

Temporal Connections between Migration, Marriage, and Non-Marital Unions among Hispanic  
Immigrant Women in the United States: An Analysis of Competing Risks

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## **Abstract**

The purpose of this study is to examine the likelihood of union formation relative to timing of migration among female Hispanic immigrants in the U.S., treating marriage and cohabitation as competing risks. I used data from the National Survey of Family Growth (2011-2017) to analyze a sample of 715 Hispanic women who migrated to the U.S. as adults. Cox proportional hazards models were used to examine the likelihood of marriage alone in the years prior to and following migration. Competing risk survival models were then used to examine the likelihood of marriage and cohabitation as competing events before and after migration. I found that the likelihood of marriage is highest the year of and the two years following migration. However, when treating marriage and cohabitation as competing events, the likelihood of marriage is high the year of migration and again only after 6 years in the U.S, whereas the likelihood of cohabitation is high the year of migration and remains high for all subsequent years, increasing with time in the U.S. These preliminary results suggest that connections between migration and family formation differ by type of partnership, and non-marital unions appear to be particularly salient among women who migrate single.

## 1. Introduction

The growth of the Hispanic population in the United States along with the second demographic transition and subsequent changes in the timing, prevalence, and types of union formation, particularly for women, have sparked an interest in studying the social and structural determinants of family formation among Hispanic individuals (Bernhardt 2004; Cherlin 2004; Lesthaeghe 2010; Oropesa and Landale, 2004). Although women across all racial/ethnic and socioeconomic groups in the United States experienced changes in patterns of family formation in recent decades, the rate and mechanisms of change were not uniform (Manning, Brown, and Payne, 2014; Lundberg, Pollack, and Stearns, 2016). Among Hispanic women, trends in union formation vary substantially by country of origin and immigrant generation status (Bean and Tienda 1987; Landale and Oropesa 2007; Raley, Durden, and Wildsmith 2004). A substantial body of research has examined the temporal connections between migration and fertility (Carter, 2000; Ford 1990; Kulu and Milewski 2007; Lindstrom and Saucedo 2007; Lübke 2015; Parrado 2011; Parrado and Flippen 2012), often demonstrating the disruptive effects of migration on childbearing. Union formation among immigrant populations is similarly complicated by temporal connections and interdependencies with migration (Hill 2004), yet less documented in the literature. Furthermore, the links between union formation and migration are often studied in the context of marriage (Hill 2004; Ortiz 1996), and the potential significance of non-marital unions as a family formation strategy among Hispanic immigrants has largely been overlooked.

While theories of migration in the U.S. have historically focused on determinants of male migration, treating female migration as derivative of husbands' or fathers', contemporary migration scholars have demonstrated the gendered patterns of migration, as women's reasons for and experiences after migration are distinct from men's, and a growing percentage of women

migrate single (Donato et al. 2008; Donato 2010; Morokvasic 1984; Pedraza 1991). A study examining the connections between migration, marriage, and divorce found that immigrant women born in Mexico or Central America had a higher likelihood of first marriage during the year of migration and the years closely following migration, compared to before migrating, suggesting women's decisions to migrate are not solely based on their husband's (Hill 2004). Furthermore, the timing of union formation has an impact on women's social and economic position after migrating. For example, one study exploring the impact of migration on female labor force participation found that Mexican-origin women who married prior to migrating were less likely to work upon arrival compared to women who migrated single, regardless of whether single women married after migrating (Flippen and Parrado 2015).

Most studies on the temporal link between migration and family formation have focused on marriage, and analyses that include non-marital or cohabiting unions among immigrant women are noticeably absent. Theories surrounding the second demographic transition and the "retreat from marriage" often portray the rise of non-marital or cohabiting unions as an alternative, rather than prerequisite, to marriage, particularly for racial/ethnic minorities and individuals with fewer economic resources (Landale and Forste 1991; Landale and Fennelly 1992; Manning and Landale 1996; Manning and Smock 2002). Much of the recent literature on family formation in the U.S. argues that studying marriage separately from cohabitation is misrepresentative of the union formation process for many women (Bumpass, Sweet, and Cherlin 1991; Landale, 1994; Lundberg, Pollack, and Stearns, 2016; Sassler and Lichter, 2020; Smock 2004). This may be especially true for Hispanic immigrants, as consensual unions have long coexisted with formal marriage as a means of family formation in Latin America and parts of the Caribbean (Castro-Martín 2002; Esteve et al. 2012; Laplante et al. 2015). Thus, while

studies have demonstrated the interdependence of migration and marriage as closely related life-course events, little is known about migration and non-marital unions. In this study, I examine the temporal connections between migration and union formation among Hispanic immigrant women living in the U.S., treating marriage and cohabitation as competing events, and examining the likelihood of each in relation to the timing of migration.

## 2. Data and methods

I pooled three waves of data from the National Survey of Family Growth (NSFG) for this analysis (2011-2017). The NSFG is a cross-sectional, nationally representative survey of U.S. noninstitutionalized women ages 15-44, and collects survey data on family life, marriage and divorce, pregnancy, infertility, contraception, and other related health measures. The NSFG has benefits over other surveys such as the Current Population Survey (CPS) and the American Community Survey (ACS) for studying migration and family formation, because of its detailed retrospective histories on all prior unions (marital and non-marital), as well as information on the exact year of migration. I was unable to include the most recent wave of the NSFG (2017-2019) because the variable measuring year of migration was suppressed in the public use data file. Regardless, data available from 2011-2017 provided a large enough sample size and recent enough data for a meaningful analysis on the contemporary connections between migration and family formation among Hispanic immigrant women.

My analysis focused on foreign-born Hispanic women, and I further restricted my sample to include only women who migrated as adults (age 18 or older), since women who migrate at younger ages are less likely to experience disruptive effects of migration on later life-course events such as family formation, and likely have different family formation patterns than adult

migrants, having lived in the U.S. for a longer period of time before forming romantic partnerships. The final sample consisted of 715 foreign-born Hispanic women.

I used event history analyses to examine three outcome variables: time to first marriage (independent of cohabitation), time to first marriage with cohabitation as a competing event, and time to first cohabitation with marriage as a competing event. For each analysis, women entered the risk set at age 15, and exited at the time (age) of the event or were right-censored at their age at the time of the survey if they had not experienced the event. Following guidance from prior research (Hill 2004), I created a time-varying measure of years before or after migration with seven categories: 6+ years before migration, 3 to 5 years before migration, 1 to 2 years before migration, year of migration, 1 to 2 years after migration, 3 to 5 years after migration, and 6+ years after migration. I first used a Cox proportional hazards model to examine the likelihood of first marriage (independent of cohabitation) within each migration window, using the immediate (1 to 2) years before migration as the reference period. I then used competing risk survival models (Fine and Gray, 1999) to model the sub-hazards of first marriage treating cohabitation as a competing event, and first cohabitation treating marriage as a competing event. For women who experienced first marital and non-marital unions in the same year, I assumed the non-marital union came first for the competing risk models. All analyses were conducted using Stata/IC version 16.

### 3. Results

Table 1 shows demographic characteristics of the sample of Hispanic foreign-born women who migrated to the U.S. as adults, descriptively showing close ties between age at migration and age at union formation. The mean age of the sample was 35.6 years, and the mean

age at migration was 24.2 years. While 69.4% of women were ever-married, the vast majority of women (94.0%) had been in either a marital or non-marital union in their lifetime. The average age at first marriage was 23.1 years, and the average age at first union overall (marriage or cohabitation) was 21.9 years. Among women who had ever formed a union, 54.0% of first unions were non-marital and 46.0% were marital, suggesting the prevalence of cohabiting unions as first partnerships among Hispanic immigrant women.

Table 2 shows results from the Cox proportional hazards model examining time to first marriage, independent of cohabitation as a potentially competing event. Compared to 1 to 2 years immediately preceding migration, the likelihood of first marriage was highest the year of migration, followed by the 1 to 2 years after migration. These results are consistent with prior findings (e.g. Hill 2004). However, when examining marriage and cohabitation as competing events, table 3 shows that the likelihood of marriage is highest during the year of migration and after 6 or more years following migration, and lowest during the window of 6 or more years prior to migration. In contrast, the model examining the likelihood of cohabitation with marriage as a competing risk shows a relatively high likelihood of forming a cohabiting union the year of migration and for all subsequent years following migration, compared to the years immediately prior to migration. Furthermore, the sub-hazard of cohabitation in the presence of marriage as a competing event increases with duration of stay in the United States.

#### 4. Discussion and conclusion

Consistent with prior studies, this analysis found that compared to the years immediately preceding migration, the likelihood of first marriage was highest in the year of migration and for the first few years following migration when marriage was examined independently from

cohabiting unions. However, when marriage and cohabitation are treated as competing events, the likelihood of marriage remains high during the year of migration, but rather than persisting in the immediate years following migration, the risk of marriage increases instead after 6 or more years in the U.S. In contrast, the likelihood of forming a cohabiting union in the presence of marriage as a competing risk was high during the year of migration and continued to increase with each subsequent time period following migration. Seeing as over half of Hispanic immigrant women reported their first union as non-marital, this finding has important implications for understanding the connections between union formation and migration. Analyses focusing on marriage as the sole marker of union formation likely mask the saliency of non-marital unions as a family formation strategy among foreign-born Hispanic women, particularly among women who migrate single and delay union formation for longer durations after migrating. These findings can be interpreted along with prior studies suggesting that marriage and marital stability may serve a particularly important role for immigrants with lower socioeconomic status (Bean, Berg, and Van Hook 1996), suggesting that women who have the economic and social means to migrate unpartnered may be more inclined to form non-marital unions after arrival. Considering the close connections between migration, labor market considerations, and marriage market considerations (Stark 1988), future studies should explore the connections between migration, type and timing of partnerships, and labor force participation, in order to better understand the socioeconomic significance of marital and non-marital unions for immigrant women.

While its detailed retrospective data on the exact year of marital and non-marital unions and migration makes the NSFG one of the best surveys to study the temporal connections between these life-course events, this dataset has a number of limitations. The lack of bi-national



data prevented a thorough analysis of selection, adaptation, and disruption theory, which are best explored by comparing family formation patterns among immigrant populations not only to native-born individuals in the receiving country, but also to non-migrants in sending countries (Choi 2014; Frank and Heuveline 2005; Lindstrom and Saucedo 2007). Furthermore, the relatively small sample of foreign-born Hispanic women who migrated as adults prevented any disaggregation by country of origin, despite salient differences in family formation among Hispanic women from different origin countries (Bean and Tienda 1987; Landale and Oropesa 2007). Lastly, the dearth of time-varying socioeconomic variables in the NSFG prevented exploration of social and structural factors that may relate to migration and family formation, such as social and familial networks in destination areas, labor force participation and occupation, and citizenship status. Despite these limitations, this analysis contributes to the literature on the connections between migration and union formation by demonstrating the importance of non-marital unions as a first partnership for many women, particularly for women who migrate single, and future studies should refrain from treating marriage as the sole means of family formation, independent of cohabiting unions, when examining connections between migration, family formation, and other life-course events.

## Tables

Table 1. Descriptive characteristics of female Hispanic immigrants living in the U.S.

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Age (mean)	35.6
Age migrated (mean)	24.2
Ever married (%)	69.4
Age at first marriage (mean)	23.1
Ever married or cohabited (%)	94.0
Age at first union (mean)	21.9
First union type, among ever married or cohabited (%)	
Non-marital	54.0
Marital	46.0

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Source: NSFG 2011-2017 (N=715)

Means and percentages weighted

Note: sample restricted to women who migrated to the U.S. as adults (age 18 or older)

Table 2. Cox Proportional Hazards Models for First Marriage Relative to the Timing of Migration among female Hispanic Immigrants Living in the U.S.

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Years before or after migration (reference=1 to 2 years before migration)	
6+ years before migration	.84 (.18)
3 to 5 years before migration	.64 (.16)
Year of migration	2.87*** (.65)
1 to 2 years after migration	2.07** (.48)
3 to 5 years after migration	1.06 (.26)
6+ years after migration	.69 (.26)

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Source: NSFG 2011-2017 (N=8,336 person-years)

Hazard ratios (standard errors) reported

\*p<.05, \*\*p<.01, \*\*\*p<.001

Table 3. Competing Risk Survival Models for First Union Relative to the Timing of Migration among female Hispanic Immigrants Living in the U.S.

	Competing Risks	
	Marriage	Cohabitation
Years before or after migration (reference=1 to 2 years before migration)		
6+ years before migration	.44** (.12)	1.54 (.40)
3 to 5 years before migration	.60 (.18)	.92 (.27)
Year of migration	2.23** (.67)	3.18*** (.95)
1 to 2 years after migration	1.55 (.56)	4.69*** (1.37)
3 to 5 years after migration	1.68 (.67)	4.90*** (1.72)
6+ years after migration	4.72*** (2.23)	6.16*** (2.63)

Source: NSFG 2011-2017 (N=5,541 person-years)

Subhazard ratios (standard errors) reported

\*p<.05, \*\*p<.01, \*\*\*p<.001

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