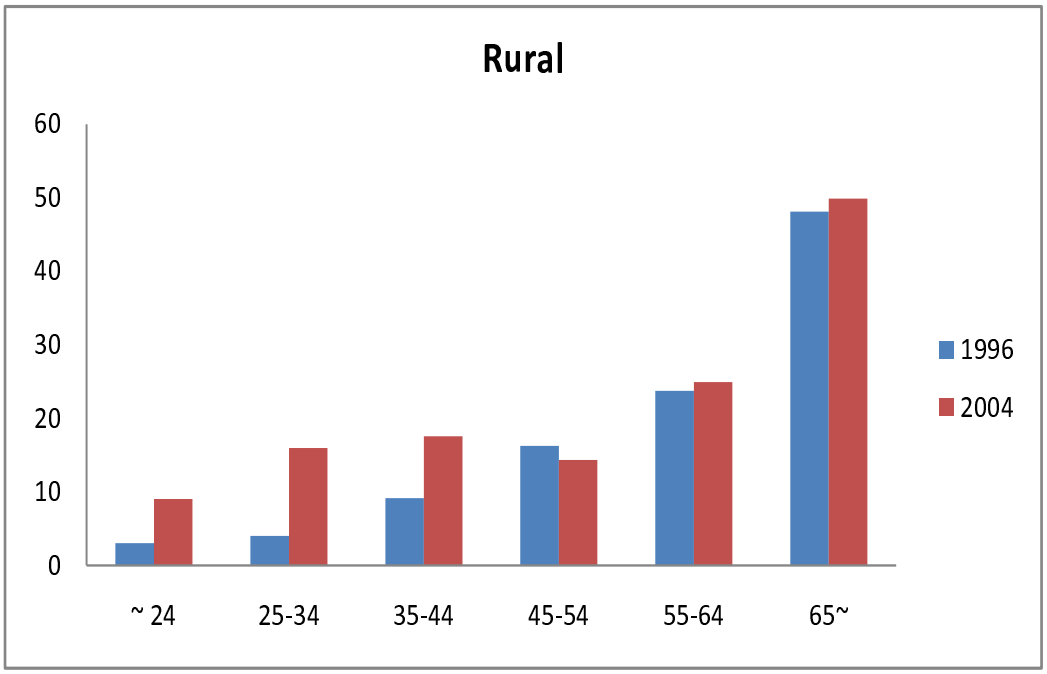
Figure 2.6: **Changes in the Distribution of Female Heads by Age Group (Urban)**



between 25 to 34 have also increased from 11 percent of all women with children in same age group in 1996 to 12 percent in 2004. Meanwhile, the female heads in all age groups over 45 years of age present relatively smaller increases than those in younger age groups, although increases during the time period are statistically significant. The relatively high proportion of the oldest age group of female heads may be partly due to the range of the age of female heads included in the sample, because my sample considers all ages of female heads. Thus, all female heads older than 65 years are included in one category.

Figures 2.6 and 2.7 illustrate the percentages of female-headed households by age group in urban and rural areas separately. These two figures provide some useful

Figure 2.7: **Changes in the Distribution of Female Heads by Age Group (Rural)**



information about the characteristics of the growth in female heads in Mexico. The percentages of female-headed households in both the youngest group and the second youngest group have increased about 4 percent and 3 percent each from 1996 to 2004. There is a small increase in proportion of those households among women between 35 to 44 years during this time period, but other older groups have not experienced significant increase in the percentage of female-heads. General pattern of the prevalence of female head by age group is similar between 1996 and 2004 –small increases of female heads in all age groups.

The increase in the proportion of female-headed households by age group in rural areas shows somewhat different patterns from that in urban areas. Figure 2.7

shows that the proportion of female heads in the three youngest female-head groups increased significantly for eight years compared to nonhead women, from 1996 to 2004. The biggest change occurs in the age group between 25 and 34 years. In 1996, female heads in this age group accounted for only 4 percent of total women with children among the same age group. However, the percentage increased dramatically to almost 17 percent in 2004. Two other young groups (under 24 years, and from 35 to 44) have experienced an increase in the proportion of female-female headed households by 6 percent between 1996 and 2004.

In contrast, the percentage has decreased in the age group between 45 and 54 during this time period. Neither are there significant increases in the proportion of female-headed households in other older age groups. Considering the fact that migration occurs among young male groups in their 20s and 30s, the pattern change of rural female-headed households supports the possible effect of international migration on the increase of female-headed households in Mexico.

2.3.2 Marriage Market and Economic Opportunities for Women

Now I examine the effect of women's average wages and marriage market conditions on women's headship. Table 2.3 presents the results of multinomial logit regressions for female headship with different types of marital status. All thirty-two states are included in the regression analyses as dummy variables to control for state level heterogeneity. Let me look at single-mother female head and divorced/separated female heads together first, because married female head is a distinctive category of headship. The first part of the table shows the relative risks of women with children

being single-mother household heads to those of women living with male partners, controlling for a woman's demographic characteristics such as age, education level, and household income. In the same way, the second part presents the relative risks of a woman being divorced or separated. From Table 2.3, the average wage of female workers at the state level is positively related to the higher probability of being single-mother head of households. Also, a woman's average wage level increases her possibility of being a divorced or separated female head. In other words, women with children are more likely to live independently without male partners, rather than remaining married, as their average wage at state level increases. The results support the economic opportunity theory. There are two possible factors behind the incidence of female heads based on increased economic opportunities. First, mothers may not want to stay in problematic marriages choosing instead to live as household heads where there are more economic opportunities. Second, single mothers may not prefer to get married (or form unions) where women's wage levels are higher, because union formation may cause high-level stress or other types of problems in living with someone else.

The effect of the marriage market factor on female headship is significant. As the availability of marriageable men decreases by one unit, women are 36 percent [exp (-0.44) = 0.64] more likely to be single mothers as opposed to being married or cohabiting. The marriage market is also important in the incidence of households headed by women who are divorced or separated. As explained in the method section, the marriage market indicator is measured using the number of employed men at state level. Based on this information, the effect of the marriage market on female

Table 2.3: **Results of the Multinomial Logit Regressions for Female Headship by Marital Status**

	Single Mother Female Head	Divorced/Separated Female Head	Married Female Head
Age 35-44[a]	0.17*	0.76***	-0.21**
	(0.09)	(0.06)	(0.10)
Age 45-54	0.12	1.35***	-0.40***
	(0.10)	(0.06)	(0.12)
Primary school[b]	0.21	0.05	-0.13
	(0.14)	(0.05)	(0.11)
Secondary school	0.41***	0.33***	-0.48***
	(0.14)	(0.06)	(0.14)
High school	0.40**	0.13*	-0.99***
	(0.16)	(0.07)	(0.18)
More than college	0.56***	-0.12	-1.33***
	(0.17)	(0.08)	(0.20)
Log wage	0.42***	0.14***	-0.07
	(0.10)	(0.05)	(0.08)
Marriage market	-0.44**	-0.52***	-0.24
	(0.21)	(0.12)	(0.27)
Household income	0.04***	0.08***	0.39***
	(0.01)	(0.01)	(0.03)
Year 1998	0.15	0.12	0.66***
	(0.13)	(0.06)	(0.18)
Year 2000	-0.11	-0.07	0.98***
	(0.15)	(0.07)	(0.18)
Year 2002	0.37***	-0.06	0.59***
	(0.12)	(0.06)	(0.20)
Year 2004	0.40***	0.12*	1.83***
	(0.12)	(0.07)	(0.17)
Constant	-7.30***	-4.11***	-6.64***
	(1.00)	(0.45)	(0.87)
N		59,350	
Log Likelihood		-36,411.7	
pseudo-R^2		0.0701	

* $p < .1$, ** $p < .05$, *** $p < .01$ (two-tailed)
[a] Reference category for age group is age 25 to 34.
[b] Reference category for education is no education.

headship also can be explained in two different ways. The relative risks of being single-mother heads to married nonhead women indicate that never-married mothers

are more likely to remain single when economically capable men are less available. On the other hand, the marriage market factor may have two types of effects on the possibilities of women being divorced or separated. First, women may prefer to divorce or separate when their partners are unemployed or not in the labor market. Second, in the case of never-married single mothers, divorced or separated women heads are less likely to form unions again when the marriage market situation is not favorable for them.

Year of survey is also an important predictor of being a single mother head over being a married nonhead. Controlling for various sociodemographic and economic variables, the probability of women with children being never-married single mothers is significantly higher –by 50 percent [exp (0.40) =1.49]– than living with male partners in 2004 compared to 1996. This finding indicates that net of several structural factors such as the marriage market or women's wage at aggregate level, there are still more instances of never-married single-mother heads in 2004 than 1996. Interestingly, although the year has a significant effect on the probability of being divorced or separated as well, it is relatively less influential.

Table 2.3 also indicates that women's headship is associated with the presence of alternative income sources within a household other than salary. Regression results show that if a woman has income sources apart from work wages (such as a pension or financial transfer from family members), she is less likely to be married and tends to remain as single or divorced. The effect of household income on female headship, however, needs to be interpreted carefully. The correlation between nonwage household income and female headship in the case of a single-mother head

or divorced/separated female is more complicated because the causal relationship between the two factors is unclear. Hypothetically, the availability of alternative income sources other than wages may encourage women to head their own households without male partners because nonwage income sources are substituted for male wage earners. These results can be interpreted in the reverse direction as well, though. In other words, those mothers who head their own households without male partners may receive more financial support in the form of transfers from other family members than do women with their partners present. The multinomial logit regression in this study does not consider the endogeneity of nonwage income, which single mother heads or female heads without male partners are more likely to receive from outside their households than are their counterparts. For this reason, the regression results make it difficult to interpret the association because a causal relationship between nonwage income and female headship cannot be identified easily with the current data.[4]

The most distinctive and interesting patterns are found when comparing the effect of the explanatory factors on married-mother head with married nonhead women. Women's wage levels or marriage market do not have a different effect

[4]One of the solutions to this problem is to use panel data that the transitions in marital status and headship identified following time change. Currently, however, there are no appropriate data satisfying the purpose of this study. The National Urban Employment Survey (*Encuesta Nacional de Empleo Urbano, ENEU*) is Mexican panel data covering a relatively long period of time (from 1987 until 2004). However, it is an employment survey focusing on labor market and does not include items about nonwage income sources. Another national longitudinal survey is the Mexican Family Life Survey (*Encuesta Nacional sobre Niveles de Vida de los Hogares, MxFls1*). This survey started in 2002 to provide a long-term panel of Mexican individuals, households and communities spanning a decade. The second wave of survey for 2005 has been competed and third wave is being conducted for 2008. These longitudinal data will provide better information for the efficient estimation of the causal relationships.

on being either a head or the wife of a male head among married women. This circumstance might be due to the fact that becoming a married female head usually does not involve a decision process related to marriage or remarriage. Women have partners and keep the marriage or cohabitation anyway. Male partners are not physically living with their female partners while working in the United States or other cities within Mexico, but either are they divorced or separated in marital status. Instead, the household nonwage income contributes significantly to the difference in the possibility of which of those two types of women they might become. Those who have other sources of money within their households are more likely to become married female heads than married wives. Here again, the causality issue should be revisited. The effect of alternative household income resources in the cases of married heads versus married nonheads might be interpreted to mean that married female heads with migrant partners are receiving a significantly greater amount in remittances than are women with their partners present. International or domestic transfers are not regarded as labor income in the ENIGH, and thus are not excluded from household income. In comparing married heads and married nonheads, this interpretation would be more reasonable than the opposite: Where there are more alternative nonwage-income sources, women are more likely to be household heads with their male partners absent.

Education level has a negative effect on the incidence of married female heads, compared to married women with partners present. Considering that the control variables are calculated based on urban-rural divisions, this relationship implies that migration may occur more frequently among families of less-educated couples. Lastly,

the relative probability of being married female heads to married nonheads is more likely to increase over time. Net of variables, the probability of a woman being a married female head is 2.6 times [exp (0.98) =2.66] higher than living with a male partner in 2000, and almost 6 times [exp (1.83) = 6.23] higher in 2004, compared to 1996. The result indicates that during this time period, households headed by married women have increased much faster than households with married couples in Mexico.

2.4 Single Mothers and Economic Opportunities

In the previous sections, I analyzed the social factors associated with the incidence of single mothers in Mexico, using Mexican national survey data. From the analyses, I have shown that economic opportunity measured by women's wage level is positively associated with the possibility of a woman becoming single mother. In fact, this economic factor has long been emphasized by economic theory as the variable with the strongest potential to influence fertility and partnership decisions, in general (Lichter, McLaughlin, and Ribar 1997; González 2005). In this section, I will focus particularly on the economic factor related to the choice of a woman being a single mother or household head using interview data. This section will provide two main additional pieces of information about the relationship between the economic factor and single motherhood. First, I will demonstrate how this economic potential affects the decisions of a woman for living arrangements. The narratives by single mothers about their decisions for living arrangements illustrate how their decisions

are actually influenced by their economic factors, given problematic marriages. Second, I will also show that although higher income potential is positively related to the decision of a woman being a single mother, there are exceptions that cannot be explained by the general relationship and need to be given attention.

To begin with, some have suggested that access to higher income possibilities would enable women to support children on their own. Higher income possibilities can include higher levels of education or professional jobs.

> He realized that there were too many things that he could not do before we got married. He always wanted to do lots of things and travel a lot, and we [she and her daughter] were just not in his life plan. At some point, I felt that I was not like a married woman....Later, I thought it was my fault, so I asked him to tell me if the problem of the situation was me to solve out the problem. But he always said it was not me. He always said it was him....When we were living together he didn't want to work and always had temporary jobs. When he had a full-time job, he always managed it badly–very badly. He had lots of debts before we got married, so we were always suffering from the debts that he made. The only thing that he did with money he earned was to pay credit card debts. He was always like that....It was a marriage with horrible economic shortage. (Claudia, 34, administrator of a school district)

Claudia's high educational attainment (a master's degree in education) enabled her to become a school district administrator. She heads her own family without any other family members in her household. As Garcia pointed out, increased schooling attainment, together with participation in the labor market, may encourage more women than before to end unsatisfactory or violent relationships with their partners and set up homes elsewhere (Garcia 2001). Relying on a high-income po-

tential based on her high education, Claudia could choose to live independently from her ex-husband, who was economically incapable. Claudia illustrates a typical case in which a woman with a higher income possibility tends to choose to terminate an unsatisfactory marriage life and build a household of her own with the children. On the other hand, economic independence may provide a single woman living with a child another option for living arrangements as a single mother head with a male partner.

> I make all the decisions and all the payments for my girl. Each individual share household works, but other than that, I do not share anything with anybody in this house. Dulce [her daughter] takes him [Leonardo, her boyfriend] as a family but not as dad. This is how it goes here. I don't want him to be regarded as her dad, or be responsible for her. [Interviewer: What is the motivation of taking this type of living arrangement?] Well, I was living with my mom and I wanted to become independent. I always wanted to *cortar el cordón* ['cut the umbilical cord'], but most of all, I wanted to live independently for my daughter....But, the problem was an economic one because I had to pay 8,000 pesos [about 800 dollars] per month for this house. Living with but independent from my fiancé and my friend eased this burden. It works very well. (Julieta, 25, graphic designer)

Julieta is living with her fiancè, her friend, and her six-year-old daughter in the same house, which costs about $800 for monthly rent. She graduated from college with a major in graphic design, and works freelancing -from which she earns 13,000 pesos (about 1,300 dollars). Although she shares the house with other household members, she was managing her life with her daughter very independently. Each of the household members has a bedroom and work place. She broke up with her

daughter's dad, who was violent and economically incapable, when she was pregnant. When her daughter was born, she was living in her mother's house. But she wanted to be independent from her parents primarily because of her daughter. She is very satisfied with her current living arrangement because it guarantees her an independent life as a head of her own family; while sharing the house with other people lets her and her daughter live in a high-priced residence of good quality and provides emotional support.

However, the "economic independence of women," hypothesis in which a variable is measured by female wage levels and other indicators of female attachment to the labor market and employment opportunities is also debatable among researchers (González, 2005). Several scholars point out that lack of economic opportunities may lower the perceived cost of out-of-wedlock childbearing, especially for very young women. In terms of the effect of labor market conditions, they suggested that in areas where few opportunities for achieving legitimate adult status exist, early nonmarital sexual activity may serve as a marker of having achieved this status (Rich and Kim 2002).

> I had wanted to be pregnant, but he did not. Why [did I want to have a baby]? Well, because I wanted to feel and to see what it would be like to be a mommy, things like that...and...I want to let my baby have young mom when he goes to school, so that he doesn't hear that 'hey, your mom is so old,' things like that. So for a long time, I used to tell my mom that I wanted to have a baby at 17. When I got pregnant, I was 16 and my partner was 15 years old. Actually, my son is a planned baby for me, but not for my partner. (Catalina, 18, housekeeper/street vendor)

Catalina has a seven-month-old son. She was pregnant when she was 16 years

old, and became a single mother when 17. She had secondary schooling (7th-9th grade) only, and stopped studying before she got pregnant. Her partner is one year younger than she is, and he left school a year before secondary-school completion. She wanted to be a mother and planned her baby at an early age, but did not think about marriage. She thought that to be a mother at an earlier age would be good for her son's school life, and the best way to be an adult.

As the case of Catalina illustrates, a number of single mothers in Mexico become so through out-of-wedlock childbirth at an early age or a break in consensual unions. In developing world, according to Garcia, an increase of female-headed households is related to demographic and social factors that are closely linked to disadvantaged living conditions in several ways (Garcia 2001).

> I met my first husband when I was 16 and had my first daughter at 18. I did not understand him because he cheated me with another woman. He left me after three years and never came back. I had two girls with him....Thereafter, I met my second husband....I had three kids with him. I was married that time, but he left for another woman eight years after we got married....He never came back to see his kids, so I could not divorce. (Abigail, 35, vendor in public market)

> I had three husbands [male partners]....In fact, I'm separated from my last husband. The first and second were *union libre* [cohabitation]. [When I started living in cohabitation with him], I was 17 years old and he was 25. He died from car accident two months before my first son was born....He [the last husband] is 22 years older than me....I did not want to be with him because he abused me physically and mentally. He was very violent...no, I mean, he is still. I have wanted to divorce him but he does not let me. So, we are still married in document. (Perla, 32, waitress)

Abigail, who is a 35-year-old, sells crafts in a public market (called *los tianguis* in Mexico) for income. She lived with her first partner in cohabitation and her second partner through civil marriage. Her first partner was the same age as she was. Now, she has five children and is the only income earner in her family. None of her previous partners provides financial support for her and her family. Perla met her first partner and had her first child when she was 17 years old. She has had three partners and three children. Now she is separated from her last partner and receives irregular economic support from him. She decided to separate from her ex-husband because he was addicted to alcohol and other drugs, and abused her mentally, physically, and verbally. She still suffers from his violence whenever he visits her. As these two cases show, early involvement in fertility and unions is related to sporadic unions at later times, and desertion by men who are unable fulfill their roles (Garcia 2001). Also, unions or out-of-wedlock childbearing at an early age is correlated to disadvantages in education, and consequently disadvantages in the labor market, resulting in economic hardships and lack of resources–especially in the presence of young children.

2.5 Conclusion

In this chapter, I investigated which social factors are related to an increase in or the prevalence of female-headed households in Mexico. The factors associated with a higher incidence of female headship in a developing country such as Mexico are different from those in Western societies. Although welfare benefits have been studied extensively as an important incentive for women with children to remain

single in Western societies, most developing countries do not provide welfare benefits, particularly to single mothers.

Based on this consideration, the main concern of this chapter was to determine what other types of economic factors at the individual level may be related to living arrangements for female-headed households in this country, if not welfare incentives. In addition, I intended to answer how the marriage market and women's economic opportunities are associated with the occurrence of female-headed households in the Mexican context. I first examined the nature of growth in female-headed households from 1996 to 2004, using data from the ENIGH survey. I examined the sociodemographic composition of Mexican women in different living arrangements. The analysis revealed several interesting patterns. First, although both the proportion and the number of female-headed households have risen continuously and are higher in the urban areas of Mexico, the increase in such households in rural areas far exceeded that in urban areas during this time period. Second, more female heads among married women are heading their households and the proportion of female heads with this marital status has increased rapidly since 1996. Although I could not track this trend for a longer time period due to data limitations, I found a consistent increase in married female heads for the time period included in the analysis. Also, female heads among married women have increased faster in rural than in urban areas. Third, a significant proportion of married female heads receive some amount of international or domestic transfers, while these transfers are not common income sources for other types of female heads.

My second research question in this chapter was what effect the marriage

market and economic opportunities available to women have on the incidence of female-headed households in Mexico. Using multinomial logit models, I examined the effect of various social factors on the probability of being a female head, as opposed to being married with a resident partner. The results show that women's economic opportunities, measured as the state wage level for women, and marriage market conditions had significant effects on the occurrence of female heads compared to married nonhead women. These factors did not affect the relative probability of married female heads to married nonhead women,though, which implies that those married female heads are not available in the marriage market because they are still married (furthermore,their partners are possibly working migrants), and their decision of headship is not involved in union formation. Regression results for the effect of household income other than wages of household members also suggest that alternative income sources can be an important relevant factor in female headship.

Although many of these findings are descriptive, they suggest important questions about female headship, which will be dealt with in the following chapter. First, based on the finding that the expansion of female-headed households might be associated with gender-specific migration, and a significant number of female-headed households rely on international remittances for their household income, how would migration affect the welfare of these households staying behind in Mexico? Second, how would the availability of alternative income sources within households contribute positively to the livelihood of female heads and their households? In a broader perspective, what is the role of the family resource in Mexico, and how can it be extended beyond household boundaries as networks?

Chapter 3

Unraveling the Economic Paradox of Female-headed Households in Mexico:The Role of Family Networks[†]

The results from the statistical analysis in the previous chapter indicated that gender-specific migration and the availability of family resources may be relevant to the prevalence of female-headed households in Mexico. If this is the case, how do these factors operate within the family unit, and what are their contributions to the welfare of female-headed households? This chapter focuses on developing several arguments concerning the relationship between these factors and the well-being of female-headed households, using the detailed types of family resources.

An extensive amount of research has shown that female-headed households are among the most disadvantaged in the United States (Bianchi 1999; Cancian and Reed 2001; Casper and Bianchi 2002; Garfinkel and McLanahan 1986; Gottschalk and Danziger 1993; Holloway, Fuller, Rambaud and Eggers-Pierola 1998; Lichter

[†]This chapter is based on an article co-authored with Andrés Villarreal and published in *Sociological Quarterly.*

1997). Households headed by women without a partner have much lower income levels and are more likely to live in poverty compared to those headed by a couple (DeNavas-Walt, Cleveland and Roemer 2001; Seccombe 2000; Short and Garner 2002). Children in mother-only families also have worse health and educational outcomes (Astone and McLanahan 1991; Carlson and Corcoran 2001; McLanahan and Sandefur 1994; Pong, Dronkers and Hampden-Thompson 2003). In contrast to the large volume of work on the consequences of female headship in the United States, comparatively little is still known about the socioeconomic conditions of female-headed households in developing countries (for a review of existing studies see Buvinic and Gupta 1997). Yet because the living standards of female heads depend both on the economic opportunities available to women in a particular national context as well as existing family practices, we may expect considerable differences in how well individuals living in such households fare.

Women in developing countries are generally more disadvantaged in the labor market. They tend to have lower labor force participation rates, are more frequently employed in the informal sector, and work in lower occupational positions compared to men (Lopez-Carlos and Zahidi 2005; Standing 1999; United Nations 2005). All these factors place women in developing countries in a worse position when heading their own households. On the other hand, extended family arrangements are more common and kinship networks stronger in many less-developed countries (De Jong Gierveld, de Valk and Blommesteijn 2001; Fussell and Palloni 2004). Young single mothers who would otherwise have to fend for themselves are often taken in by parents and other family members, while older widowed or divorced women receive

financial support from adult children and other relatives. This greater assistance from extended kin may mitigate the consequences of heading their own households.

There is a considerable variation in the prevalence of female-headed households in the developing world. Estimates range from 14 percent of all households in Indonesia to 45 percent in Botswana and Barbados (Buvinic and Gupta 1997; see also Ono-Osaki 1991; United Nations 1995). Although measurement differences preclude precise comparisons, the percentage of households headed by women appear to be on the rise in most regions (Bruce, Lloyd and Leonard 1995; Chant 1997a). A review of existing studies of female-headed households by Buvinic and Gupta (1997) also indicates that they tend to be over-represented among the poor in most developing countries (see also Folbre 1991). However, the association between female headship and poverty is by no means universal (United Nations 1995, pp. 129-130). Latin America may constitute a particular exception to this pattern. Using data from national household surveys, Marcoux (1998) finds that female-headed households are actually *less likely* to be poor in several countries of the region (see also Moser 1996; Quisumbing, Haddad and Pena 1995). Yet the social and demographic factors that are conducive to this rather surprising finding are not fully known. In this paper we examine the economic conditions of female-headed households in Mexico, a country where female headship has been found to be associated with a lower poverty rate.[1] We attempt to explain why Mexican female-headed households have income levels that are equal to or higher than households headed by men.

[1]For evidence regarding the lower poverty rate among female-headed households in the Mexican literature see Cortes (1997) and Echarri (1995). For a general review of female headship in Mexico see Acosta (2001).

The paper is organized as follows: We begin by describing the growing trend in female headship in Mexico over the past decade. We then compare the economic conditions of female- and male-headed households. We show that despite the many disadvantages faced by Mexican women, the households they head have income levels that are no different or even higher than those headed by men, and are no more likely to be living in poverty. We propose four explanations for these surprising findings based on a review of the available literature, and test them using data from a nationally-representative sample of households.

3.1 The Economic Paradox of Female-headed Households in Mexico

Table 3.1 shows the percentage of Mexican households headed by women from 1992 to 2002 according to two definitions of female headship, along with a comparison of their age-adjusted income per capita relative to male-headed households. The data are drawn from the National Survey of Household Income and Expenditure (*Encuesta Nacional de Ingresos y Gastos de los Hogares, ENIGH*), the standard source used to estimate poverty and income inequality in Mexico (i.e., de Ferranti et al. 2004; World Bank 2004). As almost every other survey conducted in Mexico, the ENIGH survey asks respondents to identify who is the head of the household. All other household members are then identified by their relation to the head. The first definition of female-headed households used in Table 3.1 simply includes all households in which

a woman has been identified as the head. This definition has been used by other studies of female headship (i.e., Appleton 1996; McKenzie 2003; United Nations 2000). However, some of the households in which a woman is identified as the head consist of only one household member (i.e., a woman living alone), while others include a woman's partner. Households headed by women living by themselves as well as those in which a partner is present will generally have higher per capita income levels, either because no dependents are present or because they include another potential earner. In the second definition of female-headed households used in Table 3.1 and throughout the rest of the paper we therefore exclude households headed by women living without children as well as those in which a partner is present. Excluding such households ensures the strictest possible test of the hypothesis that female-headed households have the same or higher income levels compared to those in which a man is identified as the head.

Both measures of female-headship indicate a large presence of female-headed households in Mexico and a steady increase over the past decade. Between 1992 and 2002 the percentage of Mexican households headed by women with children and no partner increased from 11.3 percent to 17.1 percent. Just as in many other developed and developing countries worldwide, female headship is a growing phenomenon. Table 3.1 also indicates that female-headed households actually have a slightly *higher* median income compared to those headed by men, and are less likely to be living below the poverty line. [2] The higher economic status of female-headed households

[2]For definitions of the age-adjusted household income per person and the poverty line see the Data and Measurements section below. Since the age structure of female-headed households tends to be older (there are less children present), adjusting for age increases the median household income per person of male-headed households more, and therefore provides a stricter test for the hypothesis

Table 3.1: **Percentage of Female-Headed Households in Mexico and their Age-Adjusted Income Levels, 1992-2002**

	1992	1994	1996	1998	2000	2002
% Total Female-Headed Households	13.96	14.69	16.17	17.54	18.33	20.01
with Children and No Partner	11.34	12.28	14.28	15.06	15.61	17.11
Median Income Per Capita[a]						
Female-Headed Households	1,111	1,184	1,742	2,604	4,007	4,338
Male-Headed Households	977	1,141	1,598	2,416	3,618	4,221
Ratio	1.14*	1.04*	1.09*	1.08*	1.11*	1.03
Mean Income Per Capita[a]						
Female-Headed Households	1,846	1,902	2,535	4,021	5,532	6,512
Male-Headed Households	2,041	1,960	2,719	4,022	6,014	6,657
Ratio	0.90	0.97	0.93	1.00	0.92	0.98
Percent below Poverty[b]						
Female-Headed Households	13.48	16.34	28.37	26.07	13.24	13.96
Male-Headed Households	17.70	17.29	30.81	27.31	17.59	14.25
Ratio	0.76*	0.95*	0.92*	0.95	0.75*	0.98

Source: ENIGH various years (weighted).
* $p < .05$, ** $p < .01$ (two-tailed).
[a] Equivalized household income (see Data and Measurements section for an explanation) based on second definition of female headship. Income is in current pesos; 1992 figures are in thousands of old pesos.
[b] See Data and Measurements section for a definition of the poverty line.

is particularly surprising given the disadvantages Mexican women face in the labor market and their lower employment rates compared to men. In fact, only 61 percent of female heads are employed in 2002 compared to 89 percent of male heads and their wages are 33 percent lower. The earnings of female heads alone cannot therefore explain the high economic status of female-headed households in Mexico. The explanation must instead be sought in Mexican family practices. Below we propose

that female-headed households have a higher income per capita.

four different (though not mutually exclusive) explanations for the surprisingly high income levels of Mexican female-headed households relative to those headed by men. These explanations are based on a review of the existing literature and the available evidence on the composition of Mexican households.

1) Age and Life-Course Stage of Mexican Female Heads of Household

> [After he left us for another family], we suffered a lot....we were hungry, and walked barefoot. We did not have anything, nothing. But, look, God is so great, look at everything he helped us [with]....Now I have this big house, and my children have good professions. We got married very young, so my children are old. They were already working when I was pretty young. They have helped me a lot economically....I don't say that we are rich, but thanks to God, we are never like before (Elena, 64, landlady of a rooming house).

A first explanation for the comparatively high income of female-headed households has to do with the stage in the life course of female heads. Compared to male heads, female heads in Mexico tend to be older, more frequently widowed or divorced, and have adult children (Chant 1997a; De Vos 1987; Ono-Osaki 1991). Because they are in a later stage in their life course than their male counterparts, Mexican female heads of household may have access to additional sources of income. For instance, older widowed and divorced female heads may receive income from retirement pensions, child support from previous partners, as well as greater returns on investments accumulated over their lifetimes.[3] These additional sources of income also place them

[3]The economic contribution to female-headed households in the form of child support should not be exaggerated. While the Mexican Civil Code requires that a non-custodial parent (usually male) provide economic support for his children, Chant (1997a: 34) argues that only a small proportion

in better positions than female heads who have never been married, who constitute a much smaller fraction of all female heads of household (80 percent of female heads in Mexico are either widowed or divorced, compared to 8 percent who have never married). Elena's main income sources are support from her 3 eldest children, who have mostly professional jobs and monthly payments from the lodgings she rents out in her house. Although Elena and her family suffered tremendously from economic hardship, and one of her children even had to work as a street vendor from the time he was 7 years old after her partner left the family, the assets she accumulated during her lifetime enables her to benefit from returns on it as well as financial support from her children. Revenue from house rent is one of the typical returns to investments as well illustrates Elena's case. An adult child living in the same household is another significant income source, especially for single-mother households in disadvantaged socioeconomic situations. Sometimes, a working child may play an important role as a provider of social security for certain family members in the same household.

> I never had social security or medical benefits through my work in my life....No one can get their social security from domestic work....Now I have insurance through my daughter Susana, because she works...*SUMESA* [a super market in Mexico], and has social insurance and pension for old age. Her insurance only covers her and me, but not other kids. (Lucia, 38, domestic worker)

The life stage of female heads of household in Mexico stands in sharp contrast to the United States, where female heads have become younger over time and are

of lone mothers (20 percent or less) actually receive financial assistance for their children from their former partners.

increasingly likely never to have been married. In their review of recent trends in single-mother families, Casper and Bianchi (2002) find that over the past decades "the source of single motherhood has shifted from widowhood (a transition that occurs later in life) to nonmarital childbearing (a transition that occurs relatively early in life for most women)..." (p.107). They argue that the changing pattern in the age and marital status of single mothers in the United States. is particularly troubling because never married mothers are more disadvantaged economically. They have lower levels of education and are less frequently employed compared to divorced mothers, and this means that they are in a worse position to support their children financially (pp. 110-111) (see also Moffitt and Rendall 1995). By contrast, Mexican female heads of household have a median age of 49 years, and thus more closely resemble U.S. female heads of a previous generation.

2) Family Support Networks among Female-Headed Households - A second explanation for the surprisingly high income levels of female-headed households in Mexico is that they receive greater assistance from extended family networks compared to male-headed households. Economic contributions from individuals outside the nuclear family may actually (over)compensate for female heads' lower personal earnings. Kinship support to female-headed households may occur in two different ways: coresidence with extended family members and through direct financial transfers from nonresident kin. Coresident family members may not only bring income into the household but may also provide childcare and other support for female heads allowing them to work, as shown in Xiomara's family.

> My mom has a retirement pension....She receives 1,500 or 1,100 pesos [150 or 110 dollars) a month. It depends. She has worked as janitor at a school for a long time, and retired at age 60....When my ex-partner left to Puebla, I decided to return to my mom....No, actually, she was living in a *conserjeria* [a lodging for janitor] of the school, so we were living there together....After, my mom bought this house. So, I don't need to pay rent. (Xiomara, 43, footwear seller)

Xiomara is living with her mother and three children. Her eldest daughter is only 13 years old and the youngest is 5 years old. When Xiomara leaves home for work, her mother takes care of her children. Her mother has retired from her job as a school janitor and is covered by social security for retired people. Her retirement pension makes up a significant contribution to the household income. Also, her mother owns the house in which Xiomara and her three children are living. Now Xiomara has cancer of the uterus so she cannot work a full-time job. She says, "it is fortunate for me to have my mom in this situation."

On the other hand, extended family members may be a burden on family resources, especially if they are very young, elderly or disabled. The benefits of extended family members to the household economy will therefore depend on their actual contributions in the form of income or assistance in productive activities. By contrast, direct transfers from nonresident kin increase the total household income without using up resources (that is, without increasing the denominator of the household income per capita).

Consistent with the explanation that emphasizes the importance of coresident kin, studies in the United States have found that female-headed households are more

likely to include extended family members (Hao 2003; Hofferth 1984; Hogan, Hao and Parish 1990; Tienda and Angel 1982). Among different ethnic and racial groups, Hispanics in particular along with African Americans have a higher prevalence of family extension (Aquilino 1990; Glick 1999; Glick and Van Hook. 2002; Hernandez 1989; Sarkisian, Gerena, and Gerstel 2007; Tienda and Angel 1982). In their analysis of the living arrangements of single mothers, Casper and Bianchi (2002) find that 43.9 percent of unmarried Hispanic mothers live with parents or other adults, compared to 28.8 percent and 35.1 percent of non-Hispanic white and black unmarried mothers respectively (p. 104). Extended family members living in Hispanic and African-American households have also been found to contribute significantly to the household income (Angel and Tienda 1982). The available literature is more divided regarding the effect of coresident kin on women's labor force participation. While some studies suggest that extended family members increase a woman's likelihood of working outside the home by providing low-cost child care (Blau and Robins 1989; Hao and Brinton 1997; Heckman 1974), others find that the childcare provided by extended kin does not affect women's employment (Parish, Hao, and Hogan 1991; Rosenbaum and Gilbertson 1995).

Extended family households are common in Latin American countries including Mexico (Fussell and Palloni 2004). According to the 2000 Mexican population census, 25.7 percent of all family households include at least one non-nuclear family member (INEGI 2000). Mexican female-headed households are significantly more likely than male-headed households to be extended (Chant 1997a, 1997b; De Vos 1987; González de la Rocha 1994a; Ono-Osaki 1991). In her ethnographic study

of working-class women in the Mexican city of Guadalajara, González de la Rocha (1994a) found that the female-headed households in her sample had an average of one additional extended family member. However, very few of them were actually employed. She argues instead that the contribution of these additional members consists of performing domestic chores that free female heads to work outside the home. The presence of extended family members also affords female-headed households greater flexibility and helps them during times of crisis (González de la Rocha 1991).

Second, with regard to the role of direct economic transfers from nonresident kin, previous research in the United States also suggests that female-headed households receive greater financial support from family members than households with a married couple (Hofferth 1984; Parish, Hao and Hogan 1991). However, the findings are not conclusive. Hao (1996) finds that private financial transfers have the greatest effect on the wealth of "intact" families. Single mothers who have previously been married benefit less from such transfers, while those that have never married do not benefit at all. By contrast, the few available studies on female-headed households in Mexico consistently show that they receive greater financial support from individuals outside the household unit compared to male-headed households. Among the households in Guadalajara studied by González de la Rocha (1994b) only those headed by women received any appreciable amount of contributions from nonresident kin. Similarly, Chant (1997b) finds that 31 percent of female-headed households in several communities located in midsize Mexican cities received financial support from family members accounting for 12.5 percent of their total income, while only 11 percent of

households headed by males received such support accounting for 1.6 percent of their income.

3) International Migration - A third explanation for why female-headed households in Mexico have comparatively high income levels has to do with differences in the rates of international migration between residents of female- and male-headed households. First, remittances from family members working in the United States have been shown to make up a substantial portion of the income of Mexican families who stay behind (Massey et al. 1987; Parrado 2004). If female heads of household receive a disproportionate share of remittances and these remittances are sufficiently large, they may explain the higher per capita income levels observed among female-headed households.[4] Because international remittances are one form of economic assistance from family members, this explanation is simply an extension of our previous one regarding family support networks and economic transfers in general. To test the specific effect of international remittances we need to distinguish the contribution that economic transfers from family members living within the country and abroad make to the total income of Mexican female-headed households.

Second, households headed by women in Mexico may have higher per capita income levels because their partners are living abroad. The temporary or long-term absence of their partners may in fact be the reason why many women are considered heads of household in the first place. Households headed by a woman with a

[4]Female heads of household have been found to receive a larger amount of international remittances in other developing countries (i.e., Appleton 1996, Brydon and Legge 1996, and Chant and McIlwaine 1995).

migrant partner will generally have a higher income because partners will contribute to the household in ways that may not be fully captured by remittances (i.e., their contributions may not be considered transfers from outside but rather part of the earnings generated within the household). This possibility can only be assessed by specifically examining whether female-headed households have a migrant partner in the analysis below.

4) Selection into Headship among Mexican Women - Despite recent increases in female headship, a majority of Mexican women with children do not head their own households, but instead live in households headed by someone else such as their partner or another relative. Part of the reason they do not head their own households is precisely that they lack the economic resources to do so.

> I did not, and don't have a place to live if not my parents' house...because if I live separately, I have to pay monthly rent, and well..to buy foods with the money I earn from my work, so I moved into here...yes, in fact it is very uncomfortable sometimes. For example, my parents are not used to my kids because they have already raised their own. My sister is either. Let say, like a neurotic, she gets mad [at my kids] and later she yells at them sometimes. So, I prefer to live separately, it is just better to be independent. But, I cannot. We have to live here. (Vanesa, 26, footwear seller)

Vanesa is living with her parents, sister, cousin, and her two children in the same household in a rural area of Mexico City. Her monthly income is 2,000 pesos (about $200), which she earns mostly from home-visit sales. She used to live in an urban area before she separated from her partner, but had to move into her parents'

house for of the economic reasons. She has lived in her parents' house for two years, but she feels very uncomfortable living with other family members, especially because of the problems caused by her children. Although she wants to live independently from her family, she thinks that it would be impossible in the near future because she does not have much opportunity to save money for it.

Mexican single mothers with insufficient income may move into their parents' households or those of other relatives (or stay there if they never left), as shown in case of Vanesa above. Similarly, married or cohabiting women may choose to remain in the household headed by their partners –even under strenuous circumstances– if they do not have the income necessary to live separately. Since single mothers who move into their parents' household and married women who stay with their partners despite marital problems are likely to be those with fewer economic resources. Those who do become heads will generally have higher household incomes. Becoming a household head, therefore, involves a selection process whereby those with lower income expectations are selected out of headship (or those with higher expected incomes are selected into it). Unlike Vanesa's, Nelda's household provides a different case of selection process for woman's headship.

> Yes, I'm a household head. Okay, my parents are quite old and both of them have been ill for a long time. My dad has cancer, and my mom suffered retinal detachment. So I make decisions for the household. I have always done so since I started living with my parents....My ex-partner was very violent. Also, I was the only one who worked for income. He abused me physically, sexually, and emotionally. I was very scared and did not want to keep the union. When I divorced [separated], I needed someone to *aparachar* [to cuddle] me and help me plan my life. Well you

know, divorce is devastating...(Nelda, 32, university researcher)

> We [Nelda and her parents] divide spending, but, we don't put our money together [for spending]. We hold kind of separate households. My parents pay what they consume within the house –lights, gas, telephone, housing tax, and their own foods– and I pay for anything for my kid and me, like our foods. In addition, I buy something of common usage, like toilet paper, soap, detergent, and so on. Also, I pay for a gardener who waters our garden, and a señora who does housework....I plan to move out at the end of this year again. My parents are a little healthier than before. (Nelda, 32, university researcher)

Nelda works as a researcher in the anthropology department at university. Although she is living with her parents, she is heading her household. Different from many cases of Mexican single mothers who live with their parents, the primary reason for her choice of living with her parents was not an economic but rather an emotional one. While living with her partner, Nelda suffered a problematic union due to the economic incapability and violence of her partner. When she separated from her partner, she needed emotional protection. Also, her parents needed support from her because of their illness. She hires a gardener and a maid for household help because her parents cannot work while Nelda is outside the house at work. Her significant amount of savings in the bank partly made this type of spending possible. Now, she is planning to live separately from her parents as her life is getting stable and her parents' physical situation is getting better.

This selection process provides yet another explanation for the high income levels observed among female-headed households in Mexico. To examine this selec-

tion process in the second part of our statistical analysis below, we turn our attention from households as the units of analysis to individual mothers (regardless of whether they are heads of household or not). We attempt to determine which Mexican women with children are more likely to become heads and measure the effect of this selection process on the overall income difference between female heads and non-heads.

To summarize: we have proposed four explanations for the surprisingly high income levels of Mexican female-headed households relative to those headed by males. First, we hypothesized that the higher income levels may be explained by female heads' more advanced stage in their life course. Because they are generally older, female heads often have access to additional sources of income, including assistance from adult children, that may compensate for their disadvantages in the labor market. Second, we hypothesized that the relatively high income of Mexican female-headed households may be due to the greater financial support they receive from coresident kin and extended family members living outside the households unit. Third, we proposed that the higher rates of international migration among residents of female-headed households may account for their higher total income levels. Finally, we suggested that the higher income of female-headed households may be due to a selection process whereby only women with sufficient income head their own households, while those with less access to resources move into households headed by others. In the analysis below we attempt to test these hypotheses using data from a national survey.

3.2 Data and Measurements

Our statistical analysis of female-headed households in Mexico is based on the 1997 National Survey of Demographic Dynamics (*Encuesta Nacional de la Dinámica Demográfica*, ENADID) (INEGI 1999). The ENADID survey was applied to a nationally representative sample of over 60,000 households. It includes questions on a broad range of demographic topics including domestic and international migration, women's marital and reproductive histories, and maternal health among others. Although not specifically designed as a household income survey, the ENADID includes detailed questions regarding the income received by all household members according to the source of income, including wages, transfers from relatives living within the country and abroad, retirement benefits and returns to investments among others.[5] As shown below, the ratio of median income of female- to male-headed households is similar to those based on the ENIGH surveys in Table 3.1. The ENADID survey is preferred in this instance because of its more detailed information regarding household composition. Whereas other household surveys such as the ENIGH only allow us to identify individuals' relation to the head of the household, the ENADID survey specifically allows us to identify all mothers within the household. We are therefore able to extract for our analysis all single mothers within the household regardless of

[5]The ENADID survey asks respondents if they receive seven different types of income (including remittances from relatives living within the country and abroad). However, the survey only records up to two income sources besides wages. While this restriction may be thought to result in an under-reporting of income, exploratory analysis revealed that only 0.56 percent of individuals 15 years of age or older reported two sources of income in addition to wages. The proportion of individuals with three or more sources of income in addition to wages, and whose third income source is unrecorded must therefore be lower than 0.56 percent and is thus unlikely to affect the outcome of our analysis.

whether they are household heads or not. This is essential for the second part of the paper in which we examine the selection process by which some single mothers become household heads while others do not. The ENIGH surveys do not allow us to test the selection models presented below.

Another important advantage of the ENADID survey compared with traditional income surveys such as the ENIGH is that the ENADID contains more detailed information regarding the migration experience of household members and former household members. This information allows us to test our third explanation which attributes the high income of Mexican female-headed households to the international migration of their partners. Nevertheless, because the ENADID survey was conducted some time ago we cannot be certain that the results we obtain are still valid in more recent years. For this reason we replicated all the analyses presented below using the ENIGH survey of 2002, except for the selection models and those models testing the effect of international migration for which the ENIGH survey does not provide sufficient information, as just noted. The results of these analyses are not presented here but confirmed the main findings reported below.

Following our discussion of Table 3.1 we define female-headed households as all those in which a woman with children and no resident partner is identified as the head. We exclude from our sample all households (female- or male-headed) without children. Secondly, we also exclude the relatively small number of cases of households headed by a woman with a partner present (1.9 percent).[6] Both of these

[6]Although they do not have a partner residing in the household, a relatively small number of female heads report being married (8.6 percent), and an even smaller number report being in a consensual union (3.2 percent). In separate analyses not presented here we replicated all the results of the regression models presented below using an even more restrictive definition of female-headed

conditions ensure the strictest possible test for the higher income of female-headed households compared to those headed by males because the presence of children will generally disadvantage female heads with regards to their labor force participation, while the absence of a partner will deprive female-headed households of additional income.[7]Finally, we also exclude from our analysis all households with absent heads, that is those in which the head does not normally live in the household unit (2.1 percent).

Our main variable of interest is the age-adjusted household income per capita. Also known as an individual's *equivalized household income*, this measure is preferable to a simple ratio of household income to the total number of residents for two reasons. First, it weighs children less than adults since the former have lower income requirements. Second, the equivalized household income also takes into account economies of scale in that the additional income necessary to sustain one more household member will be lower in larger households than in smaller ones. The specific formula employed is of the form $y_{hsld}/(A + \alpha_1 K_1 + \alpha_2 K_2)^{\theta}$ where y is the total household income over a three-month period, A is the number of adults, K_1 and K_2 are the number of children under 5 years, and between 6 and 14 years of age respectively. The parameters α_1 and α_2 are weights applied to children in each age group, while θ captures the degree of household economies of scale. Following Deaton and Zaidi

households which further excludes all those in which the female head reports being married or in a consensual union. Moreover, we found that even when we control for all the other predictors in the regression models, households headed by women have income levels that are the same or higher than those headed by men in each marital status category.

[7]While households headed by men do not necessarily include a head's partner in the overwhelming majority of cases they do (96.35 percent of households where a man is identified as the head have a resident partner).

(2002) and de Ferranti et al. (2004: 39-40) we use values of 0.5 and 0.75 for α_1 and α_2, and 0.9 for θ.[8]

The baseline regression models use the log total equivalized household income as a dependent variable, while later models examine the equivalized household income without transfers from relatives within the country and abroad. These later models allow us to determine the importance of such transfers on the difference between the income of female- and male-headed households once other factors are taken into account. A measure of poverty is also used in some models and is constructed using criteria recently established by the Mexican Ministry of Social Development (*Secretaría de Desarrollo Social, SEDESOL*) (SEDESOL 2002, n.d.; World Bank 2004: 7-9). The poverty line is based on the amount of income required to purchase a basket of food necessary to satisfy a person's basic nutritional requirements. Separate poverty lines are established for urban areas (defined by SEDESOL as cities or towns with 15,000 residents or more) and rural areas (defined as those with less than 15,000 residents).

The stage in the family cycle is measured using both the household head's age and the presence of adult children in the household. If our first explanation is correct, then controlling for the age of female heads of household should account for the higher income level by reversing the sign of the association between female headship and log household earnings. Similarly, by introducing a dummy variable indicating the presence of adult children into the regression models we are able to

[8]One problem with the household income measures is that they ignore how resources are actually distributed within the family. Several studies have found that female heads are more likely to spend the income on food, healthcare and education for the children compared to male household heads (i.e., Blumberg et al. 1995; Chant and Craske 2003).

estimate the effect that children have on the economic conditions of households in later stages of the family life course.

As discussed above, kinship support of female-headed households may occur in two ways: coresidence with extended family members and direct financial transfers from nonresident kin. We examine both of these factors in the statistical analysis. First, we test the effect of family extension by including a dummy variable indicating the presence of an extended family member in the regression models for household income. An extended family member is defined as any person other than the head of the household, his spouse (only in the case of male-headed households since all female heads are living without a partner by definition), and his or her children. This definition includes extended family members of all ages, such as children who are unlikely to contribute to the household income. In order to specifically test the effect that an extended family member who is more likely to make a productive contribution has on the household income we introduce a second variable indicating the presence of an adult extended family member. Because the age at which individuals contribute to the welfare of the household both by working outside the home and providing childcare is generally lower in a developing country such as Mexico, we use 15 years as the cut-off point for adults instead of 18 years (Basu 1999). We also test the specific effect of having an extended family member who is currently employed in the labor market. Secondly, we examine the possibility that economic transfers from nonresident kin may explain the unusually high income levels of female-headed households by subtracting the amount received from persons living outside the household unit.[9]

[9]Unfortunately, we cannot distinguish precisely who is sending funds to households, but only whether they originate from within or outside the country.

Following our discussion above, the effect of international migration on the income level of female-headed households is examined in two different ways. First, in order to measure the importance of remittances we test a separate regression model where international transfers to members of the household are subtracted from the total equivalized household income. If international transfers account for the higher income levels of female-headed households then the effect of female headship should be reversed (become negative) once these transfers are removed from the dependent variable. Second, the module of the ENADID survey dealing with international migration allows us to determine if any household member or former household member who lived in the household at some point in the past five years is currently living abroad. The survey also reports the relation of any migrant to the head of the household. We use this information to construct a dummy variable indicating if a woman head of household has a migrant partner. We introduce this dummy variable in the regression models in order to explicitly test the hypothesis that the higher income of female-headed households is due to the fact that their partners are living abroad.

The regression models below also control for the years of formal education of the heads of household since education is associated with higher earnings. Introducing education as a predictor allows us to test whether differences in the income level between female- and male-headed households are due to differences in the amount of education the household heads received. Finally, a dummy variable for rural location is also introduced in the regression models and is expected to have a negative effect on household income. We define rural areas as all those with less than 15,000

residents in order to be consistent with the standard used by the Ministry of Social Development (SEDESOL) in computing the poverty rates used in some of our regression models.[10]

3.3 Descriptive Results

Table 3.2 shows some descriptive statistics for female- and male-headed households in Mexico according to the 1997 ENADID survey. Both the estimated percentage of female-headed households and the ratio of median incomes of female- to male-headed households are remarkably similar to those of the ENIGH surveys conducted around the same time (see Table 3.1). The weighted statistics indicate that 15.3 percent of Mexican households were headed by women without partners in 1997, compared to 15.1 percent according to the ENIGH survey in 1998. The age-adjusted median income level is once again higher for female-headed households than male-headed households, and their poverty rate is significantly lower. The difference in mean household income levels on the other hand, is not statistically significant at the .05 level.[11]

Consistent with our first explanation according to which the high income of female-headed households is due to female heads' more advanced stage in the life course, the aggregate statistics in Table 3.2 indicate that the median age of women

[10]Because a definition of rural areas consisting of all towns with less than 2,500 residents is more customary than one including towns with up to 15,000 residents (e.g., INEGI 2001, 2006; U.S. Census Bureau 2007: 3), we also tested all our regression models using a population of 2,500 as the cut-off point for rural areas. The results of these regression models are consistent with those presented below.

[11]The difference in the median income of female- and male-headed households is significant at the .05 level using the non-parametric equality-of-medians test.

who head households is almost 10 years higher than that of male heads. The age distribution of female heads is also considerably more skewed. While 62 percent of women heading households are 45 years of age or older only 39 percent of male heads are in the same age group. However, the most dramatic finding relating to the life-course stage of female-headed households is that 40.6 percent of their total income comes from adult children living in the household unit, compared to only 16.2 percent of the income of households headed by males. These measures suggest that female-headed households are in fact in more advanced stages in the life course, and that this may contribute to their higher income levels.

Table 3.2: **Descriptive Statistics for Female- and Male-Headed Households in Mexico, 1997**

Variable	Female-headed Households	Male-headed Households
Percent of All Households	15.3	84.7
Income and Poverty		
Median Income (in pesos)	1,867	1,723
Mean Income (in pesos)	2,865[a]	2,926
Percent Poor	34.0	36.0
Sources of Income		
% From Wages	78.7	93.1
% From Transfers from Relatives	12.1	1.5
% Transfers from Abroad	5.1	0.7
% Transfers within Country	7.0	0.8
% From Retirement Benefits	6.2	2.5
% From Rents and Bank Interests	1.0	0.3
% Others (including government programs)	2.0	2.5
Income Contributions		
% Income from Head	51.6	70.8
% Income from Extended Family Members	7.3	3.0
% Income From Adult Children	40.6	16.2
Employment		
% Heads of Household Employed	55.9	91.5
Ave. Number of Employed Household Members	1.8	2.0
Household Size and Composition		
Ave. Household Size	4.1	5.1
Ave. Number of Children in Household	2.2	2.7
Ave. Number of Extended Family Members	0.9	0.4
% with at Least One Extended Family Member Present	40.7	21.3
% with at Least One Adult Extended Family Member	28.2	15.9

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Variable	Female-headed Households	Male-headed Households
% with at Least One Employed Ext. Family Member	15.8	7.9
% with Adult Children	78.1	50.0
Age of Household Head		
Median age	49.0	40.0
% 15-24 years old	1.9	5.8
% 25-34 years old	12.8	26.5
% 35-44 years old	23.1	28.6
% 45-54 years old	24.0	19.6
% 55-64 years old	20.0	11.5
% 65 years and older	18.4	8.0
Migration		
Percent with migrant partner	3.8	0.0
Percent with any migrant in household	7.2	2.5
Location		
Percent of Rural Households	13.2	86.8
Percent of Non-Rural Households	16.6	83.4

Source: ENADID 1997 (weighted).

[a] The difference between the mean income of female- and male-headed households is not significant at the .05 level, while the differences between the median income levels (using the non-parametric equality-of-medians test) and the percent living in poverty are both statistically significant.

The descriptive statistics in Table 3.2 also provide some preliminary support for the second explanation according to which kinship assistance accounts for the higher income of female-headed households. First, with regards to coresidence, female-headed households are almost twice as likely to include at least one extended family member (someone other than the female head and her children). Slightly over

40 percent of households headed by women include an extended family member. Even more importantly, female-headed households are also more likely to include extended family members who are employed and who are therefore contributing directly to the total household income. Among female-headed households 15.8 percent include an employed extended family member compared to 7.9 percent among male-headed households. Extended family members bring in 7.3 percent of the total income of female-headed households and only 3.0 percent of the income of male-headed households. Finally, consistent with our third explanation for the high income of female-headed households, income transfers from relatives living outside the household unit make up a much larger portion of the total income of female-headed households than male-headed households. However, international transfers actually account for a smaller percentage of the total household income of female-headed households than transfers from within the country. A significantly higher proportion of female-headed households also have a member living abroad compared to male-headed households (7.2 percent versus 2.5 percent).

3.4 Regression Results

The descriptive statistics presented above provide some initial support for the first three explanations for the comparatively high income level of Mexican female-headed households. However, the comparison based on aggregate statistics do not simultaneously test all these explanations or control for other demographic characteristics of the heads of households which might affect their total income. In this section we present findings from multivariate regression models that accomplish these tasks. Ta-

ble 3.3 shows the results of the first linear models using the log equivalized household income as the dependent variable, as well as logit models predicting the probability of falling below the poverty line. The estimated coefficient for female headship indicates that Mexican households headed by women have income levels that are higher than, or statistically no different from those headed by men once the other demographic factors are taken into account. In other words, the household characteristics included in these models cannot fully account for why Mexican female-headed households have comparable income levels to those headed by men despite the many disadvantages faced by female heads.

With regards to our first explanation based on the life course stage of female and male heads of household, the age of the household head is an important predictor of the total income. Households with older heads generally have higher incomes. However, female-headed households continue to have higher income levels even when the age of the household head is controlled, suggesting that the life course stage by itself does not explain the surprising finding. Additional models not presented here in which the age of the head of household was divided into six categories further revealed that female-headed households have income levels that are the same or higher than male-headed households in every age category.

The presence of adult children may also be considered a measure of the life course stage of Mexican households. Only older family heads will have adult children living with them. Coresidence with adult children is of course an imperfect measure of the advanced stage in the family cycle since most adult children do not live in their parents' household. The presence of adult children is also a measure of the

socioeconomic status of Mexican families and may be considered an indicator of family support. In any case, the results from the models in Table 3.3 indicate that having an adult child present considerably increases the income of both female- and male-headed households. The introduction of the variable for adult children reduces the coefficient for female-headed households and makes it statistically non-significant in Model 3, suggesting that the presence of adult children partly accounts for the higher income of female-headed households. Yet including the presence of adult children as a predictor does not reverse the sign of the coefficient for female headship. Even after controlling for the presence of adult children as well as other measures of the life course stage of Mexican heads of household, female-headed households continue to have income levels that are at least the same as those headed by men.

The second explanation for the comparatively high income level of female-headed households had to do with the role of extended family networks. Female-headed households were hypothesized as having higher income because they received greater support either from coresident kin or direct economic transfers from extended family members living outside the household unit. With regards to the first part of this proposition, the results presented in Table 3.3 indicate that having an extended family member in the household actually *decreases* the total income. This would suggest that on the whole either extended family members are a burden on family income or family extension is a symptom of lack of resources (i.e., only families who are already poor will resort to family extension). The interaction between female headship and family extension is nonsignificant suggesting that the presence of an extended member has no particularly beneficial effect on female-headed households.

Moreover, the inclusion of family extension in the regression models does not alter the main finding regarding the overall income difference between female- and male-headed households. Similar results are obtained when we include the presence of an adult extended family member in the regression models instead of any extended member (Model 5). Finally, when we further limit the presence of adult extended family members to only those that are currently employed (Model 6), the corresponding coefficient is positive and significant. As expected, having an extended household member who is working, and whose wages are therefore included in the total age-adjusted income per capita, significantly improves the household finances. In other words, employed extended family members are contributing more than their share of income. However, as with the remaining measures of family extension, the presence of an employed extended family member fails to account for the surprisingly high income levels among female-headed households.

Table 3.3: **Estimates from the Linear Regression Models Predicting the Log Household Income per Person and Logit Models Predicting**

	Log Household Income						Poverty	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Age	0.010**	0.011**	0.006**	0.006**	0.005**	0.005**	-0.004*	-0.003
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Years of education	0.091**	0.091**	0.092**	0.092**	0.092**	0.092**	-0.175**	-0.176**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.004)
Female head	0.067**	0.052**	0.026	0.008	0.004	-0.009	0.065	0.093
	(0.015)	(0.015)	(0.015)	(0.029)	(0.029)	(0.029)	(0.096)	(0.097)
Extended fam present			-0.038**	-0.032*			0.01	
			(0.013)	(0.014)			(0.041)	
Extended adult present					-0.029			
					(0.016)			
Extended employed present						0.104**		-0.384**
						(0.021)		(0.060)
Extend fam * Female head				-0.028			0.075	
				(0.031)			(0.090)	
Extend adult * Female head					-0.014			
					(0.032)			
Extend employed * Female head						0.000		0.126
						(0.039)		(0.116)
Adult children present			0.232**	0.227**	0.226**	0.224**	-0.751**	-0.746**
			(0.015)	(0.015)	(0.015)	(0.015)	(0.047)	(0.046)
Adult children present * Female head				0.038	0.032	0.034	-0.105	-0.1
				(0.033)	(0.033)	(0.033)	(0.110)	(0.106)
Number of children of head	-0.076**	-0.076**	-0.093**	-0.093**	-0.093**	-0.092**	0.209**	0.207**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.010)	(0.010)
Migrant spouse * Female head		0.384**	0.397**	0.404**	0.408**	0.422**	-0.768**	-0.800**
		(0.067)	(0.069)	(0.071)	(0.071)	(0.071)	(0.221)	(0.222)
Rural	-0.541**	-0.544**	-0.530**	-0.530**	-0.530**	-0.528**	0.536**	0.531**
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.030)	(0.030)
Constant	6.776**	6.771**	6.909**	6.909**	6.911**	6.911**	0.181*	0.180*
	(0.024)	(0.024)	(0.026)	(0.026)	(0.026)	(0.026)	(0.080)	(0.080)
R^2	0.3749	0.3756	0.3817	0.3818	0.3817	0.3824	0.1473	0.1487
n	53,808	53,808	53,808	53,808	53,808	53,808	54,666	54,666

* $p < .05$, ** $p < .01$ (two-tailed); pseudo-R^2 reported for logit models.

With regards to our third explanation related to international migration, the results of the regression models in Table 3.3 indicate that female-headed households with a migrant partner have significantly higher income levels. Yet the inclusion of the migrant status of a female head's partner as a predictor fails to reverse the main finding. Even households headed by women with no partner living abroad have income levels that are as high as male-headed households if not higher, when all other variables are controlled. Additional models not presented here in which the presence of any migrant household member regardless of his or her relation to the household head is included as a predictor led to similar results.

In order to examine the effect that economic transfers from family members living outside the household unit has on the age-adjusted income per capita we tested additional models in which the transfers from family members were subtracted from the total household income. If transfers explain the high income level of female-headed households compared to male-headed households, we should observe a reversal in the coefficient for female headship once these transfers are removed. We use the square root of the household income without transfers as the dependent variable in these regression models instead of the log income because subtracting transfers generates a non-negligible amount of cases with zero income, especially among female-headed households.[12]

[12] Although the log function is a better way to reduce the skewness of the dependent variable than the square root, it is not defined for values of zero causing 2.9 percent of cases in our analysis to be dropped (46.4 percent of those are female-headed households). Adding a unit before taking the log of the household income without transfers substantially alters the distribution of the dependent variable by making it bimodal. For an example of statistical analysis using a similar function see Jencks, et al. (1979).

Table 3.4: **Estimates from the Regression Models Predicting the Square Root of Household Income per Person without Domestic and International Transfers**[a]

	No	No Domestic Transfers			No International Transfers		
	Transfers	All	Rural	Non-rural	All	Rural	Non-rural
Age	0.217**	0.215**	0.064**	0.298**	0.230**	0.082**	0.311**
	(0.014)	(0.014)	(0.015)	(0.021)	(0.014)	(0.015)	(0.021)
Years of education	2.617**	2.605**	2.093**	2.747**	2.615**	2.102**	2.760**
	(0.040)	(0.040)	(0.050)	(0.050)	(0.040)	(0.051)	(0.049)
Female head	-4.340**	-2.180**	0.213	-3.448**	-1.969**	-1.682**	-2.200**
	(0.452)	(0.446)	(0.518)	(0.618)	(0.429)	(0.516)	(0.593)
Extended employed present	2.697**	2.725**	0.786	3.870**	2.706**	0.664	3.912**
	(0.715)	(0.715)	(0.528)	(1.074)	(0.712)	(0.525)	(1.070)
Extend employed * Female head	3.554**	2.021	-0.582	2.614	1.562	1.431	1.026
	(1.127)	(1.131)	(1.113)	(1.571)	(1.123)	(1.114)	(1.561)
Adult children present	4.818**	4.709**	5.888**	4.086**	4.566**	5.810**	3.896**
	(0.400)	(0.400)	(0.400)	(0.582)	(0.396)	(0.395)	(0.577)
Number of children of head	-1.701**	-1.745**	-1.325**	-2.380**	-1.775**	-1.362**	-2.423**
	(0.082)	(0.082)	(0.074)	(0.149)	(0.082)	(0.074)	(0.148)
Rural	-9.636**	-9.097**			-9.669**		
	(0.246)	(0.245)			(0.241)		
Constant	24.203**	24.548**	22.433**	21.740**	24.217**	21.629**	21.362**
	(0.738)	(0.736)	(0.734)	(1.054)	(0.730)	(0.730)	(1.045)
R^2	0.3549	0.3489	0.1909	0.2721	0.3602	0.1964	0.2772
n	54,666	54,666	23,340	31,326	54,666	23,340	31,326

* $p < .05$, ** $p < .01$ (two-tailed).

[a] The square root function is used to reduce the skewness of the dependent variable instead of the natural logarithm in order to avoid exclusion of zeros (see comments in text).

The results of these regression models are shown in Table 3.4. The first model subtracts all economic transfers to the household, while the other models subtract only transfers originating within and outside the country respectively. The results are quite conclusive: subtracting the economic transfers from family members from the total household income reverses the sign of the coefficient for female-headed households. Female-headed households have a significantly lower income per capita once the support they receive from family members outside their homes is removed. Economic transfers therefore appear to explain the comparatively high income level of Mexican female-headed households.

The second and third panels in Table 3.4 distinguish the national origin of the income transfers to Mexican households and provide additional evidence regarding our third explanation for the comparatively high income of female-headed households related to international migration. The results of the models for the entire sample of households indicate that distinguishing the national origin of the income transfers makes no substantive difference with regards to their effect on the overall income disparity between female- and male-headed households. However, when households located in rural settings are treated separately from those in non-rural settings an important difference emerges: domestic transfers alone do not account for the high income level in female- and male-headed households in rural areas. Only the greater international transfers to female-headed households explain their unusually high income levels in rural areas. By contrast, domestic transfers are more important for female heads residing in non-rural settings. The greater importance of international remittances to rural female-headed households may be due to the fact that many

of the traditional migrant sending communities are located in predominantly rural states.

3.5 Selection into Female Headship

The fourth explanation for the relatively high income level of Mexican female-headed households described above had to do with the selection process by which some women with children become household heads while others are incorporated into households headed by someone else. According to this argument, mothers with insufficient income potential are "selected out" of female headship, or only those with the prospect of sufficient resources are "selected into" headship, depending on the direction we choose to look at the process. Ideally, information regarding women's living arrangements over time would allow us to measure the effect that a change in women's location within a household structure has on their income. Unfortunately, such information is not available. Our approach is therefore to make use of the information available from the ENADID survey for all mothers regardless of whether or not they are heads of household to obtain the best possible estimate of the selection effect. We use *treatment effects models* to simultaneously estimate a single mother's likelihood of heading her own household, and the effect that household headship in turn has on her equivalized household income after controlling for other individual and household characteristics. These models allow us to obtain unbiased estimates of the effect of female headship on household income after accounting for the selection process.

In order to test the treatment effects models we constructed a new sample

consisting of all mothers in the ENADID survey regardless of their relation to the head of household. These mothers may be currently living with a partner, or they may be single mothers. Those who are single mothers may in turn either head their own households or be living in a household headed by another family member such as a parent. In all, there are three mutually exclusive groups: women with a partner (coupled mothers), single mothers who are heads of household, and single mothers who are not heads. Although we continue to use household income as a dependent variable, it is important to note that the household is no longer the unit of analysis, but rather individual mothers. The reason we use age-adjusted household income per capita instead of the mothers' income is that we want to know the total income that they (and their children) are exposed to under different living arrangements. However, since multiple mothers can be living within the same household and therefore share the same equivalized household income, each case in our sample is not strictly independent. For this reason we use the Huber/White/sandwich estimation technique with clusters formed by each household unit to compute standard errors for the regression coefficients. This technique produces correct standard error estimates even when cases included within groups or clusters are not independent, so long as they are independent across clusters (StataCorp 2001: 256-260).[13]

[13]We also tested our models using a sample in which only one mother from each household was randomly selected regardless of her relation to the head. The results of these models not presented here were essentially the same as those using the clustering technique.

Table 3.5: **Estimates of the Effect of Headship on the Household Income per Person using Least Squares and Treatment Effects Model**

	Single Mother Heads vs. Coupled Mothers			Single Mother Heads vs. Single Mother Non-Heads		
	Least Sqrs.	Treatment Effects Model		Least Sqrs.	Treatment Effects Model	
	Log Income	Selection into Head	Log Income	Log Income	Selection into Head	Log Income
Age	0.006**	0.031**	0.009**	0.006**	0.007**	0.006**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Years of education	0.101**	0.002	0.100**	0.088**	-0.001	0.088**
	(0.001)	(0.003)	(0.001)	(0.003)	(0.005)	(0.003)
Female head	-0.051**		-0.418**	0.187**		-0.297*
	(0.015)		(0.111)	(0.026)		(0.125)
Employed extended fam present	0.020	0.013	0.026	0.127**	-1.937**	-0.156
	(0.015)	(0.029)	(0.015)	(0.029)	(0.040)	(0.081)
Adult children present	0.244**	0.226**	0.250**	0.203**	0.908**	0.319**
	(0.015)	(0.033)	(0.015)	(0.032)	(0.068)	(0.041)
Number of children of woman	-0.082**	-0.096**	-0.090**	-0.055**	0.237**	-0.032**
	(0.003)	(0.008)	(0.004)	(0.008)	(0.020)	(0.010)
Any Migrant	0.258**	0.520**	0.298**	0.155**	0.103	0.169**
	(0.026)	(0.047)	(0.03)	(0.048)	(0.068)	(0.049)
Rural	-0.538**	-0.190**	-0.549**	-0.557**	-0.115**	-0.567**
	(0.011)	(0.023)	(0.011)	(0.025)	(0.038)	(0.026)
Constant	6.850**	-2.278**	6.808**	6.673**	-0.307**	6.926**
	(0.026)	(0.060)	(0.028)	(0.057)	(0.101)	(0.086)
ρ		0.248**			0.327**	
		(0.073)			(0.077)	
σ		0.820**			0.850**	
		(0.007)			(0.013)	
n	58,845	58,845		15,010	15,010	

* $p < .05$, ** $p < .01$ (two-tailed).

Chi-squared test of independent equations:

$\chi^2 = 10.66$ (df=1), $p < .0011$ Single Mother Heads vs. Coupled Mothers

$\chi^2 = 15.52$ (df=1), $p < .0001$ Single Mother Heads vs. Single Mother Non-Heads

The first panel on Table 3.5 shows the results of the treatment effects models comparing mothers who are female heads against non-heads with a partner present (coupled mothers), along with estimates from the least squares regression models ignoring the endogeneity of the headship selection process. The results indicate a strong selection effect in the expected direction. While the coefficient for female headship in the least squares regression indicates that female heads have only slightly lower income levels compared to coupled mothers, once the selection into headship is taken into account being a household head is found to have a very strong negative effect on women's household income. Headship reduces a woman's equivalized income by 34.2 percent [1-exp(-0.418)] according to the results of the treatment effects model.[14] The coefficients from the selection equation show that women who are older, have fewer children but are living with at least one adult child, and those not living in rural areas are more likely to become heads (interestingly, a woman's education level does not appear to affect her probability of heading a household). Having a migrant household member or former household member also increases the probability of being a household head.[15] The covariance among the error terms for the two equations ρ is positive suggesting that unmodeled factors both increase a woman's probability of heading her own household and her household income. The

[14]Because the units of analysis are individual mothers and not entire households as in previous models, the reference group against which female heads are compared in this instance are coupled mothers regardless of their location within the household structure. This change in reference group explains the slightly negative effect of female headship in the least squares model in the first panel of Table 3.5.

[15]Since the ENADID survey only allows us to determine the relationship of a migrant to the head of the household and not a migrant's relationship to every mother we use a dummy variable indicating the presence of any migrant as a predictor in the regression models in Table 3.5 instead of a dummy for a migrant partner.

chi-squared test reported at the bottom of Table 3.5 further indicates that the error terms for the two equations are significantly correlated and that the two equations cannot be assumed to be independent.

In sum, the results show that the least squares regressions ignoring Mexican women's selection into headship lead to a considerable underestimation of the negative effect that being heads of household has on women's economic conditions. Becoming a female head substantially decreases a woman's income. It is only because those women who actually become heads are precisely those with the greatest income potential that they are not worse off when compared to male-headed households. The unusually high income level among female-headed households observed in previous sections of the paper may therefore largely be attributed to self-selection bias.

Finally, we compare female heads of household against the third remaining group, namely other single mothers who are not heads. This comparison is important because it allows us to understand the selection process by which some Mexican single mothers become heads of their own households while others are incorporated into households headed by someone else. Part of the explanation for why Mexican female-headed households appear to do so well economically may be precisely that single mothers with insufficient income are moving in (or remaining) with their parents and other family members. The second panel in Table 3.5 shows the results of the treatment effects model comparing female heads with single mothers who are not heads, along with the corresponding estimates using least squares. The results once again indicate a selection bias in the least squares estimate of the effect of headship

on the equivalized household income of single mothers. Whereas the coefficient for female headship in the least squares regression indicates that female heads have higher household income, once the selection into headship is taken into account being a household head again decreases the household income. The coefficients from the selection equation show that single mothers who are older, have more education, have more children and at least one adult child, and those living in non-rural areas are more likely to become heads. Having an employed extended family member in the household or a migrant also increases the probability of being a household head.[16] The variance among the error terms is once again positive and the chi-squared test indicates that the two equations cannot be assumed to be independent.

In sum, the results of the treatment effects model comparing female heads against single mothers who are not heads suggest once again that headship has a harmful effect on the economic conditions of Mexican single mothers. Female heads have higher household income than other single mothers only because those who choose to become heads are also those with the greatest income potential. Overall, the selection process appears to reflect a rational strategy by Mexican single mothers: those who can fare well economically heading their own households choose to do so, while those who would not, move into households headed by someone else.[17]

[16]Family extension in these regression models using mothers as the unit of analysis is defined not in terms of individuals' relation to the household head, but in terms of their relation to the mother.

[17]The treatment effects models in the Table 3.5 assume that the selection process whereby coupled mothers become single mother heads of household (left panel) and that by which single mother non-heads become heads (right panel) are separate processes. In reality they are related since transitions may occur between any two of the three group of women. The selection process would be better modeled as a multinomial probit instead of two binary probit equations. However, a two-equation model with a multinomial probit is more difficult to identify and would require the use of convincing instrumental variables which are not available in a cross sectional survey such as the ENADID. While the analysis presented here is sufficient to establish the presence of a strong

3.6 Conclusions

In this paper we have attempted to explain why Mexican households headed by single mothers have per capita income levels that are similar to or higher than those headed by men, and are no more likely to be living in poverty. The higher income of female-headed households cannot be explained by the earnings of female heads alone. In fact, a relatively small portion of female heads are actually employed and their wages are considerably lower than those of male heads. Instead, our statistical analysis suggests that the higher income of female-headed households is explained by the greater assistance they receive from family members in the form of direct transfers originating within the country and abroad, as well as by the selection process by which Mexican women with the highest income potential end up heading their own households while others either remain with a partner or are incorporated into households headed by their parents or other relatives.

Both explanatory factors depend to a large extent on prevailing norms regarding family support for the otherwise most vulnerable members of society. Were it not for family members providing a disproportionate amount of economic assistance to female heads, and were they not willing to take struggling single mothers into their own households, we would not observe the aggregate pattern in which female-headed households are better off. To illustrate the effect that family practices may have on the prevalence of female-headed households and their economic conditions it is useful to compare the living arrangements of single mothers in Mexico with those in the United States. In 1997 (the year of the survey) 47 percent of Mexican single mothers

selection effect, future work will be required to properly test its magnitude.

lived in households headed by someone else, typically their parents. In the U.S. the figure is closer to half that amount.[18] If the same percentage of Mexican mothers were suddenly forced to head their own households as in the U.S. many of those with lower income potential (younger, less educated, never married) would almost surely be included among them and would see a dramatic decline in their living standards (all else being equal). The effect of this change might be sufficient to cause a reversal in the ratio of income of female- to male-headed households.

However, lest we paint an overly rosy picture of Mexican family practices, it is important to remember that reliance on family support comes at a price. This becomes clearer when we think about the other group of women, namely those that select themselves out of headship not by moving in with their parents, but by remaining with their partners. Many of these Mexican women may be staying in unhappy and abusive relationships with their partners simply out of fear of the economic consequences of heading their own households (see for instance González de la Rocha 1988; 1994b). In other words, there may be a considerable pent up demand for headship among married women (as well as those living in households headed by other relatives). Among other things, this may explain the rise in female-headed households over time. As women's economic status has improved they may be more frequently opting out of unhappy living arrangements.

Finally, what (if anything) can we say about the future economic status of female-headed households in Mexico? Are they destined to become poorer relative

[18] According to the CPS statistics 22 percent of single mothers in the U.S. did not head their own households in 2000 (based on tables presented in Fields and Casper 2001). However, a precise comparison between the two countries is difficult because of slight differences in the categorization of households.

to male-headed households as they are in the U.S. and other advanced capitalist countries? One of the limitations of our analysis is that it is based on data from the 1990s. It is possible that some of the strategies that have allowed female-headed households to avoid higher rates of poverty may have changed since that time. Nevertheless, the trend data shown in the first part of the paper suggests that despite a relatively steady increase in the percentage of female-headed households over the past decade, the ratio of income of female-headed households to that of male-headed households has not declined. The network of kinship assistance therefore seems to have remained sufficiently flexible. But for how long? The available evidence seems to suggest that family support in Mexico is quite resilient even in times of crisis. Ethnographic studies indicate that Mexican families incorporated a greater amount of extended family members as a way to cope with the economic crisis of the 1980s (Chant 1991; González de la Rocha 1994b). Similarly, economic transfers to Mexican households from abroad almost doubled during the subsequent crisis of the mid-1990s, and helped compensate for a decline in other forms of income (McKenzie 2003). Yet like all social mechanisms for coping with economic problems, family support has its limits. If Mexican society experiences a similar increase in the proportion of female heads that are young and never married as the United States has witnessed in the past decades, we may yet see a breakdown of the kinds of family practices that have prevented this group from heading households with lower incomes.

Chapter 4

Co-resident Extended Family Members and Time Allocation of Employed Single Mothers in Mexico

Contrary to expectation, the results of the analysis in chapter 3 suggest that only certain types of extended family members living in the same households make significant financial contributions to the female-headed households. Furthermore, the presence of any type of extended family members does not explain the higher income level of female-headed households compared to their counterparts. Kinship networks are important to the income of households led by women only when family members living in other regions of the country or abroad provide those households with transfers. Contributions to family welfare of family do not necessarily come only financial form, though. If extended family members do not make significant economic contributions, it is still possible that they provide nonfinancial support to single mothers. Departing somewhat from the results of the previous chapter, in this chapter I focus on how extended family members contribute to the livelihood of

Mexican single mothers in the form of nonmonetary support.

During recent decades, researchers in various social science disciplines have become interested in how individuals allocate their time. This interest in part reflects the changing roles of both women and men in the labor market and the resulting consequences for their households. Motivated by the increasing availability of time-use survey data, a number of studies examine broader topics of time use, including the changing pattern of time allocation in households. Many researchers regard time as a strong and ultimate resource affecting the level of an individual's wellbeing, which is determined not only by the change in structural factors influencing the effectiveness of time use, but also by the vital quality of life information provided by the way an individual performs work (Floro 1995; Juster and Stafford 1985; Zuzanek 2004; Howorth 2004). Thus, important questions in the study of poverty and inequality are how and why people allocate their time to particular activities, because the way they manage their time indicates what they are lacking and how they make up for a shortage of material resources in their everyday lives. As Floro (1995:2) argues, to examine the nature of poverty, "one should not ask what things are these individuals deprived of, but also what they are compelled to do in order to survive."

From an economist's point of view, the household-production model assumes that people derive utility or satisfaction from household-produced goods, such as health, development, and wellbeing of their household members (Becker 1965). To produce these outcomes, people should purchase goods and services or contribute their time to related activities. According to this model, people have constraints on their time such as financial resources like income, which can purchase goods and

services. So they choose the manner in which they distribute their financial resources and time spent on market or nonmarket activities to maximize their household utility in their interactions with the outer world in areas such as market or government. In this context, research shows that the time allocation of households in less-developed countries needs special attention. In these societies, interaction with the market is more restricted than in developed countries, and social infrastructures are not developed well enough to support people's economic activities outside households effectively (Ilahi 2000; Ilahi and Grimard 2000; Short et al. 2002).

The household, however, does not always act as a collective entity or in a well-coordinated way to maximize household utility. Furthermore, maximization of household utility does not always result in the greatest individual satisfaction or even in the optimization of the aggregate satisfaction of all household members. An increasing body of empirical evidence has shown that the rational-choice model of household production is inadequate and argues that the influence of social, cultural, and economic factors on assumed roles of household members determines their behaviors and choices (Kabeer 1997; Malhotra and DeGraff 1997). Some household members may experience a higher level of stress than others because of the extended total work time resulting from such dual burdens as income earner and house worker, or they may sacrifice leisure time for other members' wellbeing.

Much literature from the United States has shown that resources are distributed unequally within households. In many cases, employed women with children are the most disadvantaged population in terms of time availability. The main interest of these studies is the unequal distribution of workload between wife and

husband within married households, and the shift in household production affected by the changing pattern of women's employment and gender roles (South and Spitze 1994; Davis and Greenstein 2004; Lavee and Katz 2002; Shelton 1992). Although there are different views and explanations concerning the factors contributing to the division of labor within households, the general research findings are quite consistent: wives (or female partners) spend considerably more time in housework and childcare compared to husbands (or male partners), even when they are paid workers in the labor market (Bianchi et al 2000; Shelton and John 1996; Apps 2003; Robinson and Godbey 1999; Thompson and Walker 1991). Therefore, gender equity in the division of labor within households focusing on married couples has been the main theme of time-use research.

Relatively few studies have been conducted on the variation of time allocation by women across household types (South and Spitze 1994; Douthitt, Zick, and McCullough 1990), by various living arrangements of single mothers (Folk 1996), or by gender differences between female and male single parents (Hall, Walker, and Acock 1995) Cross comparison of the effects of household composition on the time allocation of single mothers and mothers with male partner present, however, has rarely been examined.

The household-production model also suggests that single-parent households may differ from married or cohabiting households because there are fewer time resources or opportunities for economies of scale (Becker 1985). Additional factors might also explain the distribution of resources in complex household compositions. The division of household labor in a family results from different constraints on vari-

ous family members' time, and family structure may be responsible for differences in mothers' time allocation unexplained by other socioeconomic factors (Gager, Cooney, and Call 1999; Douthitt et al. 1990).

The increasing number of one-parent families is another important reason to study single mothers' time allocation. Two-parent families composed of mother and father as basic family members are not typical feature of current family structure. More and more women are living without partners, but with children than ever before. Using census data from 1960 to 2000, Ellwood and Jencks (2004) show that single-mother households have gradually increased and that their percentage grows fastest in the lower-educated mother groups, meaning that an increase in single mothers is occurring within the context of fewer opportunities in the labor market. This in turn leads to greater economic hardship for single mothers. Among these women, many single mothers live independently, while others choose to live with their parents or other close relatives to compensate for their lack of resources. From this point of view, investigations focusing on married households would exclude a significant proportion of women from consideration. An important part of a time-use analysis would be to examine the effect of extended family members on single mothers' time use.

The purpose of this research is to explore the way employed mothers allocate their time in various activities, and the effect of coresident extended family members on time allocation of employed mothers in Mexico. This study focuses particularly on the time allocation of single mothers to childcare, domestic labor, and work to determine the effect of the gender of coresident extended kin on employed women's

time.

4.1 Kinship support and working mother's time allocation

Kinship network and extended family-living arrangements have been important research topics for the study of welfare, poverty, and the employment of single mothers and their households. Due to decreasing family size caused by a change in fertility rate, increasing female labor-force participation, and changing family values, research attention to the role of coresident extended kin is rarely found in recent U.S. literature. Instead, the topics of family studies are concentrated more on the role of nonresident relatives than on extended-family composition itself.

Extended-family arrangements, however, are still common, and kinship networks are stronger in many less-developed countries (De Jong Gierveld, de Valk, and Blommesteijn 2001; Fussell and Palloni 2004). A Mexican census shows that 25.7 percent of all family households in Mexico include at least one nonnuclear family member in 2000 (INEGI 2000). Furthermore, according to one study (Villarreal and Shin, forthcoming), 47 percent of Mexican single mothers lived in households headed by someone else (typically their parents) in 1997, while Current Population Survey statistics indicate that 22 percent of single mothers in the United States were living with their relatives in 2000 (Fields and Casper 2001).

In Mexico, family and kinship networks have played an important role as a safety net for disadvantaged populations such as single mothers. Incorporating or being incorporated by extended family members was a survival strategy to cope

with economic difficulty by pooling income and to create a collective consumption in recurrent economic crises during the 1980s and 1990s (Chant 1991; González de la Rocha 1994b; McKenzie 2003). These networks also shared housework or childcare for mothers, thus allowing mothers to participate in the labor market. In her ethnographic study in Guadalajara, González de la Rocha (1994a) found that female-headed households had an average of one additional extended family member, and that these additional members contributed to domestic chores -which freed female heads to work.

Single mothers, unlike married (or cohabiting) ones, face time and mobility constraints not only in the labor market but also in household maintenance, such as child care and domestic work due to an absent adult household member (Chant and Craske 2003; Buvinic and Gupta 1997; Presser 1989; Bianchi, Robinson, and Milkie 2006). The burden might also be caused by the absence of an additional income earner. Especially, if female-headed households are portrayed as being composed of relatively young single mothers with young children, it is clear that women-headed households have fewer resources. In this case, the absence of wages from a male family member and of significant economic contributions from children reduces the household income and provides an economic imperative for the woman to enter the labor force.

> It was good, economically. Yes, it was....After I got separated from my husband, I had to begin to work on my own. When I got married to my second husband, my life was much better. There were some problems for which we separated, but we had more money. Let me say, it was a little luxurious and I had more free time because I did not need to work and I

> could give more attention to my kids. Now, well...nobody gives me and my kids money....I have too many kids. I am the one that has to be up to the chin with children, house, and work. It's hard...don't you think so? (Abigail, 35, vendor in public market)

Abigail has five children, whom she had with her two ex-partners. Her oldest daughter is 17 years old, and the second is 15 years old. Now they are attending school, but Abigail is expecting them to finish their education soon and begin to work to increase the household income. As her case demonstrates, when a woman with a young child divorces or separates, one of the emergent issues is managing conflict between household labor (including child care) and income-earning activities. The need to juggle both waged work and domestic responsibilities also limits the jobs for which women can apply. Discrimination in the labor force regarding appropriate jobs for women and their generally lower levels of education will also limit the range of jobs and the wages available to them. (González de la Rocha 1994c; Willis 2000).

> In fact, yes, I want to look for another job [for more income], but I have to leave my kids at home by themselves. I used to work at ABC Hospital as a janitor at night. I worked there for three months and quit that job two months ago....I used to earn 1,050 pesos [105 dollars] per two weeks. Now, I don't have that additional income any more...It was really hard. [After I returned home,] I slept briefly, and got up to feed and take kids to school, then got brief sleep again...I had to leave home for work afterward, so actually, I could not take care of my kids....But now, I will go back to work at ABC hospital during the night again. With my income now, I cannot [afford anything]. (Guadalupe, 36, street vendor)

Guadalupe is living with three young children (8, 6, and 5 years old) and earns a small amount of income from sales work. She used to have a night job as a

part-time worker, at which she earned an additional $200. That was the best option for her in the presence of three young children, because she could not make time for them with day work. She stopped the night job three months ago because of the physical difficulty. Now she is thinking of going back to the same night job that she used to have because she had a serious economic shortage without the income from it.

According to one study by Bianchi et al. (2006) using the 2000 National Survey of Parents, single mothers feel time constraints, are rushed, and multitask more than married mothers or fathers. They also report having made more sacrifices in their work for their family or in their personal life for their careers than do married mothers or fathers. Thus, single-parent mothers suffer more not only from higher stress levels as well as lack of time for most basic activities than do married mothers (Bianchi 1999; Casper and Bianchi 2002; Garfinkel and McLanahan 1986; Gottschalk and Danziger 1993; Lichter 1997; McLanahan and Booth 1989; Folk 1996), but also from lower economic status, as numerous studies have shown.

From this point of view, living in the house of their parents or relatives can be an option for young single mothers to complement their lack of time and economic materials. It can occur in several ways: Sharing a house with other family members can save the cost of rent or other utilities, parents of single mothers are more likely to have returns to their investment (thus providing financial assistance for single mothers and their children), or the presence of extra adults (in particular, female adults) in the households can decrease the working single mothers' burden of childcare.

Although there is no agreement about the role of extended family members for single mothers, many researchers argue that the existence of nonnuclear family members may contribute to the wellbeing of single-mother households through the pooling of income or the provision of housework, childcare, and labor outside the household (Blau and Robins 1989; Heckman 1974; Chant 1991; González de la Rocha 1994b).

Informal childcare, in particular, that is provided by extended kin (especially mother's parents) is more common in disadvantaged groups – lower-income families, less-educated mothers, young mothers, or single-parent households (Brayfield, Deich, and Hofferth 1993; Baydar and Brooks-Gunn 1998; Vandell et al. 2003; Scott, London, and Hurst 2005) – because it allows mothers to save the cost of purchasing child care. Coresident kin are the most likely to be involved in informal child care (Baydar and Brooks-Gunn 1998). Childcare and domestic labor provided by other household members may have two different but related effects on a mother's time. On one hand, it can reduce a mother's stress from the burden of her housework responsibility, including child care, thereby allowing leisure or personal time. On the other hand, a mother's earned time through household labor provided by another household member might be transferred to work time for earning more income.

> My son goes to school and my sister or brother picks him up from school when school is over. When I don't work, I do it myself....My mom and my sister work, too, so we have to make a schedule for care for my son. It is the biggest priority in our family....Sometimes I work during the weekend, and then my sister and mom take care of him. They take my son to the park in my neighborhood, and spend time there. They buy my son toys and snacks...The greatest gift from my sister for him was a

Superman costume. (Micaela, 25, housekeeper/waitress)

Micaela is living with her mother (who is 45 years old) and her younger sister and brother. Her mother, also a single mother, and 20-year-old sister decided to take part-time jobs to make their time available for Micaela and her son. Her 17-year-old brother is attending high school and usually takes care of Micaela's son during the weekends.

On the other hand, regarding the effect on mother's labor participation, an ongoing debate exists about the relationship between extended kin and female labor-force participation. While some studies suggest that extended family members increase a woman's likelihood of working by providing low-cost childcare (Blau and Robins 1989; Heckman 1974), others find that the childcare provided by extended kin does not affect women's employment (Parish, Hao, and Hogan 1991). The contribution of extended kin, however, should consider the sociodemographic characteristics of extended family members, mothers, and other household characteristics.

Previous studies show that the mother's time allocation pattern might be influenced by the characteristics of adults residing in the household. Tienda and Glass (1985) argue that the proportion of female coresident adults is positively related to a mother's labor-force participation, while the number of coresident adults decreases a single mother's labor-force participation rate, suggesting an increased domestic burden. Another subfamily including other preschoolers in the household is likely to increase a woman's overall domestic duties and thus further reduce the amount of time she might have for paid employment (Rosenbaum and Gilbertson, 1995). Additional male in-law relatives living in the household might indicate an increased

burden for married (or cohabiting) mothers. Alternatively, some research supposes that female extended kin (such as mothers, mothers-in-law, and others) are important for mothers of young children (Short, Goldscheider, and Torr 2006; Presser 1989). Tienda and Glass (1985) suspect that employed extended kin and their earnings can increase the propensity to purchase daycare services for children, so that situation could facilitate mothers' labor participation. These findings imply that the pattern of employed mother's time allocation should be studied, in consideration of the characteristics of extended kin living in the same households.

Based on this theory, I test three hypotheses concerning the time allocation of employed mothers in Mexico.

Hypothesis 1: Time for domestic work and childcare of an employed mother decreases when a female extended family member is present in the household, whereas having a male extended family member does not affect or increase a mother's time for domestic work and childcare.

Hypothesis 2: Time for paid work of an employed mother increases with the existence of a female extended family member.

Hypothesis 3: The time contribution by an extended family member to an employed mother's time is greater for single mothers than for mothers with partners present.

Hypothesis 4: As time for childcare and domestic work by extended family increases, a mother spends more time on labor market activities for income.

4.2 Data and measurement

Data used for this study are from the Mexican Family Life Survey (*Encuesta Nacioanl sobre Niveles de Vida de los Hogares*, MxFLS1) conduced in 2002. MxFLS was designed by the Centro de Investigacion y Docenicia Economicas (CIDE) and Universidad Iberoamericana (UIA), with the involvement of various research institutes (including INEGI, Instituto Nacional de Estadistica, Geografia e Informatica) to coordinate field research.[1] MxFLS1 provides very broad information about individuals, households, and communities, including household economy (such as income, consumption, and assets); retrospective information about employment, education, migration, and marriage of individuals, individual health status (including reproductive health); time allocation of all household members, crime incidence, cognitive levels of all individuals; decision-making capacity of household members; and sociodemographic information of individuals. The MxFLS1 baseline is a probabilistic sample, stratified, multi-staged, and independent at each study dominion. Primary sampling units were selected with reference to representation at the national, urban-rural and regional levels.[2] Regional definitions are in accordance with the National Development Presidential Plan 2000-2006. The approximate sample size is 8,440 households with approximately 38,000 individual interviews. This study uses the

[1]For more information about the survey and research institutes involved in this survey, refer to: http://www.radix.uia.mxennvih/mainphp?lang=en

[2]MxFLS1 is an ongoing project that has generated a multitopic household survey with national, regional, and urban-rural representation. MxFLS-2 was scheduled to begin fieldwork activities in the first semester of 2005, and MxFLS-3 was to conducted three years later, in 2008. These rounds will turn the baseline into a longitudinal database and provide the foundation for a long-term panel of Mexican individuals, households and communities spanning a decade-long period.

sample of employed women[3] who are living with at least one child under 18 years old, regardless of the existence of their male partners in their households. Thus, altogether 1,819 women (1,218 mothers with male partners and 601 single mothers) from 1,777 households are selected for this study.

4.2.1 Dependent variables

The main variables of interest in this study are the amount of time a mother spent on domestic work, childcare, personal activities, sleeping, and work for income earning. Time for each activity is calculated using the amount spent during the week prior to the interview date. Domestic work consists of preparing and cooking food, washing clothes or cleaning the house, and collecting firewood or water. Time for care includes time spent for assisting elders, sick people, or children and helping any household member to study or do homework. MxFLS1 does not distinguish a mother's time for childcare from the time for sick or elderly people in the household. For this reason, care time in the current study does not necessarily mean time for childcare. I do, however, try to make this care time close to childcare time by eliminating older mothers over 50 whose adult household members (especially parents) are possibly old enough to be in need of care. I regarded time spent for entertainment or leisure time such as participation in sports, cultural, or entertainment activities outside the household, watching TV, reading, or using the Internet as time for personal activities. Sleeping time is calculated separately from time for personal activities. In the model for sleeping time, I dropped cases that reported hours of sleeping as zero during the

[3]A woman is recorded as employed if she has worked at least one hour during the week before the interview date.

past week. Time involved in work for income means time spent for all income-related activities, including moving time between home and workplaces, as well as time for a secondary job calculated in the same way as time for the first job if the person has one.

4.2.2 Independent variables

The main purpose of this study is to examine the effect of extended family members on the time allocation of single mothers and mothers with male partners. For this purpose, I fit Ordinary Least Squares (OLS) regression models using the hours for each activity as dependent variables, while existence of an extended family member and single motherhood are used as predictors. I also estimate a modified model for work time, employing hours for childcare and domestic work done by extended household members as predictors instead of the existence of extended family members.

Extended family member indicates a household member who is neither a child nor a woman's partner but rather another nonnuclear family member, such as a parent, sibling, or other relative living with the woman in the same household. To estimate the effect of the extended family member, I include only adult extended kin age 18 or older in this category and exclude guest or resident servant. *Single mother* is sued as a dummy variable. I define a woman living in the same household with at least one child under 18 years without that child's biological father or the women's male partner (regardless of marital status) as a single mother. *Mother with partner present* indicates a woman with child under 18 living with her male partner. Since

I include all mothers of children under 18, there are some households with two or more mothers living together in my sample. About 98 percent of total households (1,735 out of 1,777) included in this study contain one mother between the ages of 20 and 49 living with at least one child under 18, while households with two mothers account for 2 percent of total households. I consider these mothers as separate cases.

Mothers' marital status is a separate variable from that of single mother. Dummy variables for married, cohabiting, divorced or separated, widowed, and never married are employed for the analyses of single mothers,[4] while only married and cohabiting are included in the models for coupled mothers because there is no case of divorced or separated, widowed, or never married in marital status among mothers with male partners. I use three categories of children for characteristics of children: preschool child between the ages of 1 to 5 is defined as a young child, and a child from 15 to 17 years old is an adolescent child. A child is categorized as adult child if she/he is 18 years or over. I control child characteristics by age because a child in each age group may have different influences on a mother's time use. For example, a mother should devote a significant amount of her time to care for a young child when she is rearing one under 6 years old, and thus may decrease her labor time for income. Meanwhile, a female adolescent child may help with domestic work or take care of her young siblings, allowing her mother to go out for work or have more free time. While adult children may provide their mothers with domestic work or care for young siblings as their adolescent siblings do, they might have the opposite influ-

[4]I included married or cohabiting mother into single mother if she is not living with the biological father or her male partner in the same household. In this case, I assume that the male partner of a married or cohabiting mother is temporarily away from the family, or has emigrated to other cities or countries and returns home on a regular basis.

ence on mothers' time when they are employed and thus contributing to household income (Villarreal and Shin, forthcoming). Households located in communities with a population of at least 15,000 inhabitants are considered as urban. Variables for mother's age and education are continuous. Also, I control household economic status using age-adjusted household income per capita considering equivalent household size.[5] Each model also includes mothers' work time as a control variable; however, I do not control for work time of employed mothers in the models in which work time is estimated as a dependent variable.

4.3 Results

4.3.1 Descriptive results of time allocation

Table 4.1 presents descriptive statistics of mothers with partners present and single mothers between the ages of 20 and 49, living with at least one child under age 18. Without considering the employment status of a woman, there are significant differences in the number of hours spent for childcare, domestic work, and work time between mothers with partner present and single mothers. Single mothers spend less time on household work such as childcare and domestic work than do married mothers, while they work longer hours for income-earning activities. Time for personal activities and sleeping, however, is not statistically different between single mothers and mothers with partners present. This figure of the time for personal activities can be partly attributed to the survey design which does not consider dual

[5]The formula is presented in chapter 3.

Table 4.1: **Descriptive Statistics of Mothers with Partners Present and Single Mothers**

	Total Mothers		Employed Mothers	
	w/ Partner	Single	w/ Partner	Single
% of employed mothers	28.6	56.3		
Age	34.3	33.5	35.4	34.1
Education	7.1	7.1	8.0	7.7
No. of household residence	5.2	5.3	5.1	5.1
Monthly per capita income	1,199	881	1,715	1,053
Urban	49.4	52.5	58.5	60.0
Marital Status				
Never married	-	0.28	-	0.33
Married/cohabit	-	0.29	-	0.17
Separated/divorced	-	0.34	-	0.41
Widowed	-	0.10	-	0.10
Hours spent in activities				
Childcare	26.3	21.9†	23.5	19.2†
Domestic Work	28.2	20.0†	24.5	17.6†
Personal time	14.1	13.6	13.1	12.6
Sleeping	54.2	54.3	51.6	52.5
Work time	10.8	24.1†	37.6	42.9†
Children's characteristics				
With child under 6 years old (%)	57.6	54.7	49.8	50.2
With female adolescent child (%)	15.5	13.3	16.2	13.3
With adult child (%)	21.7	16.8	22.2	16.8
Ave. no. of children under 6 years old	0.84	0.72	0.71	0.62
Ave. no. of female adolescent children	0.17	0.14	0.17	0.14
Ave. no. of adult children	0.33	0.24	0.33	0.23
Characteristics of extended family member				
Number of any extended family member	0.5	2.0	0.4	2.0
Number of adult extended family member	0.3	1.4	0.3	1.4
Households with ext. family member (%)	21.8	60.6	20.4	60.6
Households with adult ext. family member (%)	18.1	56.2	16.3	56.6
Households with female adult ext. family member (%)	14.4	51.5	13.4	52.4
Households with male adult ext. family member (%)	11.1	40.4	8.8	38.9
Total Number	4,253	1,067	1,218	601
%	80.0	20.0	67.0	33.0

† Significant at .01 level in t-test for group mean difference.
Sample includes all mothers age 20 to 49 living with at least one child under 18 years .
Average hours of sleeping time excludes those with 0 hours of sleep per week.

activities during the given time. For example, mothers can spend time watching TV or going to the park with their children, and they may add the time spent on these activities into the time for childcare in addition to the whole time for childcare. Meanwhile, they are less likely to have personal time separate from their young children. On the other hand, sleeping is an activity requiring at least a basic amount of time regardless of the characteristics of other activities or family.

The differences in time spent for childcare, domestic work, and income-earning activities between single mothers and married mothers are significant at the 0.01 level. This difference may be partly due to the fact that 56 percent of single mothers are employed, while only 29 percent of coupled mothers are, as table 4.1 shows. However, the differences are almost identical when I use a sample of employed mothers, although there are drastic changes in the amount of time for working. I hypothesize that household composition could be another important explanation for the difference in time allocation of mothers. At first, single mothers are more likely to have extended family members in their households. Regardless of a woman's employment status, the proportion of single mothers living with any type of extended family member is 60 percent, whereas it is about 20 percent for employed mothers with male partners. Also, single-mother households tend to have more extended family members than do those of mothers with partners. The average number of extended family members of a mother with a male partner in her household is 0.5, whereas on average two extended-family members live in a single-mother household. Table 4.1 also shows that a single-mother household is more likely to have female extended family members than is a married-mother household. Among nonnuclear-family households

including an adult extended family member, 93 percent of single-mother households include at least one female adult extended family member whereas 82 percent of nonnuclear family households of married mothers do.

Table 4.2 illustrates how childcare, domestic work, and work for income are distributed among household members of employed mothers. Average time for childcare is 23.4 hours a week for married mothers and 18.3 for single mothers when considering nuclear families. When I restrict the sample to nonnuclear households, time for childcare by married mothers and single mothers stays the same (or increases a bit); meanwhile, average time for domestic work by mothers shows a different pattern. Yet the proportion of time for childcare borne by mothers decreases in nonnuclear households compared to nuclear ones, indicating that instead of decreasing the mothers' average time for childcare, extended family members share childcare with mothers or are involved in childcare in some way. On the other hand, the average time for domestic work by mothers with partners and single mothers of nuclear households is 25.1 and 17.6 hours per week each, perspectively, and these times decrease significantly in the presence of an extended family member. Average time for work done by mothers is also greater in nonnuclear households than in nuclear ones. Descriptive statistics presented in tables 4.1 and 4.2 provide some preliminary findings supporting Hypotheses 1 and 2 concerning the role of extended family members in mothers' time for childcare, domestic work, and labor outside of households. Now, to investigate the role of extended family members in the time allocation of employed single mothers, I test the effects of extended members by gender and employment status, controlling for various socioeconomic and demographic

Table 4.2: **Descriptive Statistics of Mothers with Partners Present and Single Mothers**

	Nuclear Households		Nonnuclear Households	
	w/ Partner	Single	w/ Partner	Single
Time for childcare				
Mother	23.35	18.31	24.35	19.92
Spouse	4.39	N/A	3.63	N/A
Ext. members	N/A	N/A	12.84	22.45
Children	1.89	4.00	2.45	1.71‡
Total childcare	29.63	22.31	43.27	44.08
Time for domestic work				
Mother	25.12	22.17	21.64†	14.1†
Spouse	2.99	N/A	2.67	N/A
Ext. members	N/A	N/A	20.87	29.14
Children	4.16	6.11	3.78	1.92†
Total domestic work	32.27	28.28	48.96	45.16
Time for work				
Mother	37.27	38.80	39.36	46†
Spouse	42.48	N/A	39.38	N/A
Ext. members	N/A	N/A	31.77	60.45
Children	9.99	8.25	11.89	4.31†
Total work time	89.74	47.05	122.40	110.76
$N =$	1,218	601	199	340

† Significant at .01 level, ‡ at .05 level, in t-test for group mean difference.
Group comparisons are between nuclear versus extended households for married and single mothers.

characteristics of mothers using OLS regressions.

4.3.2 OLS Results

Table 4.3 presents the multivariate regression results for time devoted to childcare by employed mothers. The first part of the table shows the results of regression employing the gender of extended family members as predictors of mothers' time allocation, and the second part presents the effects of employed extended family members on mothers' time for childcare. As expected, the existence of a young child under 6 years of age increases a mother's time for childcare, while the presence of a female adolescent or adult child decreases an employed mothers' time for childcare controlling for other household characteristics. This finding implies that older children may share their mothers' burden of childcare. In fact, child care is the biggest challenge for a single mother who is the only income earner in the family and with very young children. In the absence of a male partner who is the other adult income earner, older children may be important resources for household work, especially child care within the family. Female adolescent siblings are the family members most frequently involved in household work in Mexico. Lucia's case illustrates how elder children contribute to care for their younger siblings.

> When I started working [after my husband left me], my eldest daughter Susana was 10 years, the second one was 3 years, and the smallest one was only 6 months old....Susana always took care of them after she came back home around 1:00 in the afternoon. But I had to leave home at 8:00 in the morning. For five hours, from 8 to 1, two young ones had to be enclosed in the home by themselves....After Susana came back home, she fed them, changed them, like her own kids. I always made six *mamilas*

> [feeding bottles] before I went to work. When the baby cried, one of my neighbors used to come and fed a baby *mamila*, changed diaper, and so on. My neighbor used to do it once or twice a day. After Susan came back home, they were all her jobs. No one came to the home to do it for her. (Lucia, 38, domestic worker)

Lucia was separated when her youngest son was 6 months old. Before she and her husband broke up, her male partner earned about US$1,500 a month, which was a fairly high income level. After her partner left her, she had to begin to work to manage her life with three young children. With primary school education, she could not have a well-paid job, and thus could not afford daycare service for her two young children (3 years and 6 months). While Lucia was working outside, her eldest daughter, Susana, was taking care of her younger siblings. Child care by an elder sibling, however, cannot be the ultimate solution for the lack of a care giver. Also, this type of child care causes another problem in that the elder child suffers stress. Even though Susana could care for the young children, they had to be left alone at home without anyone to provide care for five hours a day. Furthermore, the practice of child care was a big burden and stress for Susana as well. Lucia said that "Susana used to *pegar* [beat] the babies."

The existence of an extended family member has a significant effect on a mother's time for childcare. The gender and employment status of an extended member, however, plays a different role in that person's contribution to a mother's childcare time. First and foremost, single mothers living with female extended members spend less time on childcare compared to those living without female kin in their households, while the existence of female extended kin does not contribute sig-

nificantly to the decrease of married mothers for childcare. Controlling for mothers' and children's demographic characteristics, household income, and mothers' working hours, single mothers with female extended family members in the household spend about 6.2 hours less for childcare a week than do single mothers without these members.

Having a male extended family member, on the other hand, does not have a significant influence on time for childcare either for single mothers or married mothers, although they are negatively related to mother's time. I test the regression model using a pooled sample including both single mothers and mothers with male partners to test the interaction effects between female extended family members and single mothers, and between male extended family members and single mothers. The interaction coefficient for female extended members and single mothers is statistically significant, suggesting that the presence of a female extended member has a large beneficial effect on single mothers in terms of their childcare time. However, male extended kin does not have any particular effect on a single mother's time.

Table 4.3: **Regression Results of Time Devoted to Childcare by Mothers**

	Effects of Extended Member			Effects of Employed Extended Member		
	All Mothers	Single	w/ Partner	All Mothers	Single	w/ Partner
Education	0.32**	0.35	0.25	0.31**	0.31	0.26
	(0.14)	(0.22)	(0.18)	(0.14)	(0.22)	(0.18)
Single mother	0.10			-1.72		
	(1.51)			(1.23)		
Female extended member present	3.57*	-6.15***	3.37			
	(2.15)	(2.30)	(2.26)			
Male extended member present	-3.91	-2.46	-4.24			
	(2.58)	(2.14)	(2.69)			
Employed extended family				9.09*	-0.29	8.56*
				(4.93)	(2.33)	(5.14)
Female ext. member * Single mother	-8.00**					
	(3.12)					
Male ext. member * Single mother	1.53					
	(3.44)					
Employed ext. member * Single mother				-10.00*		
				(5.38)		
No. of children under 6 years	7.39***	7.97***	7.27***	7.48***	7.97***	7.29***
	(0.76)	(1.39)	(0.93)	(0.77)	(1.40)	(0.93)
No. of female adolescent children	-2.75**	-1.56	-3.25*	-2.62*	-0.89	-3.31*
	(1.39)	(2.36)	(1.74)	(1.39)	(2.38)	(1.74)
No. of adult children	-3.71***	-3.89**	-3.59***	-3.54***	-3.46**	-3.48***
	(0.91)	(1.70)	(1.10)	(0.91)	(1.72)	(1.10)
Log income	0.74***	1.36***	0.56*	0.74***	1.29***	0.56*
	(0.27)	(0.49)	(0.33)	(0.27)	(0.50)	(0.33)
Urban	3.34***	2.16	4.03***	3.32***	2.50	3.89***
	(1.14)	(1.83)	(1.47)	(1.14)	(1.85)	(1.46)
Hours of work	-0.15***	-0.14***	-0.16***	-0.16***	-0.16***	-0.16***
	(0.02)	(0.04)	(0.03)	(0.02)	(0.04)	(0.03)
R^2	0.2255	0.2393	0.2298	0.2210	0.2189	0.2295
n	1740	584	1156	1740	584	1156

* $p < .1$, ** $p < .05$, *** $p < .01$ (two-tailed); standard errors are in parentheses.
Sixteen regional dummies (state), age, and marital status are included but not shown in the table.

Employment status of extended kin also has different effects on time devoted to childcare between single mothers and married mothers. From table 4.3, an employed extended family member increases married mothers' time for childcare, while time spent for childcare by single mothers living with employed extended family members is not significantly different from those without an employed member. An employed family member, however, has different effects on a mother's time for childcare when comparing single mothers and married mothers. The interaction between single-motherhood and an employed extended family member is significant, suggesting that employment status of extended family member has particular effects on single mothers' time for childcare.

A nonnuclear family member has a different effect on a mother's time for domestic work as well. In table 4.4, a female extended family member contributes significantly to time for the domestic labor of a single mother. Net of individual and household characteristics, having a female extended member decreases the time for domestic work of a single mother by about 5 hours per week compared to single mothers without a female family member, and this difference is statistically significant. A male adult extended family member, however, has no significant effect for either single mothers or mothers with partners. Female adult extended kin is likewise insignificant in its effect on time of mothers with partners present for domestic work. The interaction of female extended member and single mother is statistically insignificant.

Table 4.4: **Regression Results of Time Devoted to Domestic Work by Mothers**

	Effects of Extended Member			Effects of Employed Extended Member		
	All Mothers	Single	w/ Partner	All Mothers	Single	w/ Partner
Education	-0.45***	-0.55***	-0.43***	-0.46***	-0.56***	-0.44***
	(0.09)	(0.14)	(0.11)	(0.09)	(0.14)	(0.11)
Single mother	-2.75***			-4.65***		
	(0.94)			(0.77)		
Female extended member present	-3.29**	-5.08***	-3.29**			
	(1.33)	(1.46)	(1.38)			
Male extended member present	-0.92	-1.65	-0.98			
	(1.59)	(1.37)	(1.65)			
Employed extended family				4.44	-2.77*	4.08
				(3.03)	(1.49)	(3.12)
Female ext. member * Single mother	-2.37					
	(1.93)					
Male ext. member * Single mother	-0.99					
	(2.14)					
Employed ext. member * Single mother				-8.80***		
				(3.29)		
No. of children under 6 years	0.89*	-0.07	1.20**	0.93*	-0.12	1.23**
	(0.47)	(0.89)	(0.56)	(0.47)	(0.90)	(0.56)
No. of female adolescent children	-0.94	-2.84*	-0.12	-0.67	-2.25	-0.02
	(0.87)	(1.51)	(1.07)	(0.87)	(1.53)	(1.08)
No. of adult children	1.76***	1.10	1.80***	1.75***	1.32	1.72**
	(0.57)	(1.09)	(0.67)	(0.57)	(1.11)	(0.68)
Log income	-0.02	-0.05	-0.07	0.04	-0.08	0.00
	(0.17)	(0.30)	(0.21)	(0.17)	(0.31)	(0.21)
Urban	-2.24***	-2.91**	-2.04**	-1.98***	-2.52**	-1.84**
	(0.70)	(1.16)	(0.90)	(0.71)	(1.18)	(0.90)
Hours of work	-0.10***	-0.05**	-0.11***	-0.10***	-0.07**	-0.11***
	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)	(0.02)
R^2	0.162	0.2026	0.1032	0.1475	0.1748	0.0972
n	1784	592	1192	1784	592	1192

* $p < .1$, ** $p < .05$, *** $p < .01$ (two-tailed); Standard errors are in parentheses.
Sixteen regional dummies (state), age, and marital status are included but not shown in the table.

As opposed to the case of childcare, the existence of an adult child increases (married mothers') or does not affect (single mothers') time for domestic work. This finding is consistent with the argument that an increased number of household members means an increased domestic burden for a woman. My study, however, shows that an added household member does not have a simple or one-sided effect, as one might assume. Rather, the direction of effects is sometimes the opposite, depending on the characteristics of family members. On one hand, single mothers spend less time on domestic work in the presence of female adolescent children, while there are no significant differences in married mothers' time for domestic work measured by the number of these children. Here again, as in the case of childcare, the interaction between single motherhood and employed extended family member is significant for domestic work.

The effects of household composition on time spent for personal activities and sleeping are shown in tables 4.5 and 4.6. In contrast to the findings I expected, female extended family members do not increase time for personal activities for either single mothers or mothers living with partners. The effects on employed mothers' sleeping time are similar. The addition of extended family members in married mothers' households, however, increases the personal activities of those mothers.

Table 4.5: **Regression Results of Time for Personal Activities by Mothers**

	Effects of Extended Member			Effects of Employed Extended Member		
	All Mothers	Single	w/ Partner	All Mothers	Single	w/ Partner
Education	0.58***	0.58***	0.58***	0.57***	0.56***	0.58***
	(0.07)	(0.12)	(0.08)	(0.07)	(0.12)	(0.08)
Single mother	-0.20			-0.14		
	(0.74)			(0.60)		
Female extended member present	-0.32	0.38	-0.44			
	(1.04)	(1.23)	(1.05)			
Male extended member present	-1.16	-0.34	-1.12			
	(1.25)	(1.15)	(1.25)			
Employed extended family				3.69	1.06	3.55
				(2.36)	(1.23)	(2.37)
Female ext. member * Single mother	0.49					
	(1.52)					
Male ext. member * Single mother	0.89					
	(1.68)					
Employed ext. member * Single mother				-2.83		
				(2.58)		
No. of children under 6 years	-0.49	0.05	-0.63	-0.48	0.08	-0.63
	(0.37)	(0.74)	(0.43)	(0.37)	(0.74)	(0.43)
No. of female adolescent children	0.39	-0.22	0.78	0.40	-0.26	0.80
	(0.68)	(1.26)	(0.82)	(0.68)	(1.26)	(0.82)
No. of adult children	0.49	0.00	0.55	0.49	0.03	0.54
	(0.45)	(0.92)	(0.52)	(0.44)	(0.91)	(0.52)
Log income	0.30**	0.41	0.29*	0.31**	0.40	0.31*
	(0.13)	(0.26)	(0.16)	(0.13)	(0.26)	(0.16)
Urban	1.38**	1.68*	1.37**	1.39**	1.63*	1.41**
	(0.55)	(0.98)	(0.68)	(0.55)	(0.98)	(0.68)
Hours of work	-0.05***	-0.06***	-0.04***	-0.05***	-0.06***	-0.05***
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)
R^2	0.1123	0.1349	0.1218	0.1130	0.1359	0.1222
n	1781	590	1191	1781	590	1191

* $p < .1$, ** $p < .05$, *** $p < .01$ (two-tailed); Standard errors are in parentheses.
Sixteen regional dummies (state), age, and marital status are included but not shown in the table.

Table 4.6: **Regression Results of Time for Sleeping by Mothers**

	Effects of Extended Member			Effects of Employed Extended Member		
	All Mothers	Single	w/ Partner	All Mothers	Single	w/ Partner
Education	-0.28***	-0.33***	-0.27***	-0.28***	-0.33***	-0.27***
	(0.05)	(0.11)	(0.06)	(0.05)	(0.11)	(0.06)
Single mother	0.39			0.44		
	(0.58)			(0.49)		
Female extended member present	-0.68	0.67	-0.68			
	(0.84)	(1.08)	(0.82)			
Male extended member present	-0.13	-0.23	0.10			
	(1.00)	(1.09)	(0.98)			
Employed extended family				-2.47	0.65	-2.16
				(2.06)	(1.22)	(2.01)
Female ext. member * Single mother	1.08					
	(1.25)					
Male ext. member * Single mother	0.12					
	(1.40)					
Employed ext. member * Single mother				3.56		
				(2.28)		
No. of children under 6 years	0.02	-0.51	0.15	0.03	-0.49	0.15
	(0.29)	(0.67)	(0.32)	(0.29)	(0.67)	(0.32)
No. of female adolescent children	0.02	0.49	-0.15	0.02	0.43	-0.12
	(0.54)	(1.09)	(0.63)	(0.54)	(1.09)	(0.63)
No. of adult children	-0.28	-1.02	-0.13	-0.31	-1.00	-0.16
	(0.35)	(0.76)	(0.39)	(0.34)	(0.76)	(0.39)
Log income	-0.07	-0.15	-0.03	-0.06	-0.15	-0.02
	(0.10)	(0.23)	(0.12)	(0.10)	(0.23)	(0.12)
Urban	-1.34***	-0.58	-1.50***	-1.34***	-0.65	-1.46***
	(0.44)	(0.90)	(0.52)	(0.44)	(0.90)	(0.52)
Hours of work	-0.05***	-0.06***	-0.05***	-0.05***	-0.05***	-0.05***
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)
R^2	0.0739	0.1274	0.072	0.0747	0.1272	0.072
n	1611	475	1136	1611	475	1136

* $p < .1$, ** $p < .05$, *** $p < .01$ (two-tailed); Standard errors are in parentheses.
Sixteen regional dummies (state), age, and marital status are included but not shown in the table.

Table 4.7: **Regression Results of Time Devoted to Income-Earning Activities by Mothers (I)**

	Effects of Extended Member			Effects of Employed Extended Member		
	All Mothers	Single	w/ Partner	All Mothers	Single	w/ Partner
Education	-0.12	-0.09	-0.07	-0.11	-0.05	-0.08
	(0.13)	(0.23)	(0.16)	(0.13)	(0.23)	(0.16)
Single mother	1.81			4.50***		
	(1.48)			(1.19)		
Female extended member present	2.72	5.22**	2.56			
	(2.09)	(2.37)	(2.11)			
Male extended member present	0.68	0.1.39	0.77			
	(2.50)	(2.24)	(2.53)			
Employed extended family				5.86	-0.16	6.19
				(4.78)	(2.42)	(4.82)
Female ext. member * Single mother	3.31					
	(3.04)					
Male ext. member * Single mother	0.20					
	(3.35)					
Employed ext. member * Single mother				-4.48		
				(5.23)		
No. of children under 6 years	-2.33***	-1.83	-2.29***	-2.44***	-1.85	-2.35***
	(0.73)	(1.45)	(0.86)	(0.73)	(1.46)	(0.85)
No. of female adolescent children	-0.79	4.71*	-2.96*	-1.02	4.22*	-3.02*
	(1.36)	(2.46)	(1.64)	(1.36)	(2.47)	(1.64)
No. of adult children	0.50	0.40	0.65	0.53	0.14	0.75
	(0.89)	(1.78)	(1.04)	(0.89)	(1.78)	(1.04)
Urban	2.64**	4.22**	1.32	2.48**	4.08**	1.18
	(1.11)	(1.89)	(1.37)	(1.10)	(1.90)	(1.36)
R^2	0.0371	0.0933	0.0225	0.0301	0.0797	0.0218
n	1801	597	1204	1801	597	1204

* $p < .1$, ** $p < .05$, *** $p < .01$ (two-tailed); Standard errors are in parentheses.
Sixteen regional dummies (state), age, and marital status are included but not shown in the table.

In table 4.7, I present the effect of extended family members on the working time of employed mothers, using the same control variables as in other models except for a variable indicating income level. I excluded the income variable in this specific models due to the endogeneity issue. Both female and male extended family member is positively related to mother's working time. Yet only the association between a female extended family member and a single mother is statistically significant. Employed single mothers work 5.2 hours a week more when a female extended member lives in the household. Here, I have two interesting findings concerning the effect of children. First, having a young child under 6 years decreases the working time of mothers living with male partners, while the working time of single mothers is not significantly affected by having a young child. Second, a female adolescent child has a positive effect on a single mother's working time, but a negative effect on a married mother's. Meanwhile, an employed extended family member does not affect time for work for either single or married mothers.

To test which types of support provided by extended family members are related to employed mothers' working time, I fit the models for mothers' working time using the hours of childcare and domestic work done by all extended family members in the household. Table 4.8 shows that the amount of time for childcare by extended members helps both types of mothers to have more time to work for income. Time for domestic work by an extended member has no significant effect on a mother's working time, indicating that the time for domestic work can be more flexible for working mothers.

Table 4.8: **Regression Results of Time Devoted to Income-Earning Activities by Mothers (II)**

	All Mothers	Single Mothers	Mothers w/ Partner
Age	0.05	-0.18	0.58
	(0.67)	(1.07)	(0.87)
$Age^2/100$	-0.31	-0.12	-0.99
	(0.95)	(1.53)	(1.23)
Education	-0.16	-0.17	-0.08
	(0.13)	(0.23)	(0.17)
Married	-	-11.11***	-1.97
		(3.05)	(1.69)
Cohabitation	-	-8.03*	-
		(4.71)	
Divorced/Separated	-	0.08	-
		(2.19)	
Widowed	-	-2.34	-
		(3.54)	
Single mother	3.32**	-	-
	(1.33)		
Hours of domestic work by ext. member	-0.01	-0.01	0.04
	(0.07)	(0.06)	(0.08)
Hours of child care by ext. member	0.13*	0.09*	0.15**
	(0.07)	(0.05)	(0.07)
Ext. domestic * Single mother	0.01	-	-
	(0.08)		
Ext. child care * Single mother	-0.04	-	-
	(0.08)		
Employed extended family	-0.25	-2.75	5.05
	(2.29)	(2.62)	(5.03)
Number of adult ext. members	0.83	1.31	-0.69
	(0.73)	(0.91)	(1.24)
No. of children under 6 years	-2.32***	-1.93	-2.25***
	(0.73)	(1.45)	(0.86)
No. of female adolescent children	-0.86	4.68*	-3.03*
	(1.37)	(2.46)	(1.65)
No. of adult children	0.51	0.44	0.63
	(0.89)	(1.78)	(1.04)
Log income	0.51*	1.16**	0.26
	(0.26)	(0.49)	(0.31)
Urban	2.41**	4.15**	0.96
	(1.11)	(1.92)	(1.38)
R^2	0.0408	0.1056	0.0278
n	1,801	597	1,204

* $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed); Standard errors are in parentheses.
Sixteen regional dummies (state) are included but not shown in the table.

Now, let us look at the other aspects of a single mother's life in the presence of extended family members in Mexico. As I have shown in the analyses, the role of extended family is important in Mexico, and this type of household is more characteristic of the most disadvantaged sectors. This fact suggests that their permanence is one of the indicators of the numerous socioeconomic drawbacks faced by Latin American countries, which have been exacerbated by recurrent economic crises (Garcia 2001). As many researchers have noted, extended family or kinship network plays the role of a safety net for single mothers that the state fails to offer to its citizens. However, the family or kinship network does not always function as a safety net in some precarious economic situations.

> I don't know why they [four brothers] don't try to find better paid jobs....I encourage and plead with them to work for more money. They bring home 2,000 pesos per fifteen days, on average, however it is not so regular....Do you believe it is enough for nine persons in this family?...Since my mom died fifteen years ago, I have been doing all the housework by myself...My dad doesn't help at all because he is too old. He just takes care of my kids. However, I have three kids to take care of. (Liliana, 27, housekeeper/sales)

Liliana is living with four brothers, her father, and her three children while running a small store from which she earns a very small income. With a lack of motivation and intention to work, her brothers change their jobs very frequently. Without any other female family member to share the domestic work, Liliana is under a great burden of domestic work and childcare. The case of Liliana's family presents two possible disadvantaged situations that Mexican single mothers living

in extended family face. First, consistent with some findings from the analyses on the role of extended family members, male extended family members often increase the burden of single mothers with young children. Especially in the absence of other female kin, child care and domestic work may not be divided equally among family members. Thus a single mother can suffer more from the increased burden. Second, this situation could be especially difficult for single mothers when the labor market is not stable and the state fails to provide the disadvantaged population with social security, as in case of Mexico. In this case, the increased number of male extended family members who are unemployed (or employed in the temporary or informal sector) might double the burden of a woman in the household. Thus, Liliana's family is a typical case in which three welfare components (market, state, and family) fail to provide a safety net for a young single mother with young children.

4.4 Conclusion

In this study, I investigate the role that coresident extended family members play in the time allocation of employed single mothers in Mexico, in comparison to that of married mothers. From the analyses, I find that single mothers benefit from coresiding with female extended family members in terms of their time for childcare and domestic work, while having male extended coresident kin has no significant effect on a single mother's time allocation. Having female extended kin also allows a single mother more time to work for income, but having male extended kin does not. Interestingly, the analyses show that the beneficial effects of a female extended family member on a single mother's time for two activities - childcare and working

- are not found in the regression results for married mothers. Hours of childcare by extended family members contribute to an increase in working time spent both by single mothers and their counterparts.

I suggest two possible explanations for this difference in the role of coresident extended family members by existence of male partner. First, the relation of co-resident extended members to single mothers is not the same for married mothers. For example, in most patriarchal societies such as Mexico, extended family members of single mothers are more likely to be directly related to a single mother (such as her parents, siblings, or close kin), while these extended members for married mothers are more likely to be in-law relationships. As studies suggest, a single mother's extended family arrangements might be strategic, although sharing living places with anyone other than her own child may compromise her privacy, because direct kin are more willing to help their single-parent kin than are other relatives. Second, even in the cases where extended family members are beneficial to households of married (or cohabiting) couples, the effect of these kin in such households might be significant for the time of the mother's male partner, but not for the mother. Descriptive statistics shown in table 4.2 imply that the average time for childcare by a male partner in a nonnuclear household is less, compared to that of nuclear households. My study also suggests that childcare and domestic work provided by extended family members have different effects on a mother's work time. I infer that it might be due to the different characteristics of family work that these two tasks mean to mothers. Childcare, unlike domestic work, requires the caregiver to spend significant, if not full, time on it. On the other hand, domestic work can wait until

the mother or anyone else is available to do it. Thus, it might not have a significant effect on the mother's decision about whether she increases her work time or not.

I did not include contributing factors such as relatives providing part-time childcare, domestic labor, or income transfers to mothers while living outside the household. Like that of coresident kin, this type of kinship network is an important supporting mechanism for single mothers in Mexico. For this reason, I expect that the effect of a coresident extended member could possibly change when the variety of roles of family members living outside households is considered in the analyses.

Nevertheless, this study suggests important implications about the role of family networks: family extension functions as a safety net for employed single mothers facing both time and material constraints, and it may contribute to the welfare of single mothers in Mexico. On this point, the decline of family size and extended families due to the decrease in fertility and increase in single-parent households since the 1970s should be a warning sign about the need of social protection for single mothers based on kinship network (Roberts 2005). Shrinking family size means that "others" in the household who take over the task of childcare will become increasingly scarce (Presser 1989).

In contrast to the family or kinship networks found in rural settings or traditional societies, those in urban areas is not stable in Mexico. The profound transformation of the Mexican economy and labor market structure causes repetitive unemployment (or underemployment) or unstable work by family members. Low income might cause barriers for single mothers in accessing paid childcare due to their inability to afford the cost of this service. Kinship network as a social mechanism has its

limits and instabilities (Villarreal and Shin, forthcoming), as one of only three components of the welfare triangle: state, market, and family (Esping-Anderson 1999). Neoliberal reforms by the Mexican government since the 1980s have also changed the roles of state, employment, and labor-market structures, hence affecting family-life situation such as marriage (or union) patterns.

Although the Mexican government has launched various social protection programs for people in poverty and vulnerability since the late 1990s, the scale and boundaries are very limited. Local governments still cannot provide effective intervention to stop the vicious cycle of poverty, due to limited resources and lack of motivation. In this situation, the demographic trend experienced by the U.S. society –an increase in young and never-married single mothers– implies that more and more Mexican single mothers will suffer from poverty in the absence of social protection provided by the family if Mexico follows the same U.S. trend in the future. From that point of view, this study suggests that the government must play an active role for providing basic welfare services (such as childcare) and effective labor market mechanisms.

Chapter 5

Conclusion

The prevalence of female-headed households is a notable change in the family structure, and the number of single mothers is increasing due to various social factors in many societies during recent decades. Due to the disadvantaged in the labor market, women in single motherhood or in headship are the target of concerns in terms of poverty. In spite of the general trends in these changes, however, the pattern of poverty is determined by many social factors, not only by the labor market only. The family network is known as one of the important sources of wellbeing for many disadvantaged population. Furthermore, poverty is not a unidimentional concept with income levels as a unique measure. To examine the household quality of life, more comprehensive measures should be employed.

Taking these facts into consideration, the primary aim of this study was to look at the livelihood of female-headed households and single mothers in Mexico in relation to family practices, working arrangements, and structural situations. The main questions are: What social and economic factors are related to the prevalence of female-headed households in Mexico? How do Mexican female-headed households

manage economic hardship to enhance their livelihood? How do family networks contribute to the wellbeing of single-mother and female-headed households? By asking these questions, this study has yielded three hypothetical and analytical conclusions.

First, the prevalence of female-headed households in Mexico is generally associated with gender-specific migration, increased economic opportunities for women, and marriage-market conditions. In Mexico, an increase of female heads is outstanding among married women from 1996 to 2004. The male partners of these women are not residing in the same households but rather living in other regions in Mexico or abroad (usually in the United States). The increase in this type of female heads has been much faster in rural areas. An enhanced marriage-market condition encourages women to choose living single with their children rather than forming unions, and an increased women's wage also enables them to head their own households without male income earners. Applying these suggested hypotheses to the United States and Europe, I also considered welfare resources as a factor motivating mothers choices to be household heads. Given the fact that welfare benefits for single mothers equivalent to those in the United States and European countries do not exist in Mexico, I expected nonwage income sources (such as financial transfers) to have similar effects on women's decisions about headship as do welfare benefits in other countries. At the same time, I noticed that the association between nonwage income sources and female headship (or single motherhood) may have reversed causality.

Second, Mexican female heads have household income relatively higher than or equivalent to that of male heads, and this peculiarity is at-

tributed to the financial support to female-headed households provided by family networks, and to the selection process of single mothers. In regard to kinship networks, not all types of family networks have significant contributions to household income. Although a selective type of extended family members (especially employed extended family members) can increase household income in general (both for male- and female-headed households), I did not find any particularly beneficial effects of these members on households headed by women. Instead, the analyses show that without financial transfers received from family members living outside of households, female-headed households would not have higher income than those with male heads. The effects of different types of remittances vary by urban and rural settings. International remittances contribute significantly to the household income of female heads residing both in rural and urban areas, while domestic transfers have positive effects on the income level of female-headed households in rural areas only.

These findings indicate that international migration occurs more frequently in rural regions of Mexico than in urban, and the international remittances make up for a significant part of the income of female-headed households. On the other hand this economic paradox of female-headed households can be thought of as the result of the selection process by Mexican single mothers. Female heads have higher household income than other single mothers because those who can afford their lives with children based on higher economic potential choose to head their own households. Those who cannot, move into households headed by their parents. As previous studies (González de la Rocha 1994; Chant 2003)point out, the selection process is a rational strategy of single mothers facing economic hardship in Mexico.

Third, extended family members residing with mothers affect their time allocation, and the effects vary by the gender of the extended family member and the mothers' marital status. Although coresident extended family members do not have a significant effect on the household income of female heads, studies have shown that family networks may have other types of effects on the welfare of single mothers. Time, along with consumption, is one of the important indicators of individuals' wellbeing, because time allocation patterns reflect not only the availability of material resources to individuals, but also the ways in which they distribute these resources in their basic activities. To examine the effects of the presence of extended family members in the households on single mothers, I compare these effects on time allocation between employed single mothers and married (or cohabiting) mothers. From the analyses, I found that coresident extended family members decrease the burden of childcare and domestic work for single mothers, while they have no significant effects on married mothers' time allocation as they do on single mothers. These family members have beneficial effects in particular on time for childcare by single mothers. They also enable single mothers to work more hours for income by providing them with childcare. All extended family members, though, do not have the same effects on single mothers' time allocation. The beneficial effects on single mothers' time for childcare and work for income are greater in the cases of female extended family members than male. In most cases, the presence of male extended family members does not affect time use by mothers of all kinds.

One of the strengths of this study is that it combines various research methods together to enhance the liability of the analysis results –comparative study, as well

as quantitative and qualitative methods. Most of all, the results are supported by the analyses of qualitative data obtained from in-depth interviews. Although the interviews do not provide answers for the questions about causal relationships, they present several possible social processes to aid better understanding of the relationships. More importantly, however, the interview data provided my research with invaluable information because the interviews introduced new aspects of Mexican single-mothers' lives and the peculiarity of the social process and context, which are not covered by quantitative data analyses. On the other hand, the comparative study between Mexico and South Korea enhanced our grasp of structural characteristics as conditions of single mothers' welfare. By introducing comparative analyses, I could examine the commonalities, as well as distinctive social practices, customized in these two countries.

Now I would like to briefly address the limitations of this study. Several analyses in this research have methodological restrictions caused by endogeneity of the explanatory factors. This problem is partly due to the unavailability of appropriate data. In my dissertation, this limitation applies to three main analyses. First, as I mentioned in chapter 2, the causal relationship of female headship and availability of nonwage resources is not uncovered clearly, because the causal relationship between predictors (resources) and outcomes (female headship) can be reversed in other contexts, as shown by the analyses in chapter 3. Second, the selection effect of headship on the higher income levels of female-headed households was examined by employing a treatment effect model in chapter 3. The selection effect might be better estimated, however, by using longitudinal data covering a longer time span. Third, this issue

needs to be addressed in analyses for time use. The residential arrangements of some women are likely consequences of their time demands. While the issue is not unique to this study, and may not be entirely resolved in this analysis, the issue is central to research on this topic and deserves further scrutiny.

Second, although migration is one of the important topics examined in my dissertation, qualitative analyses could not cover the issue. This problem is caused by the limitations of the regions in my field research. I conducted interviews mostly within Mexico City, and more than half of the interviewees are selected from those residing in the urban center. Considering the relatively small number of interviews (n=30), households with migrant partners could not be easily identified within this region.

While this research has uncovered interesting connections between female headship, poverty, and living arrangements in Mexico, there still a number of promising directions left for future research in this area. First, as one of the important measures of individuals' welfare, the pattern of consumption will provide a more comprehensive picture for clearer understanding of female poverty. While household per capita income is one of the indicators of absolute household poverty, some researchers suggest that poverty should reflect actual consumption level rather than just income alone. Income and consumption measures provide different pictures of poverty. The household with poverty by income measure may not have poverty by a consumption measure for several reasons (Pendakur 2001; Litcher 1997). For example, Pendakur (2001) found that approximately one-half of individuals whose income is low have consumption that is not low in Canada, depending on the year. Buvinic

and Gupta (1997) argue that income and consumption measures have the opposite outcome for poverty. They found that in Brazil, female-headed households are poorer than male-headed households when per capita income is used as a poverty measure, while the poverty effect associated with female-headed households is wiped out when the consumption measure is employed for poverty. This difference is derived from the fact that consumption is an indicator of life-time wealth and permanent household income, while income indicates temporary availability of resources. People who perceive themselves as having high lifetime wealth may consume a lot of nonsubsidiary goods, even in the presence of a negative income. On the other hand, people who perceive themselves as having low lifetime wealth will consume little even in the presence of positive income, and will tend to spend their income over a broader period of time (Pendakur 2001)

This consumption measure has important meaning for female-headed households in Mexico because it may explain the inequality in life opportunities for women, in that female-headed households may depend more on the income from nonlabor resources such as remittances and private transfers. For this reason, their economic status may be unstable in the longterm, compared to other types of households. Although women have generally shown themselves to be eminently able to cope with economic hardship (sometimes leading to higher household per capita income and lower probability of poverty), this ability is finite. Whether it can be sustained in the face of long-term poverty is questionable, especially given that their efforts to generate income have been undertaken alongside the heavier burdens of work in the home (Chant 2003). In Mexico, the percentage of expenditure per capita for

each item varies by headship of households. According to statistics provided by INEGI, female-headed households expend a higher proportion of money on basic goods (food, drink, and cigarettes) and housing than do male-headed households, while male-headed households spend more money for education and medical services than their female counterparts. Each consumption measure indicates how the household income is distributed, so that less expenditure for education, healthcare, and leisure may mean negative consequences for family members (especially for children) in the long run. For these reasons, female poverty and inequality can be better understood by considering income and consumption measures together.

Second, in this research I have presented several social factors related to the prevalence or incidence of female-households in Mexico during recent years using descriptive statistical analysis and multinomial logit model. It does not necessarily answer, however, of the question what factors have actually contributed to an *increase* of female-headed households in Mexico during the last decades. An increase of female heads in a society, and related social factors such as women's economic opportunities or the labor market, are macro-level variables. For this reason, macro-level data analyses need to be introduced to determine which factors caused this national-level phenomenon.

Third, although not being incorporated in this dissertation research, I also conducted field research in South Korea targeting the same types of women that I studied in this dissertation. In my future research, I would like to combine Korean case for comparative research. By a comparative study, I will seek to achieve more comprehensive understanding of the social policies and structural situations

that single mothers face in these two countries. In this comparative study, I will look at how state, market and family interact with each other distinctively. Also, I will examine the similarities and differences between Mexico and South Korea in the social practices of single mothers aimed at securing their welfare. Furthermore, I will expand the research scope to labor-market structure, economic characteristics of cities, and female labor-force participation in these two countries. Contrary to the expected research result that informal economy will disappear as a society goes through economic development, my preliminary research shows that it will still take a significant portion of the economies in South Korea and Mexico – indeed, it has actually increased in both countries during recent years. In this project, I will compare development of urban informal sectors, industrial characteristics of the sectors, and female labor in these two countries. Such an approach will allow me to elaborate the analytical framework that will aid our understanding of the nature of both poverty and inequality.

Appendices

Appendix A

Treatment Effect Models

The least squares estimates of the effect of female headship on household income presented in the first part of the paper are biased because they ignore the endogenous selection process by which some Mexican women become household heads while others do not. Not only are Mexican women not randomly selected to be household heads, but they have some input in the decision process. They are likely to self select based in large part on their income potential. This problem is known as the "self selection bias" in the econometric literature (see Greene 2000: 927-932; and Maddala 1983: 257-290 for detailed explanations). More formally, we began by testing household income models of the form:

$$log\ y_i = \beta' \mathbf{x_i} + \delta femhead_i + \varepsilon_i$$

where y_i is the equivalized household income per person; $femhead_i$ is a dummy variable indicating whether a woman is a head of household and δ its associated coefficient; $\mathbf{x_i}$ and β are a set of control variables and their coefficients respectively; and ε_i is a normally distributed error term with mean zero and variance σ^2. The value

of δ obtained by least squares will be a biased estimate of the effect that headship has on women's income if women who choose headship are those with the highest income potential regardless of whether or not they become heads. In this case least squares will lead to an overestimate of δ (Barnow, Cain and Goldberger 1980; Greene 2000: 933-934). To address this problem we introduce a selection equation for headship of the form:

$$femhead_i^* = \gamma' w_i + u_i$$

$$femhead_i = \begin{cases} 1 & \text{if } femhead_i^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

where $femhead_i^*$ is an unobserved latent variable assumed to be a linear function of the set of exogenous predictors $\mathbf{w_i}$, and $femhead_i^*$ is the actual observed decision regarding headship. The error terms from both equations, ε_i and u_i, are allowed to be correlated and assumed to follow a bivariate normal distribution with mean zero and covariance ρ. As discussed in Greene (2000) and Maddala (1983) this class of two-equation models can be identified without the use of instrumental variables.[1] Regression models of this form are often referred to as *treatment effects*

[1]Finding an instrument for headship would require us to come up with an exogenous variable that predicts a woman's probability of heading her own household but is not a direct predictor of her household income. In practice, it is impossible to find such an exogenous predictor using our cross-sectional dataset without making wildly unbelievable assumptions. We have therefore chosen to present the results of models without instrumental variables. However, we tested additional models using different family variables such as the presence of an extended family member or an adult child as instruments and found the main result regarding the effect of headship to be similar to that presented in table 3.5.

models and have been used in the econometric literature to estimate the effect of participation in social programs where participants have some input in the selection process (see Maddala (1983) for a review of applications). Greene (2000: 933-934) illustrates these models by examining the effect of college education on individual earnings. In general, individuals are not randomly selected into college, and those who choose to attend college may be expected to have high earnings regardless of whether or not they actually go to college. Ignoring self selection into higher education would therefore overestimate the effect that attending college has on an individual's earnings. We may similarly think of headship as a "treatment" which some Mexican mothers receive and use these type of models to estimate the effect of headship on their household income.

Appendix B

Field Research

B.1 Interview Guides

ENGLISH

1. Demographic characteristics of single mother and household members:

   (a) Age, Schooling, Household Composition, Characteristics of Family Members

2. Decision-making process for household headship:

   (a) Are you heading your own household?

   (b) If so, how did it happen that you become a head of household? What happened to your husband? Has he died? Or are you divorced or separated? Or did has he leave for other region or country for work?

3. The variation of decision making of household composition and headship

(a) Do you have relatives living closely to you and your family? Who are they?

(b) If you are a head of household, have you ever considered being a part of the household of relatives?

(c) After you were separated (or divorced/your husband died), has any family member (relative or friend) moved into your own house and lived with you?

(d) Were there any specific reasons why you decided to be head (or not) of household? And what were other factors you thought important when deciding on the current living arrangement (living with children only, or living with other relatives)?

4. Marriage and working history

(a) When did you get married (or began to live with male partner), and when was this union has been over, and why?

(b) How was your marriage (or union) life?

(c) Have you ever participated in economic activities to make a living? If so, please tell me your work history.

(d) Have you had any conflicts between work and family life? How was it when your male partner (or husband) was living in this household, and how is it now?

5. Income, Transfer, and Consumption Pattern

(a) What are the income sources of your family (or household)?

(b) Who is mainly controlling the family income, and how is the income spent (by category, such as education, health, food and drinks, alcoholic beverages or tobacco, and so on)?

(c) Are you receiving any monetary help? Where does it come from?

(d) How is the spending different compared to the time when your husband (or male partner) was living in this household?

(e) What kinds of things have you had to cut back on since becoming a single parent? What are the priorities? When money is short, what is the first thing you cut back on?

6. Welfare Policy

(a) Do you know about the welfare program (public or private one)?

(b) If you and your family benefits from a program, what is it?

(c) How do you feel about the welfare policy of the government?

B.2 Contact Information

MEXFAM (Fundación Mexicana para la Plantación Familiar)
Juárez 208 Col. Tlalpan. Mèxico. D.F 14000 Tel: 52 (55) 5487 0030

Inmujeres (Instituto de las mujeres en Distrito Federal) Delegación de Coyoacan
Col. Copilco el Alto. Del. Coyoacan. Mexico D.F. 04360 Tel: 52 (55) 5658 2214

Indujeres. Delegación de Cuauhtémoc
Col. Buena Vista. Del. Cuauhtémoc. Mexico D.F. Tel: 52 (55) 3300 1269

Lic. Pablo E. Yanez Rizo, General Director of Equidad y Desarrollo Social de D.F

Lic. Jacqueline Paredo, Directora Ejecutiva de Apoyo a la Niñez en DIF-DF(Sistema para el Desarrollo Integral De la Familia del Distrito Federal)

Lic. Norma Leticia Castillo Lara, Coordinadora Ejecutive de Fondo para el Desarrollo Social del D.F. (Secretaría de Desarrollo Económico)

Mónica E. Orozco Corona, Directora General de Análisis y Prospectiva, SEDESOL

Lic. Eulalia Franco, Coordinadora de Apoyo a la Niñez en DIF-DF 52 (55) 5601 4122

Dra. Elena Azaola Garrido, Investigadora in CIESAS (Centro de Investigaciones y Estudios Superiores en Atropología Social)

Dr. Gonzalo Andrés Saraví, Investigador in CIESAS

B.3 Interviewees' Characteristics

Table B.1: **Interviewees' Characteristics**

No.	Name	Age	Education	Occupation	Family Type	Headship
1	Elena	64	No education	Rental	Nuclear	Head
2	Julia	32	Inc. primary	Domestic worker	Nuclear	Head
3	Claudia	34	Graduate school	Administrator	Nuclear	Head
4	Izarra	20	Primary	Sex worker	Nuclear	Head
5	Yolanda	54	Primary	Secretary of college	Nuclear	Head
6	Josefina	43	College	Teacher	Extended	Head
7	Laura	44	Primary	Domestic worker	Nuclear	Head
8	Liliana	27	Inc. high school	Housekeeper	Extended	Nonhead
9	Nelda	32	College	Researcher	Extended	Head
10	Julieta	25	College	Graphic Designer	Combined	Head
11	Catalina	18	Secondary	Housekeeper/vendor	Extended	Nonhead
12	Abigail	35	Secondary	Vendor in market	Nuclear	Head
13	Estefani	38	Inc. primary	Sex worker	Nuclear	Head
14	Patricia	44	Inc. primary	Vendor	Nuclear	Head
15	Osana	38	Primary	Domestic worker	Nuclear	Head
16	Perla	32	Inc. high school	Waitress	Nuclear	Head
17	Carmen	44	College	Secretary of school	Nuclear	Head
18	Raquel	61	Secondary	Housekeeper	Nuclear	Head
19	Marcela	59	Primary	Street vendor	Nuclear	Head
20	Estela	51	Primary	Vendor	Extended	Nonhead
21	Lucia	38	Primary	Domestic worker	Nuclear	Head
22	Micaela	25	Inc. high school	Housekeeper	Extended	Nonhead
23	Carola	51	Primary	Farming	Extended	Nonhead
24	Maribel	29	High school	Nurse	Nuclear	Head
25	Xiomara	43	Secondary	Footwear seller	Extended	Head
26	Marquilla	39	High school	Bank teller	Extended	Nonhead
27	Guadalupe	36	Inc. secondary	Street vendor	Nuclear	Head
28	Nancy	30	Secondary	Custodian	Extended	Nonhead
29	Carolina	43	Secondary	Executive Assistant	Extended	Head
30	Vanesa	26	Inc. secondary	Footwear seller	Extended	Nonhead

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Vita

Heeju Shin was born in Seoul, Korea on November 16, 1973, the daughter of Yunsu Shin and Jeongja Choi. She received the Bachelor of Science degree in Nursing and Master of Arts degree in Sociology from Yonsei University, Seoul, Korea. She started the doctoral degree program at the University of Texas at Austin in August 2001. While in Graduate School, she worked as a Teaching Assistant in the Department of Sociology and Population Research Center, and a Graduate Research Assistant in Public Policy Institute at the Department of Government.

Permanent Address: 1-304 Royal Apartment, Juan-6 Dong, Nam-Gu,
Incheon 402-206, South Korea

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