Mexican migration and its effect on the union formation patterns of women in sending communities

Kate H. Choi
Department of Sociology
264 Haines Hall
375 Portola Plaza
University of California Los Angeles
Los Angeles, CA 90095-1551
Tel: (310)903-1793
E-mail: katechoi@ucla.edu

* Please direct all correspondence to Kate Choi at the direction mentioned above.

Abstract

Mexican migration to the U.S. is a gendered process characterized by the circular migration of men and the permanence of women in sending communities. The sex selective migration patterns in Mexico substantially diminish the gains to marriage for non-migrant wives by forcing them to assume additional household responsibilities during their spouses' absences and decreases the availability of marriageable men in the local marriage markets. Despite the altering effects of male migration on factors previously shown to influence union formation patterns, little is known of the association between male migration and women's entry into unions. This paper explores the relationship between male migration and women's entry into first unions and examines the mediating processes involved in such a relationship. It finds that women living in municipalities with a high prevalence of male migration are less likely to enter into a union compared to women living in areas with a low prevalence of male migration. Moreover, it finds that the negative association between male migration and women's entry in to unions is predominantly mediated by its effect on the quantity of available men. Lastly, it finds that the negative association between the prevalence of male migration in a municipality and women's entry into first union is particularly salient for women in rural regions, who are more likely to suffer economic hardships upon their spouses' migrations due to the lack of paid labor opportunities for married women in their communities.

Introduction

Mexican migration to the United States is one of the biggest migration systems in the world (Lindstrom 2002). As of the mid-1990's, there were approximately 7 million Mexican nationals in the United States and this number is expected to grow by 290,000 persons per year (Lindstrom & Giorguli-Saucedo. 2002). A stable feature in Mexican migration has been the circular migration of men and the permanence of women in sending communities (Kanaiaupuni 2000; Frank & Wildsmith 2005). Because migration is such a gendered process in Mexico, males comprise over 80% of all US migrants despite increases in female migration since the 1970's (Kanaiaupuni 2000; Durand, Massey, and Zenteno 2001). In turn, this has given rise to high rates of divided households and imbalances in the distribution of men and women in sending communities (Parrado & Zenteno 2002; Frank & Wildsmith 2005).

The divided households and the imbalance of sex ratios resulting from migration can influence the timing and incidence of first marriages. Becker's specialization and trade model argues that a decline in gains to marriage results in delayed or foregone marriages. Prior studies examining the effects of migration on family life in Mexico have found that migration results in diminished gains to marriage for non-migrant wives by forcing them to assume a significant portion of the costs associated with migration (Hondagneu Sotelo 1994; Aysa & Massey 2004). Furthermore, marital search models argue that the characteristics of local marriage markets exert a strong influence over marital timing. Past studies have repeatedly found that shortages in the quantity and quality of available men in local areas depress women's transition to first marriages (Oppenheimer 1988; Lichter et al. 1992; South & Lloyd 1992; Raley 1996; Parrado & Zenteno 2002). Therefore, if the above mentioned theories of marriage were to apply to the union formation patterns in Mexico, women, who live in areas with high levels of migration, will be less likely to enter a union compared to those women, who live in areas with low levels of migration. Is this the case? Does male migration depress women's transition into first unions?

Previous research examining the interrelationship between migration and family life focuses on the experiences of immigrant families in receiving communities and analyses examining the impact of migration on family formation patterns in sending communities remain limited (Hondagneu Sotelo 1992; Hondagneu Sotelo 1994; Landale & Ogena 1995; Ortiz 1996). Moreover, due to data limitations, the few studies that assess the interrelationship between migration and family life in sending communities center around the effect of male migration on the union

formation/dissolution of male migrants or analyzes the impact of male migration on the well-being of their non-migrant spouses or children (Frank & Wildsmith 2005). Consequently, there has yet to be a study that examines the contextual effects of male migration on the union formation patterns of women in sending communities despite the sex selective migration patterns in Mexico and the importance of women's age at first union on their fertility behavior. Thus, this paper extends the literature by assessing the contextual effects of male migration on women's transition into first unions. Using life history data from the nationally representative *Encuesta Nacional de la Dinamica Demografia 1997* (ENADID 97) and contextual data from the *XI Censo General de Populacion y Vivienda* (*1990* Mexican Census), this paper aims to:

- Explore the relationship between the prevalence of male migration in the municipality and women's transition into first marriages
- Investigate how the relationship between male migration and women's transition into first marriages is mediated by community characteristics, such as the local marriage market or incidence that married women engage in paid labor
- Examine if the association between male migration and women's transition into first unions varies between urban and rural regions
- Assess if the relationship between male migration and women's transition into first unions is particularly salient for women with intermediary education, who have the least favorable bargaining positions in the marriage market and depend the most on spouses' income to financially support themselves upon entry into a union

The above mentioned analyses are important for a number of reasons. For starters, the timing of transition into first union can influence the pace of childbearing and the level of completed fertility (Lindstrom 1997). Second, delay in entry into consensual unions or marriages can result in a rise of births outside of unions. This is particularly relevant for the wellbeing of Mexican women and children in light of recent studies that have shown that Mexico presents a particularly harsh environment for female headed households, who have been defined as the country's "poorest of the poor" (Finley 2003; Frank & Wildsmith 2005). Third, unions affect the quantity of close ties that male migrants have with their communities of origin. This has policy implications for both sides of the border because migrants with greater number of close ties in sending communities are more likely to send remittances and return to their countries of origin (Menjivar et al. 1998; Mooney 2003). Last but not least, it adds to the increasing body of scholarly work that examines the effect of migration on sending communities and moves away from the exclusive focus on the effects of migration on migrant-receiving communities (Kanaiaupuni & Donato 1999; Frank & Hummer 2002; Frank & Wildsmith 2005).

Background

Theories of Marital Behavior

Family sociologists have produced various theories to explain variation in union formation process. Of these, four theoretical perspectives are particularly relevant to our study and they are: Becker's specialization and trade model, Oppenheimer's martial search models, the sex ratio hypothesis, and Lesthaeghe's ideational theory.

A central theoretical perspective in explaining union formation patterns is Becker's specialization and trade model. According to this model, single men and women will choose to marry if and only if, each partner believes that they will gain more by marrying than remaining single (Becker 1974; Sweeney 2002). In turn, the gains to marriage can be maximized when men specialize in the paid labor and women specialize in household activities (Becker 1974). Through gendered specialization, each spouse can garner a comparative advantage over their spouse in the activity in which they specialized. In addition, their specialization makes them more complementary to each other; and thus, induces them to trade (Becker 1974; Parrado & Zenteno 2002; Sweeney 2002). Thus, events that diminish the marital benefits garnered through specialization and trade will result in delayed or foregone marriages

An alternative perspective in explaining union formation patterns is Oppenheimer's marital search model. According to this theoretical perspective, the probability that an individual will get married is the product of their traits relative to their competitors' and the availability of marriageable mates in the local marriage market (Oppenheimer 1988). This model operates under the assumption that a certain economic standard must be attained prior to people's entry into marriage (Oppenheimer 1988; Sweeney 2002). Thus, in patriarchal societies where men are expected to be the primary, if not, sole providers for their families, the uncertainties surrounding men's transition into economic adult roles, their current economic positions, and the availability of marriageable men are crucial in the determination of marital timing (Oppenheimer 1988). The dimension of this theoretical perspective that is particularly relevant for this study is the effect that local marriage markets have on union formation patterns. Oppenheimer (1988) argues that the local marriage market becomes a spatial arena where prospective partners seek to "hire" or be hired by a suitable marriage partner that can complement their own assets (Oppenheimer 1988; Lichter et al. 1992; Raley 1996). Thus, the probability that a match will be successful will be highly influenced by the conditions of the local marriage market that determines not only the sheer number of individuals of the opposite sex, but also the

distribution of members of the opposite sex with certain attributes (Parrado & Zenteno 2002). In sum, the timing of women's transition into first marriages is shaped by events that influence the quality and quantity of marriageable men in local marriage markets.

A third perspective in explaining union formation patterns is the theory of imbalanced sex ratios. This theory is an extension of Oppenheimer's marital search theory that emphasizes the importance of demographic contexts on union formation patterns. This perspective expands our understanding of the effect that local marriage markets have on marital behavior by taking into account the interaction between gender inequality and the distribution of marriageable men and women (Parrado & Zenteno 2002). According to this perspective, an imbalance in the sex composition in the local marriage markets will have a different effect on men and women because women depend more than men on marriage for financial support (Guttentag & Secord 1983; Parrado & Zenteno 2002). Thus, when men are subject to unfavorable marriage opportunities due to an oversupply of marriageable men, men are more likely to marry because the scarcity of marriageable women will increase women's bargaining powers and augment the pressures on men to commit to stable relationships (Guttentag & Secord 1983; Lloyd & South 1996; Parrado & Zenteno 2002). Conversely, an oversupply of women discourages men's marriage because the relative overabundance of marriageable women will diminish their bargaining power. As women's bargaining power diminishes, men will delay or forego entry into marriage because they can now enjoy marital benefits, such as physical or emotional intimacy, without getting married (Lloyd & South 1996; Edin 2004). In this light, not only does an undersupply of men diminish women's transition into first unions merely due to the lack of marriageable men, but also it decreases the likelihood that women will marry by diminishing their willingness to marry.

Lastly, another central theoretical perspective in the explanation of the timing and incidence of union formation patterns can be found in Lesthaeghe's ideational theory. This perspective contends that changes in norms governing marital behavior also contributed to the dramatic rise in both the age at first marriage and the proportion of individuals who chose to forego marriage altogether. In the past, when there was a stronger emphasis on social conformity and greater sanctions against deviation from such norms, women were more likely to conform to the patriarchal attitudes towards marriage that dictated that women undergo post-marital socialization to adapt to their husbands' needs and to tolerate their husbands' inconsiderate behavior (Lesthaeghe 1995). However, with the

advent of the second demographic transition, women started to place a greater emphasis on individual autonomy and self-fulfillment. Thus, at home, women increasingly demanded quality relationships from their spouses that would allow them to self actualize. Furthermore, they were less willing to undergo post marital socialization to mold themselves according to the needs of their husband. This need prolonged women's marital search process because women now had to find partners that were more compatible with their goals for self fulfillment and self actualization. In addition, women sought to self actualize in the work place and started to place a greater emphasis on their career. The need to accomplish a particular level in their careers also resulted in delayed marriages.

Previous work on Marital Behavior in Mexico

Previous research has documented union formation patterns in Mexico. Due to the rapid increases in women's labor force participation since the 1960's, many studies have attempted to determine how increases in women's labor force participation affects union formation behavior in Mexico. Contrary to the expectations of the specialization and trade model, studies have found that the average age of first marriage for women had remained stable, at roughly 21 years of age, despite the fact that women's labor force participation has nearly doubled during the same period (Parrado & Zenteno 2002). Moreover, studies by Parrado & Zenteno (2002) found that women with six or fewer years of education and women with 13 years of education are more likely to marry compared to women who had between 7 and 12 years of education controlling for other socio-demographic factors such as years of employment, occupation, and premarital child birth. This curvilinear relationship between women's educational attainment and their transition into first unions stems from the curvilinear relationship between women's educational attainment and the availability of job opportunities in Mexico. According to them, because women with low or high levels of education have greater employment opportunities and are better financial contributors to marriage, they are more attractive marriage partners. Consequently, they are more likely to get married compared to women with intermediary levels of education. Combined, these empirical analyses fail to support Becker's specialization and trade models of marriage.

In addition, some studies have explored the effect that men's career entry has on union formation patterns. Parrado & Zenteno (2002) found that men's employment during the previous year facilitates their transition into marriage. That is, as predicted by the marital search theory, uncertainties associated with men's transition into adult

economic roles resulted in delayed marriages. Furthermore, this study also found that the availability of marriageable men is positively associated with women's entry into unions. In particular, the educational composition of local men is positively associated with women's entry into unions even after controlling for their occupation, age educational attainment, and employment status. Thus, the prevailing marital trends in Mexico can be explained using Oppenheimer's marital search theory and the sex ratio hypothesis.

Previous research has also documented the effect of migration on local marriage markets conditions and assessed how these conditions affect on transitions into unions. Pavon (1990) documented the distribution of men and women at marriageable ages and found that traditionally there has been an oversupply of women across Mexican states. Furthermore, he documented that the imbalance is exasperated by the sex selective nature of the Mexican migration process. He found that in high migration states such as Zacatecas and Guanajuato, the number of men per 100 women at the age 20 was approximately 80 (Pavon 1990; Parrado & Zenteno 2002). Parrado and Zenteno (2002) further expanded this portion of the literature by examining the effect of local marriage markets on transition to first unions. They found that the availability of educated men in local markets was positively associated with women's entry into unions; whereas, the availability of women who can make direct contributions to the household in local marriage markets increased the likelihood of male transition into unions (Parrado & Zenteno 2002).

Lastly, past studies have shown that migration alters the normative values governing gender dynamics within the family. Hondagneu Sotelo (1994) found that male migration thrusts non-migrants women into situations where they must act decisively, autonomously, and become competent in an expanding number of tasks (Hondagneu Sotelo 1994). The shift into a more decisive autonomous role during their husbands' absences propels women to move away from the patriarchal gender ideologies and practices that governed their spousal relations upon their husbands' return (Hondagneu Sotelo 1994). Thus, male migration often culminates in the reconstruction of gender relations in sending communities.

In conclusion, previous research on the union formation pattern in Mexico and the effect of migration on families in the sending communities show that marital formation in Mexico is increasingly governed by the affordability of the marriage; and consequently, employment, especially male employment, is a determinant in the

timing and incidence of entry into marriages. Furthermore, like in the case of the U.S., the quantity and quality of potential mates is an important determinant of marital formation. Lastly, not only does migration alter the local marriage markets for men and women, but it also engenders a reconstruction of gender dynamics in Mexico.

Migration and Marriage: the case of Mexico

My goal is to examine the contextual effect that male migration has on women's union formation patterns and to identify the factors that shape this relationship. This section depicts the study's conceptual framework that incorporates the principal pathways through which aggregate levels of male migration influence the women's entry into first unions. On the basis of the above mentioned theoretical perspectives, my conceptual framework asserts that male migration will affect entry into marriages in three ways: diminishing the marital benefits, altering the availability of marriageable men in local marriage markets, and changing the normative values associated with marriage.

A pathway through which migration can affect union formation patterns is by diminishing women's gain to marriage. First, migration can diminish women's gains to marriage by generating financial pressures that forces non-migrant wives to intensify paid labor activities during their husbands' sojourn. In many Mexican communities, men are still expected to be the primary, if not sole, providers for their families and social norms discourage women from working outside of the home (Frank & Wildsmith 2005). This division of labor, however, may no longer be sustainable for some non-migrant wives due to the economic pressures caused by their husbands' migration. It takes time and money to move, acquire housing, and find a job in the receiving country (Aysa & Massey 2004). Consequently, it may take migrants several months to be in a position to remit money to their families on a regular basis (Aysa & Massey 2004). In the absence of regular financial support from the male migrants, non-migrant wives and children can experience a severe cash flow problem (Aysa & Massey 2004). These economic pressures are further exasperated for the increasing proportion of families that have incurred debts in sending communities to finance the dramatically rising costs of crossing the border (Massey, Durand, and Malone 2002; Aysa & Massey 2004). Although assistance from kin and other forms of community support may be available for emergencies, women can seldom rely on these sources for continuous economic support (Hondagneu Sotelo 1994). Therefore, to ensure their family's survival and to pay back the debts incurred in the sending community, non-

migrant wives must intensify their paid labor activities during this time (Kanaiaupuni 2000). That is, for a temporary amount of time, they must be the primary providers for their families and forego the marital benefits arising from specialization and trade.

Second, migration can reduce marital gains by temporarily removing the economic security afforded to women by marriage. Despite their efforts to intensify their paid labor activities, non-migrant wives and their children can suffer severe economic hardships because there are very limited employment opportunities for married women in the formal sector (Hondagneu Sotelo 1994; Kanaaipuni 2000). Therefore, a high proportion of married women are relegated to low paying jobs in the informal sector that affords little job security (Hondagneu Sotelo 1994). The economic hardship is particularly salient for non-migrant wives in rural communities and women who have intermediary levels of educational attainment (Hondagneu-Sotelo 1994; Parrado & Zenteno 2002). Unlike urban or semi-urban areas that have been explicitly organized to produce goods and services relying on female labor during the past decade, rural areas offer women even fewer paid employment opportunities (Hondagneu Sotelo 1994; Aysa & Massey 2002). Thus, the probability of securing a job in the formal sector is even lower for non-migrant wives in rural sending communities. Furthermore, the prospect of obtaining a job is even smaller for non-migrant wives that have intermediary levels of education due to Mexico's bifurcated labor market for women that has jobs for women with high levels of education or women with low levels of education (Parrado & Zenteno 2002). Thus, in the absence of steady remittances and employment opportunities for women, a proportion of non-migrant wives and children are subject to abject economic circumstances and these economic circumstances are most dire for those women and children in rural areas and little education.

Third, migration reduces the gains to marriage by forcing them to assume the responsibility of ensuring that their children are not emotionally affected by their husbands' absences. Circular migration of men can be extremely disruptive for the children because it forces children to adjust repeatedly to their parents' absence and presence. Previous research has extensively documented the pernicious effects of family instability on children's well-being (Wu 1993; Wu & Martinson 1996). To ensure that their children are not emotionally affected by the instability associated with migration, non-migrant wives devote considerable energy to instill some sense of the migrants' presence and to reassure their children that their migrant husbands will return (Kanaiaupuni 2000). They do this by making constant

references about the migrants to their children, avoiding references to dates of departure and returns, and adopting language to qualify any feelings of resentment or anger that emerge towards absent partners in front of their children (Kanaiaupuni 2000). Thus, migration diminishes women's gains to marriage by increasing women's responsibilities and exerting a negative influence on one of the most valuable commodities of marriage: the children.

Fourth, migration reduces the gains to marriage by depriving women from the emotional gains associated with entry into a union. Past studies have found that only a small proportion of migrants and their families communicate consistently (Kanaiaupuni 2000). Instead, non-migrant wives sporadically receive news about their husbands from other migrants, who are visiting their families or returning from their sojourns to the community of origin (Kanaiaupuni 2000). In addition to the sporadic communication, migrants often extend their stay in the U.S. because of the costs and risks associated with return trips (Kanaiaupuni 2000). Compounded with the bouts of severe economic hardships, migrants' prolonged stay in the U.S. and the sporadic communication gives rise to loneliness, resentment, frustration, and concerns about their spouses' fidelity for non-migrant wives (Hondagneu Sotelo 1994; Kanaiaupuni 2000; Frank & Wildsmith 2005). Ultimately, migration deprives non-migrant wives from the key emotional benefits of marriage: companionship and intimacy.

Fifth, migration reduces women's gains to entry into a union by heightening the risk of abandonment. Landale and Ogena (1995) found that recent or prior migration experiences increases the chances for union dissolution among Puerto Rican women. In addition, Frank and Wildsmith (2005) found that individual migration experiences and residence in communities with medium migration rates increase the likelihood of male union dissolution in Mexico. According to these studies, although migrants rely heavily on social networks during the migration process, the density of social ties are considerably less in the U.S. compared to those in their sending communities. Therefore, migration becomes a period of sexual transgression in light of the diminished probability they will be detected (Hondagneu Sotelo 1994; Hirsch 2003; Frank & Wildsmith 2005). A portion of the intimate relationships developed during this time can become permanent unions, which lead to the dissolution of pre-existing unions. Furthermore, some migrants adopt normative values that are more divorce friendly. Upon exposure to the normative attitudes governing union behaviors in the U.S., some migrants adopt marital ideals that place a greater emphasis on desire rather than obligation as prerequisites for unions (Hirsch 1999; Frank & Wildsmith 2005).

Furthermore, their exposure to a social climate where divorce is more prevalent and acceptable may increase the possibility that they will consider separation or divorce as a viable option (Frank & Wildsmith 2005). The change in the male migrants' normative behavior increases women's vulnerability for desertion.

In sum, migration results in a significant decrease in the gains to marriage for non-migrant wives because it increases the scope of the responsibilities that women must assume; deprives them of companionship, emotionally affects their children, and heightens the risk of being abandoned. In light of these mechanisms, it can be expected that women in communities with a high prevalence of migration will be less likely to transition into unions because the benefits they can garner from such unions will be significantly less if their husbands were to migrate and the probability that men in their communities will migrate is substantially higher than the probability that men in communities with lower levels of migration given their greater access to migrant social networks. Furthermore, women, who grew up in communities with a high prevalence of non-migrant wives, might be socialized to believe that marriage entails a lot of costs but provides very little benefits. Thus, these women will forego marriages entirely or delay marriage as long as possible.

Alternatively, migration can influence union formation patterns by altering the incidence of labor market participation for non-migrant men. On the macro level, the remittances sent by migrants can affect women's transition into first unions by creating structural conditions that diminish the pool of marriageable men. Although criticized by recent studies for ignoring the multiplier effects of consumption on economic development, the predominant view in the literature on the economic consequences of labor migration argues that the remittances sent by migrants can have deleterious, long term effects on the economy of the sending community because they are overwhelming spent on consumption with high import content and is seldom invested in job producing enterprises or income generating activities (Russell 1986; Keeley & Tran 1989; Durand, Parrado, & Massey 1996; Mooney 2003). In turn, increases in consumption fueled by remittances may propagate a cyclical downturn in the economy of the sending community by increasing inflation, pushing up wage levels, slowing down the economy, and ultimately increasing unemployment rates in the sending communities (Russell 1986). Thus, migration can diminish the opportunities for non-migrant men in sending communities to transition into adult economic roles because their dependence on the remittances sent by migrants are heightened due to limited career opportunities. Since men must acquire a certain level of economic

independence for marriage to take place, the pool of marriageable men in sending communities will be reduced in size due to the deleterious effect that remittances can have on the local economy.

On a more micro-level, remittances might remove the pressure for non-migrant family members to contribute to the household income. In the absence of such pressures, non-migrant family members might choose to withdraw from the labor market and this can delay non-migrant men's transition into adult economic roles. Durand et al. (1996) found that a portion of the remittances were channeled into the education of some non-migrant family members. That is, with the availability of funds to finance their education, some non-migrants might lengthen their stay in school. Another portion of non-migrant males may simply withdraw from the labor market because they can now substitute their wages with the "migradollars". In any case, remittances enable non-migrants to delay their transition into adulthood and increase uncertainties about their future economic prospects. In turn, this will reduce the pool of marriageable men in sending communities.

Migration also influences women's transition into first unions by shaping local marriage markets. Pavon (1990) found that the gender selective migration process has exasperated the distribution of men and women in Mexican communities. In high migration states, such as Zacatecas and Guanajuato, it is estimated that the number of men per 100 women at the age 20 was approximately 80 (Parrado & Zenteno 2002). In its most simple form, the imbalance in sex ratio resulting from migration delays women's entry into unions because it reduces the sheer number of marriageable men. Furthermore, migration may be selective of certain traits, such as resourcefulness, motivation to succeed, desire to become economically independent, or good general health (Hondagneu Soteolo 1994; Landale et al. 2000). Possession of such traits can make individuals especially attractive in the local marriage market. Consequently, it could be the case that migration results in the disproportionate removal of "marriageable" from the local marriage market. Moreover, the shortage of marriageable men engendered through sex selective migration can further delay women's entry into unions by reducing women's bargaining powers and providing men with the ability to enjoy the benefits associated with unions without having to commit. These factors combined will give rise to a smaller pool of marriageable men in sending communities.

Lastly, changes in normative values associated with marriage is another venue through which migration influences union formation patterns is by shaping the normative values associated with marriage. Depending on the

type and level of interaction that they have with the host culture, migrants are exposed to a social climate where there is a higher prevalence of single motherhood and delayed or foregone entry into marriages are far more socially acceptable than in the case of the sending communities. Migrants can bring back these normative values as social remittances for their sending community (Levitt 1998). Depending on its compatibility with the values in the sending communities, the introduction of such norms can alter values that govern union formation behavior in the sending community and it might be more acceptable for women in sending communities to delay or forego marriages.

Migrants are also exposed to an environment where wives contribute more to the financial well-being of their families. Having seen this, some migrants can alter their normative values with regards to the division of labor in a marriage and transmit them to the sending communities. If these normative values were to be adopted by the sending communities wives' economic contribution increases in importance, women may experience a greater need to acquire higher levels of education or on the job training as women's economic contribution to marriage increases in importance. Due to the time necessary to accumulate these skills, women will delay their entry into marriages.

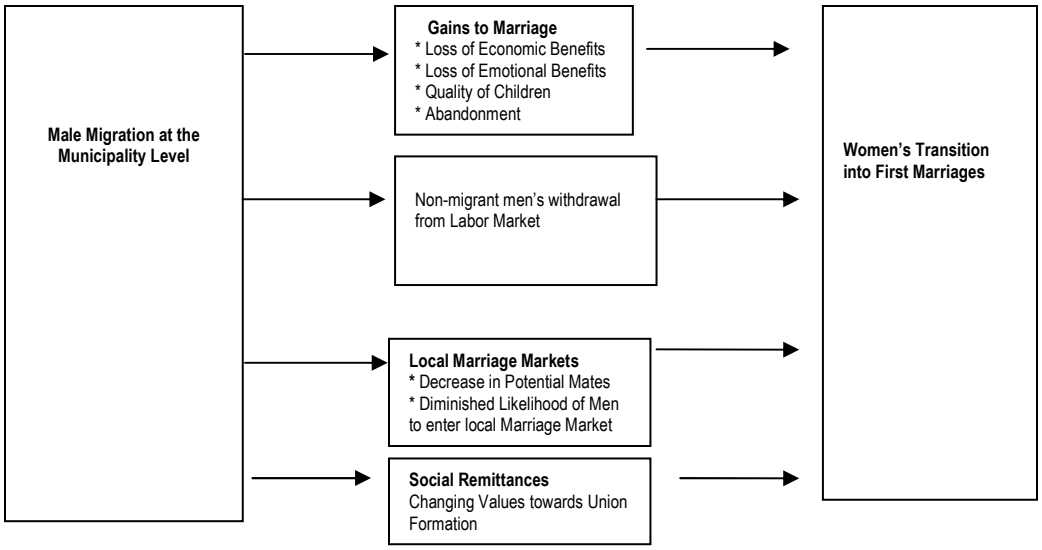
Hypotheses

On the basis of the above mentioned theoretical frameworks and empirical results, I hypothesize that male migration at the municipality level will be negatively associated with women's transition into first marriages because male migration reduces women's financial gain into marriage, diminishes the pool of available men, and transmits norms increase the acceptability of delayed or foregone marriages. I also hypothesize that the relationship between male migration and women's transition into first unions will be mediated by the intensification of married women's work and the state of local marriage markets after migration. Because rural communities offer fewer paid labor opportunities for married women, I further hypothesize that the effect of male migration and women's transition into first marriages will be stronger in rural communities than urban communities. Lastly, I hypothesize that the effect of migration on transition into first unions will be particularly salient for women with intermediary levels of education[1],

[1] Based on the definitions used by Parrado and Zenteno in their paper *Gender Differences in Union Formation in Mexico: evidence from Marital Search Models* that defines intermediary education as 7-12 years of education,, I argue that women whose education attainment is middle school or high school are those with intermediary educational attainment level.

who are the ones that are most affected by men's migration and have unfavorable bargaining position in the local marriage market due to limited employment opportunities.

Conceptual Model Detailing the Pathways through which Migration Affects Transition into First Marriages



Methods

Data

The data for this analysis come from the *Encuesta Nacional de la Dinamica Demografica 97* (ENADID 97) and the *XI Censo General de Populacion y Vivienda 1990* (1990 Mexican Census). ENADID 97 is a survey implemented by Mexico's Instituto Nacional de Estadistica, Geografia e Informatica (INEGI) on socio-demographic characteristics, such as educational attainment, fertility, migration, mortality, and union formation. The survey conducted a stratified, multi-stage probability sample of 2260 households within each of the nations 32 states, yielding a target size of 80,000 households. The questionnaire was administered in face-to-face interviews from October to December in 1997, with a final sample of 73,412 households in 847 municipalities across 32 states. ENADID 97 collected retrospective histories on union formation and fertility patterns for all the female members of childbearing ages (15-54) in each sampled households. Doing so yielded them a final sample of 88,022 women.

The Mexican Census is a 10% micro level data file available through the Integrated Public Use Microdata Series (IPUMS) International Project. The Census is comprised of 8,118,242 cases. It contains cross sectional information on socio-demographic ~~characteristics~~, such as education attainment, fertility, migration, mortality, and

marital status of its respondents (IPUMS 2005). It was created by systematically sampling private dwellings, which were sorted at the municipality and locality level (IPUMS 2005). It contains the same state and municipality identifiers as ENADID 97 that enables me to link it to ENADID 97.

ENADID 97 provides a rare opportunity to examine the contextual effects of male migration on women's transition into first unions. Most important for the present analysis is the fact that ENADID 97 is one of the few databases that collected data on all female members between the ages of 15-54 in the sampled households. This feature allows users of this dataset the unique ability to examine the contextual effect of international migration on women in sending communities. Second, it includes information about the respondents' municipality of residence. Using this information, the present analysis is able to combine retrospective histories with data from the 1990 Mexican Census to compute aggregate measures that accurately reflect marriage market conditions, the prevalence of male migration, and labor market characteristics in the municipality. Third, ENADID includes information on the respondents' union histories and fertility behavior. The retrospective histories on transition into unions enables that the measurement of the independent, control, and mediating variables to take place prior to the dependent variable. The proper temporal ordering of the variables allows stronger conclusions to be drawn from the findings. Lastly, its multi-stratified sampling of households allows that samples from this dataset to be truly representative of women's union formation in Mexico. Thus, the findings of the present study can be generalized at the national and state level. The ability to further generalize at the state level is particularly important in the analysis of marital behavior in Mexico since norms governing union formation and union formation behaviors vary considerably by region (Oliviera 2000).

The present study restricts the ENADID 97 in the following manner. First, to be included in the sample, they had to be women between the ages of 20 and 30 at the time of the interview. The lower age limit was chosen to ensure that individuals were directly or vicariously affected by the prevalence of migration at the municipality to incorporate it to their socialization process. That is, I wanted to ensure that respondents in our sample were old enough in 1985 to be aware of the consequences of migration on non-migrant wives and their children. The upper age limit was placed to ensure that the degree of variation with the sampled cohort would be limited. That is, with time, the normative values governing marital behaviors change; and therefore, I included the upper limit to ensure that our cohort included individuals that on average and at the macro level experienced similar socio-demographic

events that shape views about union formation. Second, the sample was comprised of single women or women in unions/marriages who had made the transition into unions after December 31, 1989. This restriction was placed to ensure the independent, control, and mediating variables were measured prior to the dependent variable. Third, respondents had to have answered the portion of the questionnaires corresponding to the general demographic section and the characteristics of women. In addition, women in unions had to have provided retrospective histories of their unions. I also excluded cases that were missing on weights and missing information on the year of entry into first union. After the introduction of these restrictions, my sample was comprised of 24,302 women in 697 municipalities. For the second part of our analysis, the life history information was converted into person-half year data. That is, each six months lived by the respondent between the age 13 and age 30 constituted an observation in our study. I censored all individuals that transitioned into first unions. The sample was additionally censored at the date of the interview for respondents who remained single. After applying these restrictions, my sample was comprised of 493,186 person half year files.

Measurements

This article evaluates the contextual effects of male migration on women's transition into first unions. As mentioned earlier, instead of choosing transition into first marriages, I chose transition into first unions, which includes both marriages sanctioned by church and/or state and consensual unions, as my dependent variable because in Mexico consensual marriage has served as surrogate marriages with full social recognition since the pre-Hispanic era (Oliviera 2000). Currently, informal unions account for approximately 17% of all unions in Mexico (Pebley & Goldman 1986; Oliviera 2000; Gomez de Leon 2001; Frank & Wildsmith 2005). I restricted my analysis to entry into first unions because only a very small proportion of the sample had a second union and factors predicting entry into unions differ for first and subsequent unions. This dependent variable was a dummy variable coded 1 if the respondent transitioned into first unions and 0 if the respondent remained single within the 6 months corresponding to the person half year file.

The primary independent variable is the male migration rate at the municipality level. In the 1990 Mexican census, individuals were asked where they resided in 1985. Based on these responses, the Mexican census lists the state or country they were residing in 1985. I calculate my measure by dividing the number of men who indicated

that they were residing in another country by the total number of men in the municipality. Then, I multiply this number by 100 to convert the proportion into percentages. I argue that the municipality is the appropriate geographic fields of interaction for prospective marital partners based on its extensive use in past studies examining the effect of local marriage markets on union formation behaviors (Parrado & Zenteno 2002).

The relationship between male migration at the municipality level and women's transition into first unions can be mediated by several community characteristics that influence women's transition into first unions. The first mediator is the percentage of employed married women in the municipality. As mentioned earlier, male migration can diminish the gains to marriage by intensifying the need for married women to work and increasing the scope of responsibilities. A high proportion of employed married women in certain communities might signal that women in these municipalities do not receive the financial benefits associated and expected in a marriage; and therefore, women in these regions might retreat from marriages. I calculate this variable by dividing the number of employed women in unions by the number of women in unions within a municipality. Once again, I multiply this number by 100 to convert the proportion into percentages.

The next set of mediators captures the characteristics of the local marriage market. Not everyone participates in the same marriage market. Rather, potential mates meet within geographically delimited areas that circumscribe their daily activities at work, in neighborhoods, and in various organizations (Lichter et al. 1992). Thus, the sex ratio has municipalities as its geographical unit. Furthermore, I exclude children and the elderly on the basis of previous studies that have indicated that the sex ratios including children tend to be biased towards balance and the sex ratio of the elderly tend to be biased downward (Fossett and Kiecolt 1991). Specifically, in efforts to avoid this bias, I exclude individuals below the age of 16 and the age 65. Although most individuals marry spouses of similar age and therefore the marriage market is segmented by age, I do not use age specific sex ratios because these sex ratios may ignore potential suitors in adjacent age groups and the empirical superiority of such measures over simpler alternatives have yet to be established (Fossett and Kiecolt 1991). With these specifications in mind, I create two mediators: one is for quantity of marriageable men after male migration and the other is a measure for the quality of available men after male migration. This measure is obtained by dividing the number of men between the ages of 16 and 65 by the number of women between the ages of 16 and 65 within a municipality in 1989. The

subsequent mediators capture the effect that the post-migration availability of marriageable men has on women's transition into unions. I calculate the second mediating variable by dividing the number of employed men by the number of women in the same municipality and age group.

I also control for respondents' socio-demographic characteristics that are associated with the likelihood of women's entry into first unions. My measures of socio-demographic characteristics consist of educational attainment, school enrollment, age at first union, and premarital childbirth. The educational attainment variable was introduced to account for the confounding effects of education on women's transition into marriages. According to the specialization and trade models, highly educated women have greater employment opportunities; and thus, depend less on their husbands for financial support. In turn, the diminished financial benefits of marriage increase the likelihood that they will retreat from marriage (Becker 1974). Conversely, empirical studies examining union formation in Mexico have found that women with high levels of education attainment are more likely to marry because their ability to economically contribute to the household make them extremely attractive marital partners (Parrado & Zenteno 2002). Regardless of the direction of the educational attainment variable, I control for this to net out its effects. The educational attainment variable is comprised of a set of six dummy variables. Each includes mutually exclusive categories of educational attainment and is comprised of less than primary, primary, middle school, high school, postsecondary education, and missing information on educational attainment.

Moreover, I introduce school enrollment to account for the effects that being enrolled in school has on entry into first unions. Prior to the full acquisition of human capital, women might be uncertain of the type of spouse that might be compatible with them (Oppenheimer 1997). Furthermore, the demands from school might not be compatible with their household responsibilities (Parrado & Zenteno 2002). Due to the uncertainty and incompatibility combined, women, who are still enrolled in school, might delay their transition into adulthood. Because ENADID 97 does not retrospective histories on education, I constructed my enrollment variable based on two coded items in the questionnaires: (1) an item that indicated the respondents' highest educational attainment and (2) another item indicating how many years they attended the institution where they attained their highest levels education. Moreover, I assumed that respondents started to attend preschool at the age of 3; primary school at the age of 6; middle school at the age of 12; high school at the age of 15, and postsecondary institutions at the age of 18. Enrollment is a dummy

variable coded 1 if they are enrolled in school and coded 0 if they are no longer enrolled in school at the time the respondent made their transition into marriage.

Another control variable is one that indicates if the woman had a child prior to marriage. Past studies have extensively shown that having a premarital birth reduces the likelihood that women will marry (Holland 1995; Harknett & McLanahan 2004). This may be particularly relevant in Mexico where chastity prior to marriage has been highly valued until very recently (Hirsch 2003; Lopez Gonzalez 2004). The fertility histories in ENADID 97 provide the month and year of birth for the deceased children and the current age of the child that is currently alive. Using this information, I was able to construct a dummy variable indicating premarital birth variable that was coded 1 if the respondent had a child prior to transitioning into their first unions and coded 0 if the respondent did not have child prior to their transition into first unions.

I also control for age when the transition into first unions took place. With age, it is more likely that individuals would have attained the threshold economic standard for marriage to take place and will have a better idea on the characteristics that formulate an ideal spouse. These factors are both characteristics that facilitate older individuals' transition into unions. Simultaneously, however, the distribution of potential mates shrinks after a certain age and this might be a deterrent to one's transition into first unions. In the case of married women, age at marriage is a continuous variable that measures the age when their transition into unions took place. I obtained this by subtracting the year and month of birth from the year and month when the transition took place. In the case that the month of entry into first unions was missing, I substituted the month by the mean month: 6.67. In the case of single women, age at marriage captures their current age.

Last but not least, to determine if the effects of male migration on union formation patterns are particularly salient for women in rural communities, I divide the sample into two groups depending on their rural or urban status. The urban/rural status is contingent upon the number of individuals in a given community. The measure for urban residence is a dummy variable coded 1 if there were more than 100,000 people in their community of residence and coded 0 if there were more than 100,000 people in their community of residence.[2]

[2] Different studies have defined urban/rural areas differently. I use 100,000 because ENADID 97 defines metropolitan areas in that way.

Methods

The study is comprised of two parts. First, I present a series of descriptive statistics that assess the variation in union formation patterns by the prevalence of male migration. The descriptive analysis are the not subject to the time-varying restrictions as the event history models. The second part assesses the contextual effect of male migration on risk of entry into first unions and first marriages using hierarchical linear models and event history analysis.

The descriptive portion of the present analysis is comprised of two parts. First, I present analyses that assess the variation in the incidence of women's transition into first unions depending on the prevalence of male migration in the municipality. To do so, I separate the municipalities into two groups: those with high levels of migration and those with low levels. I classify municipalities into high migration regions when the migration rate surpasses the median migration rate and low migrant regions when the migration rate is equal or smaller the median migration rate. Second, I examine differences in socio-demographic composition of sampled individuals in regions with a high prevalence of male migration and a low prevalence of male migration.

In the second portion of the present analysis, I assess the contextual effects of male migration on the likelihood that women will transition into first unions by using hierarchical linear models and discrete event history analysis. In the sample, individual measures are nested within municipalities. As a result, there are potentially two levels of variation: variation at the individual level due to respondent's socio-demographic characteristics and variation at the community level due to the conditions of the municipality. To the extent that unmeasured municipality characteristics may influence individual behavior, individuals within a municipality may share similarities with one another compared to individuals living in different municipalities. If this is the case, the error terms are correlated. Therefore, there is an underestimation of the standard error and the significance of the parameter may be overestimated (Barber et al. 2000; Frank & Wildsmith 2005). Thus, by using the hierarchical linear models, I am able to correct for the correlated error terms and obtain a more accurate understanding of the significance of each parameter in our model.

Hierarchical linear models can be thought of as a system of equations and thus, each level of analysis provides an equation (Barber et al. 2000; Raudenbush & Bryk 2002; Frank & Wildmisth 2005). Since we have two levels of data, we have two equations that take the following forms. The individual level, the log odds of union formation can be expressed as: $\text{Log}[\Phi_{itm} /(1-\Phi_{itm})] = \pi_{00m} + \Sigma_j \pi_{jc} X_{i0m} + \Sigma_k \pi_k Z_{itm}$ where Φ_{itm} is the probability of observing a union formation for woman *i* in person half year *t* in municipality *m*. X_{i0m} are the time constant individual level measures, and Z_{itm} are the time varying individual level attributes. The municipality specific effects are included in the level 2 equation: $\pi_{00m} = \gamma_{00} + \mu_{00m}$ where μ_{00m} is the level 2 error term.

The event history models involve specifying the contextual effects of percent male migration in municipality on women's union formation in a series of multivariate analysis that builds upon each other. I first measure the baseline association between percent of male migration at the municipality and women's transition into first unions. Second, I add controls for known correlates influencing women' transition into first unions, such as educational attainment, school enrollment, premarital birth, and age at marriage. Third, I determine if the constructed aggregate level variables mediates the relationship between percent male migration in municipality and women's transition into first unions. With this set of models, I attempt to establish if the decrease gains in marriage and the changes in the quality and quantity of available men in local marriage markets mediate the relationship between male migration and women's transition into first unions. Fourth, I add interaction terms between percentage of male migrants in municipality and women's educational attainment characteristics to establish if male migration at the municipality level influences women's transition into first unions. Lastly, I separate my sample into an urban sample and a rural sample to ascertain if the effects of male migration on women's transition differ in rural and urban areas.

Results

Table 1 shows the variation in the incidence of women's entry into first unions by the prevalence of male migration in the municipality. Women living in areas with high migration display a lower incidence of transition into first unions compared to women in living in areas with low migration and this is the case in all ages. For instance, at age 24, 63% of the women living in areas with a low prevalence of male migration have transitioned into first unions while only 58% of women living in areas with a high prevalence of male migration have transitioned into first unions. This variation is especially salient by age 20: the average age at marriage for the sampled women.

Differences in socio-demographic characteristics associated with early marriage can account for some of the differences in the percentage of women who have transitioned into their first unions between municipalities with a high prevalence of migration and municipalities with a low prevalence of migration. Table 2 compares the socio-demographic characteristics of the sampled women living in municipalities with a low prevalence of male migration and high prevalence of male migration. By doing so, I determine if there is a pervasive pattern in the socio-demographic composition of women living in municipalities with a low prevalence that encourages earlier transition into first unions. I find that there are only modest differences in the educational attainment of women living in these two regions. For example, 67% of women living in municipalities with a high prevalence of male migration have an intermediary level of education (middle school or high school) whereas 65% women living in municipalities with a lower prevalence of male migration have intermediary levels of education. That is, women living in municipalities with a low prevalence of male migration are slightly better educated. Therefore, not surprisingly, women living in municipalities with a low prevalence of male migration are more likely to be enrolled in school. We also find that a high proportion of women living in areas with a low prevalence of male migration have a child prior to their entry into first unions. 24% of women living in areas with a low prevalence of male migration have a child prior to their entry into first unions; whereas, 19% of women living in areas with a high prevalence of male migration have a child prior to entry into first unions. Thus, the results in Table 2 do not indicate that women living in low migration region possess socio-demographic attributes that encourage early entry into first unions. Conversely, the results in Table 2 as it relates to school enrollment, educational attainment, and child birth prior to first unions indicate that women living in areas with a high prevalence of male migration possess socio-demographic characteristics that are associated with early entry into first unions.

Table 2 also illustrates the characteristics of the sampled municipalities. As expected, my findings in Table 2 indicate that married women in municipalities with a high prevalence of male migration are more likely to be employed. Moreover, municipalities with a higher prevalence of male migration have lower sex ratios compared to those with a lower prevalence of male migration. Thus, compared to their counterparts living in municipalities with a low prevalence of male migration, women living in municipalities with a high prevalence of male migration experience disadvantageous local marriage markets and diminished gains to marriage.

Table 3 presents the odds ratios from the event history analysis modeling the relationship between the prevalence of male migration and women's transition into first unions at the municipality level. Model 1 is a baseline model that estimates the association between percentage of male migration and women's transition into first unions. In accordance with expectations, I find that women living in municipalities with a high prevalence of male migration are less likely to transition into first unions. The odds of women's transition into first unions decreases by 17% with a 1% increase in the prevalence of male migration in a given municipality.

It could be the case that the association between male migration at the municipality and women's transition into first unions might be the result of differences in socio-demographic characteristics between women living in municipalities with a low prevalence of migration and women living in municipalities with a high prevalence of migration. Therefore, model 2 introduces controls for socio-demographic factors that affect the likelihood that a woman will transition into first unions. In particular, I control for educational attainment, school enrollment status, age at first unions, and birth prior to union. Although socio-demographic characteristics partially explain the association between male migration at the municipality level and women's transition into first unions, this association persists even after controlling for such characteristics. Even after I control for socio-demographic characteristics, the odds of women's transition into first unions decrease by 14% for a 1% increase in the prevalence of male migration within a municipality.

Most control variables operate in the direction predicted by theories on marriage. In line with Oppenheimer's marital search theories, enrollment in school decreases the likelihood of women's transition into first unions by 73%. With regards to educational attainment, although I also find a curvilinear relationship between educational attainment and marriage, I find that women with primary and post secondary education are less likely to enter into a union compared to those in middle school or high school. My results indicate that women with primary education are 10% less likely to enter into a first union while women with postsecondary education are 16% less likely to enter into a unions compared to women with an educational attainment of middle school. Under the labor market structure in Mexico, women in intermediary levels of education have more to gain from entry into unions, therefore, they will be the more likely to enter into a union. Interestingly, however, having children prior to their first union exhibit increased odds of transitioning into first unions. Because ENADID 97 does not provide a month of birth

for the living offspring, I am unable to estimate the time of conception. Therefore, it could be the case that this unexpected finding is due to the fact that the transition into first union is a result of the pregnancy itself.

Table 4 examines if the association between male migration and women's transition into unions are mediated by such measures and assesses if the impact of male migration on women's transition into first unions is disproportionate across sub-groups. Model 3 adds the percentage of married women who are employed to earlier models. By introducing this variable, I attempt to explore how decreases in the gains to marriage mediate the relationship between male migration and women's transition into first unions. Contrary to expectations, this mediator explains little of the association between percentage of male migration in the municipality and women's transition into first unions. Not only does the coefficient for the percentage of male migration in municipality remain statistically significant, but also the odds of women's transition into first unions only decreases by 14%, an additional 0.2% to the earlier model with controls, once the mediator is added to the existing model. Literature indicates that in Mexico, married women often have sporadic work in the informal sector (Hondagneu Sotelo 1994). The unexpected finding could be attributed to the fact that cross-sectional employment records might not accurately describe the employment patterns of women in certain regions.

Model 4 adds the sex ratios into the model to see if the relationship between male migration and women's transition into first unions are mediated by the local marriage market conditions. The relationship is mediated by the local marriage market conditions. After adding this mediator, the odds of women's transition into first unions decreases by 9% for every 1% increase in the prevalence of male migration within a municipality and remains statistically significant. In models that enter the sex ratios separately, I find that the sex ratio of employed men to women in a municipality between the ages of 16 to 65 is statistically significant. Nevertheless, in the models where both sex ratios are presented together, I find that only the sex ratio of men to women in a municipality between the ages of 16 and 65 is statistically significant[3]. Thus, the prevalence of male migration depresses women's transition into first unions by decreasing the sheer number of marriageable men in the local marriage markets.

[3] In analyses unreported here, we also ran models with sex ratios of men who are out of the labor force between the ages of 16 and 65 over the number of women in the same age group in municipalities. The collinearity between this variable and others prevents us from garnering proper results.

Model 5 adds interactions between one's educational attainment and the percentage of male migration in a municipality to existing models. I introduce these interaction terms in efforts to determine if the effects of male migration on women's transition into first unions are particularly salient for women with more disadvantageous backgrounds. Contrary to expectations, the effects of male migration on women's transition into first unions are not particularly salient for women with intermediary levels of education.

Next, we proceed to determine if the relationship between male migration and women's transition into first unions varies substantially depending on whether or not the municipality is in an urban region or a rural region. In analyses not reported in here, I find that although there is a negative association between male migration and women's transition into first unions in rural regions, there is no statistically significant association between male migration and women's transition into first unions. This finding is in line with my expectations based on the literature that argues that women in rural areas experience greater hardships in the event of their spouse's migration compared their counterparts living in urban regions due to the structural lack of paid employment opportunities for women in these regions.

Discussion and Conclusion

Theories on marriage have long argued that entry into unions is contingent upon the benefits it can provide and the local marriage conditions that constraint their marriage opportunities. With its sex selective nature, Mexican migration alters both- the gains to unions and the availability of marriageable men- for women in sending communities. Therefore, the aim of this paper was to examine what are the contextual effects of male migration on women's transition into first unions. This study finds evidence that the percentage of male migrants within a municipality is negatively correlated with women's transition into first unions. That is, women living in municipalities with a high prevalence of male migration are less likely to transition into first unions despite having socio-demographic characteristics that delay entry into marriages such as lower proportion of women enrolled in school.

The study also attempts to determine the characteristics that mediate the relationship between male migration and women's transition into first unions. I first set out to test if the diminished gains to marriage resulting due to male migration, operationalized as percentage of employed married women, affected women's transition to first unions. Contrary to expectations, the results indicated that this variable mediates very little the relationship

between male migration and women's transition into first unions. Nonetheless, it could be the case that a cross-sectional measure of women's labor market participation might not accurately capture the intensification of work experienced by migrant wives due to the sporadic nature of the employment opportunities available to them. Furthermore, because these women engage in informal sectors of the economy, they might be less inclined to discuss their employment status in surveys collected by the government. Thus, future studies and data collection efforts should further explore the impact that the decreased benefits to marriage arising due to male migration has on the propensity for single women in sending communities.

I then tested if the association between male migration and women's transition into first unions is mediated by local marriage market characteristics. Added separately, the sex ratios measuring the quality and quantity of potential mates mediated the relationship between male migration and women's transition to first unions; however, added together only the number of men between the ages of 16 and 65 over the number of women between the ages of 16 and 65 in a given municipality served as a statistically significant mediator for the relationship between male migration and women's transition into first unions. In other words, a high prevalence of male migration affects women's entry into first unions by lowering the quantity of available men.

Lastly, I determined if the contextual effects of male migration was particularly salient for women in rural areas and women with intermediary levels of education. As mentioned earlier, previous studies have indicated that women in rural areas suffer greater economic hardships compared to women in urban areas in the event that their spouses were to migrate due to the lack of paid labor opportunities for women in these regions (Hondagneu Sotelo 1994). Furthermore, women with intermediary levels of education have the greatest chance of experiencing economic hardships because of the lack of paid labor opportunities for these women. The results indicate that the contextual effects of male migration are particularly salient for women in rural areas; however, this is not the case for women with intermediary levels of education.

Even after the introduction of controls and mediators, the negative association between percentage of male migration and women's transition into first unions persists. I argue that the normative changes that migrants have brought to the sending communities could account for a large portion of the remaining effects. That is, U.S. migrants are exposed to a culture that is more accepting of women's delayed marriages. Upon exposure, some may even

subscribe to such normative values. Therefore, it could be the case that municipalities with a high prevalence of male migrants are more accepting towards women's delayed marriages and under such a normative climate women will be more likely to prolong their marital search.

Nonetheless, I am also mindful of the fact that some of the remaining effects could stem from my inability to control for certain variables due to the limitations of the data. Because ENADID 97 was originally intended to provide Mexican officials with basic demographic data rather than a detailed socioeconomic profile of the population, it only possesses a limited range of background socioeconomic characteristics (Durand et al. 2001). In particular, it contains no retrospective histories on employment and limited retrospective histories on migration[4]. Consequently, I cannot control for individual experiences associated with employment and migration, which could affect union formation patterns. Nonetheless, to compensate for my inability to control for employment characteristics, I control for a major determinant of individual employment status: educational attainment. With regards to individual migration experiences, I operate under the assumption that female migration is not a common occurrence prior to women's transition into first marriages. This assumption is based on past studies that have found that the likelihood of marriage is disproportionately high for immigrant women because marriage can serve as a venue for women to secure financing from their families to cover their migration costs and to attain the necessary documentation for entry into the receiving country (Donato 1993; Raley 2004). Moreover, previous research has documented that a major motivation for women's migration stems from the desire to unify their families and to ensure that their husbands are more than "father's by check" for their children (Hondagneu Sotelo 1994). Thus, although cognizant that this is a weakness in this study, I expect that the effect of not controlling for individual migration and employment status will generate a small margin of error because of the above mentioned reasons. Nonetheless, future data collection efforts should include more detailed retrospective data on women's migration and employment experiences.

Moreover, our aggregate measure of male migration was based on a question in the Mexican Census that asked the respondent to state the country and state of residence in 1985. Thus, to be in our sample, the migrant had

[4] Although some retrospective data was collected for migration, the collection of this data was restricted to the period between 1992 and 1997. Because the present analysis desires to ensure that the independent, control, and mediating variables are measured prior to the dependent variable, the information available in the retrospective studies cannot be used.

to have either returned or had to be visiting at the time the Census was collecting data. Therefore, our analysis underestimates the number migrants, especially those that have permanently settled in the receiving country.

In conclusion, this research is part of an increasing effort in the migration literature to recognize the impact of migration in sending communities and to broaden the scope of research to include non-migrants. The findings of this study indicate that Mexican migration is an institution that not only impacts migrants and their families, but also has profound impact on everyone in the sending communities. Specifically, in this case, I find that due to the sex-selective nature of Mexican migration, the prevalence of male migration is negatively associated with women's transition into first unions by altering the marital bargain and the local marriage market characteristics. In this vein, future studies and data collection efforts alike should increase their endeavors to give a voice to non-migrants in sending communities, especially non-migrant women since they disproportionately assume a high proportion of the costs associated with migration.

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Appendix

Table 1: Rate of Women's Entry into First Unions Depending on the Prevalence of Migration

	Low	High
LT 16	9.30	6.75
16	23.02	18.63
18	39.20	33.40
20	52.26	46.69
22	59.68	54.27
24	63.20	58.78
26	65.06	60.64
28	65.67	61.55

Note: Results are represented in weighted percentages

Table 2: Comparison of Socio-demographic characteristics between municipalities with a low prevalence of male migration and a high prevalence of male migration

	All		Low		High
	(N=24,302)		(N=12,063)		(N=12,239)
Individual Characteristics					
Educational Attainment					
Less than primary	0.46%		0.56%		0.35%
Primary	28.36%		28.74%		27.94%
Middle School	37.68%		37.96%		37.37%
High School	14.85%		15.18%		14.49%
Post Secondary	16.60%		15.12%		18.23%
Missing Education	2.04%		2.43%		1.62%
Other individual characteristics					
Birth prior to union	22.10%		24.54%		19.40%
Single	46.46%		44.62%		48.50%
Age at marriage	20.71		20.53		20.94
Proportion enrolled in school	2.01%		2.23%		1.77%
Community Characteristics					
Sex ratio (Quantity)	92.61%		0.94		0.91
Sex ratio (Quality/Employed)	72.02%		0.74		0.70
Percentage of Employed Married Women	17.75%		16.49%		19.14%
Percentage of Male migrants	0.34%		0.07%		0.65%

Note: All figures are weighted

Table 3. Logistic Regression Estimates on the effect of male migration at the municipality level on women's transition into first unions						
	Zero Order		Model 1		Model 2	
	exp(B)	T-value	exp(B)	T-value	exp(B)	T-value
Intercept			0.03	-151.70	0.03	-122.79
Prevalence of Male migration						
% Male migrants in municipality	0.83	-4.95	0.83	-4.95	0.86	-4.22
Educational Attainment (Middle School)						
Less than primary	1.10	0.45			0.81	-1.29
Primary School	1.15	4.44			0.90	-3.42
High School	0.76	-6.12			1.07	1.41
Post Secondary	0.42	-18.56			0.84	-3.26
Missing Education	1.29	2.89			1.14	1.51
Enrollment in School (Not enrolled in school)						
Enrolled in School	0.35	0.04			0.27	-26.68
Age at marriage						
Age	0.97	-12.46			0.93	-22.04
Non-marital Birth (None)						
Had nonmarital births prior to unions	2.25	26.21			1.93	21.73

Table 4. Logistic Regression Estimates on the effect of male migration at the municipality level on women's transition into first unions

	Model 3		Model 4		Model 5	
	exp(B)	**T-value**	**exp(B)**	**T-value**	**exp(B)**	**T-value**
Intercept	0.03	-121.72	0.03	-123.22	0.03	-123.55
% Male migrants in municipality	0.86	-4.05	0.91	-2.58	0.91	-2.00
Educational Attainment (Middle School)						
Less than primary	0.79	-1.45	0.79	-1.44	0.88	-0.65
Primary	0.88	-3.84	0.89	-3.70	0.88	-2.99
High	1.07	1.45	1.07	1.46	1.08	1.29
Post Secondary	0.85	-2.95	0.85	-2.94	0.84	-2.37
Missing Education	1.11	1.22	1.13	1.36	1.08	0.73
Enrollment in School (Not enrolled in school)						
Enrolled in School	0.27	-25.79	0.27	-25.79	0.27	-25.78
Age at marriage						
Age	0.93	-21.57	0.93	-21.53	0.93	-21.53
Non-marital Birth (None)						
Had nonmarital births prior to unions	1.93	21.35	1.93	21.23	1.93	21.23
Interaction Terms						
% of Male migrants*Less than primary					0.51	-1.47
% Male migration*Primary					1.01	0.12
% Male migration*High School					0.98	-0.33
% Male migration*Post Secondary					1.03	0.20
% Male migration*Missing Education					1.17	1.05
Mediators						
Percentage of Employed Married Women	0.99	-3.62	0.99	-2.17	0.99	-2.16
Sex Ratio: Number of Men over number of Women			2.94	2.73	2.92	2.70
Sex Ratio: Number of Employed Men over number of Women			1.01	0.04	1.02	0.06