A Spatial Perspective on Mexican Immigration Since 1970

Jeffrey Napierala
Department of Sociology
Center for Social and Demographic Analysis
University at Albany

Abstract: The changing distribution of Mexican immigrants in the United States has received substantial attention, but few researchers have considered the role that spatial processes have played in its development. This paper will examine how Mexican immigration has unfolded over time and across geographic space. Maps are used descriptively to examine their spatial distribution and multilevel models with spatial lags are used to statistically test for spatial effects. Results indicate that strong spatial effects exist at the county level. As expected, Mexican immigrants have dispersed from existing concentrations to adjacent areas over time. The spatial effects of social and economic covariates will also be considered.

Over the last 40 years, the changing geographic distribution of immigrants has altered our understanding of the process of migration in the US. In particular, the declining rates of settlement in large, gateway cities has led to increasing numbers of immigrants in places small and large across the country. This paper investigates the role that spatial factors have played in influencing the changing geographic distribution of Mexican immigrants.

I focus specifically on Mexican immigrants. This is because there is a great deal of variation in the geographic distribution of immigrant origin groups, which may be the result of separate spatial processes. Mexicans, for example, have been strongly influenced by the relative ease of travel to the United States over land for much of the 20th century. Mexicans are also the largest immigrant origin group in the United States, and are widely distributed across the country. There are more than 10 million Mexican immigrants and roughly 33 million person of Mexican origin as of 2011 (Gonzalez-Barrera and Lopez 2013).

A Spatial Perspective in a Historical Context

Although Mexican immigrants have a greater presence in more places around the country than ever before, many are moving directly to, or near to places where Mexicans have gone for many years. In other words, the geographic dispersion of Mexican immigrants out of the southwest is not a recent phenomenon, and can be seen as an extension of an ongoing process that has directed and redirected immigrants in search of more favorable conditions.

The best example of this process is Chicago, where Mexicans arrived in sizable numbers along with Southern Blacks in the early 20th century to take low skilled industrial jobs. Some of these were Tejanos, who were of mixed decent and were already living in the southwest (Gregory 2006), but others were immigrants from Mexico fleeing violence due to a civil war. Many of the first immigrants arrived through jobs on the railroad, which inadvertently introduced them to higher paying work in heavy industries; others arrived from seasonal agricultural jobs on nearby farms (Innes-Jiménez 2013).

Although Chicago is an outlier in terms of the size of the Mexican population, there are many other places outside of the southwest that also received Mexican immigrants in the early 20th century (see Figure 1). This includes Nebraska, Kansas, New York and New Jersey, which are states often considered to be new destinations for Mexicans. Migration to these places is propelled by seasonal agricultural work, but also other low and unskilled jobs, which have high rates of turnover. Such employment fits with the classic strategy of the Mexican sojourner, who migrates temporarily in search of higher wages to support his or her family in Mexico.

Nevertheless, those that return to Mexico have gained information on employment and living conditions that they share with others. Such information establishes a crucial link between communities in Mexico and the US. As Massey and others have demonstrated (e.g. Massey and Espana 1987), such ties reduce the costs of migrating for additional migrants in Mexican communities. Consequently, as migration from Mexico increased in the latter part of the 20th century, incoming immigrants were also likely to travel to these same areas in greater numbers.

Just as information travels in origin communities, and between destination and origin communities through returning migrants, it also is transferred amongst migrants in destination communities. One example is the use of employment agencies to recruit Chinese immigrants in New York City to work in other restaurants in places near the metro area, but also around the country (Liang and Li 2014). Less direct evidence comes from the concentration of immigrants in industries that have relocated to areas outside of traditional urban cores, such as meatpacking and manufacturing (e.g. Stull, Broadway and Griffith 1995; Zúñiga and Hernández-León 2005). It seems clear that immigrants have been successfully recruited by these businesses, or that existing networks have helped immigrants locate these new sources of employment.

Thus, once immigrants arrive to a destination they may need to rely on local, more current sources of information to locate jobs and housing. We can expect this to be most common when rates of immigration are especially high and immigrants are forced to compete with each other for work and housing. This is precisely the case for Mexican immigrants, particularly in southern California, starting in the 1990's. Following the Immigration Reform and Control Act of 1986, immigration increased rapidly to the most established destinations leading to increased housing costs, a backlash against the growing number of immigrants, and the "deflection" of immigrants to other destinations (Light 2006). This is coupled with increased expenditures on border control, which disrupted the

existing cyclical pattern of migration, and influenced migrants to stay longer and settle in the US (Massey, Durand and Malone 2002).

These factors, the growth of the immigrant population and competition for resources, have led immigrants to search out new places to settle. In contrast to existing research on this topic, this paper seeks to determine in these new destinations are spatially related to existing areas of settlement.

Data

Decennial summary file data from 1970 to 2000, along with American Community Survey data for 2007-2011 are utilized for the analysis. The unit of analysis is the county. In the panel created for the analysis, counties have been merged, when necessary, to create a consistent unit. The total number of cross-sectional county units is 3078, yielding 12,312 total observations in the regression models.

The dependent variable is the Mexican immigrant population in each the county divided by the total number of Mexican immigrants in the US in 1970. I refer to this simply as the Mexican population below. This captures the changing overall distribution of Mexican immigrants in each county, and provides a more intuitive interpretation than simply using a count of the population.

The independent variables are the temporally lagged dependent variable and the county population density, which is a control which measures urbanization. In a future version of this paper, additional covariates will be included that relate to additional social and economic conditions.

Methods

Descriptive mapping will be presented (in future versions), along with multilevel models. As mentioned above, the independent variables are temporally lagged and, consequently, the parameter estimates measure the change in the dependent variable (Allison 1990).

The level 1 "within county" variance is particularly useful since it can be used to test hypotheses concerning how the Mexican population distribution has changed over time net of unobserved, stable characteristics (of counties, due to a within unit transformation). A statistically significant spatial lag of the dependent variable tests for a time-space diffusion effect. The slope of the lagged dependent variable, π_{2i}, also can this hypothesis. A significant effect of the spatial lag of the dependent variable will provide evidence that the rate of change in the (distribution) of the Mexican population is related to Mexican population in adjacent counties. At this preliminary stage of the analysis, non-linear terms are not included to simplify the presentation of results. The multilevel model can be expressed as:

$$Y_{ti} = \pi_{0i} + \pi_{1i}Time + \pi_{2i}Y_{t-1,i} + \pi_{3i}WY_{t-1,i} + \sum_{m=4}^{M} \pi_{mi}Z_{mti} + e_{ti}$$

$$\pi_{0i} = \beta_{00} + \beta_{01}Y_i + \beta_{02}WY_i + \sum_{m=3}^{M} \beta_{0q}Z_{qi} + r_{0i}$$

$$\pi_{2i} = \beta_{10} + \beta_{11}Y_i + \beta_{12}WY_i + \sum_{m=3}^{M} \beta_{1q}Z_{qi} + r_{1i}$$

Preliminary Results

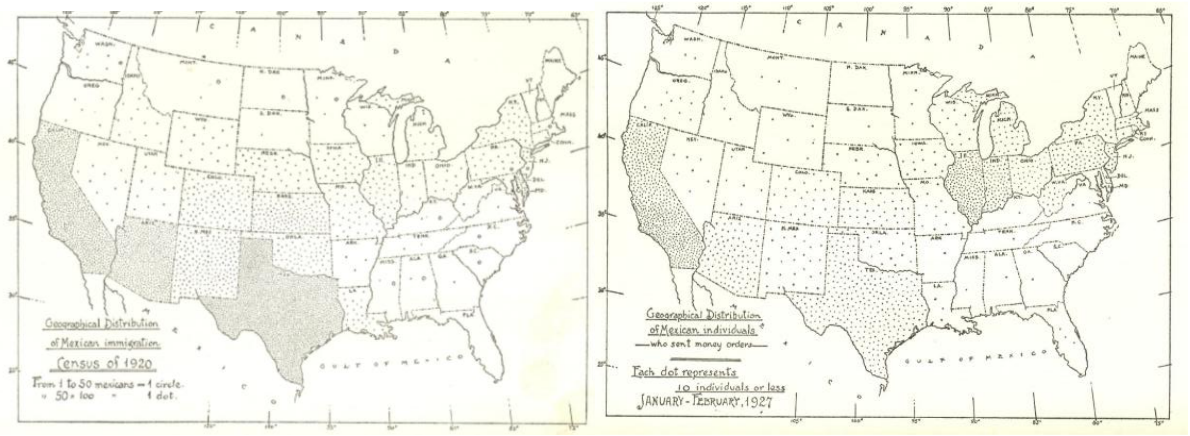
Table 1 provides parameter estimates for the models depicted above. Support exists for diffusion hypothesis. In particular, for the level 1 model, the spatial lag of the Mexican population is positive and statistically significant suggesting that adjacent counties have a positive effect on population growth. This is in contrast to the non-spatially lagged Mexican population variable, which when taken together with the spatial lag, suggest that the Mexican population is moving away from existing concentrations to adjacent areas. Overall, the spatial lags explain a substantial, and significant amount of the total within county variance.[1]

[1] Variance parameters are not shown, but are available upon request.

The effect of the (temporally lagged) Mexican population variable varies significantly across counties. Of particular interest, as before, is the spatial lag. The effect of the Mexican population variable is negative, and significant, which indicates that the growth of the Mexican population is lower when adjacent counties have larger Mexican populations.

Overall, the results point to shifting distribution of Mexican immigrants since 1970, which is characterized by dispersion from existing areas of concentration. Further care will be taken to examine the complexities of the process in future versions of this paper, but initial results indicate that a spatial approach to understanding Mexican immigration will be fruitful for understanding this new era of immigration.

Figure 1. Distribution of the Mexican Immigrant Population



From Gamo (1930), pgs. 26 & 28

Table 1. Preliminary Results from the Multilevel Model

	Estimate		Lag Estimate	
Intercept	0.514	***		
Time (in years)	0.01675	***		
Level 1 Model				
Mexican Population	-0.3461	***	0.2752	***
Logged Population Density	0.001587	***	-0.0152	***
Level 2 Model				
Mexican Population	-0.0004	*	0.3744	***
Logged Population Density	0.000795	***	-0.0006	
Mexican Population Model				
Mexican Population	-0.00745		-1.0464	***
Logged Population Density	0.02556		0.1129	

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