

Couples across Borders: Impact of Mexico-U.S. Migration on Union Dissolution

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Abstract

Using the Mexican Migration Project data from 1997 to 2016, this study utilizes a life course perspective and quantitatively examines how U.S migration affects union stability among Mexican male household heads and whether the impact varies by union type, union duration as well as legal status of the immigrants. Results based on multilevel discrete-time event history analysis show that Mexican male household heads with more U.S. migration experience prior to marriage, as well as those who are in the U.S. after marriage in any given year are significantly more likely to experience union dissolution compared to those without U.S. migration experience. The detrimental short-term impact of immigration on union stability is stronger during the earlier stage of the union. The temporal impact of U.S. migration experience on union stability also varies significantly by the legal status of the immigrant and union type. Being in the U.S. with legal resident or citizen status is most likely to increase risk of union dissolution, but being in the U.S. as an undocumented immigrant or with temporary work visa overall is not significantly associated with higher risk of union dissolution compared to staying in the origin. The impact of U.S. migration also affects civil unions and consensual unions more than religious unions. While being a legal resident or undocumented immigrant in U.S. largely increases odds of union dissolution among civil unions, it does not have a significant impact on religious unions. In addition, higher migration prevalence at the community level is associated with higher risk of union dissolution at the individual level. Macro-level immigrant policy environment measured by visa accessibility for Mexican immigrants does not have a significant impact on moderating the potential deleterious impact of U.S. immigration on migrants' union stability. Lastly, the negative effect of U.S. migration on union stability is likely to be buffered by economic and kinship ties of migrants in the country of origin. The presence of young children and property ownership in Mexico decreases odds of union dissolution among Mexican male household heads with U.S. migration experience.

Introduction

Over the past few decades, international migration has increasingly become an important and highly debated national policy issue, particularly in major migrant-receiving countries such as the United States. Meanwhile, Mexico-US migration have been at the center of many immigrant policy debates in the U.S., due to the large number of both legal and undocumented Mexican immigrants in the country. Mexican migration to the United States has historically been characterized by high rates of circular migration of men between Mexican sending communities to the United States, with wives and children left in the origin community (Durand et al. 2001; Frank and Wildsmith 2005; Lindstrom and Giorguli-Saucedo 2002 & 2007; Massey et al 1997). As a result, the majority of Mexican couples with U.S. migration experience are living separately across borders, since only a very small fraction of them migrate together or are able to reunite with proper immigration channels. Since the start of rising border enforcement in the mid-1990s, unauthorized circular migration slowed down due to the higher cost and increased difficulties in coming back and forth (Giorguli-Saucedo et al 2018; Massey and Riosmena 2010; Garip 2016). After the Great Recession in 2008, undocumented Mexican migration to the U.S. has further declined due to the change in wage differences and also political contexts (Villarreal 2014). But the total number of undocumented Mexican immigrants remains high. There are still an estimated 5.8 million undocumented Mexican immigrants in 2014, accounting for 52% of the total unauthorized immigrants in the U.S. (Passel and Cohn 2016). While family reunification has long been a key principle of U.S. immigrant policy and immigration based on family ties accounts for the largest share of overall immigrant admission in the U.S., (MPI, 2018), it is not always feasible for Mexican immigrants to reunite as a family, particularly among those with low occupational status or without legal status. More recently, the Trump administration's proposals to restrict family-based immigration have raised further concerns about the potential impact of those immigration policies on family disruption.

Divided households with husbands migrating to the U.S. while wives and children are common in Mexico. Highly gendered family roles in Mexico often push men into the U.S. labor market where wages are considerably higher and pull women to stay behind to take care of children (Lindstrom and Giorguli Saucedo 2007). Previous studies have shown that this type of household arrangement might have negative consequences on family members left behind. Qualitative studies consistently show that women who are left behind in Mexico by their migrant husbands in U.S. experience stress associated with new responsibilities due to the absence of husband and also fear that they might be abandoned (Kana'iaupuni 2000; Salgado de Snyder 1993). At the same time, due to the absence of bi-national datasets that could be used to compare Mexican migrants and non-migrants across borders, quantitative studies examining the impact of U.S. migration on union stability among migrant families has been scarce (see the only exception Fank and Wildsmith 2005). More studies have focused on the assimilation of immigrants in the receiving societies in terms of family behaviors such as fertility levels and gender roles (Andersson 2004; Bean, Berg, and Van Hook 1996; Boehm 2008; Cooke 2006; Itzigsohn and Giorguli-Saucedo 2005; Parrado and Flippen 2005), as well as how Mexican immigration contributes to understand racial disparity in union dissolution patterns in the U.S. (Phillips and Sweeney 2005; Zhang and Van Hook 2009).

While many studies have been devoted to examining the assimilation of immigrants into the mainstream in the receiving society in terms of family behaviors such as fertility levels or

gender roles in the household, studies that compare family behaviors of immigrants and their non-migrant counterparts in the origin have been scarce (Clark, Glick and Bures 2009; Glick, 2010). Also, most studies on Mexican migrants in the United States have been limited by the lack of data on legal status and mode of entry, the information of which might reflect significant variation in terms of selectivity and structural assimilation and have important consequences for understanding family behaviors (Clark, Glick and Bures 2009; Glick, 2010). In this paper, I aim to extend previous literature on immigrant assimilation and changing family behaviors by examining how U.S. migration experience affects union stability by comparing Mexican male household heads with their non-migrant counterparts remaining in the origin and how the impact of U.S. migration experience on union stability might vary by legal (documentation) status of the immigrants.

While the very limited quantitative studies on Mexico-U.S. migration and union stability have provided important insights on how U.S. migration experience might increase the risk of union dissolution among migrants due to changing normative values at the individual and community level (Fank and Wildsmith 2005), they have not examined how the impact of U.S. migration might vary by union type or union duration. However, factors affecting union dissolution might vary between cohabitating unions and legal marriages (Brines and Joyner 1999; Andersson and Philipov 2002; Manning 2004; Wu and Musick 2008), as well as religious and non-religious unions (Brown, Orbuch, and Bauermeister 2008; Lehrer 2004). The impact of migration on family behaviors also varies by the life stage of the migrant (Jasso 2003; Kulu and Milewski 2007). Taking a life-course perspective, this study provides new insights to the literature on immigrant assimilation and family demography by examining how the impact of U.S. migration on union dissolution might vary by union type and union duration. Specifically, using the Mexican Migration Project data from 1997 to 2016, this study attempts to answer the following research questions: 1) Does U.S. migration increase risk of union dissolution among Mexican male migrant household heads compared to their non-migrant peers in the origin? 2) Does the effect of U.S. migration on union dissolution vary by union duration, union type and legal status (U.S. documentation) of migrants? 3) How does community context (measured by U.S migration prevalence and immigrants' transnational involvement in the community) affect Mexican male household heads' risk of union dissolution?

Theoretical Motivation

Migrant Assimilation and Changing Family Behaviors

An extensive body of research on immigration has been devoted to understanding the assimilation and adaptation process of immigrants in receiving societies. Different theoretical perspectives have been proposed to understand the adaptation and assimilation trajectories of immigrants in the United States. The classic assimilation theory suggests that immigrants will eventually assimilate into the American mainstream and adopt values and norms of the mainstream, though the mainstream values and norms might also be influenced by immigrants to some extent (Gordon 1964; Alba and Nee 1997). Meanwhile, segmented assimilation theory suggests that immigrants follow varied paths of assimilation depending on the country of origin and race: while some (white) immigrants might assimilate into the mainstream, poor immigrants and immigrants of color might assimilate into the minority underclass or selectively assimilate into mainstream culture but remain highly attached to the ethnic culture and values of origin (Portes and Zhou 1993;

Portes and Rumbaut, 2001). Studies on the impact of Mexico-US migration on family change have largely focused on how gender relations, fertility behaviors change after being exposed to U.S. norms and culture. A few studies have found that exposure to U.S. ideology of gender equality might make immigrant Mexican women develop a greater expectation for egalitarianism in gender roles in the household with exposure to U.S. culture (Pessar 1999; Foner 2002). Lindstrom (2002) finds that Mexican women that migrate to U.S. show lower levels of birth probability while in the U.S. and also fewer total birth. Meanwhile, studies on immigrants in European societies find first-generation immigrants living in Sweden for more than 5 years have similar fertility levels as natives (Andersson 2004). Studies on impact of internal migration on family behaviors also find that migrants often adapt to fertility levels of natives at the destination (Lindstrom 2003; Kulu 2005 & 2006).

Another line of the literature on immigration however emphasizes the importance of transnational connections and how they might enforce norms and values of the origin among immigrants, particularly immigrants of low status in the receiving society. A number of studies argue that it is important to view the adaptation process of immigrants from a transnational perspective and that immigrants (first-generation) often maintain close family ties as well as social networks in country of origin while they stay in the receiving society (Aguilera 2004; Itzigsohn and Giorguli Saucedo 2002 & 2005; Levitt, 2001; Morawska, 2003; Parrado and Flippen 2005; White and Johnson 2016). Mexican migrants are shown to retain and sometimes even reinforce familial norms and behaviors of the origin (Parrado and Flippen 2005). For instance, Mexican immigrants might reinforce gender roles in the family or value marital and family continuity even more when they are frustrated by low status and low self-esteem in the receiving society (De Snyder and Diaz Pirez, 1996; Mahler, 1999; Chávez, Edelblute, and Korver-Glenn 2016; Walter, Bourgois, and Loinaz 2004; Choi 2018). While some studies suggest that immigrant Mexican women might develop more expectation for egalitarianism with exposure to U.S. culture (Pessar 1999), others argue that immigrant women might depend even more on their husband than their non-migrant peers (Parrado and Flippen 2005), since immigrant women often have fewer social networks in the receiving society when migration is more driven by migration networks of the male migrants (Curran and Rivero-Fuentes 2000; Livingston 2006). Under these circumstances, it is unclear whether U.S. migration will indeed increase union instability among Mexican migrants.

Overall, previous studies have provided competing hypotheses on the potential impact of U.S. migration experience on union stability in immigrant families. In addition, some of the difference in family behaviors (e.g., union dissolution) observed between migrants and their non-migrant counterparts in the origin or between migrants and their native counterparts in the destination might due to the socioeconomic status or selectivity of migrants themselves, rather than varied norms towards family or marriage (Bean, Berg, and Van Hook 1996; Clark, Glick, and Bures 2009; Glick 2010; Lee and Bean 2004; Lindstrom and Saucedo 2002). Migrants are selective in many ways compared to those remaining in origin, conditional on country of origin and mode of entry (Feliciano 2005). Information on legal status and mode of entry provides important information on selectivity and thus have important consequences for understanding assimilation processes and family behaviors after migration (Clark et al 2009; Massey and Capoferro 2004). However, most studies on Mexican migrants in the United States have been limited by the lack of data on legal status and mode of entry. This study fills this gap by incorporating information on legal status into the discussion on migration and changing family behavior.

Prior Findings on Pathways from Migration to Union Dissolution

Migration is often considered as a family strategy to diversify risks for the collective good of the whole family (Stark and Lucas 1988; Massey et al, 1993; Taylor 1999). However, family members involved in the migration process might experience different levels of returns. Even when couples migrate together, family migration often benefits the man's career more while has a negative impact on the woman's well-being (Mincer 1978; Boyle et al. 2008; Cook 2001), which could jeopardize the relationship of the couples. Muszynska and Kulu (2007) shows that couples in Russia who move repeated over long distance are much more likely to experience union dissolution compared to who do not move or move only once. Another study on internal migration and union dissolution in Austria finds that repeated migration is associated with higher odds of marital disruption regardless of migration distance (Boyle et al 2008). In the context of Mexico-U.S. migration, some studies suggest that Mexican couples face challenges when immigrant men often are committed to maintain the traditional gender roles and male dominance while women are eager to embrace mainstream gender norms in U.S. (Hondagneu-Sotelo 1999; Itzigsohn and Giorguli-Saucedo 2002 & 2005; Boehm 2008).

Migration can also result in disruption in family stages and support networks, which have various impacts on family members involved in the migration process (Antman 2013; Glick, 2010; Nobles 2011). Frank and Wildsmith (2005) suggest that international migration disrupts social ties and social controls from the origin that is beneficial for union stability. After migrating to the U.S., male household heads are no longer subject to observations and judgment from kin and social networks back at their hometown and thus are more likely to engage in risky behaviors that could disrupt union stability. International migration might also lead to changes in gender norms and other normative values that are associated with union stability. Migrants who are more exposed to U.S. culture are more likely to consider divorce and act upon it compared to non-migrants or migrants with less extensive U.S. experience (Frank and Wildsmith 2005; Hill 2004). Qualitative studies also show suggest that couples living across borders are often conflicted with different gender norms in sending and receiving communities (Hirsch 2003).

International migration not only affects union stability by shifting normative values towards marriage at the individual level, but also by changing normative values at the community level. Foner (1997) suggests that transnational links between immigrants and communities of origin not only keep immigrants influenced by practices and norms in the origin, but also lets communities of origin be constantly influenced by norms in the receiving society. Previous empirical studies have also suggested for the positive impact of networks and cumulative migration on driving more migration as well as changing norms and values in the origin (Garip and Asad 2016; Massey et al. 1993; Kandel and Massey 2002; Massey and Espinosa 1997; Sanderson 2014). In communities with high migration prevalence and extensive migration networks, a culture of migration can be formed and normative influence becomes another important mechanism to affect migration behavior besides more information and lower cost of migration associated with networks (Garip and Asad 2016). Community contexts are shown to have a significant impact on union dissolution. For instance, the risk of divorce is often found to be higher in urban areas than in rural areas, not only because of the local marriage market, but also because of the less stigma attached to divorce in a more urban environment (Kalmijn and Uunk 2007; Lyngstad 2006; Lyngstad 2011).

Communities of migrant origin and destination are often considered to be linked by migrant social networks. Migration not only remits money, but also ideas and information through migrant networks (White and Johnson 2016) with higher migration prevalence are more likely to adopt norms from migrant-receiving societies and that are more favorable for divorce due to return migration from U.S. or social networks across Mexico and U.S, which increases union instability among individuals living in the community (Frank and Wildsmith 2005).

While previous studies on immigrant assimilation and transnationalism have provided important insights on how U.S. migration experience might increase the risk of union dissolution due to changing normative values at the individual and community level, they do not examine how the impact of immigration might vary by union type or union duration. Yet, the literature of family demography suggest that factors affecting union dissolution might vary between cohabitating unions and legal marriages (Brines and Joyner 1999; Andersson and Philipov 2002; Manning 2004; Wu and Musick 2008), as well as religious and non-religious unions (Brown, Orbuch, and Bauermeister 2008; Lehrer 2004). Studies on migration, family change and life course argue that the impact of migration also varies by the life stage of the migrant (Jasso 2003; Kulu and Milewski 2007). With detailed retrospective life history information collected on Mexican migrants in the U.S., this study contributes to previous literature on the impact of migration on union disruption by taking a life-course perspective and examining its varied impact by the legal status of the immigrants, timing and duration of the migration. The hypothesized direction of effects of key individual and community-level migration characteristics on risk of union dissolution are presented in *Table 1*.

Data and Methods

Data

This paper uses the Mexican Migration Project (MMP) database MMP161, which include repeated cross-sectional data collected through 1982 till 2016. The Mexican Migration Project (MMP) provides one of the very few bi-national datasets that collect retrospective life history data for both migrant and non-migrants in both sending and receiving communities. Detailed information are collected on the household heads' life-time U.S. migration history, along with sociodemographic information such as union history, labor history, property ownership history as well as presence of children in each year, which makes the MMP ideal to study the complex interrelationship between migration on family changes. MMP sample is not representative of Mexico, with more communities selected in Western Mexico with potentially higher migration prevalence. Although it is not representative of the population at large, it has been widely used to understand migration process of Mexicans to the United States (Curran and Rivero-Fuentes 2000; Garip 2016; Lessem 2017; Massey and Riosmena 2010; Riosmena 2016). Most importantly, MMP collects data on legal status (U.S documentation) for each year the migrant is in the U.S. It also includes a large sample of Mexican undocumented immigrants that are often not available in other surveys, which allows for comparison of characteristics and behaviors of documented and undocumented migrants (Massey and Zenteno 2000; Massey and Capoferro 2004). Data are organized into person-year records for discrete-time event history analysis for this study, which will be discussed in more detail in the methods section.

For analysis in this paper, sample is first limited to male household heads for whom detailed migration, union, labor, education history information are collected so that I can determine relative timing of life-course events. MMP ethnoscapes uses a type of de jure enumeration, so household head is the individual who customarily serves as the head of household, regardless of whether he/she is in the sending community at the time of the interview (Riosmena 2016). Migrants are tracked down and interviewed in the U.S. Female household heads are excluded due to their small sample size and disproportional higher likelihood of being in divorced households. Also, although MMP collects migration history and background characteristics for the household head's spouse (mainly wives), it's limited to the current spouse at the time of the survey, so information of spouse are used in this analysis since those divorced do not report information on their ex-spouse.

The final analytical sample is further limited to male household heads surveyed between 1997-2015 for whom causes of union dissolution can be identified¹. In the earlier waves, individuals whose union ends due to divorced or separated cannot be differentiated from those who are widowed and thus are not included in the analysis. Another 89 observations surveyed between 1997-2015 for which dissolution causes cannot be identified are also dropped from the final analysis. Following the approach adopted by Frank and Wildsmith(2005), the analysis is further limited to first unions that are formed after 1960, since previous studies suggest that union patterns changed dramatically around 1960s and have resulted in higher divorce rates in the United States (Bumpass 1990) and also Mexico (Lopez 2001). Unions in this paper include formal marriages recognized by church (religious unions) or states (civil unions), and also informal consensual unions. Prior studies also used the broader definition of union/marriage since consensual unions are quite common and widely accepted in Mexico (Frank and Wildsmith 2005; Landale and Fennelly 1992; Richter 1988). In this paper, around 16% of the first unions are consensual unions. Only first unions are included because that first unions are likely to behave differently from subsequent unions and that second or higher-order unions are very rare in the sample. The final sample includes 12,730 unique male household heads from 109 communities whose first unions are formed after 1960 and are 70 years old or less at the time of the survey. A person-year record was created in which each male household head contributes one year of information for each year they are in a union. Observations are right censored at the time of the survey or when unions end due to death of spouse. The final sample is comprised of 251,406 person-year records. Descriptive statistics of the analytical sample are provided in *Table 2*, which will be discussed in more detail in the results section.

Variables

The full list and definition of all variables are presented in in *Table 3*. Below I provide further details on key dependent and independent variables.

Dependent variable

Union dissolution in this paper includes separation and divorce. This may lead to some overstatement of disruption if individuals who report being separated at the time of the survey but get back together later. A binary variable is created to indicate the status of union dissolution in

¹ Mexican Migration Project starts to collect information on reasons of union dissolution starting in 1997 (communities 53-161).

each person year (from the start of the union till the end of union dissolution or the time of the survey). Individuals whose union ends due to death of spouse are right censored. The variable takes on a value of 1 if separation or divorce is reported, and 0 if otherwise.

Key independent variable

Migration characteristics at the individual level

This paper aims to understand both short-term and long-term effects of Mexico-U.S. migration. To understand the impact of U.S. migration from a life-course perspective, I differentiate migration experience before and after union formation. MMP only collects data on first and last trip of internal migration, so internal migration status cannot be identified as person-year basis and thus measures of internal migration are not included as covariates in this paper.

Being in the U.S. in any person year after union formation is included to capture the temporary effect of immigration on union stability. For each person year, an indicator is created on whether the Mexican male household head is currently in the U.S. It is worth noting that since all the time variant independent variables are lagged by one year, the estimated effect of this variable will be the effect of being an U.S. migrant in any given year on union dissolution in the following year.

Cumulative migration experience before union formation refers to total time spent in U.S. till the year when unions begins. The original scale reported in the questionnaire to measure U.S. migration experience is months, but is translated into years for easier interpretation in this paper.

Cumulative migration experience during union formation refers to the total years spent in U.S. between the year union begins and the year the union ends (separation or divorce) or become censored (the year spouse died or the time of the survey for those unions that never ended).

U.S. documentation while in U.S. is included to understand how the impact of U.S. migration on union dissolution might vary by the legal status of the migrants. U.S. documentation is reported by the migrants for each year they are in the U.S. The original documentation include 12 categories, but it is reclassified into three major categories in order to retain sufficient sample size for all documentation types. The new categories are: 1) legal resident or citizen, which includes 5 original categories (legal resident, citizen, Silva letter, Refugee; PTAT, DACA. Very few people belongs to the category of the last three categories in the MMP sample)); 2) temporary or contract visa, which includes contract-Bracero, contract-H2A (agricultural), temporary worker, temporary tourist/visitor; 3) Undocumented. Among male household heads who ever migrated to the U.S., 65% of them are undocumented for at least some of their time as a migrant in the U.S., though they might first arrive in the U.S. as documented with a temporary visa or eventually become legalized as a legal resident or citizen.

Migration characteristics at the community level.

Community migration prevalence ratio is used as a proxy of community exposure to change in normative values due to migration in any given year. It is calculated as the number of people with international migratory experience divided by the total number of people alive. According to the MMP documentation, it is comparable across communities and time.

Immigrant transnational links in the community is measured by a single principle factor score estimated by 10 items tapping immigrants' involvement in the community's development

and activities. The 10 items used in the principle factor analysis are: migrant helped to finance electric service, migrants helped to finance water service, migrants helped to finance public lighting, migrants helped to finance plaza, migrants helped to finance public market, migrants helped to finance sports facilities, migrants helped to finance churches, migrants helped to finance schools, migrants usually return to community for Patron Saint's Day, special mass in community for migrants on Saint's Day. Only one principle factor with an Eigenvalue value of 4.17049 explaining over 90% of the variance is retained. All items listed above are positively correlated with the final score of migrant involvement in the community, with the items indicating migrants having helped to finance schools, plaza, light, water and electricity having the most weights. The complete list of items used for constructing the factor score and their scoring coefficients are presented in Appendix 1.

Other control variables

Additional explanatory variables that are associated with risk of union dissolution are also included in the analysis as controls, such as age at union formation, union cohort, union type and union duration (Ono 1999; Lyngstad and Jalovaara 2010; Teachman 2002). Presence of children (number of minor children and adult children) is included as past studies have shown that the presence of children discourages union dissolution (Boyle et al 2008; Manning 2004; Waite and Lillard 1991) and the impact of children also varies by the age of children (Kalmijn 2005; Hewitt 2009). Socioeconomic status of male household heads (such as education, employment, occupation category, property ownership) that may affect union stability are also included as control variables (Hansen 2005; Kalmijn, Loeve and Manting 2007). Metropolitan type of the community of origin is also included as union dissolution risk is also shown to be related to the location of the community, with union dissolution rate often higher in urban areas than rural areas (Kalmijn and Uunk 2007; Lyngstad and Jalovaara 2010).

Method

The analysis proceeds through three steps. First, I present a descriptive comparison of key demographic and socioeconomic characteristics, as well as community contexts of male household heads by migration status. In addition, Kaplan-Meier survival estimates are presented to show patterns of union duration by key time-invariant measures. Secondly, I use multilevel discrete-time hazard models to estimate both the temporal and long-term effects of U.S. migration experience on union dissolution for all individuals in the sample. Lastly, I use multilevel discrete-time hazard models to estimate how immigrant status (legal status) and community-level factors mediate the impact of international migration on risk of union dissolution among Mexican-origin male household heads' who have migrated to U.S. prior or after union formation only, after observing individuals with any U.S. migration experience are selective in many ways compared to their non-migrant peers.

Discrete-time hazard models are used due to relative coarse measurement of duration and the existence of tied-observations (Allison 1982; Box-Steffensmeier and Jones 2004). Duration dependency is modeled by union duration and its squared term. Interaction terms of migration status (being in U.S. during any year when the individual is in union) and union duration as well as its squared term are included to examine how the temporal effect of U.S. migration might vary by union duration in the full sample. Also, since male household heads are clustered at the

community level in the sample, multilevel modeling is used to address the issue of correlated error within communities. Likelihood ratio tests show that the multilevel models are significantly better than one-level logistic regression, though the intraclass correlation statistics for the models are relative low after controlling for community-level characteristics. A random intercept at the community level is included to control for community-level variation in risk of union dissolution. A random intercept model rather than fixed effects mode is used for two reasons. First, this study aims to examine the impact of migration prevalence at the community-level besides the impact of migration at the individual level. Second, the main interest of this paper is to estimate a population-level mean effect rather than community-context specific effect of migration experience on risk of union dissolution.

The final multilevel discrete-time logistic hazards model estimating odds of union dissolution for the overall sample is specified as the following:

$$\text{Log} \left[\frac{p_{ijt}}{1-p_{ijt}} \right] = b_0 + b_1 X_{1ij(t-1)} + b_2 X_{2ij(t-1)} + b_3 X_{1ij(t-1)} * X_{2ij(t-1)} + b_4 S_{ij(t-1)} + b_5 Z_{ij(t-1)} + b_6 C_j + b_7 V_{j(t-1)} + \mu_{0j}, \text{ where}$$

p_{ijt} is the probability of individual i in community j to experience union dissolution in year t;

X_1 refers to individuals' presence in the U.S. in year t-1 (1=in the U.S., 0=otherwise);

X_2 refers to union duration and its squared term in year t-1;

S is a vector of individual-level time constant explanatory variables, including age at marriage, union type, marriage cohort, cumulative migration experience before union formation

Z is a vector of other key individual-level time-varying variables at time t-1, including cumulative migration experience after union formation, education, employment status, occupation category, presence of children (having a new born in the prior year, number of minor and adult children).

C is a vector of community-level time constant variables, including metropolitan category of community and U.S. immigrant involvement in development and activities of the community.

V is a vector of community-level time-varying variables at time t-1, including migration prevalence ratio, community population

b_0 is the random intercept's fixed component

μ_{0j} is the community-level random coefficient, which measures the deviation of each context from b_0 .

All time-varying covariates are lagged by 1 calendar year to ensure that all characteristics of independent variables (eg, U.S. migration experience) are measured prior to the occurrence of union dissolution. Analysis for the migrant-only sample also includes interaction terms of union type and U.S. documentation (legal status). Weights are only applied for descriptive statistics, per guidelines of the MMP documentation. Based on the ethnosurvey design of the MMP data, the weights are solely a function of the community dummies and the survey place and are thus not necessary for regression or causal modeling (Pren 2012). The results are only representative of the population of all sampled communities, not all population of Mexico.

Results

I first present descriptive statistics of male household heads in the MMP sample by whether they have any U.S. migration experience or not (Table 2), as well as Kaplan-Meier survival estimates of union duration by key time-invariant measures (Figure 2a and 2b). Then I estimate how U.S. migration experience affects union stability overall, as well as how the impact of U.S. migration experience might vary by the duration of the union, based on the full sample with all male household heads (Table 4). Lastly I present results from discrete time multilevel hazard models based on male household heads with U.S. migration experience only, with a focus on how the impact of U.S. migration vary by the legal status of the migrant and the type of the union, and how transnational family connections and community-level factors mediate the impact of U.S. migration on union stability among Mexican male household heads with any U.S. migration experience (Table 5).

Descriptive Statistics

Table 3 provides weighted descriptive statistics of migrant and non-migrant male household heads in the MMP sample whose first unions are formed between 1961 and 2016. Among the 12,730 male household heads included in the analytical sample, 3,706 (29% of the sample) have migrated to U.S. at least once at some point of their life. Among those male household head with U.S. migration experience, 20 % of them have only migrated prior to union formation, 53% have only migrated after their first union formation, 27% have migrated both before and after union formation, as shown in *Figure 1*. Among all the male household heads with U.S. migration experience, they have stayed in U.S. for 2.4 years before marriage/union formation on average. Meanwhile, their average cumulative migration experience after marriage till union ends or the time of the survey is about 6 years. The descriptive statistics suggest that U.S. migration is an important life-course event affecting quite a substantial proportion of Mexicans in unions, particularly those in communities with high migration prevalence, as those selected in the MMP sample.

The risk of union dissolution in this sample is relatively low in Mexico, which is consistent with previous studies on union stability in Mexico, but the risks vary significantly by U.S. migration experience of the male household heads. Among male household heads with no U.S. migration experience, only 2% of them reported having being divorced or separated by the time of the survey. Yet, among male household heads who have ever migrated to the U.S., 5% of them have experienced separation or divorce after their first unions are formed. As shown by the Kaplan-Meier survival estimates of union duration (Figure 2a), unions also tend to fail much faster among Mexican male household heads who have ever migrated to U.S. before union formation compared to their non-migrant counterparts remaining in the origin and the difference is significant based on the log-rank test of equality of survival functions ($p < .01$).

The likelihood of union dissolution also varies by union type. Although consensual union is quite common in Mexico, those in consensual unions are much more likely to end in dissolution, compared to civil unions or religious unions. As shown in Figure 2b, while less than 3% of unions with religious element (religious union or religious and civil union) have ended in divorce or separation, 7% of civil unions and over 10% of consensual unions have ended by the 50th year (the

longest union duration observed in the sample is 53 years). Consensual and civil unions are also significantly more likely to experience disruption soon after the union formation. Interestingly, although migrants they are more likely to experience union disruption, they are less likely to be in consensual unions while more likely to be in formal civil or religious unions as shown in Table 3. Meanwhile, migrants captured in the MMP sample are also more likely to be in more recent union cohorts after 1980 compared to their non-migrants, although the union dissolution risk does not seem to vary significantly by union cohort, based on the Kaplan-Meier survival estimates of union cohort presented in Appendix 2.

Migrants and non-migrants also vary significantly in terms of education, occupation and community-level characteristics. Male household heads with U.S. migration experience on average have lower levels of education and are much more likely to work in manufacturing while less likely to work as professionals and managers. This negative occupational status selection of Mexican migrants in the U.S. is also found in prior studies (Massey and Espinosa 1997; Garip 2016), though it is likely to largely driven by the undocumented migrants. Male household heads with U.S. migration experience are also less likely to own property or business compared to their counterparts with no U.S. migration experience. Lastly, there is a significant variation in community-level characteristics by male household heads' U.S. migration experience. Male household heads with U.S. migration experience are significantly more likely to come from communities in non-metropolitan areas with smaller populations, but higher migration prevalence.

Regression Analysis

Overall Impact of U.S Migration on Union Dissolution among Mexican Male Household Heads

Table 4 presents the hazard ratios from multilevel discrete-time event history analysis modeling the relationship between migration and union dissolution. Results suggest that U.S migration experience has significant short-term and long-term effects on union stability. The models are estimated sequentially. The baseline model (Model 1) shows that male household heads who are in the U.S. in the prior year are 2.2 times as likely to experience a union dissolution in the current year compared to those who are not migrants to U.S., after controlling for age at first union, union cohort and union type. In addition, each additional year of cumulative U.S. migration experience prior to union formation is associated with 8 percent higher risk of union dissolution ($p < 0.01$), while each additional year of U.S. migration experience after union formation is associated with 3.5 percent higher risk of union dissolution though the impact is only marginally significant. Models 1 also includes measures of duration dependency besides measures of migration characteristics. The coefficients of duration indicators operate in the way as expected: risk of union duration first increases and then declines with union duration.

Model 2 adds in interaction terms of presence in the U.S. and union duration to examine whether the short-term effect of U.S. migration might vary by union stage. The coefficients of the interaction terms of presence in the U.S. and union duration (as well as its quadratic terms) suggest that the temporary effect (being in the U.S. in the prior year) has a stronger effect during the earlier stages of the union. The detrimental effect of U.S. migration decreases with union duration, potentially due to the fact that unions that stay longer might be intrinsically more stable and thus

less likely to be affected by migration-induced separation. Meanwhile, union type is also a significant predictor of union dissolution. Male household heads who are in consensual unions are 5 times as likely to experience union disruption compared to those in formal religious unions. But the impact of union cohort is not statistically significant (coefficients not shown in Table 4 due to space constraints). Mexican male household heads who form unions in most recent decades are no more likely to experience union dissolution compared to their earlier cohort counterparts. As expected, male household heads who marry/form union at a younger age are more likely to experience union dissolution.

Model 3 and Model 4 introduce controls for individuals' socioeconomic status such as education, employment status and occupation, household wealth as well as family composition. Descriptive statistics in Table 3 suggest that Mexican male migrants to the U.S. are negatively selected in terms of education and are more likely to work in occupations with lower prestige such as manufacturing and other traditional blue-collar occupations. Results in Model 3 show that both the long term and temporal effect of U.S. on union stability are still significant and substantial even after controlling for education and occupation. The impact of education on union stability is limited, which is likely to be partly due to the overall low education among male household heads in the MMP sample. Meanwhile, employment status has a strong impact on risk of union dissolution. Male household heads who are employed in the previous year are much less likely to experience union disruption in the current year compared to those who are unemployed regardless of occupation. The impact of type of occupation on union stability does not seem to vary significantly though ($p > 0.1$ based on F statistic). Model 4 further adds in household-level characteristics, such as household ownership of land, property and business. As expected, male household heads with more wealth (owning property) are less likely to experience union disruption. Familial ties such as presence of children also matters for union stability. Having minor children decreases the risk of union dissolution, though the impact of adult children is insignificant. The introduction of individual-level human capital and household-level wealth and familial ties decreases the impact of union type, their mediating effect on U.S. migration experience on union dissolution is limited. Even after controlling for family and individual-level background characteristics, Mexican males who have migrated to the U.S. (whether before or after marriage) are much more likely to experience union disruptions compared to those with no U.S. migration experience.

Model 5 introduces community-level migration and urbanization characteristics. The results in Model 5 suggest that higher migration prevalence at the community level is significantly associated with higher risk of union dissolution at the individual level ($p < 0.01$). The estimated coefficient indicates that each 1 percentage point increase in migration prevalence ratio is associated with 2 percent higher risk of union dissolution among male household heads. Although the magnitude of estimated effect is subject to individual interpretation, the decrease in coefficient sizes of all individual-level migration variables suggest that at least some of the observed impact of U.S. migration experience at the individual level is explained by the community-level migration prevalence. One possible explanation is that individual-level migration status is highly correlated with community-level migration prevalence, as shown in the descriptive statistics in Table 2. Another possible reason is that couples in communities with higher migration prevalence might be more influenced by family norms in the U.S. and are more likely to be receptive to behaviors such as divorce. Meanwhile, both community type and population are not significant predictors of risk of union dissolution. Although being in metropolitan communities (results not shown in the Table 4

due to space constraint) or communities with a larger population is associated with higher union dissolution risk, the associations are not significant after controlling for other individual-level characteristics.

Overall, the regression results in Table 4 suggest that the impact of U.S. migration experience (both cumulative U.S. migration experience before and after union formation) is associated with much higher risk of union dissolution, even after controlling for other individual-level demographic and socioeconomic characteristics as well as community contexts that might affect union stability. As shown in the most saturated model (Model 5), each additional year of U.S. migration experience prior to union formation is associated with 6 percent higher risk of union dissolution, while each additional year of U.S. migration experience after union formation is associated with 9 percent higher risk of union dissolution. In addition, the temporal detrimental effect of presence in U.S. on union disruption is substantial and varies by union duration. During the earlier years following union formation, Mexican male household heads who are migrants in the U.S. could be as much 4 times as likely to experience union dissolution in the subsequent year compared to those who are not, but the detrimental temporal effect of being a migrant in the U.S. on union stability decreases as the union lasts longer.

Varied Impact of U.S. Migration on Union Dissolution by Legal Status and Union Type

The above analysis suggest that Mexican male household heads with U.S. migration experience overall are more likely to experience divorce or separation, which provides strong empirical evidence that U.S. migration experience associated with exposure to U.S. norms towards marriage and thus increase likelihood of union dissolution. Yet, migrants might experience various levels of assimilation to culture and norms in the receiving society. Legal status is one of the key predictors of immigrant assimilation, particularly among Mexican migrants, among whom the share of undocumented immigrants are high. Therefore, this section focuses on a subsample of male household heads who have ever migrated to the U.S. only, and examines on how the impact of U.S. migration experience might vary by legal status of the immigrant and union type, as well as how transnational links might buffer some of the potential detrimental impact of U.S. migration on union stability among Mexican male household heads with U.S. migration experience.

Table 5 presents results from multilevel discrete-time hazard models predicting odds of union dissolution among Mexican male household heads who have ever migrated to the U.S. The models are estimated sequentially. Model 1 shows that union type, cumulative migration experience before marriage, as well as short-term effect of presence in the U.S. are significant predictors of odds of union dissolution among Mexican male immigrants. The impact of union type is even stronger for predicting union dissolution among migrants compared to the overall sample. Among male household heads with U.S. migration experience, those in consensual unions are 7.7 times as likely to experience union dissolution in any given year compared to those in religious unions, after controlling for union cohort, age at first union as well as union duration and migration experience. In addition, legal status during the time when the migrant is in the U.S. has a significant impact on likelihood of union dissolution. Mexican immigrants who are in the U.S. as a legal resident or citizen in any given year are 3.3 times as likely to experience union disruption in the next year compared to their counterparts who are not in the U.S. in that year. However, those who are in the U.S. as an undocumented immigrant or on temporary visa (e.g., contract worker) in

any given year are not significantly more likely to experience union dissolution in the next year compared to their counterparts who remain in the origin.

To understand whether the impact of U.S immigrant status vary by union type, Model 2 introduces interaction terms of U.S. documentation and union type. Results in Model 2 suggest that the impact of being a legal resident or undocumented is stronger for those in civil unions compared to those in religious unions. One possible explanation might be that those in religious unions might be more impacted by the traditional Mexican norms and culture, and they are less likely to adapt to U.S. norms towards marriage and family behavior even after being an immigrant in the U.S. Interestingly, the impact of being in U.S. is not stronger for consensual unions, though the risk of union dissolution is highest among consensual unions overall compared to civil or religious union. Model 3 further includes individual background characteristics such as education, occupation (results not shown due to space constraint) as well as proxies of transnational ties that might buffer the impact of U.S. migration experience. As shown in Model 3, the impact of union type, cumulative migration experience after marriage decreases after introduction of family ties, but the estimated short-term impact of legal status for union dissolution among civil unions is still significant. Presence of young children, property and business in country of origin (Mexico) has a moderate mediating impact on the deleterious impact of U.S. migration on union stability. Having property in Mexico is associated with 51 percent lower risk of union dissolution among Mexican male household heads with U.S. migration experience. Meanwhile, having property in U.S. is associated with higher likelihood of union dissolution, though the impact is not statistically significant. All these factors are likely to be an indicator that the migrants have more networks or more motivation to return to Mexico and thus are associated with lower likelihood of union dissolution among the migrants.

Community-level migration prevalence is associated with higher odds of union dissolution among Mexican male household heads with U.S. migration experience, as shown in Model 4. Yet, other community-level characteristics such as migrant involvement in the development and activity of the community of origin does not seem to have a significant buffering impact on the detrimental impact of U.S. migration on Mexican males' union stability. This could be due to competing effects of migrant involvement in the community. On one hand, higher levels of migrant involvement (investment) in the community of origin might suggest for stronger connections between the migrants and their family origin and thus is beneficial for union stability, but on the other hand, those communities also have higher migration prevalence and thus might be more exposed to U.S. norms towards gender relations and union behaviors. Lastly, U.S. immigration policy environment measured by visa accessibility for Mexican immigrants does not appear to have a significant impact on union stability among Mexican male migrants, although previous studies suggest that it is highly correlated with presence of undocumented migrants and likelihood of family reunification among Mexican migrants in the U.S. (Massey and Espinosa 1997).

Even after controlling for individual, household and community-level contexts as well as U.S. immigration policy environment towards Mexican migrants, the negative impact of U.S. migration, particularly temporal effect of being in the U.S. is still quite substantial and statistically significant and the impact of U.S. migration status varies significantly by legal status and union type. Figure 2 presents the predicted probability of union dissolution by type of U.S. documentation and union type among Mexican male migrant household heads based on Model 4. The graph shows that while the impact of being an immigrant in the U.S. on union stability is

minimal for those in religious unions regardless of legal status, the impact of being an immigrant in the U.S. on male household heads' risk of union dissolution is substantial among those in civil or consensual unions. Among male household heads in civil unions, those that are in the U.S. as legal resident or citizen in any given year are much more likely to experience union dissolution in the subsequent year, compared to their counterparts that are not currently in the U.S. or those who are an undocumented immigrant in the U.S. in that year. If legal status attainment is an indicator of structural assimilation, the results clearly show that structural assimilation rather than cultural assimilation of Mexican migrants in the U.S. is more significantly correlated with higher odds of union dissolution. Legal status attainment might also reflect more positive selection in terms of socioeconomic status, which might make Mexican immigrant males more attractive in the U.S. marriage market and thus increase their likelihood of breaking up with their current spouse. Meanwhile, undocumented Mexican immigrants in civil or consensual unions also show higher probability of union dissolution compared to their counterparts not currently in the U.S., but the impact of being an undocumented immigrant on union dissolution is only marginally significant for male household heads in civil unions.

Conclusion

This study is among one of the very few studies that quantitatively examines the impact of U.S. migration on union stability among Mexican male household heads. Using data from the Mexican Migration Project and adopting a life-course perspective, this study provides strong evidence for both the short-term and long-term impact of international migration on union stability, after controlling for other individual-level demographic and socioeconomic characteristics as well as community-level contexts. Migrant male household heads who are in the U.S. in the previous year overall are much more likely to experience union disruption in the current year relative to those who are not in U.S. in the previous year. More cumulative U.S. migration experience the male household head has prior to marriage/union formation is also associated with higher odds of union dissolution. Community-level migration prevalence is significantly correlated with higher risk of union dissolution among male household heads in Mexico. Familial and economic ties in the origin are likely to moderate the relationship between migration and union disruption. Having young children or property decreases the risk of union dissolution among migrants. Overall, this paper provides strong empirical evidence on the impact of international migration on union stability in the Mexico-U.S. migration context.

While previous studies mostly focus on the impact of assimilation or adaptation of Mexican immigrants in the U.S. by comparing Mexican immigrants with their counterparts in the U.S., this study compares the union behavior of Mexican migrants with their non-migrant counterparts from the origin. The results also provide important insights on how structural assimilation and selectivity (measured by legal status and mode of entry) contribute to the varied union behaviors between migrants and non-migrants. The results show that the impact of U.S. migration on union stability varies significantly legal status of the Mexican migrant and by union type. Among Mexican male household heads with any U.S. migration experience, while being in the U.S. as a legal resident or citizen in any year is associated with higher odds of union dissolution in the subsequent year, being an undocumented immigrant or immigrant with temporary work visa is significantly related with higher odds of experience union disruption. The temporal impact of U.S.

migration on union stability is very limited for male household heads in religious unions, but quite substantial for male household heads in civil unions. Among male household heads in civil unions, those who have attained legal resident or citizen status are far more likely to experience union dissolution, compared to those who are temporary migrant workers or undocumented immigrants. On one hand, this might be due to the more positive selection of immigrants who have attained resident or citizen status in terms of socioeconomic status such as education and occupation compared to their undocumented migrant peers, which might make them more attractive in the marriage market in the U.S. On the other, higher socioeconomic status of the legal immigrants might also make them less attached to the culture and social networks from the origin and more adapt to the culture and norms in the receiving society.

This study shows that while cumulative exposure to U.S. culture and norms might affect changing family behaviors among Mexican immigrants, structural assimilation is just as important, if not more. This study also shows that the impact of international migration is highly shaped by their experience in the destination, while immigrants with legal status (who are also more likely to be positively selected in terms of socioeconomic status) might be more likely to change union behaviors, those without legal status (also more likely to have lower social status) are more likely to hold onto their culture and norms of origin. This study shows that the observed variation in family behaviors associated with immigration cannot simply be attributed to exposure to different culture and norms, as it could be largely due to the structural differences and selectivity of migrants. A more integrated approach that takes into consideration of both structural and cultural perspective of the immigration experience could benefit future studies on immigration and changing family behaviors.

While this study advances literature on the impact of Mexico-U.S. migration on union stability by offering important insights on how varied experience at the receiving society depending on the immigrants' legal status might have different consequences for union behaviors of Mexican male migrants, this study is limited by the lack of information on their spouses. Although MMP collects data on spouse of household heads, but it is limited to the current spouse, so this study is not able to include characteristics experience of spouses or migration experience of female migrants. Future studies could examine whether the impact of immigration on union stability is gendered and whether the impact varies by different arrangements of couples' migration (eg, couples migrate together vs when only the wife migrates or the husband migrates). In addition, this study is not able to differentiate the male household heads without U.S. migration experience by whether they have internal migration experience, as MMP only collects data on first and last trip of internal migration, but those internal migrants might also have higher odds of union dissolution. Future studies should also aim to establish a more causal link between immigration and union dissolution. This paper uses cumulative migration experience before and after migration, as well as community migration prevalence as proxies to measure potential exposure to U.S. culture and norms as proxy to measure change in normative values due to migration. More concrete measures could be developed to directly measure stress as well as changes in gender norms or other normative values governing union behavior in order to understand the causal mechanism between migration and union dissolution.

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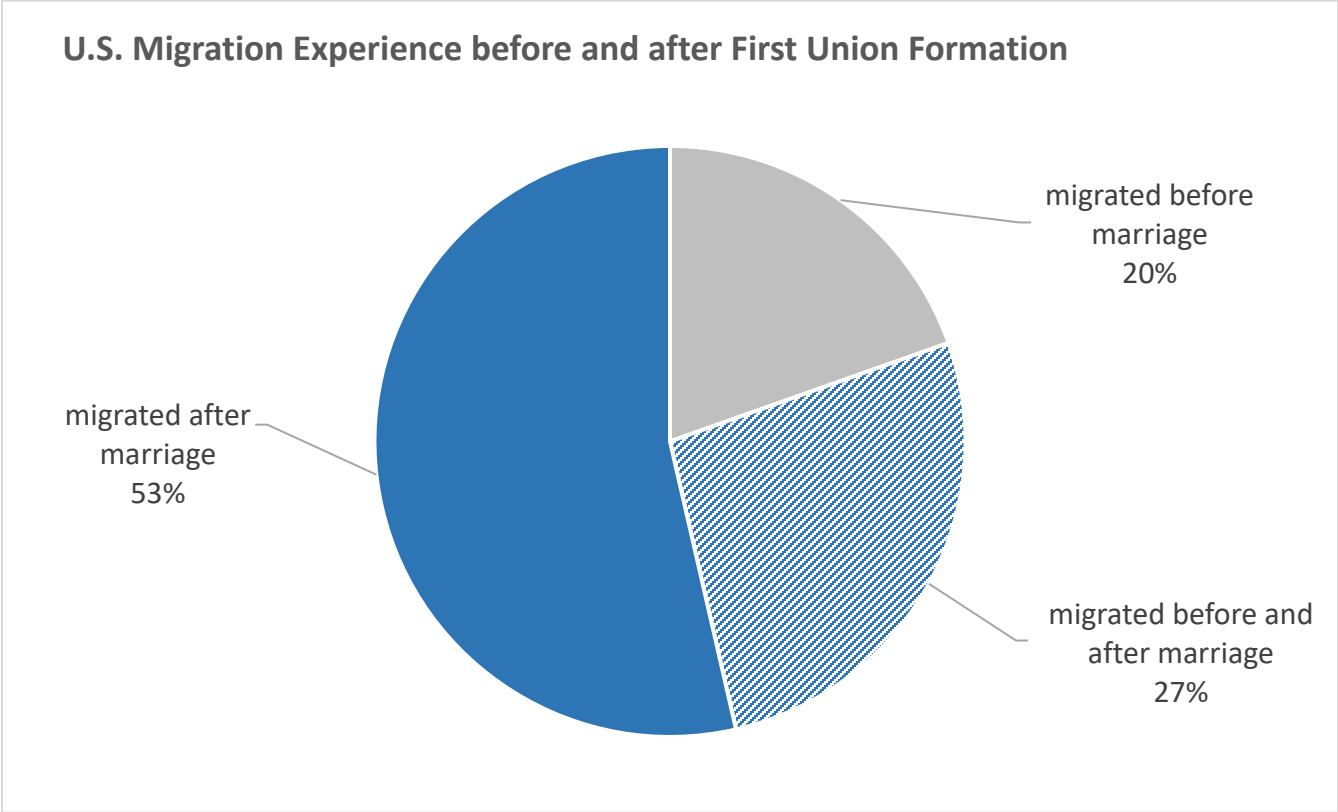
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Figure 1: U.S. Migration Experience before and after First Union Formation among Mexican Male Household Heads



Source: Mexican Migration Project (MMP 161).

Table 1: Expected Direction of Effects of Key Independent Variables on Risk of Union Dissolution

	Expected direction of relationship ^a
<i>Individual-level migration characteristics</i> ^b	
Cumulative U.S migration experience before union formation	+
U.S. Migration Experience after union formation	
<i>Currently in U.S.</i>	+
Cumulative U.S migration experience after union formation	+
U.S. Documentation	
<i>Legal resident/citizen</i>	+
<i>Undocumented</i>	?
<i>Community-level migration characteristics</i>	
Community migration prevalence ratio	+
Migrants' involvement in the development and activities of community of origin ^b	-

Note: ^a + indicates positive effect, - indicates negative effect.

^b The reference group is Mexican male household heads with no U.S. migration experience.

Table 2: Weighted Sample Descriptive Statistics^a by U.S. Migration Experience

Dependent variable	Non-Migrants	Migrants
Union Dissolution(seperated or divorced)	0.02	0.05
Time-invariant independent variables^b		
Age at first union	24.07	24.22
Union type		
<i>Religious union</i>	0.65	0.68
<i>Civil union</i>	0.18	0.19
<i>Consensual union</i>	0.18	0.12
Marriage cohort		
1961-1970	0.13	0.10
1971-1980	0.23	0.20
1981-1990	0.28	0.33
1990-2000	0.24	0.28
<i>after 2000</i>	0.12	0.08
Cumulative U.S migration experience before marriage(yrs)	N/A	2.38
Time-varying independent variables^c		
<i>Individual/household level attributes</i>		
Duration	18.92	17.05
Education		
<i>no education or primary education</i>	0.50	0.58
<i>junior high education</i>	0.25	0.25
<i>senior high education and above</i>	0.25	0.18
Employment status and occupation		
<i>Unemployed</i>	0.05	0.04
<i>Professionals, technicians,managers</i>	0.17	0.08
<i>Agriculture, forestry/fisheries workers</i>	0.22	0.20
<i>Manufacturing, transportation workers</i>	0.36	0.47
<i>Administrative, sales, services workers</i>	0.21	0.21
Land, Property, Business ownership		
<i>Own land</i>	0.13	0.15
<i>Own property</i>	0.87	0.83
<i>Own business</i>	0.28	0.21
Number of children under 18	2.19	1.89
Number of children aged 18+	1.38	1.14
U.S. Migration Experience		
<i>Currently in U.S.</i>	N/A	0.44
<i>Cumulative U.S migration experience after marriage(yrs)</i>	N/A	5.90
<i>Community-level attributes</i>		
Community migration prevalance ratio	12.16	21.28
Community population (thousands)	291.10	170.35
Community type		
<i>Metropolitan area</i>	0.35	0.21
<i>Small urban area</i>	0.27	0.38
<i>Town</i>	0.31	0.33
<i>Rancho (rural village)</i>	0.07	0.08
N	9,024	3,706

^a All characteristics are significantly different at $p < .01$ by U.S. migration experience, except for number of children under 18 and property ownship.

^b Descriptive statistics of time-invariant measures are based on the year when the union begins.

^c Descriptive statistics of time-varying measures are based on time of survey (for those right-censored observations) or the year when the union ends. All time-vaying measures are lagged by 1 calendar year.

Table 3: List of Variables and Variable Definition

	Definition
Dependent variable	
Union Dissolution	1 if union ends with separation or divorce; 0 otherwise.
Time-invariant independent variables	
<i>Individual/household level attributes</i>	
Age at first union	Age of the male household head when his first union was formed
Union type	religious union (reference), civil union, concensual union
Marriage/Union cohort	The year in which the first union was formed: 1961-1970; 1971-1980; 1980-1990; 1991-2000; 2000-2016. 1980-1990 is the mode and thus used as the base category.
Cumulative U.S migration experience before union formation(yrs)	Years of experience being a migrant in U.S. prior to marriage. The original scale is in months. It is transferred to years for easier interpretation.
<i>Community level attributes</i>	
Metropolitan type of community	Communities are classified by four categories: metropolitan area(reference), smaller urban area, town, rancho.
Migrant involvement in the community	Principle factor score estimated by migrants' involvement in the following 10 types of activities: migrant helped to finance electric service, migrants helped to finance water service, migrants helped to finance public lighting, migrants helped to finance plaza, migrants helped to finance public market, migrants helped to finance sports facilities, migrants helped to finance churches, migrants helped to finance schools, migrants usually return to community for Patron Saint's Day, special mass in community for migrants on Saint's Day. This variable is time-invariant, because the information is only collected at the time of the survey, but based on the way it is asked in the questionnaire it is supposed to reflect immigrant involvement in the community from the past till the time of survey. No specific timeframe is specified for those activities.
Time-varying independent variables*	
<i>Individual/household level attributes</i>	
Duration of union	Duration of union in any person-year. Duration ranges from 0-53 years in the analytical sample.
Squared term of duration of union	Quadratic term of duration of union in any person-year.
Education	The original scale is years of education. It is recoded into a categorical variable in this paper: primary education or less (0-6 yrs), junior high education(7-9 yrs), senior high education and above(10+ yrs).
Employment status and occupation categories	Based on the occupation code provided in the MMP data, male household heads are reclassified into 5 categories: unemployed or not in labor force; professionals, technicians, managers; agriculture, forestry/fisheries workers; manufacturing, transportation workers; administrative, sales, services workers.
Property ownership	Dichotomous variable indicating whether the household of the individual owns one or more property in U.S. or Mexico. For analysis on the migrant sample, ownership of property is further classified by the location of property. Two variables are created to indicate whether having any property (house/apartments) in the U.S. or Mexico.
Business ownership	Dichotomous variable indicating whether the household of the individual owns one or more business. For analysis on the migrants sample, ownership of business is further classified by the location (U.S. or Mexico) of business owned.
Land ownership	Dichotomous variable indicating whether the household head owns one or more parcels of land in U.S. or Mexico. All land reported owned by respondents in the MMP project are in Mexico.
Number of children under 18	Number of children who are less than 18 years old.
Number of children aged 18+	Number of children who are over 19 years old.
U.S. migration experience after union formation	
<i>Currently in U.S.</i>	Currently in the U.S. in any person-year.
<i>Legal documentation while in U.S.</i>	The original documentation include 12 categories, but it is reclassified into three major categories in order to retain sufficient sample size for all documentation types. The categories are: 1) legal resident or citizen (legal resident, citizen, Silva letter, Refugee; PTAT, DACA); 2) temporary or contract visa, which includes contract-Bracero, contract-H2A (agricultural), temporary worker, temporary tourist/visitor; 3) Undocumented.
<i>Cumulative U.S migration experience after union formation (yrs)</i>	Cumulative years of experience being a migrant in U.S. after union formation. The original scale is in months. It is transferred to years for easier interpretation.
<i>Community level attributes</i>	
Community migration prevalence ratio	The prevalence ratio is defined as " the number of people with international migratory experience divided by the total number of people alive" according to the MPP154 documentation. According to the documentation, the prevalence ratio is standardized for comparison across communities and thus controls for the effect of differences in the history and timing of migration.
Macro-level immigration policy environment	

Visa accessibility

Accessibility of visas is calculated by MMP project as $TIA/(TIA+GIE)$, where TIA refers to the total number of Mexicans who received green card per year, and GIE refers to gross illegal entries per year. More information can be found on the MMP project website and Massey and Espinosa's 1997 paper ("What's Driving Mexico-U.S. Migration? A Theoretical, Empirical, and Policy Analysis." *American Journal of Sociology* 102:939-999). It is included as a proxy to measure the U.S. immigrant policy towards Mexican immigrants and it is a strong indicator of likelihood of family reunification among Mexican migrants.

Table 4: Multilevel Discrete-time Hazard Models Predicting Odds of Union Dissolution among Mexican Male Household Heads

	Model1	Model2	Model3	Model4	Model5
Time-invariant independent variables					
Cumulative U.S migration experience before marriage (yrs)	1.083*** (0.0221)	1.061*** (0.0236)	1.061*** (0.0236)	1.065*** (0.0240)	1.057** (0.0241)
Union type (ref=religious union)					
<i>Civil union</i>	3.453*** (0.498)	3.454*** (0.498)	3.341*** (0.482)	2.990*** (0.431)	2.984*** (0.427)
<i>Consensual union</i>	5.105*** (0.746)	5.033*** (0.734)	5.001*** (0.727)	4.254*** (0.614)	4.336*** (0.620)
Time-variant independent variables					
Cumulative U.S migration experience after marriage(yrs)	1.035* (0.0184)	1.107*** (0.0265)	1.102*** (0.0254)	1.096*** (0.0254)	1.086*** (0.0253)
Currently in U.S.	2.126*** (0.418)	4.788*** (1.462)	4.958*** (1.520)	4.905*** (1.504)	4.353*** (1.339)
Duration of union(yrs)	1.052** (0.0226)	1.076*** (0.0258)	1.087*** (0.0263)	1.249*** (0.0392)	1.245*** (0.0393)
Duration of union(yrs) squared	0.998*** (0.000702)	0.997*** (0.000783)	0.997*** (0.000791)	0.994*** (0.00115)	0.994*** (0.00116)
Interactions of currently in U.S. and union duration					
<i>Currently in U.S. * union duration(yrs)</i>		0.858*** (0.0471)	0.853*** (0.0465)	0.844*** (0.0476)	0.846*** (0.0478)
<i>Currently in U.S. * union duration(yrs) squared</i>		1.002 (0.00182)	1.002 (0.00181)	1.003 (0.00192)	1.003 (0.00193)
Education (ref=primary education or less)					
<i>Junior high education</i>			1.097 (0.165)	1.030 (0.155)	1.043 (0.157)
<i>Senior high education and above</i>			1.215 (0.199)	1.140 (0.187)	1.163 (0.191)
Employment status and occupation (ref=not employed)					
<i>Professionals, technicians,managers</i>			0.355*** (0.101)	0.389*** (0.111)	0.371*** (0.106)
<i>Agriculture, forestry/fisheries workers</i>			0.246*** (0.0630)	0.280*** (0.0728)	0.271*** (0.0707)
<i>Manufacturing, transportation workers</i>			0.330*** (0.0795)	0.348*** (0.0840)	0.336*** (0.0808)
<i>Administrative, sales, services workers</i>			0.413*** (0.104)	0.459*** (0.117)	0.440*** (0.112)
Land, Property, Business ownership ^c					
<i>Own land</i>				0.984 (0.217)	0.979 (0.216)
<i>Own property</i>				0.380*** (0.0506)	0.385*** (0.0511)
<i>Own business</i>				0.745 (0.139)	0.767 (0.143)
Number of children under 18				0.756*** (0.0361)	0.753*** (0.0359)
Number of children aged 18+				0.927 (0.0990)	0.924 (0.0987)
Community migration prevalence(%)					1.021*** (0.00534)
Community population (logged)					1.030 (0.0575)
Constant	0.000986	0.000813	0.000783	0.000984	0.00064

Intraclass correlation(community-level)	0.06	0.06	0.05	0.04	0.01
Observations (person years)	251,406	251,406	251,406	251,406	251,406
Number of communities	109	109	109	109	109

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

* All models also control for time invariant characteristics including marriage cohort, age at first union. Model 5 further controls for metropolitan category of community. Coefficients are not presented here due to space constraint.

Table 5: Multilevel Discrete-time Hazard Models Predicting Odds of Union Dissolution among Mexican Male Household Heads Who Ever Migrated to the U.S.*

	Model1	Model2	Model3	Model4
Time-invariant independent variables				
Cumulative U.S migration experience before marriage (yrs)	1.072** (0.0295)	1.069** (0.0299)	1.062** (0.0299)	1.060** (0.0306)
Union type (ref=religious union)				
Civil union	4.155*** (0.960)	2.218** (0.797)	1.710 (0.620)	1.717 (0.624)
Consensual union	7.712*** (1.803)	5.982*** (1.829)	4.897*** (1.495)	4.814*** (1.494)
Factor score of immigrant involvement in the community ^a				0.978 (0.0853)
Time-variant independent variables				
Cumulative U.S migration experience after marriage(yrs)	1.047* (0.0247)	1.052** (0.0251)	1.015 (0.0254)	1.021 (0.0264)
U.S. migration status and documentation (ref=not in U.S.)				
Legal resident or citizen	3.285*** (0.985)	1.661 (0.729)	1.859 (0.827)	1.528 (0.692)
Contract worker or temporary visa	1.263 (0.764)	1.027 (1.054)	0.913 (0.937)	0.909 (0.936)
Undocumented	1.419 (0.364)	0.990 (0.430)	1.025 (0.449)	0.932 (0.413)
Duration of union(yrs)	0.964 (0.0313)	0.962 (0.0315)	1.158*** (0.0517)	1.143*** (0.0526)
Duration of union(yrs) squared	1.000 (0.00104)	1.000 (0.00105)	0.996*** (0.00163)	0.996** (0.00168)
Interactions of union type and US documentation ^b				
Legal resident/citizen * civil union		4.032** (2.198)	4.175*** (2.299)	4.377*** (2.413)
Legal resident/citizen * consensual union		2.149 (1.196)	1.854 (1.043)	1.855 (1.053)
Contract or temporary* consensual union		2.422 (3.070)	2.245 (2.852)	2.130 (2.706)
Undocumented * civil union		2.741 (1.727)	2.901* (1.836)	2.891* (1.832)
Undocumented * consensual union		1.316 (0.744)	1.256 (0.712)	1.341 (0.766)
Land, Property, Business ownership ^c				
Own land in Mexico			0.931 (0.342)	0.978 (0.362)
Own property in the U.S.			1.256 (0.615)	1.290 (0.635)
Own property in Mexico			0.489*** (0.116)	0.530*** (0.126)
Own business in the U.S.			0.677 (0.517)	0.737 (0.563)
Own business in Mexico			0.401* (0.116)	0.427* (0.126)

			(0.192)	(0.204)
Number of children under 18			0.623***	0.617***
			(0.0545)	(0.0543)
Number of children aged 18+			0.820	0.780
			(0.152)	(0.153)
Community migration prevalence(%)				1.025***
				(0.00834)
Community population (logged)				0.940
				(0.102)
Visa accessibility (%) ^d				0.978
				(0.0194)
Constant	0.00199	0.00257	0.00683	0.0197
Intraclass correlation(community-level)	0.07	0.07	0.08	0.04
Observations (person years)	68,342	68,093	68,093	66,442
Number of communities	109	109	109	109

Standard errors in parentheses.*** p<0.01, ** p<0.05, * p<0.1

* All models also control for time invariant characteristics including marriage cohort, age at first union. Model 3 further controls for education, employment status and occupation. Model 4 controls for metropolitan category of community. Coefficients are not presented here due to space constraint.

^a Immigrant involvement is not measured at the time of the survey, though time-varying measure would be more ideal.

^b No male household head who are in civil union and are temporary worker in U.S. experienced union dissolution, so these 238 observations(person-years) are not included in analysis here.

^c No observation has land in the U.S..

^d Visa accessibility information is only available till 2012.

Figure 2a Kaplan-Meier survival estimates of union duration by U.S. migration experience

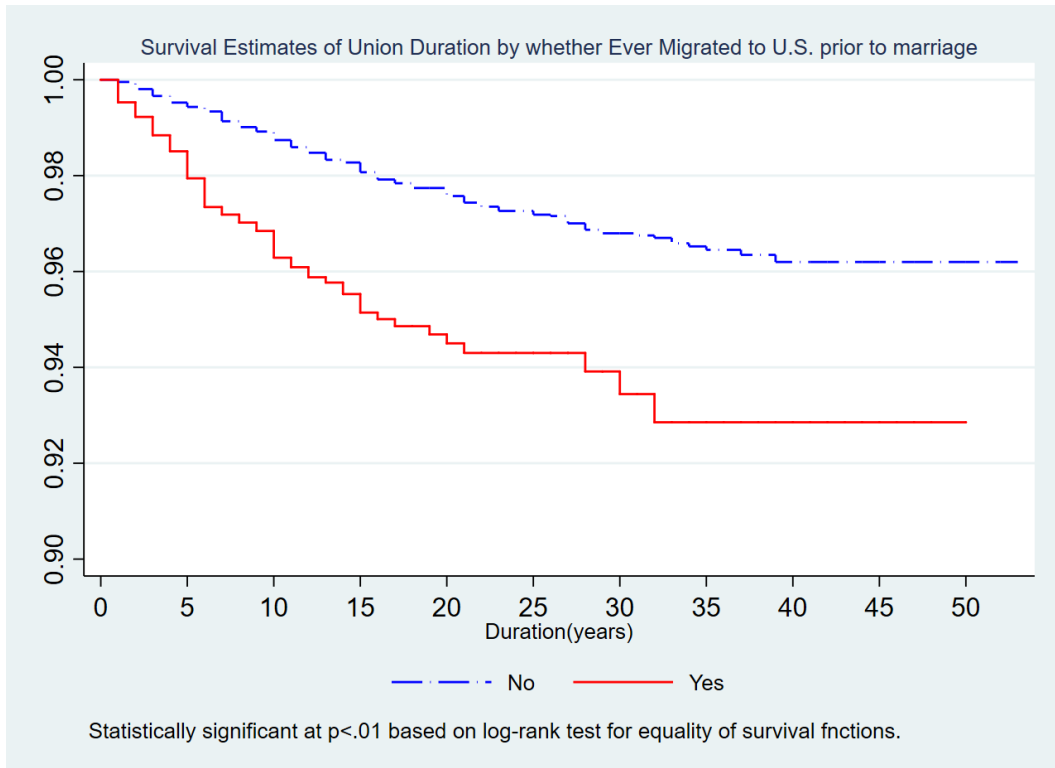


Figure 2b Kaplan-Meier survival estimates of union duration by union type

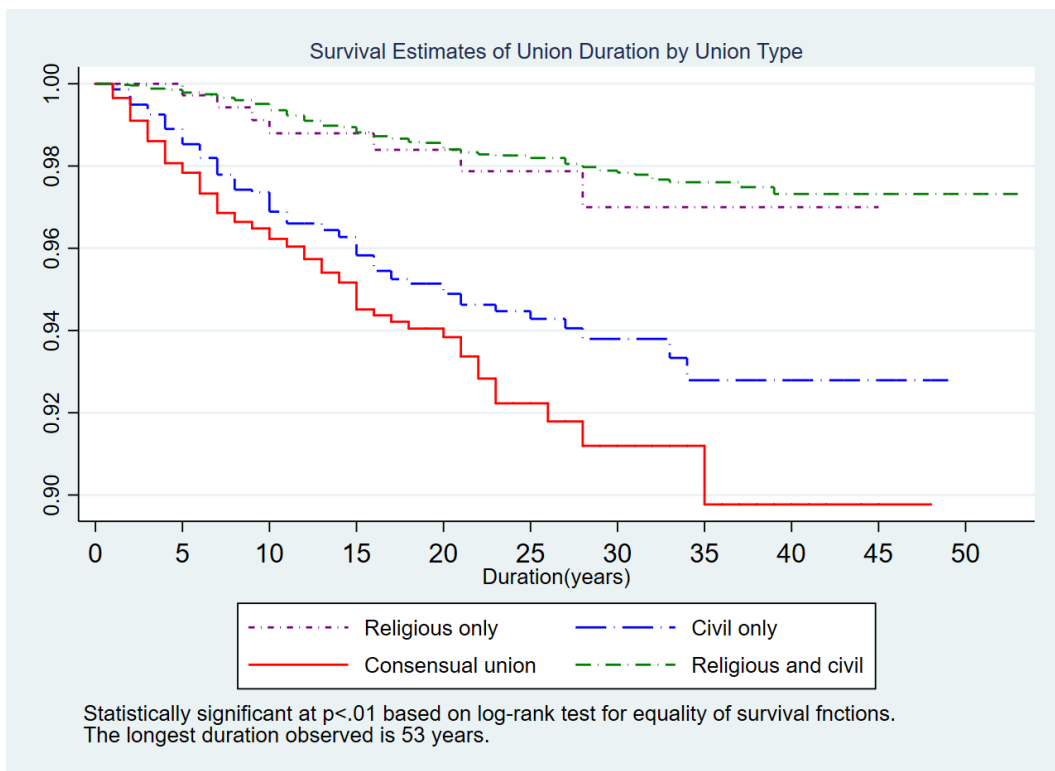
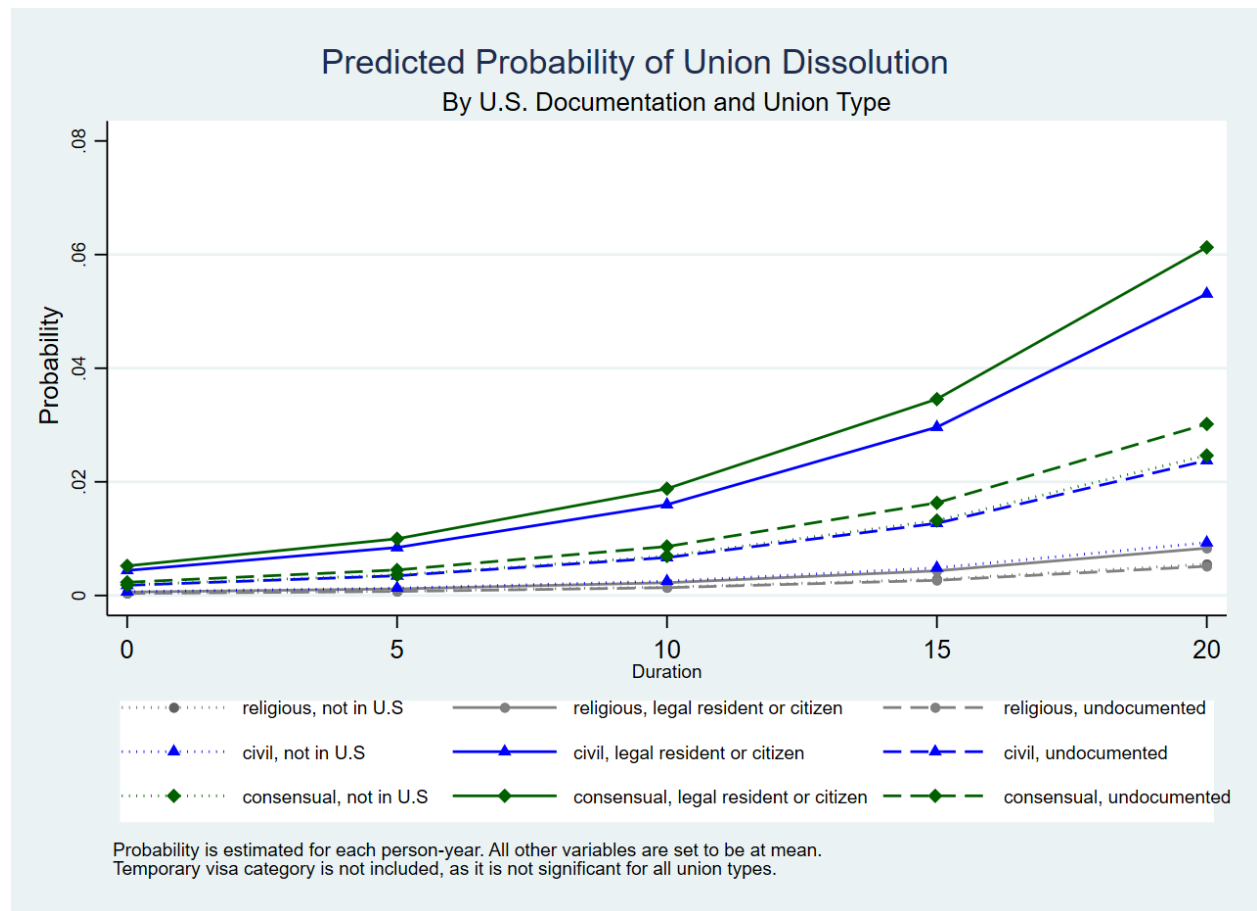


Figure 3: Predicted Probability of Union Dissolution by U.S. Documentation and Union Type



Appendix 1: Items used to construct principle factor score of parental engagement

Input Item ^a	Scoring coefficient
Migrants helped to finance schools	0.13361
Migrants helped to finance churches	0.06438
Migrants helped to finance sports facilities	0.09965
Migrants helped to finance public market	0.07062
Migrants helped to finance plaza	0.12818
Migrants helped to finance public lighting	0.20175
Migrants helped to finance water service	0.17736
Migrants helped to finance electric service	0.3185
Special mass in community for migrants on Saint's Day	0.02369
Migrants usually return to community for Patron Saint's Day	0.02067

^a All items are originally measured based on a dummy variable with 1 indicating "yes, migrant has participated in the activity".

Appendix 2

Kaplan-Meier survival estimates of union duration by Union Cohort

