MEXICAN MIGRATION, GENDER DIFFERENCES, AND GEOGRAPHIC DISPERSION IN THE 1990s

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Paper presented at the Population Association of America Meetings
Detroit, MI May 2, 2009

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Abstract

The geography of Mexican migration experience tremendous change in the 1990s with settlement occurring across the United States. Did processes of Mexican migration fundamentally change, prompting migrants to settle in non-traditional destinations? Or did the factors that have long attracted Mexican migrants to particular destinations simply become more regionally dispersed? The present research addresses these questions by investigating gender differences in destination choices in the late 1990s. We hypothesize that female migrants chose destinations with more diverse or "mature" Mexican origin populations rather than simply where greater numbers of male migrant had settled previously. In addition, we hypothesize that the effects of more mature Mexican origin populations differ for married female migrants relative to unmarried migrants. Using 1990 and 2000 Census data and multinomial logistic regression to predict destination choices, our results are consistent with our first hypothesis. We also find that marriage provides female migrants access to a greater range of destinations whereas unmarried female migrants are more limited to more mature Mexican origin populations.

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Introduction

Change in the geography of Mexican migration to the United States occurred in dramatic fashion during the 1990s as evidenced by the increase in the percentage of Mexican-born persons residing outside the five traditional destination states[1] from 10 percent in 1990 to almost 25 percent by 2000 (Durand, Massey et al. 2005; Ruggles, Sobek et al. 2008). The changes were fueled in large part by growing migration flows across the U.S.-Mexican border (Grieco 2003; Passel and Suro 2005) with a greater proportion of new arrivals choosing non-traditional destinations (Durand, Massey et al. 2005; Lichter and Johnson Forthcoming (2009)). A burgeoning literature on the changes has documented the size and characteristics of the migration streams (Passel and Zimmerman 2001; Kandel and Cromartie 2004; Durand, Massey et al. 2005; Leach and Bean 2008), but research has yet to fully investigate the specific factors related to Mexican migrants' new destination choices.

Studies that investigate immigrant destination choices, more generally, consistently show the strong pull of existing co-ethnic communities, especially for labor migrant groups such as Mexicans (Gurak and Kritz 2000; Bauer, Epstein et al. 2005; Scott, Coomes et al. 2005; Diaz McConnell 2008). This research, however, rarely disentangles the relationship between migrant destination choices and characteristics of established co-ethnic communities. We know from such research that Mexican migrants are more likely to choose places where larger Mexican-born populations exist, but it does not tell us whether co-ethnic population size, or other aspects of settled

[1] Arizona, California, Illinois, New Mexico and Texas

populations, affect the destination choices of various kinds of Mexican migrants, men and women for example, differently. Change in settlement patterns means that recently-arrived Mexican migrants now settle in places that are much more varied in terms of social and demographic contexts, economic activities, and histories of migration than ever before. Does this variation matter in the destination choices of Mexican migrants? If so, for whom?

The present research seeks to answer these questions with particular focus on differences between male and female migrants. While gender has long been known to be a key dimension of Mexican migration (see Reichert and Massey 1979; Reichert and Massey 1980; Massey 1986; Massey, Goldring et al. 1994), the nature of its role in migration and settlement processes continues to be a matter of debate (Hondagneu-Sotelo 1994; Cerrutti and Massey 2001). On one hand, female migration is often viewed as predictably following prior male migration once a migration stream grown sufficiently to reduce the costs and risk of migration (Massey 1986; Massey, Goldring et al. 1994; Cerrutti and Massey 2001). On the other hand, scholars have argued that female migration is more subject to gender norms that limit access to male-controlled migration networks (Hondagneu-Sotelo 1994; Menjívar 2000). One might find evidence that weighs in on this debate in the kinds of destinations that female Mexican migrants choose relative to their male counterparts. For reasons described below, I hypothesize that female migrants require and thus choose destinations with more diverse co-ethnic communities that provide greater options of support for female migration and settlement. Likewise, I hypothesize that the amount of prior male migration will not be as great a factor for females as it is for males.

Background and Theoretical Framework

Mexican Migration and Gender

Research on immigrant destination choices shows that the relative size of preexisting co-ethnic communities or immigrant enclaves is one of the strongest factors in where one chooses to settle (Gurak and Kritz 2000; Bauer, Epstein et al. 2005; Scott, Coomes et al. 2005; Diaz McConnell 2008). Immigrants tend to choose places that have larger pre-existing immigrant communities in which prior arrivals of the same national origin reside. The relationship between destination choice and size of immigrant community tends to be stronger for immigrant groups that scholars often characterize as low-skilled economic migrants or labor migrants, as are Mexicans (Gurak and Kritz 2000; Bauer, Epstein et al. 2005; Scott, Coomes et al. 2005).

Such findings are consistent with research on the importance of social capital and migrant networks in processes of labor migration (Reichert and Massey 1979; Reichert and Massey 1980; Portes and Bach 1985; Massey 1986; Massey, Goldring et al. 1994)}. Low-skilled labor migrants rarely possess the economic resources to pay for the costs of migration themselves. They instead rely on social capital – often in the form of information and economic resources from family members and associates who previously migrated – for assistance to increase the chances of successful migration (Massey, Goldring et al. 1994; Massey 1999). Migrant networks generally facilitate the exchange of such resources from prior migrants to prospective migrants (Hondagneu-Sotelo 1994; Massey 1999). One might then expect that new arrivals would more likely choose places where greater numbers of earlier arrivals of the same national origins have previously settled given the source and availability of resources in such places.

The migration theory of cumulative causation explains that once a migration stream has become established, deeper network ties and the free flow of information and other kinds of resources causes more migration, and a stream grows exponentially until some point of saturation (Massey 1990; Massey 1999). An aspect of the growth of a migration stream is its development in terms of the kinds of migrants that join the stream in varying stages (Massey 1986; Massey, Goldring et al. 1994). As a stream grows, the composition of migrants changes according to the costs and risks of migration and perceptions about the ability of different people to bear them (Massey, Goldring et al. 1994). These perceptions are greatly influenced, of course, by gender norms of rural Mexican society from where most Mexican migration originates. At first, when the costs and risks of migration are high, male heads-of-households leave a sending community. Once they reach their destination and obtain jobs and housing, they then send for their younger brothers, cousins and nephews, which in turn, further reduces the costs and risks of migration (Massey 1986; Massey, Goldring et al. 1994). Once the costs and risk have been sufficiently reduce women and children join migration streams. Gender thus is a key dimension of Mexican migration that is regulated by gender norms, but is portrayed by such research as an inevitable outcome once the prevalence of migration in a sending community has become sufficiently high to ameliorate the risks of female migration.

This research has been criticized, however, for oversimplifying the role of gender in Mexican migration (Pedraza 1991; Hondagneu-Sotelo 1994; Menjívar 2000). This alternative perspective argues that female migration is not a foregone conclusion as migration becomes more prevalent and networks expand. Rather, gender norms often

dictate that women negotiate with their spouses or fathers, with varying success, for access to male-controlled network resources to facilitate their migration (Hondagneu-Sotelo 1994; Hagan 1998). At times though, women may subvert their husbands' or fathers' wishes against their migration by seeking assistance from other male family members with migration experience or prior female migrants who previously encountered barriers to male networks (Hondagneu-Sotelo 1994; Hagan 1998; Menjívar 2000).

In either case, female migration does not occur simply because the volume or prevalence of prior migration has sufficiently reduced the costs and risks of migration. Rather, female migration depends more on the availability of alternative means of access to network resources. While larger migration streams may increase the probability that a potential female migrant gains access to the network, other characteristics of prior migration in terms of the history and migrant composition may be the larger factor in female migration. For example, a greater proportion of women to have previously migrated may strengthen female networks and facilitate more female migration. And the longer migration into a place has occurred the more likely a female migrant may know an older uncle or father-in-law who previously migrated and is willing to help them migrate. Bachmeier, Bean and Leach (2006; 2008) have previously referred to the composition of migrant communities in terms of the size of the U.S.-born population and tenure in the United States among the foreign born as the "maturity" of a settled migrant population. More mature Mexican origin populations may offer female migrants multiple ways to access and pool network resources to facilitate their migration.

New Destinations of Mexican Migration

Distinguishing conceptually the relative size of a migration stream into a destination from the maturity of the settled population may be particularly relevant in light of the increased settlement of Mexican migrant in non-traditional destinations that have little or no history of immigration. In attempting to assess differences across Mexican destinations and recent arrivals who settle in such places, scholars have typically categorized places empirically, most simply into a new-traditional dichotomy (Durand, Massey et al. 2005; Diaz McConnell 2008) or a more complex categorization using the relative size and/or rate of growth of the Mexican-born population in a place (Suro and Singer 2002; Lichter and Johnson Forthcoming (2009)). Using measures of the relative size and Mexican population maturity as we do strengths the conceptualization of Mexican migrant destinations in two respects. For one, they are more theoretically based in terms of representing varying degrees of network ties, available resources, and the kinds of migrants that comprise such migration stream and Mexican-born populations. Second, as continuous rather than categorical measures, they may increase the validity of the results by better representing dynamics that occur across continuums.

Hypotheses

To summarize, I hypothesize the following:

1. Female migrants settle in different kinds of migrant communities than male migrants.

    1a. If the size of migration streams are a primary factor in the destination choices of female migrants and female migrants simply follow their male

counterparts, then female migrants will settle in U.S. destinations with greater migration streams previously relative to male migrants.

1b. Alternatively, if women require more established and diverse networks to facilitate their migration, then they will settle in destinations with more "mature" migrant communities relative to male migrants.

2. In addition to gender, marital status plays a strong role in the destination choices of female migrants, although the direction of the relationship is difficult to predict.

2a. On one hand, married female migrants may settle in more mature communities to subvert spousal control of migrant networks.

2b. On the other hand, married female migrants settle in places with less mature communities due to more direct access to such places via marriage and spousal support.

Data

Data come from the 1990 and 2000 U.S. Censuses (Ruggles, Sobek et al. 2008). The sample consists of Mexican-born persons, ages 18 to 64, who lived in Mexico five years prior to the 2000 Census. This sample allows for an analysis of the destination choices of recently arrived Mexican migrants to U.S. destinations.

I operationalize migrant destinations by first identifying Metropolitan Statistical Areas (MSAs) as identified in the Census data. Destination-choice studies that consider geographic areas smaller than states typically only consider migrants that reside in MSAs. Doing so misses dynamics in rural areas, which is not an insignificant aspect of the redistribution of the Mexican migrant population (Kandel and Cromartie 2004; Lichter and Johnson 2006). I thus group recently-arrived Mexican migrants residing in

non-metropolitan areas within each state into “non-metro state” regions. While far from perfect, grouping together migrants who reside in non-metro areas within each state and including them in the analysis provides at least a starting point to approximate differences between rural and urban areas.

I limited the sample to Mexican migrants that reside in destinations with a sample of at least 70 Mexican-born person records, which represents approximately 1400 people, to calculate reliable statistics on the Mexican-born population in each place. After doing so the sample consists of approximately 64,000 person records, representing a population of 1,390,067 Mexican migrants who arrived between 1995 and 2000 and resided in 202 destination regions. Because the full sample of 64,000 records makes the model estimation that I describe below computationally prohibitive, even on the fastest servers, I randomly select approximately 15 percent of the 64,000 person records and use 9,932 for the analysis.

I then match data for various characteristics of the 202 destinations from the 1990 Census to use as lagged predictors of destination choices between 1995 and 2000.

Method

Factor Analysis of Mexican Community Maturity

I first assess the maturity of migrant communities by creating a single scale using factor analysis (Kim and Mueller 1978). Following Bachmeier and Bean (2008) I include four measures of nativity and duration composition and relative size of the Mexican origin population in each MSA / non-metro state region. The four measures are 1) proportion Mexican origin of total population, 2) proportion U.S.-born of the Mexican origin population, 3) proportion Mexican-born in the U.S. for 20-plus years, and 4)

proportion Mexican-born in the U.S. for 5-plus years. In addition, I also include two additional variables that may indicate the degree of development of female migration networks in a place and the extent to which structural and institutional support of family migration exists in a place. The additional two measures are 5) proportion female of the Mexican-born population and 6) proportion of Mexican-born women living with their own children. Factor analysis allows one to assess whether the six measures are explained by one or more latent variables. It is expected that all six variables are explained by the same underlying concept of migrant community maturity. I then use the maturity scale as an independent variable in the logistic regression model described below.

Conditional Multinomial Logistic Regression Models

I employ conditional multinomial logistic regression (CMLR) to predict the probability that a migrant selected their chosen destination relative to all other possible destinations. CMLR is commonly used to assess the determinants of migrant destination choices under the assumption that migrants' choice has the maximum utility or benefits them the most (see Bartel 1989; Kritz and Nogle 1994; Bauer, Epstein et al. 2005; Scott, Coomes et al. 2005; Diaz McConnell 2008).

I model migrant destination choices between 1995 and 2000 using lagged regional characteristics, mostly from 1990, and individual characteristics as the independent predictor variables. This allows me to assess male-female differences in the effects of size of flow in 1990 and community maturity in 1995 on subsequent destination choices of new arrivals between 1995 and 2000.

The utility function of the full model of a migrant (*i)* who selects a destination (*j)* between 1995 and 2000 is written as

$$U_{ij,95-00} = \beta_1 STREAM_{90} + \beta_2 MATURITY_{95} + \sum_{k=3}^{K} \beta_k Z_{kj} + \gamma_1 (STREAM_{90} * SEX_i) + \gamma_2 (MATURITY_{95} * SEX_i) + \sum_{l=1}^{L} \gamma_{3l} (STREAM_{90} * X_{li}) + \gamma_{4l} (MATURITY_{95} * X_{li}) + \sum_{k=5}^{K} \sum_{l=1}^{L} \gamma_{kl} Z_{kj} X_{li} + \varepsilon_{ij}$$

where *STREAM* is the relative size of a migration stream in 1990, *MATURITY* is a maturity score, the output of the factor analysis, of a Mexican origin community in 1995, the *Z*s are other destination-level control variables, the *X*s are other individual-level control variables, the *β*s are the first-order destination-level coefficients to be estimated, the *γ*s are the interaction coefficients to be estimated, and ε_{ij} is a randomly distributed error term.

The destination-level control variables (*Z*s) include a squared term of size of the migration stream, total population (log), earnings (log) per working-age (ages 25-64) adult, percent of working age adults with bachelor's degree or higher education (percent skilled), percent employed in agricultural industry, percent employed in construction industry, percent employed in service industry, and whether the destination region is an MSA or the non-metropolitan population of a state. Each of these variables is calculated using 1990 data. Two additional variables, rate of employment growth and rate of foreign-born population growth, both with respect to the population in 1990, measure change between 1990 and 2000, excluding recently arrived Mexican migrants. In addition to sex, individual-level variables include dichotomous indictors of married and speaks English and years of education, age and age squared.

A migrant chooses destination *m* over destination *j* if the utility of doing so is greater. In other words, migrants choose destinations that benefit them the most in

terms of the destination characteristics included in the model and the interaction of their own individual characteristics with the destination characteristics. In the present case, I assess whether men and women choose different kinds of places and hypothesize that different sizes of migration streams and the maturity of Mexican communities benefit male and female migrants differently.

If the non-error term in the utility equation above is represented as V_{ij}, the probability that migrant *i* chooses destination *j* instead of any other destination is given as

$$P_{ij} = \frac{e^{V_{ij}}}{\sum_{j=1}^{J} e^{V_{ij}}}$$

which is the familiar multinomial logit model (Scott, Coomes et al. 2005). The parameter estimates are obtained by maximizing the log-likelihood function

$$L = \sum_{i=1}^{I} \sum_{j=1}^{J} D_{ij} log P_{ij}$$

where D_{ij} equals 1 if migrant *i* chooses to settle in destination *j* and equals 0 otherwise.

Even though I reduced the sample size as described above, the model estimation requires 201 comparisons per person-record and remains very computationally intensive. Following Scott, Coomes and Izyumov (2005), I randomly select nine alternative destinations so that only 8 comparisons are made per individual record in the sample. Several authors have shown the parameter estimates based on a reduced set of randomly selected alternative destinations to be robust relative to

estimates based all destinations (Ben-Akiva and Lerman 1985; Train 1993; Scott, Coomes et al. 2005).

Results

Descriptive Statistics

In the multivariate analysis, I control for age, years of education, whether a migrants speaks any English, and whether or not a migrant is married at the individual level in the regression analysis below. I provide descriptive statistics for such variables in Table 1. As is well known, Mexican migration is male dominated (male to female ratio of 1.6), and female migrants are much more likely to be married relative to male migrants (53 percent of females versus 22 percent of males). Different marital rates are consistent with common perceptions that female migration is more often due to family reunification and male migration is more often due to labor and economic reasons.

Table 1. Characteristics of Recently-Arrived Mexican Migrant to the United States, Ages 16 to 64, Arrived 1995 – 2000.

Ratio Male to Female	1.6	
	Male	Female
Sample Size	6,130	3,802
Age	27.3	29.0
	(0.046)	(0.065)
Years of Education	8.5	8.7
	(0.02)	(0.026)
Percent Speaks English	59.4	53.1
	(0.002)	(0.003)
Percent Married	21.9	53.2
	(0.002)	(0.003)

( ) Standard error in parentheses

As I note above, the sample includes recently arrived migrants that resided in 202 destination regions with at least 70 Mexican-born person records in the 2000 Census data. I provide mean values for the region-level variables in Table 2 below. The mean values are weighted by the population of recently-arrived Mexican migrants that resided in each region in 2000. I calculate most of the region-level variables using 1990 Census data to lag the independent variables in regression models. This insures that probability of destination choice is exogenous of the regional characteristics in the model. The exceptions are the variables used to calculate a score for the maturity of the Mexican community within each region using factor analysis, described in the next section. I do not lag these variables because there would not be sufficient Mexican-born person records in many of the destination regions in the 1990 data. The metro/nonmetro status is also determined from the 2000 Census.

I focus the analysis on the two variables that measure the amount of prior migration and the maturity of the Mexican community in the destination. The summary statistics show that Mexican migrants who arrived between 1995 and 2000 settled in places that had received, on average, a little more than seven Mexican migrants per 1,000 population in the period between 1985 and 1990. The size of prior migration streams was different in the places that male migrants chose relative to the places that female migrants chose. Recent male arrivals, as expected, settled in places that had relatively less previous migration than those in which female migrants settled (6.8 versus 8.2 migrant per 1,000 population). This is consistent with the idea that women migrate to places where migration has been more prevalent.

In addition, female migrants settled in places that appear more mature in terms of each of the variables used to calculate the maturity score. Female migrants settled in destination regions that have relatively larger Mexican origin populations (19 versus 16 percent); higher percentages of U.S.-born population within the Mexican Origin population (53.7 versus 51.8 percent); higher percentages of long-term migrants who have been in the United States for 20 or more years (20 versus 18 percent); lower percentages of Mexican migrants what had arrived in the previous 5 years[2] (13 versus 15 percent); higher percentages of women in the Mexican-born population (43 versus 41.5 percent); and higher percentages of women residing with children (24.4 versus 23.2 percent).

I also provide in the table descriptive statistics for variables that prior studies on destination choice commonly control.

[2] Because a relatively greater percentage of the Mexican-born population having arrived in the past five years would generally reflect a ***less*** mature destination (negative association with maturity), I recoded the indicator to be positively related to maturity. So the variable used in the d presented in the table is the percentage of the Mexican-born population to have arrived ***more than*** 5 years ago.

Table 2. Characteristics of Mexican Migrant Destinations (all region-level measures lagged except maturity)

	Total		Male		Female	
	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)
Size of Mexican Migration Stream per 1,000 Population, 1990	7.3	(0.031)	6.8	(0.038)	8.2	(0.051)
Mexican Community Maturity Indicators, 2000						
Percent Mexican Origin of Total Population	17.1	(0.056)	15.9	(0.067)	19.0	(0.097)
Percent U.S. Born of Mexican Origin Population	52.5	(0.046)	51.8	(0.059)	53.7	(0.071)
Percent Arrived in U.S. 20+ Years of Mexican-Born Population	19.0	(0.038)	18.2	(0.048)	20.4	(0.062)
Percent Arrived in U.S. 5+ Years of Mexican-Born Population	75.9	(0.042)	75.0	(0.054)	77.3	(0.064)
Percent Female of Mexican-Born Population	42.1	(0.022)	41.5	(0.029)	43.0	(0.035)
Percent Living with Own Children of Mexican-Born Females	23.7	(0.02)	23.2	(0.025)	24.4	(0.032)
Total Population (log), 1990	14.4	(0.004)	14.4	(0.005)	14.4	(0.007)
Annual Earnings (log) per Working-Age Adult, 1990	7.4	(0.002)	7.4	(0.002)	7.4	(0.003)
Employment Growth per 1,000 1990 Population, 1990-2000	94.2	(0.406)	95.8	(0.525)	91.7	(0.64)
Foreign-Born Population Growth per 1,000 1990 Population, 1990-2000	90.3	(0.172)	88.7	(0.222)	92.7	(0.271)
Percent Working-Age Adults with Bachelor's Degree, 1990	24.1	(0.026)	24.2	(0.033)	23.9	(0.041)
Percent Employed in Agricultural Industry, 1990	2.7	(0.011)	2.7	(0.014)	2.8	(0.019)
Percent Employed in Construction Industry, 1990	6.4	(0.005)	6.4	(0.007)	6.4	(0.009)
Percent Employed in Service Industry, 1990	10.6	(0.014)	10.6	(0.018)	10.7	(0.023)
Non-Metropolitan Destination (proportion of migrants)	0.121	(0.001)	0.125	(0.002)	0.114	(0.002)

Measuring Mexican Community Maturity

Similar to Bachmeier and Bean (Bachmeier and Bean 2008), we employ factor analysis to assess the maturity of the Mexican origin population in each destination region. While their study investigates the relationship between a leaner model of maturity (i.e., only the first four variables listed in Table 2) as an independent variable and the presence of Mexican-born women and children as a dependent variable, we include the later two variables in our measure of maturity with the view that the presence of migration of women and children represent . We include the six variable discussed above, hypothesizing that each of them is an outcome of maturity, which is not directly observable. We expect the factor analysis to show that all six variables have a large amount of variation in common and explain only one dimension of information (i.e., maturity).

The factor analysis in fact shows this to be the case. The upper part of Table 3 shows that the first of six possible factors explains 70 percent of the total variation across the six variables. And as a rule of thumb, factors with eigenvalues less than one are typically disregarded as not explaining a substantial amount of variation[3]. The six variables thus have a substantial amount of variation in common and explain a single dimension of information, what we conceptualize as the maturity of a Mexican origin population.

[3] Given that the eigenvalue is close to one at 0.81, I explored what variables "load" high on the second factor. Only "Percent U.S. Born of Mexican Origin Population" loaded on factor 2. This indicates that relatively larger native-born Mexican origin populations do not always coincide with places with more mature migration streams in terms of the five other variables. This may be the case in destinations such as Florida or Eastern Washington state where seasonal workers "settled out" long ago but their U.S.-born children left for more urban areas due to the lack of opportunities. A substantial native-born Mexican origin population would not grow. I keep this variable in the analysis because the loading on factor 1 is still relatively large at 67..

Table 3. Factor Analysis Results for Mexican Community Maturity, 2000

Factors	Eigenvalue	Difference	Proportion	Cumulative
1	4.22	3.42	0.70	0.70
2	0.81	0.39	0.13	0.84
3	0.41	0.10	0.07	0.91
4	0.31	0.17	0.05	0.96
5	0.14	0.04	0.02	0.98
6	0.10		0.02	1.00

	Loadings for Factor 1
Percent Mexican Origin of Total Population	78
Percent U.S. Born of Mexican Origin Population	67
Percent Arrived in U.S. 20+ Years of Mexican-Born Population	91
Percent Arrived in U.S. 5+ Years of Mexican-Born Population	88
Percent Female of Mexican-Born Population	85
Percent Living with Own Children of Mexican-Born Females	92

Destination Choice Models

Table 4 presents the results for the multinomial logistic regression model predicting the conditional probability of a migrant's destination choice. I use the standard scores of each region-level variable to predict destination choice so the estimated coefficients have no intuitive meaning other than the direction and statistical significance (i.e., larger positive coefficients are interpreted as greater probability of destination choice relative to alternative destinations). I focus on the effects of size prior migration stream and Mexican origin population maturity on the destination choices of male and female migrants.

Before introducing sex or other individual-level and regional control variables, Model 1 shows that both the relative size of prior migration streams and the maturity of local Mexican origin populations are generally related to migrants' destination choices. Mexican migrants were more likely to choose places that had larger Mexican migration

streams in the 1985 to 1990 period[4]. At the same time, the negative coefficient on maturity indicates that migrants were also more likely to choose places that were less mature. In other words, new arrivals in the late 1990s tended to chose relatively newer destinations (i.e., less mature) where prior migrants had began to settle in the 1980s. "New" destinations such as Atlanta and Raleigh-Durham likely fall close to the regression line and typify such settlement in this respect.

The various demographic and economic variables shown in Table 2 are controlled in Model 2. There is little effect on the coefficients of size of prior stream and maturity. This result confirms the powerful effects of cumulative causation and networks in Mexican migration regardless of the kinds of economic activity in a place and speaks to the effects of cumulative causation once significant settlement has occurred.

Models 1 and 2 assume all migrants are alike with regard to the effect of regional factors on their destination choices. We expect that this is not the case especially with regard to gender and its interaction with migration network dynamics as discussed above. Models 3 through 5 assess individual differences with interaction terms between the individual-level variables presented in Table 1 and the regional variables. We first assess gender differences in general by adding interaction terms between sex and each regional variable (Model 3; only the coefficients for size of flow and maturity interaction terms are shown). As expected, the size of prior migration streams do not have a different effect on female migrants relative to male migrants (coefficient on gender-size of stream term not statistically significant). In other words, it

[4] I also include a squared-term for prior migration size because of the curvilinear shape of the relationship between prior migration and migration at some subsequent point. In other words, as migration streams become larger and migrants begin to saturate a local labor market, subsequent migration will slow. Hence the negative coefficient on the squared term.

is not necessarily the case that men migrate in relatively smaller migration streams while women migrate in relatively larger streams. Rather, migration in the late 1990s built upon migration that had occurred in the 1980s similarly for both sexes.

The maturity of Mexican origin populations, on the other hand, had differing effects on male and female migrants. We find that the negative coefficient on the maturity score in Models 1 and 2 is driven almost entirely by male migrants given the negative coefficient in Model 3 and a positive coefficient of almost the same size on the sex-maturity interaction term. Put simply, male migrants settled in relatively less mature destinations while maturity had a much smaller effect on female migrants (the sum of -0.45 and 0.31). So while there are differing effects of population maturity by gender, as expected, maturity does not affect each gender as expected.

Model 4 assesses whether the gender effects remain after controlling for the other individual-level factors. Surprisingly, the overall effects of size of flow and maturity become statistically not significant. While prior size of flow appears to matter for both male and female migrants in Model 3, the effects are explained by the intersections between individual-level characteristics and regional demographic and economic dynamics. In fact, a closer look at the other interaction terms (provided in the Appendix), the effects of cumulative causation, i.e., size of prior stream, appear to be moderated by the age of migrants. It appears that relatively older migrants drive the results in Models 1 & 2; that is, migrants were more likely to settle in places with larger prior streams yet less mature populations.

The same is true for Mexican population maturity but only for male migrants. Individual-level differences among male migrants explain the fact that they generally

preferred places with less mature populations. Gender differences with regard to population maturity remain however. In spite of individual characteristics, female migrants chose places with more mature Mexican populations relative to male migrants. This is consistent with Hypothesis 1b and the notion that more mature Mexican populations offer female migrants greater opportunities and are more supportive of their migration and settlement.

Finally, to test Hypothesis 2, we added three-level interaction terms between sex and a dummy variable for married with both size of flow and maturity. Model 5 shows that the effect of marriage among female migrants is statistically significant; marriage matters for the kinds of destinations that female migrants choose. In addition, it appears that marriage enables female migrants' settlement in a greater variety of destinations relative to unmarried female migrants, at least in terms of population maturity. The results thus are more consistent with Hypothesis 2b and the notion that marriage provides women with greater access to networks, on the whole, than it inhibits them, relative to unmarried female migrants.

Table 4. Selected Coefficients for Conditional Multinomial Logistic Regression Models of Destination Choice, Mexican Migrants, Ages 16-64, Arrived in United States between 1995 & 2000

	Model 1[a]		Model 2[b]		Model 3[b]		Model 4[c]		Model 5[c]	
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Size of Flow, 1990	1.95 **	(0.04)	1.64 **	(0.09)	1.69 **	(0.11)	0.52	(0.52)	0.51	(0.52)
Size of Flow Squared, 1990	-1.03 **	(0.03)	-0.94 **	(0.06)	-1.01 **	(0.08)	-0.17	(0.38)	-0.16	(0.38)
Mexican Community Maturity, 2000	-0.54 **	(0.02)	-0.33 **	(0.04)	-0.45 **	(0.05)	0.21	(0.23)	0.20	(0.23)
Interaction terms										
Size of Flow * Female					-0.14	(0.17)	0.06	(0.12)	0.08	(0.14)
Size of Flow^2 * Female					0.16	(0.13)	-0.03	(0.09)	-0.05	(0.11)
Maturity * Female					0.31 **	(0.08)	0.18 *	(0.05)	0.27 **	(0.07)
Size of Flow * Married							-0.45 **	(0.13)	-0.40 *	(0.16)
Size of Flow^2 * Married							0.22 *	(0.10)	0.20	(0.12)
Maturity * Married							0.39 **	(0.06)	0.49 **	(0.07)
Size of Flow * Married * Female									-0.02	(0.19)
Size of Flow^2 * Married * Female									0.01	(0.15)
Maturity * Married * Female									-0.21 *	(0.09)

** p-value<.01; * p-value<.05

a No Controls

b Controling for economic and demographic place characteristics

c Controlling for place characteristics and interaction effects of individual characteristics (age, years of education, speaks English, married)

Discussion and Conclusions

Much current research is devoted to the changing settlement patterns of Mexican migration during the 1990s. While the places of settlement have changed somewhat, the dynamics of Mexican migration do not appear to have changed. The results presented above appear consistent with theories of network migration and cumulative causation, particularly with respect to gender. As has previously been shown in recent studies (see Bachmeier and Bean 2008; Leach and Bean 2008), the results support the notion that new Mexican arrivals, and labor migration more broadly, often employ previously established migration networks to achieve successful migration and settlement. New Mexican arrivals in the 1990s generally settled in places that had relatively larger migration streams ten years prior. If the size of prior migration streams were the only characteristic used to consider the effects of migrant networks and cumulative causation, one might find a contradiction between such findings and increased settlement in "new" destinations, where there was presumably less migration and smaller prior flows in the 1990s. The results also show, however, that Mexican migrants chose destinations in which the Mexican origin population was less mature; that is, destinations that had smaller native-born Mexican origin populations, relatively fewer long-term migrants, and lower proportions of Mexican-born women and women with children. In other words, Mexican migrants chose newer destinations where prior settlement had not been established for very long. In settling in newer destination regions (i.e., less mature Mexican origin populations), migrants still chose place where migration networks had been established previously (i.e., relatively larger prior migration streams).

Further disaggregating the results, however, reveals interesting patterns that enhance our understanding of Mexican migration. Size of prior flow and Mexican population maturity generally do not influence all migrants similarly as one might expect. Also according to expectations, the amount of migration to have occurred previously does not sort out different kinds of migrants, especially with respect to gender. In other words, less prior migration does not translate in male dominated migration and more migration does not predict more female migration. This is consistent with our argument above that more migration does not necessarily translate into lower migration costs or greater access to network resources for women.

The composition of the settled Mexican population in a place, on the other hand, affects female migration. When controlling for various other characteristics, female migrants settle in places with more mature Mexican populations relative to male migrants (for whom maturity has no effect on destination choice). We suspect this is so because female migrants likely find greater access to migrant networks in places that have more diverse migrant communities that are supportive of female migration. There may be more extended family members who either have become legal permanent residents or are born in the United States willing to support their migration. There may be more prior female migrants who form migration networks with potential female migrants in Mexico. And the establishment of certain kinds of institutions such as healthcare facilities that cater to immigrant populations may make such places more accessible and attractive to female migrants. Alternatively, less mature migrant populations that are dominated by young male migrants may restrict access to network

information and resources due to perceptions that female migration is too risky or conditions in the destination are not suitable for women.

And finally, marital status appears to drive the kinds of destinations that female migrants choose. The notion that married women in Mexico are more limited in their destination choices due their husbands' control over network resources does not appear in the population-level data that we analyze here. Rather, married women are more similar to their male counterparts in that their destination choices do not appear to be affected by the maturity of Mexican populations across regions. This is not to say that gendered relations do not affect the timing of female migration, but when married women migrate, they appear to go to similar kinds of places as their male counterparts.

Appendix

Table A.1. Other Coefficients for Conditional Multinomial Logistic Regression Models of Destination Choice, Mexican Migrants, Ages 16-64, Arrived in United States between 1995 & 2000

	Model 2[b]		Model 3[b]		Model 4[c]		Model 5[c]	
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Demographic and Economic Controls								
Population (log), 1990	1.11 **	(0.03)	1.11 **	(0.03)	1.19 **	(0.13)	1.17 **	(0.13)
Mean earnings (log) per working-age adult, 1990	0.11 **	(0.03)	0.13 **	(0.04)	0.40	(0.21)	0.39	(0.21)
Employment growth, 1990 - 2000	0.29 **	(0.03)	0.28 **	(0.03)	-0.09	(0.17)	-0.08	(0.17)
Foreign-born growth, 1990 - 2000	0.36 **	(0.03)	0.38 **	(0.04)	0.39 *	(0.17)	0.39 *	(0.17)
Percent bachelor's degree or higher, working-age adults, 1990	-0.15 **	(0.03)	-0.18 **	(0.04)	-0.06	(0.20)	-0.06	(0.20)
Percent black, working-age adults, 1990	-0.02	(0.02)	-0.04	(0.03)	0.06	(0.15)	0.06	(0.15)
Percent employed in agricultural industry, 1990	-0.02	(0.03)	-0.02	(0.03)	0.49 **	(0.16)	0.49 **	(0.16)
Percent employed in construction industry, 1990	-0.02	(0.02)	-0.02	(0.03)	0.08	(0.14)	0.09	(0.14)
Percent employed in service industry, 1990	-0.11 **	(0.02)	-0.10 **	(0.03)	-0.12	(0.13)	-0.11	(0.13)
Population * Female			0.01	(0.04)	-0.04	(0.03)	-0.03	(0.03)
Earnings * Female			-0.06	(0.07)	-0.01	(0.05)	-0.02	(0.05)
Employment growth * Female			0.03	(0.05)	0.01	(0.04)	0.01	(0.04)
Foreign-born growth * Female			-0.04	(0.06)	-0.02	(0.04)	-0.02	(0.04)
Percent BA+ * Female			0.06	(0.06)	0.02	(0.05)	0.02	(0.05)
Percent Black * Female			0.06	(0.05)	0.01	(0.04)	0.01	(0.04)
Percent Ag * Female			0.02	(0.05)	-0.05	(0.04)	-0.05	(0.04)
Percent Construction * Female			0.00	(0.05)	-0.05	(0.03)	-0.05	(0.03)
Percent Service * Female			-0.02	(0.04)	0.02	(0.03)	0.02	(0.03)
Population * Age					0.00	(0.01)	0.00	(0.01)
Earnings * Age					-0.02	(0.01)	-0.02	(0.01)
Employment growth * Age					0.02 *	(0.01)	0.02 *	(0.01)
Foreign-born growth * Age					0.00	(0.01)	0.00	(0.01)
Percent BA+ * Age					0.00	(0.01)	0.00	(0.01)
Percent Black * Age					0.00	(0.01)	0.00	(0.01)
Percent Ag * Age					-0.01	(0.01)	-0.01	(0.01)
Percent Construction * Age					0.00	(0.01)	0.00	(0.01)
Percent Service * Age					0.00	(0.01)	0.00	(0.01)
Size of Flow * Age					0.10 **	(0.03)	0.10 **	(0.03)
Size of Flow^2 * Age					-0.07 **	(0.02)	-0.07 **	(0.02)
Maturity * Age					-0.07 **	(0.01)	-0.07 **	(0.01)
Population * Age Squared					0.00	(0.00)	0.00	(0.00)
Earnings * Age Squared					0.00	(0.00)	0.00	(0.00)
Employment growth * Age Squared					0.00 *	(0.00)	0.00 *	(0.00)
Foreign-born growth * Age Squared					0.00	(0.00)	0.00	(0.00)
Percent BA+ * Age Squared					0.00	(0.00)	0.00	(0.00)
Percent Black * Age Squared					0.00	(0.00)	0.00	(0.00)
Percent Ag * Age Squared					0.00	(0.00)	0.00	(0.00)
Percent Construction * Age Squared					0.00	(0.00)	0.00	(0.00)
Percent Service * Age Squared					0.00	(0.00)	0.00	(0.00)
Size of Flow * Age Squared					0.00 **	(0.00)	0.00 **	(0.00)
Size of Flow^2 * Age Squared					0.00 **	(0.00)	0.00 **	(0.00)
Maturity * Age Squared					0.00 **	(0.00)	0.00 **	(0.00)

(continued on next page)

** p-value<.01; * p-value<.05

a No Controls

b Controling for economic and demographic place characteristics

c Controlling for place characteristics and interaction effects of individual characteristics (age, years of education, speaks English, married)

Table A.1 (cont.). Other Coefficients for Conditional Multinomial Logistic Regression Models of Destination Choice, Mexican Migrants, Ages 16-64, Arrived in United States between 1995 & 2000

	Model 2[b]		Model 3[b]		Model 4[c]		Model 5[c]	
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Population * Years Education					0.00	(0.00)	0.00	(0.00)
Earnings * Years Education					0.01	(0.01)	0.01	(0.01)
Employment growth * Years Education					0.00	(0.00)	0.00	(0.00)
Foreign-born growth * Years Education					0.00	(0.00)	0.00	(0.00)
Percent BA+ * Years Education					-0.01	(0.01)	-0.01	(0.01)
Percent Black * Years Education					0.00	(0.00)	0.00	(0.00)
Percent Ag * Years Education					-0.03 **	(0.00)	-0.03 **	(0.00)
Percent Construction * Years Education					0.00	(0.00)	0.00	(0.00)
Percent Service * Years Education					0.00	(0.00)	0.00	(0.00)
Size of Flow * Years Education					-0.03	(0.01)	-0.03	(0.01)
Size of Flow^2 * Years Education					0.02 *	(0.01)	0.02 *	(0.01)
Maturity * Years Education					0.02 **	(0.01)	0.02 **	(0.01)
Population * English					0.06 *	(0.03)	0.06 *	(0.03)
Earnings * English					0.02	(0.05)	0.02	(0.05)
Employment growth * English					0.07	(0.04)	0.07	(0.04)
Foreign-born growth * English					-0.11 **	(0.04)	-0.11 **	(0.04)
Percent BA+ * English					-0.04	(0.04)	-0.04	(0.04)
Percent Black * English					0.00	(0.03)	0.00	(0.03)
Percent Ag * English					-0.10 **	(0.04)	-0.10 **	(0.04)
Percent Construction * English					-0.09 **	(0.03)	-0.09 **	(0.03)
Percent Service * English					0.05	(0.03)	0.05	(0.03)
Size of Flow * English					0.09	(0.12)	0.09	(0.12)
Size of Flow^2 * English					-0.11	(0.09)	-0.11	(0.09)
Maturity * English					0.01	(0.05)	0.01	(0.05)
Population * Married					0.02	(0.03)	0.06	(0.03)
Earnings * Married					-0.04	(0.05)	0.02	(0.05)
Employment growth * Married					0.03	(0.04)	0.07	(0.04)
Foreign-born growth * Married					0.00	(0.04)	-0.11	(0.04)
Percent BA+ * Married					0.04	(0.05)	-0.04	(0.04)
Percent Black * Married					0.01	(0.04)	0.00	(0.03)
Percent Ag * Married					0.07	(0.04)	-0.10	(0.04)
Percent Construction * Married					0.08 *	(0.04)	-0.09 *	(0.03)
Percent Service * Married					-0.02	(0.03)	0.05	(0.03)

** p-value<.01; * p-value<.05

a No Controls

b Controling for economic and demographic place characteristics

c Controlling for place characteristics and interaction effects of individual characteristics (age, years of education, speaks English, married)

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