

MEXICAN-ORIGIN INTERREGIONAL MIGRATION FROM THE SOUTHWEST:  
HUMAN, HOUSEHOLD, AND COMMUNITY CAPITAL HYPOTHESES

A Thesis

by

CARLOS SIORDIA

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2009

Major Subject: Sociology

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Approved by:

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## ABSTRACT

Mexican-origin Interregional Migration from the Southwest:  
Human, Household, and Community Capital Hypotheses. (May 2009)

Carlos Siordia, B. A., University of Texas-Pan American

Chair of Advisory Committee: Dr. Rogelio Saenz

This research addresses the question of what factors lead Mexican-origin individuals living in the U.S. to seek a new residence outside their Southwestern state of residence. The analysis examines three hypotheses: (1) the human capital hypothesis that college graduates have higher odds of migrating out of the core region than those with less than a high school education; (2) the household social capital hypothesis that posits that the presence of a household member born outside the core increases the odds of migration; and (3) the community social capital hypothesis which states that householders residing in an area with community social capital will have higher odds of leaving the core than those living in areas with no community social capital.

These hypotheses are investigated using three models: (1) a full model that includes both native- and foreign-born Mexican-origin householders; (2) a native-born model which includes only native-born Southwest householders; and (3) a foreign-born models that includes only foreign-born Mexican-origin householders. By using the Saenzian region-concepts of core, periphery, and frontier, I find: (1) limited support for

the human capital hypothesis; (2) consistent support for the household social capital; and (3) no support for the community social capital.

The analysis is important to sociological theory and demography because it specifically endeavors to explain how the connections between three kinds of capital—human, household, and community—shape the decision to leave the Southwest for other regions of the country. By computing statistical and theoretical particulars, the thesis ascertains that migration-selectivity theories regarding the general population are useful in theorizing Mexican-origin interregional migration. Findings expand existing sociological literature by theorizing how human, household, and community capital operate under the Saenzian regions to shape the interregional migration of the growing Mexican-origin population of the U.S.

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## CHAPTER I

### INTRODUCTION

Demographic analyses of the movement of humans extend back over a century with the work of Ravenstein based on migration in Europe (1876, 1885, 1889). In the United States, initial interest on migration centered on rural-to-urban migration and the movement of blacks out of the South (Anonymous 1936; Hamilton 1959; Taeuber & Taeuber 1938; Thompson & Bogue 1949; Wattenberg 1948). Research on the movement of Mexican Americans<sup>1</sup> began in the 1970's (Alexander 1979; Beale 1973; Brunton 1973; Cardenas 1976, 1977; Boswell 1979; Estrada 1976; Grebler 1970; Moore 1970a, 1970 b; Romo 1978; Weeks 1979) and continued in the 1980's (Arreola 1985; Bean et al. 1988; Garcia 1981; McHugh 1989; Saenz 1989a, 1989b) and the 1990's (Frey et al. 1998; Saenz et al. 1994, 1997, 1999).

Investigations of the migratory patterns of Mexican-origin people has increased significantly in recent years (e.g., Borjas 2006; Cai 2007; Crowley et al. 2006; Durand et al. 2006; Ellis et al. 2006; Fernandez et al. 2007; Foulkes et al. 2000; Frey et al. 2005; Gilroy 2007; Gouveia et al. 2000; Gurak et al. 2000; Guzman et al. 2002; Hiller et al. 2007; Saenz et al. 2004, 2007; Yankow 2003). Even though studies concentrating on the migratory behaviors of Mexican-origin individuals have only existed for about three

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This thesis follows the style and format of the *American Sociological Review*.

<sup>1</sup>The umbrella label of "Latino/a" cannot be used interchangeably with Mexican-origin because while all Mexican Americans are Latinas/os not all Latinas/os are Mexican American. Thus, when the term Hispanics is used, it refers to Mexican Americans and all other Latin-origin individuals who fall under the ethnic category.

decades, the fact that Latinos have become America's largest ethnic minority group (U.S. Census 2006) has recently increased the importance of studying this population.

Despite this research, there is no published study that uses census data from other years to explore how human, household, and community capital influence the likelihood of interregional migration in the U.S. Mexican American population. By using network theories by Fred E. Katz (1966), Mark S. Granovetter (1973), and Charles Tilly and C. Harold Brown (1967), the thesis seeks to advance migration theory by evaluating how individual level attributes and social contacts may influence the likelihood of out migrating from the Southwest (Arizona, California, Colorado, New Mexico, and Texas) into other U.S. regions.

Advancing sociological knowledge by studying how the different forms of social capital relate to the migratory behavior of Mexican-origin individuals will help sociologists develop an understanding of how they move away from what has typically been characterized as their "homeland" (Anaya & Lomeli 1989) and into regions of the United States that have traditionally had fewer Mexican-origin people. This understanding will help evaluate theories of social networks and in particular how different forms of social capital influence their geographical location through the U.S.

This research based on the 2000 5% Public Use Microdata Sample (PUMS) focuses on Mexican-origin migration from the Southwest region occurring between 1995 and 2000. The project makes the Mexican-descent population in the Southwest the foci of the study for various reasons. In general, the Southwest is an important region for Mexican-descent people (Galarza 1981, Samora & Simon 1993; Nostrand 1975).

Mexican-origin people have populated Southwestern states for many decades (Watson & Samora 1954) extending back prior to the settlement of European pilgrims in the first colonies (Bushee 1923; Pachon & Moore 1981). The Southwest has for the most part retained the heaviest population concentration of Mexican-descent people in part due to the historical and continuing Mexican immigration (Bogardus 1930; Calavita 1992; Gwin 1921; Samora 1971; Pantoja, Menjívar, & Magaña 2008).

The primary cause for studying the migratory behavior of Mexican-origin individuals living in the Southwest is that this ethnic U.S. population has experienced and continues to experience unique socio-cultural and economic circumstances in the region. For example, the Southwest geographical area has its own regional identity (Weber 1982), its own politics (Shockley 1972), and its own culture (Perrigo 1971) due in large part to the presence of pre- and -post U.S. Mexicans in the region. Mexican-origin individuals in the region have experienced a wide range of social environments ranging from violent social oppression against Mexicans (Paredes 1958) to revolutionary social movements (Gutierrez 1998). The Southwest is filled with both wonderful and terrifying stories that inform modern day Mexican-origin discourse in North America and how their residence in or pilgrimage from Aztlán (Hernandez 1975) influences their lives.

Early works have given the Southwest region special attention by pointing out how race and class operated very differently within it in comparison to other U.S. regions (Barrera 1979). For example, law scholars have pointed out that in post-conquest Southwest states Mexicans became invisible under the law in order to keep

them from entering the landholding or claimant class (Cameron 2000). Because the Mexican-origin population in the Southwest has experienced a very unique socio-political struggle (Acuña 1972, 2006), the key socio-political Chicano movement that served in large part to awaken the national identity of Latinos/as in general during the 1970s and today through academia and various communication agencies took roots within the southwestern states (Munoz 1989; Trujillo 2005).

Ever since Mexico was militarily forced to sign the Treaty of Guadalupe Hidalgo in 1848 (Griswold 1990) the Southwest has continue to host the largest Mexican-descent population in the U.S. Existing maps clearly show the pronounced presence of Latinos/as in the Southwest states by county in 2006 (Census 2007a). The Southwest continues to be a special place for Mexican-origin individuals.

The continual presence of Latinas/os in the southwestern states has given rise to many special ethno-racial struggles and experiences that may have helped defined their population identity within the U.S., allowing previous researches and the current enterprises the means to justify that it be given special attention (Galarza, Gallegos, & Samora 1970; Grebler, Moore & Guzman 1970; Griswold 1984; Moore 1970a; Trujillo 1974; Saenz, Cready, & Morales 2007; Saenz & Davila 1992). Recent data continues to indicate that southwestern states have the highest percent of Latino/a concentrations in the U.S.<sup>2</sup>. For example, in 2006, New Mexico's total population was 45% Hispanic, while California had 36%, Texas 36%, Arizona 29%, and Colorado 20% (Census

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<sup>2</sup> Earlier writers have pointed out that the Hispanic and Latino/a umbrella label hides the fact that Mexican Americans have been the bulk of the Southwester Hispanic population for many decades (McWilliams 1949; Saenz, Cready, & Morales 2007).

2007b). Nevada was the only state not currently included in the Southwest to have a higher Latino/a concentration (24%) than Colorado, the southwestern state with the lowest Latino/a concentration. The major point in all this is that most Mexican Americans have and continue to make the Southwest their home in the U.S.

Another reason why Mexican-origin individuals in the southwestern region are the center of attention in this research is that they have been unfortunate recipients of high poverty rates<sup>3</sup> and low levels of socioeconomic status for many years. For example, in 2006 about 21% of Latinas/os were in poverty and except in New Mexico and all other southwestern states had poverty ratios higher than the national ratio (Bishaw & Semega 2008). This makes poverty among Latinos/as in the Southwest a special issue because interregional migration to non-southwestern states represents a strategy for exiting poverty with geographic mobility associated with social mobility. Mexican-origin people make up most of the Latino/a population in southwestern states. The presence of high levels of poverty make "new destinations" (Zuniga & Hernandez-Leon 2005) instrumental in potentially relinquishing the Mexican-descent population from the continual grip of poverty in the Southwest.

The spotlight on the Southwest--in the context of interregional migration--is important because it holds special social, historical, economic, and political meaning for Mexican-origin individuals in the U.S. As Mexican-origin individuals alter their population distribution across the U.S. (Bernstein 2007), migration out from the Southwest may lend a hand in helping them experience economic and social "upward"

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<sup>3</sup> For a detailed discussion of how poverty is measured please see Dalaker 2001.

mobility, allowing them to continue to change the "face of America" in general (Rodriguez et.al., 2008; Saenz et.al. 2003; Saenz 2004) and that of their own ethnic population.

In examining Mexican-origin interregional migration from the Southwest region, this study seeks to expand demographic theory and methods. By using multinomial logistic modeling, this research endeavors to help social theory further open the door for new insights (Gale 1973) on the complex migration patterns among the Mexican-origin population in the United States. In particular, the research addresses the question of how human, household, and community capital are associated with Mexican-origin interregional migration from the Southwest into other U.S. regions.

The thesis consists of five chapters. This first chapter highlights the goals of the research undertaken here. Chapter II examines the literature on interregional migration. This section introduces the Saenzian concept related to the movement of Mexican-origin people to specific areas of the county in more detail. Chapter III describes the data and the methods used to carry out the analysis. Chapter IV discusses the findings. Finally, Chapter V summarizes the findings and concludes with a discussion of the implications of the results.

## CHAPTER II

### LITERATURE REVIEW

This chapter provides an overview of the literature on internal migration, with specific attention to interregional migration. The chapter provides a discussion based on the major theoretical components of the analysis, namely the Saenzian concepts and the different forms of capital (human and social) that are related to movement of Mexican-origin individuals from the Southwest region. The chapter describes how various theories frame our understanding of migration.

By drawing on ecological demography theories, I first delineate why migration is such an important dynamic in populations. A discussion of how social networks help explain the processual migration perspective follows. This information helps capture the economically-laden logic underlying ideas used to frame how human and household and community social capital influence the decision of Mexican-origin individuals to migrate out of the Southwest. The section delineates the three main human and social capital factors used to establish the three main hypotheses under analysis.

In the second section, the interregional migration literature is explored to explain why the Southwest region is the foci of this study. This section introduces the cornerstone idea of the empirical project: the Saenzian concepts.

The literature review concludes with a discussion of how interregional migration selectivity occurs. The theories and various factors introduced earlier are used in this

section to encapsulate the main idea of the thesis: that interregional migration is influenced by various types of human and social capital mechanisms.

### *Human Ecology, Migration, and Capitals*

Human ecology theory (Hawley 1950) concerns itself with how human populations organize themselves in relation to their sustenance-producing activities (Poston & Frisbie 2006). Ecological demography posits that populations attain sustenance equilibrium by using the three main demographic processes: (1) births/fertility; (2) deaths/mortality; and (3) moving/migration (Poston & Frisbie 2006). Research on the "ecological complex" (Sly 1972) in migration has been around since the sixties (Hawley 1968; Davis 1963).

Although some have pointed out how human ecological theories parallel conflict theories (Hawley 1984), it may follow more of a quasi-functionalist perspective. The macro-theory basically posits that populations maintain equilibrium between their size and resources by redistributing themselves through the three main demographic processes, with migration being the most efficient in affecting population change (Poston & Frisbie 2006).

An oversimplified example of how equilibrium is attained among a group of people (i.e., a population) that reside in a geographical location where food becomes scarce, would be that these people would have to find a way to distribute their food in such a way that all members are sustained—kept alive. In the event that food access continually decreased, the population would have to find a way to limit the number of



"mouths" it has to feed. The population may then attain sustenance equilibrium by either having fewer births, more deaths, or people migrating out of the group. No matter what, they would have to change the size of their group relative to their resources. Having fewer births will only benefit them at a much latter time. Increasing the amounts of deaths in the group may create ethical dilemmas that may dissuade the group using such solutions. In this hypothetical scenario, migration offers the quickest most acceptable response to disturbances in the equilibrium.

Some researchers have pointed out the U.S. population is becoming less mobile (Wolf & Longino 2005), while others have indicated that mobility has remained high in the civilian population mobility over the last few decades (Franklin 2003; Pingle 2007). Migration is a dynamic process that helps populations regulate themselves: it is an exceptionally dynamic demographic process. So much so that Charles Tilly wrote that throughout American history "...the highly variable knitting together of sending and receiving networks, shaped the aspirations, opportunities, strategies, fortunes, and accomplishments of most Americas" (1990: 93). This is why I am investigating human migration.

The macro perspective human ecology offers can help us understand that individuals migrate for more than just personal reasons: there are structural influences on the decision to migrate. Human organisms are framed as rational economic agents in the hypotheses of the research. Humans are seen as having a desire to maximize both their monetary and psycho-emotional benefits. They are believed to have the ability to perceive opportunities that may help them maximize their benefits and that their ability

to act on such perceptions is affected by different demographic factors. The mere "possibility of migration" has been shown to foster human capital formation (Katz & Rapoport 2005:273). The thesis seeks to discern how existing human and social capital are associated with the decision to migrate.

The economic framing of the individual thus assumes that in general most humans want to move up the social hierarchy. More specifically, Mexican-origin individuals have the ability to perceive how their individual skills and social networks can be used to gain the greatest returns on their various forms of human and social capital and their ability to act on such perceptions varies by different socioeconomic and demographic factors, such as marital status and education.

I will now discuss how the term social network is being used more in a metaphorical sense than an empirical one.

The word network refers to the idea that people are interconnected in a social system. That is, humans interact with others and their interactions with others vary in strength. In most instances, family members would be seen as having a strong connection while co-workers may be seen as having a weak connection (Granovetter 1973; Katz 1958). Human relationships are then imagined as connections that unite various nodes (i.e., humans) in a social network, where migration flows of human organisms through "trust networks" are important for individuals', families', and national economies (Tilly 2007). The thesis is interested in assessing whether different forms of social (and human, see below) capital affects migratory behavior as individuals navigate through the various "social links" (Katz 1966).

While the ecological perspective is not used directly in modeling migration decisions, recognizably populations tend toward achieving sustenance equilibrium and that social networks vary in strength and usefulness. The thesis investigates how micro-level attributes like level of education and the macro-level factor of having many in-migrants in the community influence the likelihood of migrating. As such, it is only concerned with how Mexican-origin individuals use their personal and public forms of capitals in searching for upward social mobility. It is ultimately interested in ascertaining if social factors play a role in the decision to migrate.

There are three types of human and social capital theories used in the analysis: human capital and household and community social capital. These are treated as "migration capitals." That is, they are being framed as resources that can influence migration processes.

Capital theories have been utilized in migration studies (Massey et al. 1997; Saenz et al. 2007) to understand how the different forms of human and social capital influence migration behavior. By conceptualizing social network interactions, research has been able to compare the value<sup>4</sup> of different types of ties (Coleman 1988; Litwak 1960; Rapoport 1953).

In general, human capital theory refers to the individual's characteristics and it is most commonly measured by level of education (Davila et al. 1990; Foulkes et al. 2000; Giordono 2000; Greenwood 1985; Kritz et al. 1994; Saenz 1991, 1989; Schwartz 1976).

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<sup>4</sup> It is beyond the scope of this study to discuss how social networks/ties/contacts unequally benefit individuals (Menjivar 2000), how their equilibrium is altered by context (Jones 1948) and how they are simultaneously embedded with advantages and disadvantages (Takahashi & Magalong 2008).

Human capital is viewed as a private entity because the individual “owns” it. In keeping with tradition, this study will also use education as a proxy for human capital.

Educational attainment is important in predicting migration because many migration studies have shown it to be a significant factor for estimating the probability of migration (for example see Domina 2006). There are several reasons why migration research should consider the individuals' human capital. For example, human capital has been shown to influence an individual's position in the social hierarchy (Wall, Ferrazzi, & Schryer 1998) and that labor market returns vary by the level of human capital (Redstone 2006).

This socioeconomic mobility associated with education makes human capital an important component of population redistribution. If education influences the ability to influence one's socioeconomic status and it is highly associated with migratory behavior, then it should be included in migration research. Including such an important factor is contextualized by using the Saenzian concepts. Evaluating how the core, periphery, and frontier regions play a role in understanding the various human and social capital in relation to interregional migration shows how education is involved in migration processes.

Education has the potential to provide the means by which to act on the pursuit of a better quality of life. Of the three forms of human and social capitals being studied, human capital is the most resourceful in navigating formal interactions. A straightforward example of this can be given when we consider to employment opportunities. Previous research has shown that interregional movers have "greater

propensities for upward mobility...when upward mobility implies increase in income" (Ge Lin 2006). Researchers have also found that returns to educational investments vary by state (Goetz & Rupasingha 2003) and that skilled workers respond to market disequilibrium by moving into the more attractive regions, while the unskilled are immobile and move to these attractive regions only after their more skilled counterparts move in (Michel, Perrot, & Thisse 1996).

All individuals may benefit from network contacts in finding their way through "multiregional occupational labor market systems" (Sweeney & Goldstein 2005:314) to gain employment, but those with college degrees may rely on impersonal links more easily than individuals with less than a high school education --specially when the job is in a different region from where they are currently residing.

Having a college degree may also mean that extra avenues of information (like internet job postings) are available to inform the person of more profitable formal economic sectors. Because individuals with a college degree are hypothetically more skilled in navigating through weak-formal networks, it is believed that the migration of those with less than a high school education may rely more heavily on strong and informal social networks than for those with a college degree.

Implicit in this logic is the notion that weak ties are more abundant than strong ties and that individuals who can navigate more efficiently through weak ties have the greatest opportunities for maximizing their skills. Weak ties may also be formal or informal. I use the term "formal" to refer to quasi-professional associations and "informal" to tentatively name more socially intimate and non-professionally related

associations. By way of example, a formal weak tie may be an individual who lives far away and can only be contacted via their business email, phone, fax, or internet website. An informal weak tie may be an acquaintance known through a third cousin. I believe those with a college education have more training in how to navigate formal-weak ties. That is, those with a college education may on average have more skills in using different forms of technology, like the internet, to successfully make contacts with semi-strangers in geographically distant places.

As a consequence, those with less than a high school education are perceived as having more limitations in navigating weak formal networks. This is a crucial point because current race problems in America allow and create different forms of discrimination for all potential Mexican-origin migrants. That is, they may be navigating through potential hostile environments and facing more social obstacles in their ability to migrate. As a consequence, those who are able to enter non-ethnic networks (like formal weak-ties) may have a higher likelihood of leaving the Southwest.

Human capital is a privately owned individual attribute that can aid the movement through networks imbedded in structural systems where job attainment is achieved through a supposed competitive process. Those with more human capital are more empowered to influence their position in the social hierarchy. As a consequence, Mexican-origin individuals living in the Southwest that perceive migration as a tool with the potential to help with upward social mobility may act on the desire to leave the core. Those with less formal education are hypothetically moving out of necessity while those with more education move out of the desire to improve the returns to their education.

A classical study of migration details why and how education plays an important role in migration process (Ritchey 1976). As a result, a main hypothesis under observation evaluates if education is important in predicting migration behaviors and if different forms of social capital operating through social networks are important factors in predicting migration after this human capital factor is statistically controlled. There are three hypotheses under investigation. In the first, I hypothesize that householders with a college degree will have a higher likelihood of migrating out of the core region compared to those with less than a high school education.

Household social capital has been used to hypothesize how the household's network contacts are associated with interregional migration (Saenz 2007). Some have recently reported that households are the social unit through which individuals experience their neighborhood and make residential location decisions (Ellis, Wright, & Parks 2006). The key difference between human and household social capital is that in general terms human capital theory focuses on the individual's characteristics while household social capital theory concentrates on the household's characteristics to interpret likelihoods of migration. Human capital is imagined as existing in the individual, while household capital moves within a group of significant others—usually family (or more broadly, household) members. Both are viewed as private entities because they belong to the individual or his/her household unit.

Household social capital theory also helps explain how household network connections may influence the likelihood of migration. The logic here is that individuals with a household member born outside the core may have a higher likelihood to migrate

out of the homeland because they have verifiable contacts outside the core. This thesis uses the presence of a person born outside the core in the household to establish if the householder has any periphery or frontier contacts. If there is a non-core person who was born outside the core (more details below) in the household, then the householder is said to have household capital. Because a Mexican-origin individual with household capital has verifiable non-core network contacts, it is more likely he/she will have a higher probability of leaving the Southwest.

By statistically modeling the three regional categories, the thesis examines if the presence of a non-core place of birth in the household is actually influencing the householder's likelihood of interregional migration. This leads us to the second of the three main hypotheses under investigation. I hypothesize that householders with a household member born outside the Southwest region have a higher likelihood of migrating out of the core region compared to householders who do not have a household member born outside of the homeland. More specifically, those with periphery household social capital will be more likely to out-migrate to a periphery state and those with frontier household social capital will be more likely to leave the core for a frontier state.

Research on community social capital has also been employed in migration studies to hypothesize how individuals benefit from social connections in their communities (Ayala-Garcia 2003; Massey 1990; Saenz 2007). By concentrating attention on community characteristics, researchers have theorized how communities'



network-contacts shape migratory behavior. The loci of resources here are perceived to rest within the communal geographic space of the individual.

The major difference among these three capital-based concepts is that community social capital is a context factor, while human capital and household social capital are both individual-level factors. Community social capital is a "public good" while the other two are "privately owned". In this paper, community social capital refers to the relative presence of persons in the local area [Public Use Microdata Area (PUMA)] (where householders were living in 1995) who migrated from outside of the Southwest between 1995 and 2000.

Accounting for the context variable of community social capital may aid migration studies by observing how communal resources provide potential network contacts. I will give a straightforward example. A person living in a core community (i.e., PUMA) where there are lots of Mexican-origin persons who migrated recently from outside of the core is potentially exposed to many frontier and periphery network links in comparison to a householder living in community with very little of such migrant. The logic is that the degree to which there are members present from outside the core in the community affords different potentialities for connecting with periphery or frontier networks. As a consequence of these assumptions and ideas, the individual living in an area with community capital is seen as being more likely to migrate out of the core region. It is therefore hypothesized that Mexican-origin individuals residing in 1995 communities that have relatively high levels of Mexican-origin periphery and frontier in-

migrants will have a higher likelihood of migration than those who live in areas with low levels of in-migrant concentrations.

### *Interregional Migration and Saenzian Concepts*

Interregional migration in the United States has been studied for many decades (Ross & Truxal 1931). Studies examining interregional migration by race have also been around for many years (Cebula 1974; Crowder & South 2005; Fulton 2007; Greenwood & Gormely 1971; Saenz, Cready, and Morales 2007). Research focusing in on Mexican-origin individuals living in the Southwest (Saenz 1989a) has suggested that general migration selectivity theories need to be examined to see if they can be generalized to varying ethnic groups (Saenz 1989b). Recent work has shown that “minority status” individuals have different “onward migration” behaviors than whites (Wilson, Berry, & Toney 2008) and that Latinos are more likely to “return migrate” than whites (Wilson et.al. 2008). Because Mexican-origin interregional migration may be different than non-Hispanic White or Black movements, this project seeks to provide information that can help better understand the interregional migration experience of Mexican-origin individuals living in the Southwest.

Much is known about interregional migration, but this complex phenomenon has many worthwhile questions that remain to be explored in the Mexican-origin population. Interregional migration is defined here as an event that occurs when an individual moves from one region to another in the continental U.S. The review of the existing literature

on interregional migration is narrowed to focus on how various demographic characteristics influence migration behavior.

The states in the continental U.S. are used to conceptualize the three Saenzian regions. The states are categorized into regions by measuring the Mexican-origin population presence (discussed in more detail below). Accounting for *where* potential migrants move is important because the place of destination plays a role in the decision to migrate. For example, a recent study found that communities vary in level of "attraction" to prospective in-migrants (Lekwa, Rice, & Hibbing 2007). Thus creating regions based on an ethno-racial measure helps this research account for how place of destination plays a role in either "pulling in" or detracting potential Mexican-origin interregional migrants.

The thesis uses the Saenzian concepts of core, periphery, and frontier to categorize the three ethno-racial regions. Because the U.S. Mexican-origin population is most heavily concentrated in the core region, it hypothetically exerts the most powerful pull for Mexican-origin individuals. The periphery follows in Mexican-origin concentration and thus in attraction and this region is followed by the frontier where very few Mexican-origin people can be found relatively speaking.

The interconnectivity of migration flows is complex and different for each state, but in general within-county migrations have been typically associated with life-cycle states (Sjasstad 1962) and inter-county migrations and beyond have been seen more driven by economic reasons. Classical work on this topic clearly states that "economic repulsions and attractions have long been emphasized as the primary forces motivating

migration" (Westefeld 1940). This investigation is concerned with evaluating interregional migration and consequently assumes that Mexican-origin south-westerners are in general behaving as logical actors motivated by both economic and non-economic reasons.

A key element addressed is how the potential desire to be among co-ethnics plays a role in moderating economic motives as they influence migratory behavior. Some have recently shown that the individuals own assessment the potential climate of reception is associated with migration (Valdivia et.al. 2008). For these reasons the multinomial statistical models being used with 2000 Census data are believed to show how the different forms of human and social capital differ in significance and influence when place of destination is considered.

Interregional migration is a multi-dimensional phenomenon. It can be separated down into two general processes: deciding to migrate and where to migrate. The previous section delineated some of the fundamental dynamics involved with the decision to migrate. I will now discuss how the "where" factor interacts with the individual's characteristics and in particular will outline how the Saenzian concepts help crystallize the way various types of capital operate to influence interregional migration decisions.

In 1991 Rogelio Saenz published a study using the core, periphery, and frontier terms to quantitatively model Mexican-origin interregional migration. By introducing these demographic concepts, Saenz expanded ethnic-migration theories. He operationalized spatial-population constructs that helped articulate how Mexican-origin

selectivity factors operate in interregional migration from: highly concentrated ethnic areas (the core region) to the two less ethnically-populated regions of the U.S. (the periphery and frontier). Accounting for ethnic context is necessary because research has found that it is an important determinant of internal migration (Kritz & Nogle 1994).

This approach is methodologically useful to the sociology of migration because it addresses the important element of physical and ethnic distance (see Bogue et al. 1949; Bright 1941; Stouffer 1940, 1960; Westefeld 1940) and place of destination (see Fotheringham et. al. 2000; Wolpert 1967) in studying interregional migration. The core, periphery, and frontier designations—hereafter referred to as the Saenzian concepts—are very useful because they directly investigate factors involved in Mexican-origin interregional migration research.

The core region is also referred to as the homeland because it has been historically populated by Mexican-origin people and because it currently holds the largest Mexican-origin population concentration in the U. S. The continual presence of Mexican-origin people in this sizeable geographic area gave birth to the "core" categorization.

The theoretical framework that informs this thesis research draws on several different traditions. At the center of this study is the time-honored theoretical assumption that migration evolves through stages (Bohning 1972; Marks 1983; Massey 1987, 1990; Saenz 1991). According to this view of the process of interregional migration, the cumulative causation of migration begins when individuals that migrate become an information resource to those “back home” who may be interested in

migrating. This “feedback” (Reichert 1981) process is then assumed to establish a mechanism whereby migration becomes processual: past migrants influence those with whom they are linked by providing them with a migration network contact. This is how chains of migrants are formed linking distant places (Tilly 1990).

A general example using Saenzian concepts would be that feedback mechanisms are established when members of one’s ethnic group migrate out from the core into the periphery or to the frontier area. When the core out-migrants break ties with the Southwest, they serve as a source of information to their connections “back home.” Because previous studies have found that knowledge networks can help the migration process (Lee 1966), it is assumed that knowledge of what the periphery or frontier regions are like and how to migrate to them with affordability can increase the likelihood of out migration from the core. Ultimately, knowledge-based movements trigger the internal momentum necessary for the creation of the migratory-contact networks (see Gurak 1992; Katz 1958) that form migratory feedback mechanisms. This processual formulation of interregional migration directs the overall theoretical approach in this thesis.

In the example above, the periphery and frontier migrants consequently set up the first stage of the migration process by establishing a network contact from a particular region back to the core. Social networks operate through a processual migration sequence that pulls and pushes individuals in such a way that sustenance equilibrium is attained through population redistribution.

The structural and individual influences on migration behaviors are also a function of various *pull*<sup>5</sup> factors that shape the level of attraction a region may have to potential migrants. Interregional migration research has historically sought to investigate how certain factors—such as a robust economy—function to attract potential migrants and how other elements—such as high local unemployment rates—influence the decision to leave the area. In general, context is seen as influencing migration patterns among Mexican-origin householders because the racial-ethnic composition of the place of destination is believed to play a role in promoting or dissuading the decision to move. "Social links" (Katz 1966) then are central in the most dynamic demographic process known to humans.

The underlying logic of pull/push thoughts is that place of residence and potential place of migration interact with the individuals' demographic characteristics to either pull or push them from one geographic areas to another. For example, the core's grip can be seen as loosening its grip on the Mexican-origin population at the beginning of the 20<sup>th</sup> century when agricultural, manufacturing, and railroad industries produced several pull forces that weakened the grip—resulting in increased out-migration of Mexican-origin individuals from the Southwest region of the country (Saenz 1991). Accounting for where the individual lives with a community social capital variable is very important. The Saenzian concepts are necessary for migration research of minority populations because they help enhance statistical models by taking into consideration the racial-ethnic context of where a potential migrant may move to.

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<sup>5</sup> For a discussion of the conceptualization of the "pull" factor, see Bogue 1949 and Herbele 1938. Lee (1966) uses "plus" to discuss similar migration factors

As stated previously, the *periphery* and *frontier* regions are so labeled because they have, relatively speaking, smaller Mexican-origin populations than the core. The regions have exerted different pull and *push*<sup>6</sup> factors on Mexican-American migration over time. The key difference between the Saenzian ethno-racial regions is on how each of them provides different social network contacts.

The core is densely populated by Mexican-origin individuals. It is assumed that this heavy co-ethnic concentration provides Mexican-origin people in the Southwest with many networks that may potentially increase their chances of maximizing profits with their skills. In states where co-ethnic concentrations are low, as in the frontier or periphery states, it is assumed that social networks will be more limited, making the ability to maximize skill more problematic. Migrating to a non-core state then presents more social and economic obstacles for the potential migrant. The limited amount of migration chains entering the Southwest from the periphery and frontier region then make the decision to leave the core a more challenging alternative. As a result of all these propositions, I argue that economic pull and push factors are important along with noneconomic pull and push factors like racial-ethnic concentrations and the presence of in-migrants from non-core regions.

A simple example of how the Saenzian regions may exert pull or push factor can given to help illuminate the reader. A New Mexico resident migrating to North Carolina may face different issues than if he/she were to migrate to Texas. Why? There are several reasons. The first is the amount of geographical distance required to relocate.

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<sup>6</sup> For a discussion of the conceptualization of “push” factor, see Bogue 1949 and Herbele 1938. Lee “minus” to discuss similar migration factors (1966).



Moving to North Carolina from New Mexico is further than moving to Texas. This geographical distance then interacts with perceived social distances. In this project, the social distance is being measured by like ethnic concentration. Thus, moving to North Carolina means potentially living in an area with less people that look like me while moving to Texas will probably mean the potential migrant has more chances of living in an area where there are more co-ethnics.

It follows then that the core will exert a greater pull/retention power than the other two regions--although the periphery and frontier may offer more and different types of avenues for upward social mobility. For example, many of the core communities where Mexican-origin people reside are burden with chronic poverty. So even though they reap the social benefits from living among co-ethnics, they pay a penalty for residing in an area with limited labor market opportunities. For example, the Southwest has heavy concentrations of immigrants and recent research has found evidence that immigrants adversely impact the employment opportunities of native-born workers (Camarota 2007). These generalizations vary by the individuals level of education, but even those with a college degree may have lower returns on their education than if they lived in a non-poor community. In short, residing in a periphery or frontier state may mean that the Mexican-origin person is able to tap into a more resource laden area where their minority status may even help them be more competitive in maximizing their skills (like being bilinguals).

As discussed in the introduction, the Mexican-origin individuals living in the Southwest are very frequently exposed to chronic poverty. Thus, in spite of how the

networks and the desire to be among co-ethnics may function to retain the potential migrant within the Southwest there are other pull factors exerting an effect from outside the core. In this case, the frontier and periphery may offer different levels of attraction that may vary by economic opportunities and perceptions of how the host community may ease the integration of the perspective migrant. For example, research has found that trust towards Whites varies in the Latino population (Chaves, Wampler, Burkhart 2006). Such pull factors from the different Saenzian regions exert dissimilar influence in pulling and pushing people. This variation is believed to have a significant association with how individuals vary in their region-specific contact availability. That is, what kinds of community and household capital they have. This is why the Saenzian concepts are so instrumental when accounting for community capital.

A recent study on Mexican American internal migration patterns between 1985 and 1990 was conducted using the *Saenzian* concepts (Saenz et al. 2007). This research and others have used census data from earlier decades, but no study similar to this one has been undertaken using data from the 2000 census. This thesis examines 2000 census data and uses statistical models that better integrate individual and contextual factors compared to extant research based on the Mexican-origin population.

Migration selectivity occurs at both macro and micro levels. At the macro level there are context phenomena exerting pull/push forces and at the micro level there are individual level characteristics that both invoke or limit the ability to move.

Selectivity is an overall important factor because research has shown that migration is a highly individualistic decision (Bogue 1959, 1992b; Feliciano 2005; Shaw

1975; Thomas 1938) in the Latino/a population (Saenz 1989, 1992, and 2007). It has been established that economic motives influence migration (Weeks 1996) and that these motives are also associated with age, race, education, and sex as the significant factors influencing individual selectivity. Even bilingualism has been found to have a significant association with migration (Golash-Boza 2005). These are introduced in the model to statically control for their potential influence on the probabilities of migration. Since they are not the central focus of the research, they are only briefly discussed before moving on to a discussion on how social networks are also influenced by the individuals' demographic characteristics.

Selectivity fundamentally focuses attention on how certain characteristics are highly probabilistic and sociologically significant to interregional migration. In other words, the likelihood of migration is said to either increase or decrease when certain statuses—like being a college graduate versus not—are “selected” (active) or “de-selected” (inactive). For example, the possession (active state) of high formal education increases the likelihood (selection) of interregional migration when the formally educated individual is compared to those with a high school diploma or some college.

Understanding selectivity is important because migration research is contextualized in associations between demographic and environmental characteristics in migratory behavior. Research has shown that selectivity for “frontier” migrants is more evident than for “periphery” migrants (Saenz 1991), meaning that demographic characteristics make moving out to the frontier a more selective process. Hence, the heightened selectivity for the frontier migrant becomes more evident than the periphery

migrant because of the social and economic complexes that influence mobility (Blanco 1963; Lee 1966). The likelihood of migration is influenced by various factors that offer different selectivity options to potential migrants.

Age has been a part of the migration research lexicon for many years because it has been found to have an association with migration patterns (Johnson et. al. 2005; Smith-Buani 2001). Generally, people move most in their early adult years between age 18 and 30. Responsiveness to perceived income opportunities have been shown to vary by race (Greenwood 1975) and males have consistently been shown to migrate more than females (Curran et.al., 2006; Cebula 1974; Donato et. al. 2006).

It is important to recognize that social networks are not neutral links: access to them is affected by the individual's characteristics and statuses. Researchers have shown that linking up to the many hypothetical social networks varies by different factors (Entwisle et.al. 2007). Classical work has shown that attributes like sex and age may play a role in how selective factors operate in the forces that govern migration process (Hobbs 1942).

Race is one such ascribed status that still matters in the American experiment. Some have even said that classifying people is "necessary to organize and maintain an empire" (Hacking 2005: 116). This is when moving to a region where there are more people "like me" may influence the potential migrant to evaluate how socioeconomic returns may vary by region (Aguilera & Massey 2003). The Saenzian concepts capture the racial-ethnic composition of the place of destination and allows the statistical inclusion of such an important ethno-racial geo-spatial factor. When potential migrants

contemplate their potential destinations, they are--hypothetically speaking--likely to consider how their access to local social networks in the community of reception will influence their ability to attain upward social mobility. This is capture by using the Saenzian regions.

In summary, the literature clearly shows that interregional migration is complex and that for the most part individuals are treated as economic agents who seek to improve their quality of life by living in areas that allow them to maximize their profits. The thesis draws from all these different social thoughts to examine how human capital and, household and community social capital are associated with interregional migration among Mexican-origin individuals living in the U.S.

### *Hypotheses*

By using the various schools of thoughts, the present study will test three different hypotheses to evaluate if interregional migration theories of the general population can be used to understand the migration of the Mexican-origin population living in the Southwest. To reiterate below are the three hypotheses:

#### Human Capital Hypothesis:

I hypothesize that householders with a college degree will have a higher likelihood of migrating out of the core compared to those with less than a high school education.

#### Household Social Capital Hypothesis:

I hypothesize that householders with a household member born outside the Southwest region have a higher likelihood of migrating out of the core region compared to householders who do not have a household member born outside of the homeland. More specifically, those with periphery household social capital will be more likely to out-migrate to a periphery state and those with frontier household social capital will be more likely to leave the core for a frontier state.

Community Social Capital Hypothesis:

I hypothesize that Mexican-origin individuals living in a PUMA with community social capital will have a higher likelihood of migration than those without community social capital.

## CHAPTER III

### METHODOLOGY

#### *Data Source*

The hypotheses introduced above will be examined using data from the U.S. Bureau of the Census' 2000 5% Public Use Microdata Sample (PUMS). This dataset represents one of the best sources of information to research the demographic and socioeconomic patterns of Mexican-origin householders and other racial and ethnic groups.

#### *Sample Selection and Saenzian Regions*

The unit of analysis in the study is the householder (head of household). Householders are only included in the analysis if they lived in a southwestern (Arizona, California, Colorado, New Mexico, and Texas) state in 1995 and in one of the continental U.S. states (including the District of Columbia) in 2000. The householders in the analysis are further selected by only including those who report that they are of Mexican origin and who were between the ages of 30 and 64 in 2000. The age-specified selection allows the analysis to exclude persons whose migration may be potentially due to non-labor market reasons (e.g., college students and military personnel).

As a consequence of these stipulations, the analysis is composed of householders between the ages of 30 and 64 who are of Mexican-origin and who lived in a southwestern state in 1995 and in one of the continental U.S. states in 2000. This is the group of people who make up my sample used in the analysis.

The householders in the sample are divided up into three different categories based on their region of residence in 2000 based on the Saenzian concepts. These designations are established through the following procedure<sup>7</sup>.

The percentage of Mexican-origin population in the overall state population is computed. The percentage of Mexicans in a state is calculated by dividing the number of Mexican-origin individuals living in state *i* in 2000 by the total population living in that state *i* in 2000 with this product multiplied by 100. For example, in 2000, Alabama had a total population of 4,447,100 and a Mexican-origin population of 44,522--thus, the following computation is carried out:  $(44,522/4,447,100)*100=1.0\%$ . The percentage of the Mexican-origin population relative group size in all continental states is obtained in this fashion. These percentages are then used in accordance with the Saenzian concepts to classify the continental states into the core, periphery, and frontier.

This approach used to create the Saenzian regions replicates that used in previous research (Saenz 1990; Saenz et. al. 2007). The states that have been typically categorized as southwestern (core) are treated the same here. Hence, Arizona, California, Colorado, New Mexico, and Texas make up the core region.

After the core states are taken out, then the average absolute size and relative percentage of the Mexican-origin population across the 44 mainland non-southwestern states in the year 2000 is calculated. The relative percent average for 2000 is 2.4%. That is, the Mexican-origin population accounted on average for 2.4% of the populations of non-core states in 2000.

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<sup>7</sup> Other researchers have recently used the same terms in studying a different type of migration in the western part of the United States (Henrie & Plane 2008).



The relative size (percentage) average is then used to categorize the non-southwestern states into periphery and frontier regions. Non-Southwest states *above* the relative average of 2.4% Mexican-origin concentration are assigned to the periphery region and the remaining non-southwestern states that are *below* the relative average are assigned to the frontier region. All of these procedures then lead to the regions being comprised as follows: the core is made up of 5 states, the periphery of 14 states, and the frontier of 30 states. This is a total of 49 states (including the District of Columbia) used in the study. Tables 1 through 3 display each of the states by region and their corresponding Mexican-origin population percents.

Table 1 reports that Vermont, at 0.19%, is the frontier state with the lowest percentage of Mexican-origin individuals and that in the same region Arkansas is the state with the highest Mexican-origin concentration (2.3%).

Table 2 shows that in the periphery region, Wisconsin (2.4%) is the state with the lowest Mexican-origin percentage and that the periphery state of Nevada has the highest percentage (14.3%). Note that Nevada has a larger concentration of Mexican-origin people than Colorado, a core state. In order to make this project as comparable as possible to previous ones, Nevada is treated as a periphery state and Colorado as a core state<sup>8</sup>.

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<sup>8</sup> A co-authored presentation including the author of this thesis shows that Nevada is still significantly different from the other five Southwest states (Saenz & Siordia 2008). Perhaps in the future as Nevada becomes more similar to the Southwest states, it will become part of the core.

Table 1  
2000 Frontier States

State	Percent Mexican-origin
Arkansas	2.29%
Florida	2.28%
Michigan	2.22%
Iowa	2.09%
Minnesota	1.94%
Delaware	1.66%
Missouri	1.39%
New York	1.37%
Tennessee	1.36%
South Carolina	1.32%
Montana	1.30%
New Jersey	1.22%
Virginia	1.05%
Alabama	1.00%
D. C.	0.89%
South Dakota	0.84%
Ohio	0.80%
Kentucky	0.78%
Mississippi	0.76%
Maryland	0.75%
Louisiana	0.72%
Connecticut	0.69%
North Dakota	0.67%
Rhode Island	0.56%
Pennsylvania	0.45%
New Hampshire	0.37%
Massachusetts	0.35%
West Virginia	0.24%
Maine	0.22%
Vermont	0.19%

Source: U.S. Census 2000 SF-1  
Universe: State's total population

Table 2  
2000 Periphery States

State	Percent Mexican-origin
Nevada	14.30%
Illinois	9.21%
Oregon	6.27%
Idaho	6.13%
Utah	6.11%
Washington	5.60%
Kansas	5.52%
Nebraska	4.15%
Wyoming	4.04%
Oklahoma	3.85%
Georgia	3.36%
North Carolina	3.06%
Indiana	2.52%
Wisconsin	2.36%

Source: U.S. Census 2000 SF-1  
Universe: State's total population

Table 3  
2000 Core States

State	Percent Mexican-origin
California	24.96%
Texas	24.32%
Arizona	20.77%
New Mexico	18.14%
Colorado	10.48%

Source: U.S. Census 2000 SF-1  
Universe: State's total population

Of the core states listed in Table 3, Colorado is the state with the lowest Mexican-origin percentage at 10.5% and California has the highest percentage (25.0%). As a whole, the frontier has an average Mexican concentration of 1.1%, the periphery

has 5.5%, and the core has an average 19.7%. Figures 1 and 2 visually show how the states fit within the scheme of the Saenzian concepts.

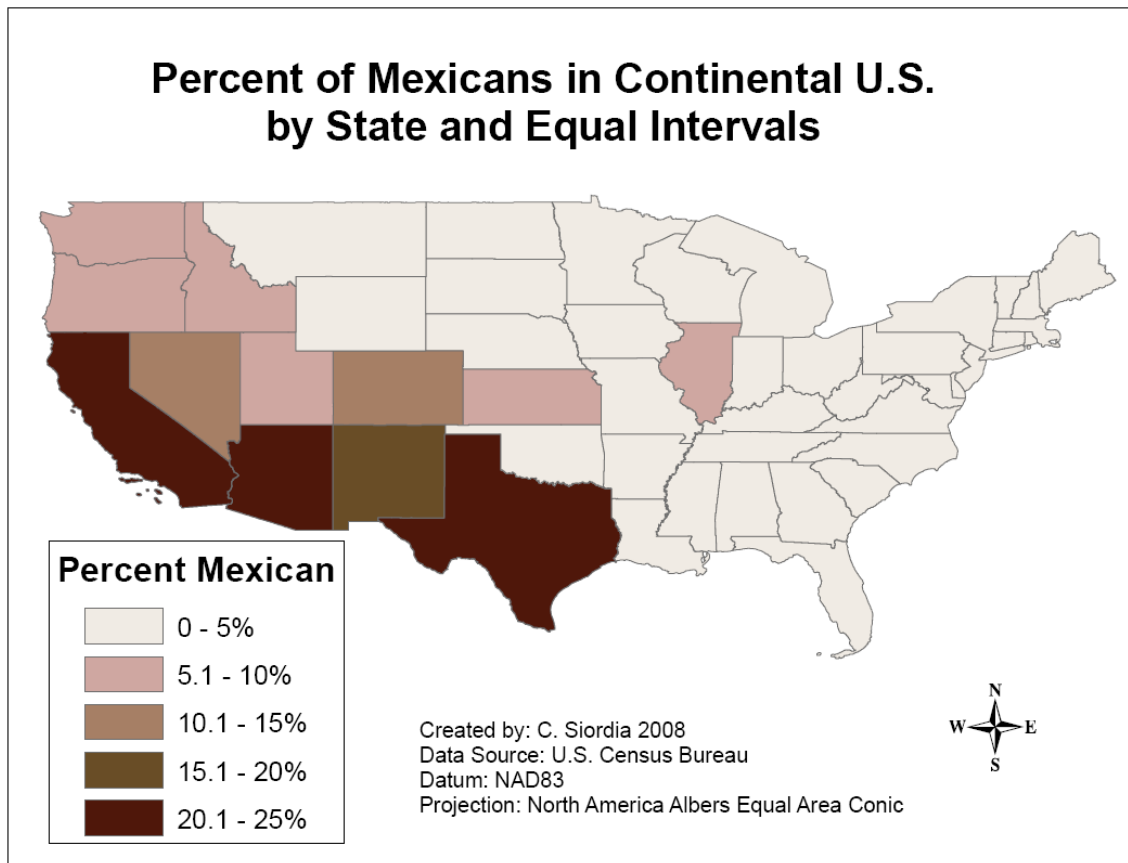


Figure 1  
Percent of Mexicans in Continental U.S. by State and Equal Intervals

Through these designations I classify Mexican-origin householders living in the Southwest in 1995 into one of three possible migration categories: (1) regional non-migrants—lived in the Southwest in 2000; (2) periphery migrants—lived in a periphery state in 2000; or (3) frontier migrants—lived in a frontier state in 2000. These three migration categories constitute the trichotomous dependent variable used in the analysis.

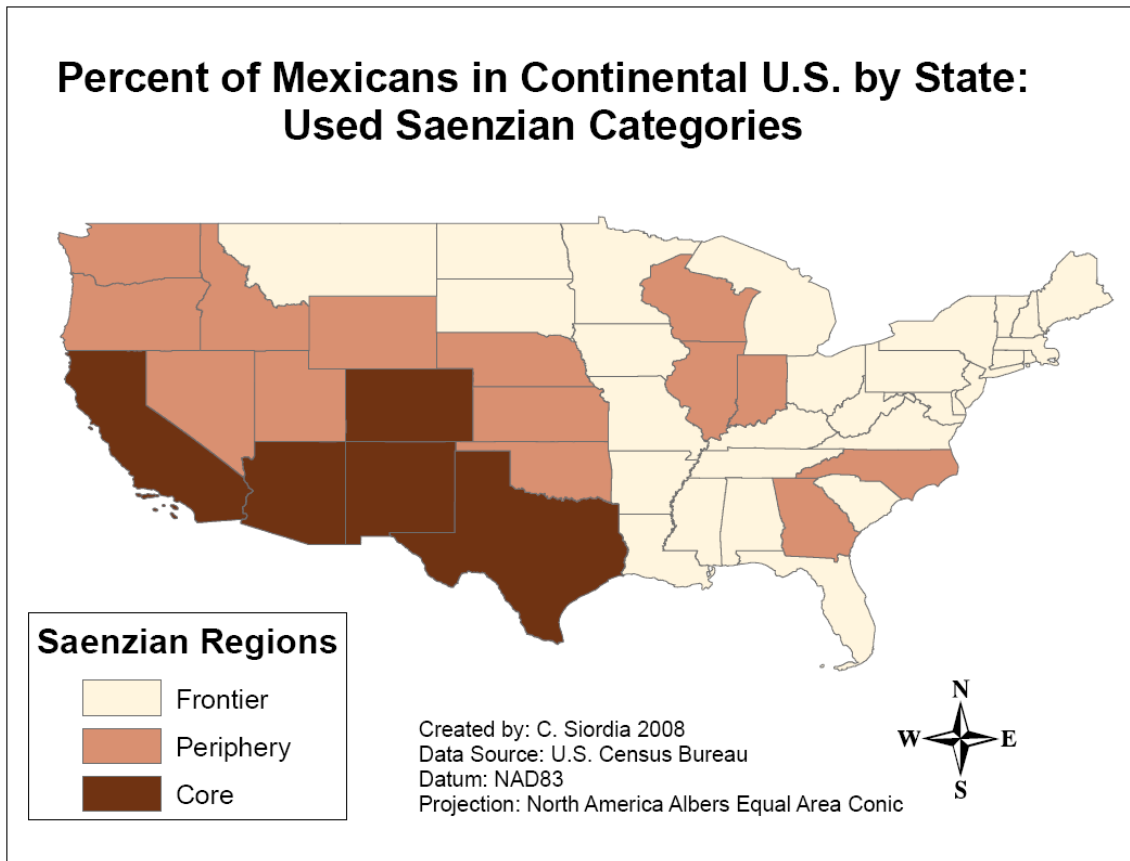


Figure 2  
 Percent of Mexicans in Continental U.S. by State: Used Saenzian Categories

I will now discuss in more detail how the three migration categories that make up the dependent variable are created.

### *Dependent Variable*

The migration category is assessed by using the “five-year” migration census question. The question was first introduced in the 1940 U.S. census and has been used ever since to study migration (Bogue 1949; Lee and Lee 1960; Saenz, Cready, Morales 2007). In 2000 the question asked long form respondents to report their place of

residence in 1995 and 2000. By using this five-year question Mexican-origin householders are categorized according to their response: (1) **regional non-migrants** are Mexicans who lived in the Southwest in both 1995 and 2000: (2) **periphery migrants** are Mexicans who lived in the Southwest in 1995 and in the periphery region in 2000: and (3) **frontier migrants** are Mexicans who lived in the Southwest in 1995 and in the frontier region in 2000 (more details given below).

The dependent variable is made up of three categories: regional non-migrants, periphery-migrants, and frontier-migrants. These categories are unordered. That is, I cannot say they differ in respect to some absolute value other than the arbitrary requirements I have outlined in their creation. I will test a cumulative model to make sure that they are unordered. The statistical test, discussed in more detail below, will validate the use of a multinomial model.

In a multinomial model, one of the categories has to be the reference category. The reasons for this are outlined in detail below. The regional non-migrant category is the reference group. Regional non-migrants represent the comparison group. Table 4 below offers a concise summary of the categories in the dependent variable.

### *Independent Variables*

The thesis includes three primary independent variables: (1) educational attainment; (2) presence of a household member born outside the core region; and (3) if their 1995 PUMA of residence is considered to have community social capital. Each of

these is used to test one of the three main hypotheses. Table 5 summarizes the three main independent variables under analysis.

Table 4  
Dependent Variables

Variable Name	Variable Description	Variable Operationalization
Nonmigrant	Householder did NOT migrate	Regional non-migrants are those householders who reported living in the Southwest in 1995 and in 2000
Periphery migrant	Householder migrate to Periphery region	The Periphery migrants are those individuals who lived in the Southwest in 1995 and report living in a Periphery state in 2000.
Frontier migrant	Householder migrated to Frontier region	The Frontier migrants are those individuals who lived in the Southwest in 1995 and report living in a Frontier state in 2000.

The first independent variable measures educational attainment and it is used as a proxy for the individuals' human capital. According to the hypothesis stated in Chapter II, I expect householders with a college education to have a higher likelihoods of migrating out of the core than those with less than a high school education.

Educational attainment is broken up into five categories: (1) less than high school education (0-8 years of education); (2) some high school--the respondent has completed between 9 and 12 years of schooling with no high school diploma; (3) high school graduate; (4) some college; and (5) college graduate and above. Earlier studies indicate that persons with eight or fewer years of education have lower likelihoods of migration (Saenz et. al. 2007). Thus, the dummy variables being created for these categories will be compared to those with less than high school, the reference category.

Table 5  
Independent Variables

Variable Name	Variable Description	Variable Operationalization
Education	Householders' educational attainment level (human capital)	Level of education is measured with four dummy variables: (1) some high school (9-11) (2) high school graduate (3) some college (4) college graduate. *The reference category will be made up by persons with eight or fewer years of education.
Member	Presence of household members born outside the Core (household social capital)	Member is measured by two dummy variables: (1) households were at least one (>5 year old) member was born in a Periphery state (2) households were at least one (>5 year old) member was born in a <i>frontier</i> state. *The reference category will be made up by households where none of the people living in it was born outside the Southwest.
Community	Level of in-migrant concentration in community (community social capital)	The community social capital independent variable measures the percent (%) of Mexican-origin concentration in the community that moved in from a Periphery or Frontier state between 1995 and 2000.

The second of the three main independent variables measures whether a householder is connected to a household where a household member was *born outside the core region* and over the age of five is present (the reason why age five is used will be discussed below). If there is a household member over the age of five present in the household, the head of household will be labeled as having household social capital. Because a birth outside the core is considered to signify increased potential contacts with



the periphery and frontier region, this measure is used to ascertain if the householder has a verifiable social network connection with a non-core region.

Recognizing the increased potential of “non-core social network contacts” in a household unit with household capital will allow us to evaluate its influence on the likelihood to migrate. A subtle complication with the measure is that a person born outside the core need not be a “blood” relative. Thus, the strength of the link between the householder and the person born outside the core may—hypothetically—vary.

By way of making the logic clear, I will provide a straightforward example. Say participant  $X_i$  reports living in a household where someone was born in a frontier state. The person associated with participant  $X_i$  may be a daughter, niece, or friend. Not only can the relationships vary, but the amount of time that has passed since the birth may also vary. Thus, participant  $X_i$  may have a daughter born outside the core 15 years ago, or a niece born outside the core 10 years ago, or a friend in the household born outside the core only 5 years ago. Which of these would provide the strongest link to non-core networks? The potential for variation creates limitations that are more clearly addressed at closing.

Not all is lost though. The basic premise is that the Mexican-origin householder has at least one verifiable connection with a person born out of the core region. The presence of such an association is expected to increase the householder's potential for periphery and frontier networks—and thus increase the likelihood that they migrate out of the core compared to householders who do not have a household member born outside of this region.

Why are only household members five years of age and older the only persons considered in the construction of this variable? Since the PUMS data does not allow the reconstruction of households back to 1995 (the beginning of the migration period under observation), a proxy must be used. In order to insure that children born outside the core region after the beginning of the migration period (1995) are not included, the household capital measure will only take into account household members who are five years or older in 2000. This means that if a person associated with the householder was born in 1996, 1997, 1998, 1999, or 2000 outside the core, they will not help the householder gain household capital. Only those born on or before 1995 have the power to move the head of household from having no household capital status into having it. More details on how the household capital variable was created, by considering the presence of a birth outside the core and in what region the birth occurred, is discussed below.

The analysis dichotomizes household capital into two different variables in order to investigate if the non-core place of birth is actually exerting an influence on the likelihood of migration. Two things are taken into account in creating this variable:

1. Is there a person in the household over the age of five born outside the core?
2. If so, from what region was the person born?

The two pieces of information are then used to create two dummy variables. A householder does not have household social capital if no member of their household was born outside of the core region. If there is a non-core birth over the age of five present among household members, the event is further broken down into whether the birth occurred in the periphery or frontier region. An individual is thus said to have periphery

household social capital if there is a household member whose birth occurred in the periphery. In the same logic, a householder is said to have frontier household social capital if a household member was born in the frontier. The variable has three dummy components as a result of these procedures: (1) households where at least one member was born in a *periphery* state; and (2) households where at least one member was born in a *frontier* state, and (3) the reference category is households where none of the people living in it were born outside the Southwest.

The third and final independent variable measures the Mexican-origin concentration in the community. This variable is relatively different than the first two main independent variables because it is a context measure, whereas the other two are individual-level measures. Community social capital is measured by counting how many Mexican-origin individuals moved in from a periphery or frontier state between 1995 and 2000 into a core PUMA. The variable is used in the multinomial models to investigate if residing in a community heavily populated with non-core in-migrants has an association with the outmigration of householders who are the focus of the analysis. This measure is used because it is believed to be a good way of assessing the presence of periphery and frontier networks in the PUMA. In simple terms, a person is said to have community social capital if they reside in an area where there are lots of non-core in-migrants. The logic here is that residing in a community with many non-core in-migrants increases the number of potential non-core migration connections which enhances the possibility of migration out of the core region.

I will now discuss how community social capital is quantified. The percent of Mexican-origin non-core in-migrants is first computed for each of the 475 southwestern PUMAs. For a given PUMA in the core region, the number of Mexican-origin non-core in-migrants (migrated to the core PUMA between 1995 and 2000 from outside of the core region) is the numerator and the total Mexican-origin population in the PUMA is the denominator. The product is multiplied by 100 to converted it to percentage form<sup>9</sup>. After calculating the percentages, an average percent of non-core in-migrants across all the PUMAs is computed. The results indicate that between 1995 and 2000 the average core PUMA had 1.71% of its Mexican-descent population made up of non-core in-migrants. About 75% of the southwestern PUMAs fell below a 2.05% concentration. The PUMAs in the top quartile (25%) are then seen as affording their residence with community social capital. This top quartile cut off was arbitrarily chosen by me.

The communities' in-migrant percents are then dichotomized into those with community social capital and those without it. Individuals residing in a PUMA with 2.05% concentration of in-migrants or more are considered to have community social capital and those below are said to not have community social capital. PUMAs with community social capital hypothetically increase potential non-core migrant network contacts and thus they may increase the likelihoods of out migration from the core region.

Figure 3 clearly shows that PUMAs bordering Mexico have very low community capital and that each state has only a few PUMAs endowed with high levels of

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<sup>9</sup> The numbers were computed using the following:  $\frac{1995 \rightarrow 2000 \text{ NonCoreInMigrantsInPUMA}}{\text{TotalMexicanOriginInPUMA}}$ .

community social capital. The potential of spatially analyzing clusters with GIS software with this community social capital measure is discussed at closing.

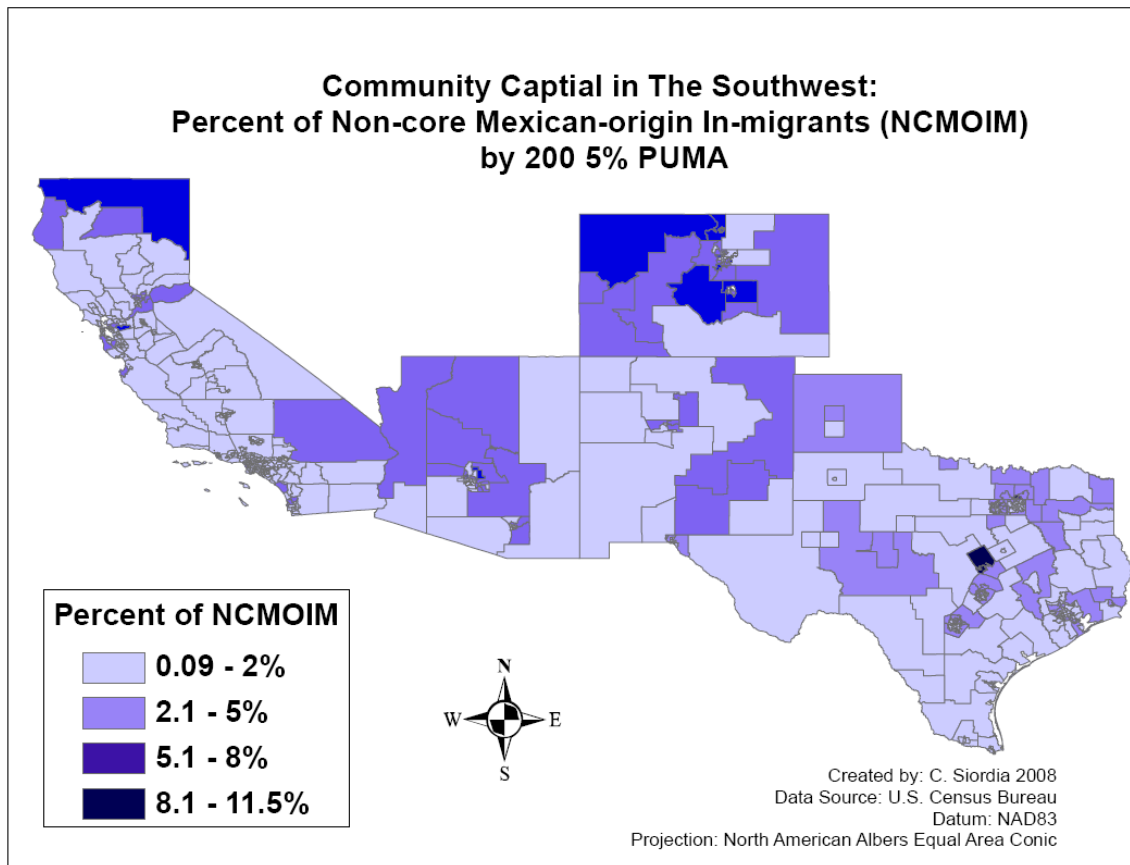


Figure 3  
Community Capital in the Southwest:  
Percent of Non-core Mexican-origin In-migrants (NCMOIM) by 2000 5% PUMA

In Figure 4, the reader can see how the PUMAs are dichotomized. This map makes it visually apparent that except for a few PUMAs in California, all those bordering Mexico are not considered to have community social capital. There is a slight pattern in the PUMAs with community social capital to be next to a non-core state or a PUMA with

community social capital. These are interesting patterns mentioned more at length in the last chapter.

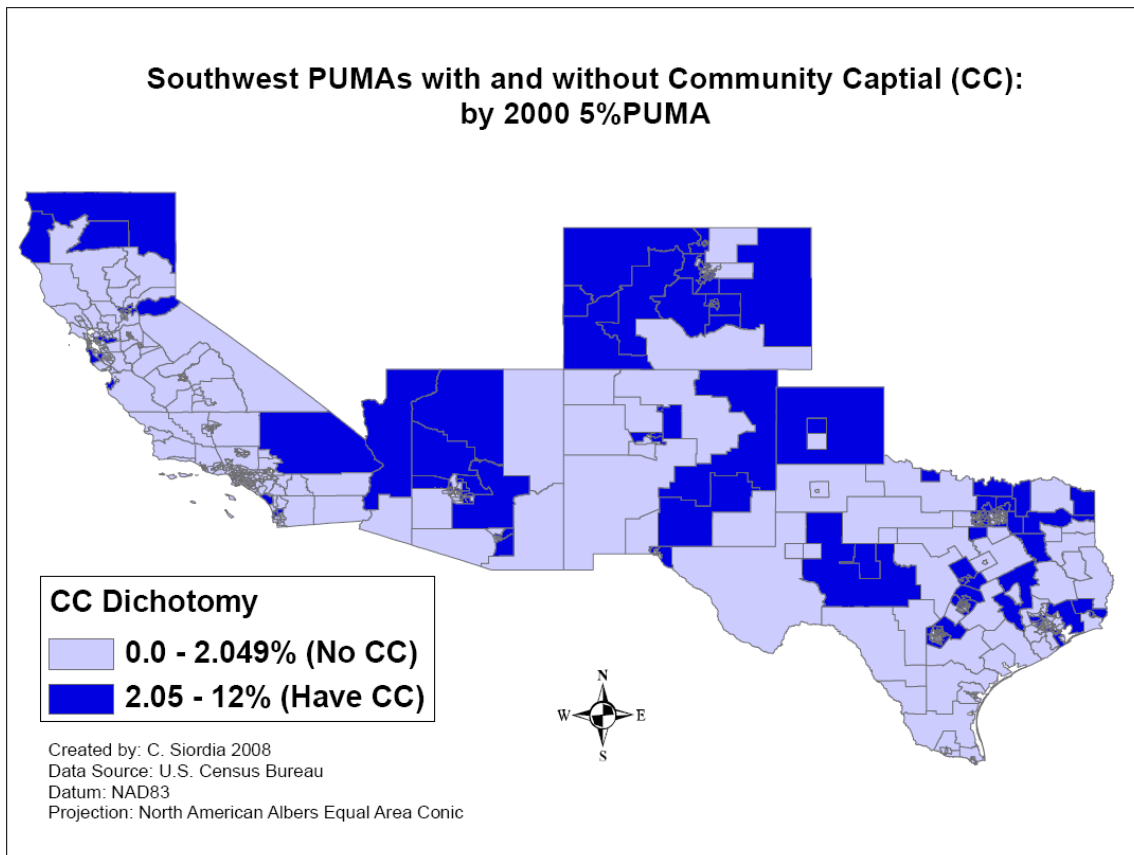
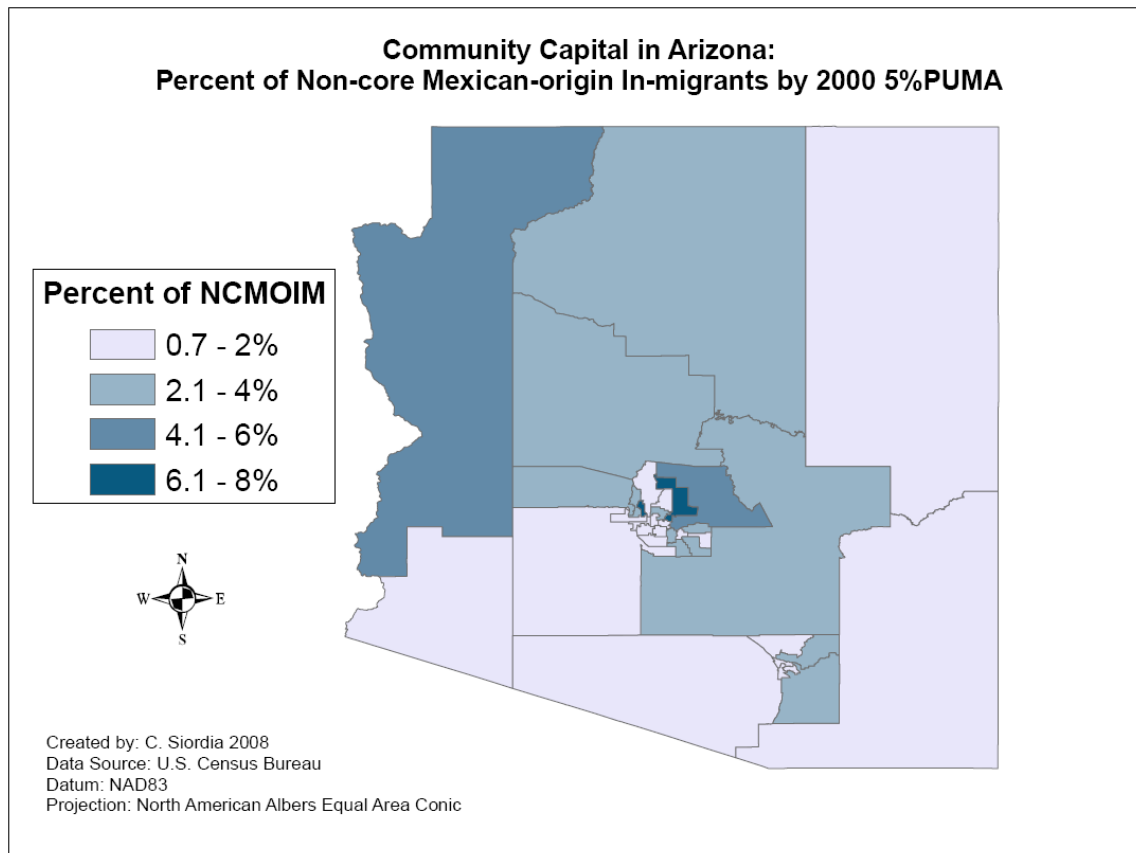


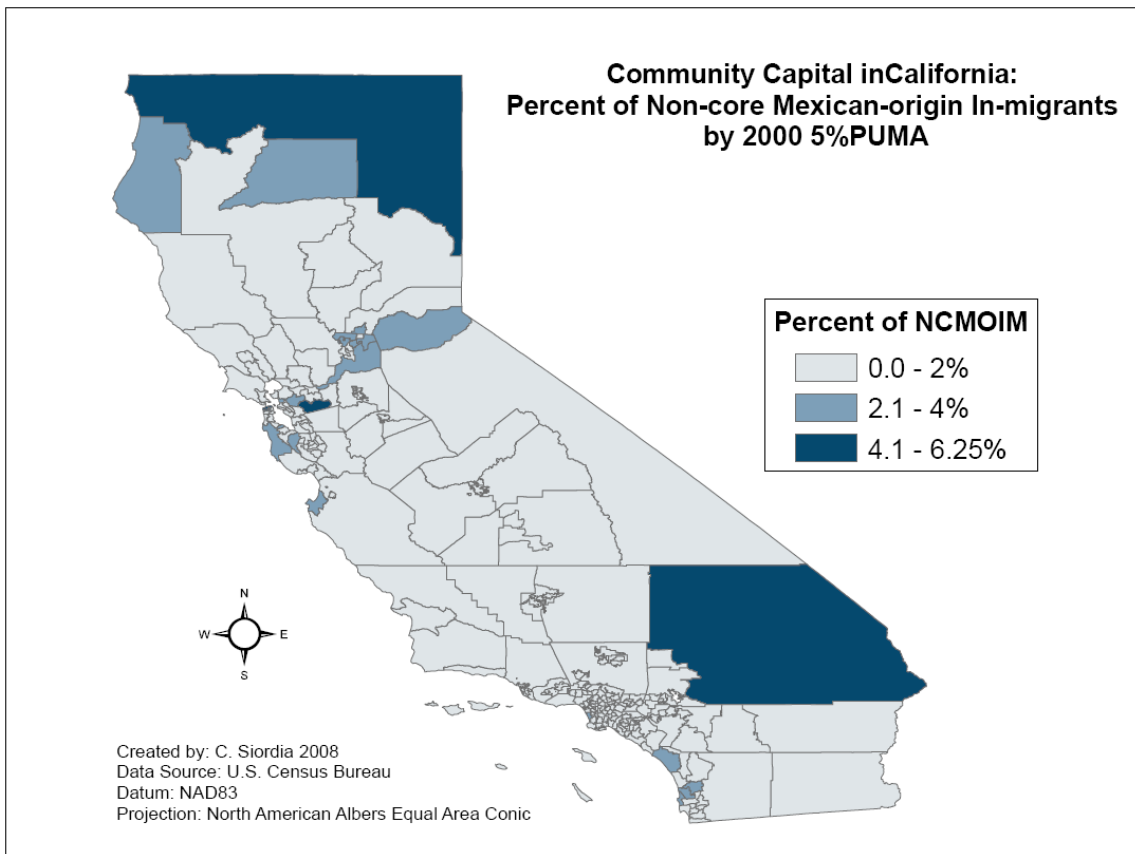
Figure 4  
 Southwest PUMAs with and without Community Capital (CC):  
 By 2000 5% PUMA

Because PUMAs are relative small in scale when compared to states—especially in metro areas—maps displaying the percentage level associated with community social capital is given for all five southwestern states individually. There are also noticeable differences in the ranges of concentration and patterns of aggregations by state. The

figures below (Figures 5 to 9) are given in order to demonstrate the many variations of community social capital concentrations throughout the Southwest.

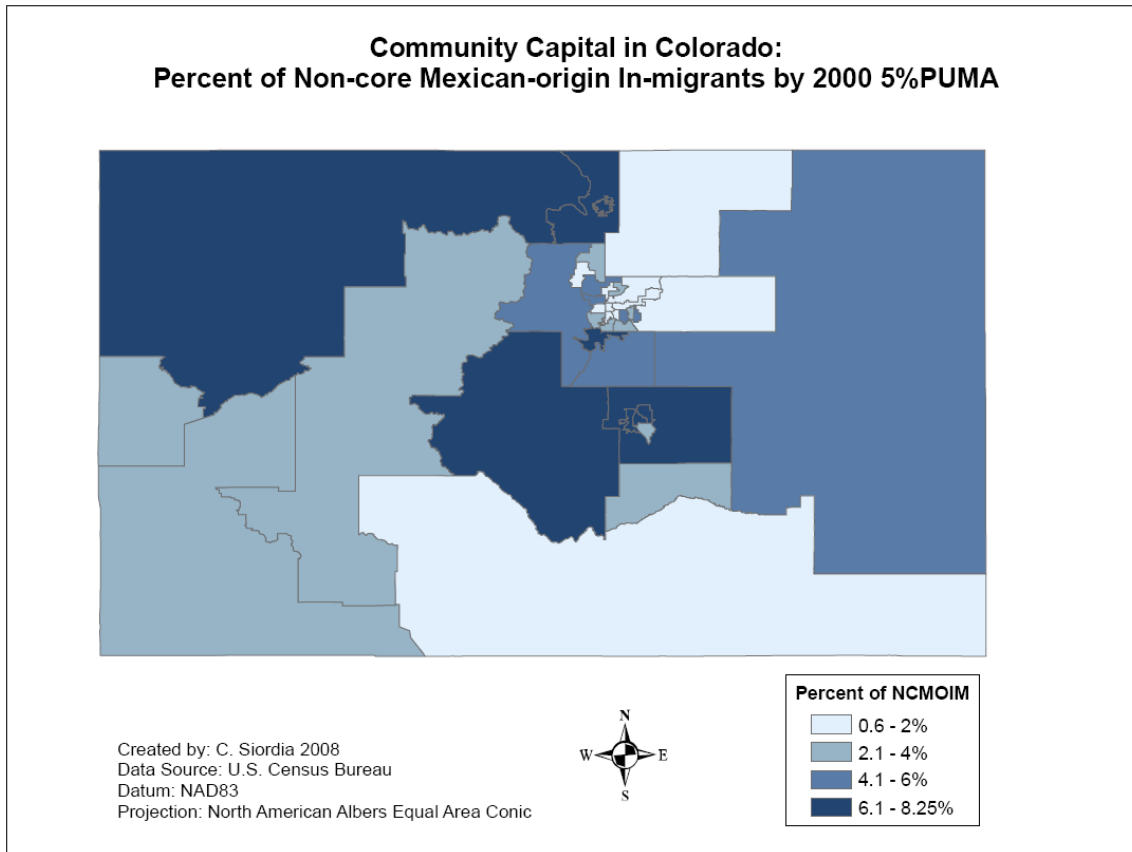


**Figure 5**  
**Community Capital in Arizona:**  
**Percent of Non-core Mexican-origin In-migrants by 2000 5% PUMA**

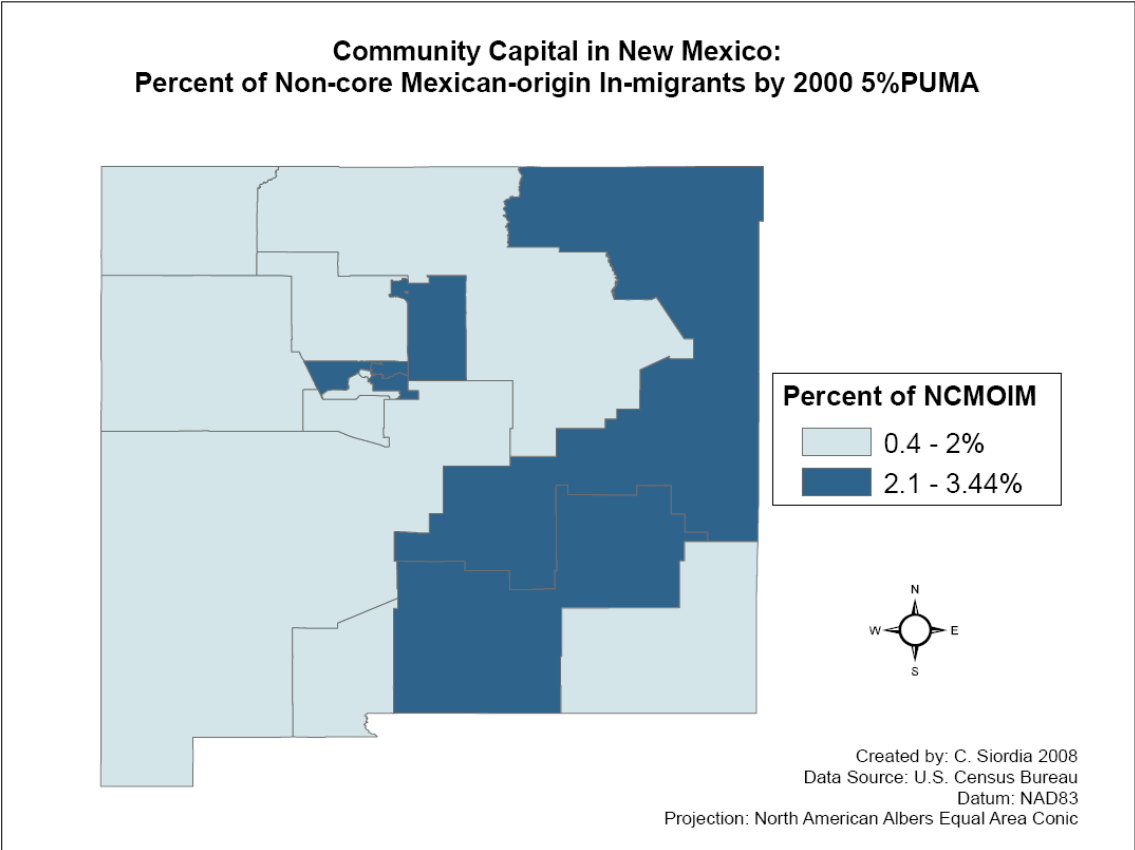


**Figure 6**  
**Community Capital in California:**  
**Percent of Non-core Mexican-origin In-migrants by 2000 5% PUMA**

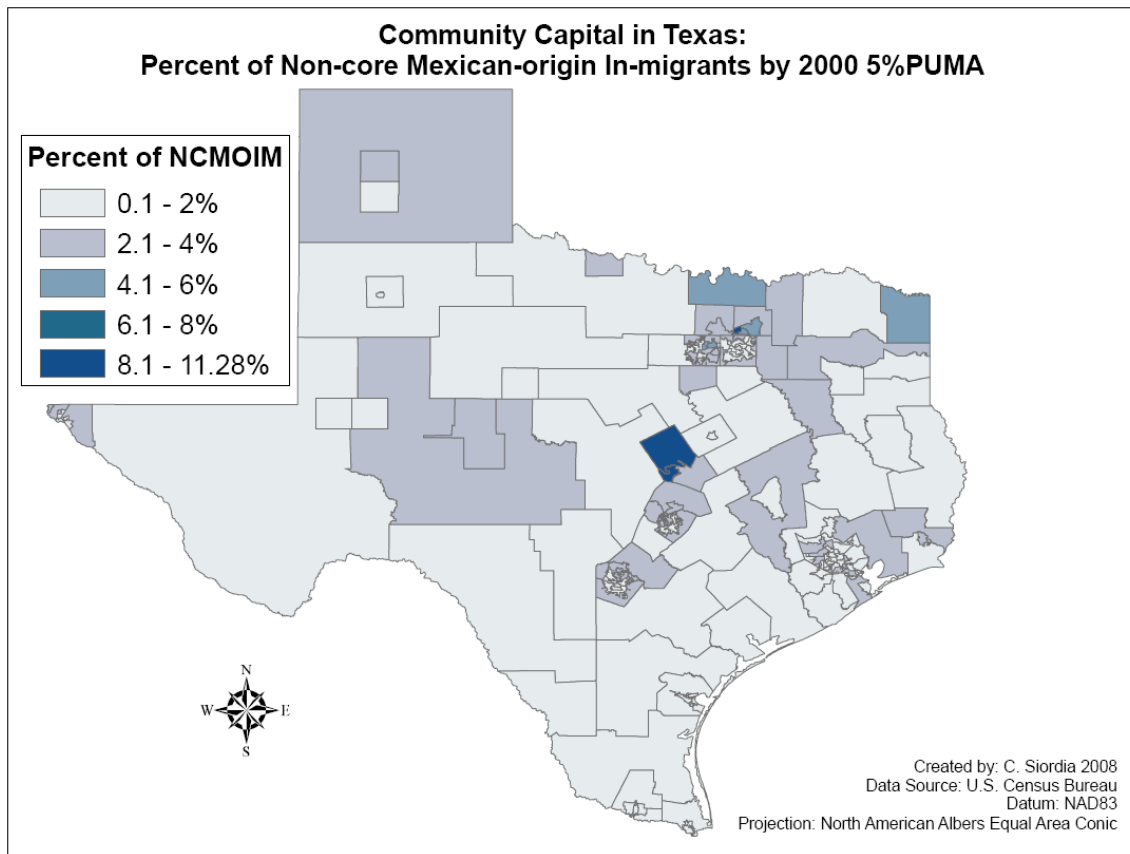




**Figure 7**  
**Community Capital in Colorado:**  
**Percent of Non-core Mexican-origin In-migrants by 2000 5% PUMA**



**Figure 8**  
**Community Capital in New Mexico:  
Percent of Non-core Mexican-origin In-migrants by 2000 5% PUMA**



**Figure 9**  
**Community Capital in Texas:**  
**Percent of Non-core Mexican-origin In-migrants by 2000 5% PUMA**

These figures show that New Mexico has the lowest percentages of PUMAs with community social capital, while California has heavy concentrations of PUMAs with community social capital in the north and south parts of the state. Of all the Southwest state, Arizona has the most PUMAs with community social capital--located at the center of the state. Texas has a broad variation of community social capital with the PUMAs near Austin having more than 11% of non-core Mexican-origin in-migrants.

### *Control Variables*

The analysis includes several control variables. Table 6 contains a concise summary of all the control variables. Age is controlled for by measuring it with three categorical dummy variables: (1) 30-39; (2) 40-49; (3) 50-59. Householders 60 to 69 years of age have been shown to be the less likely to migrate (Saenz et. al. 2007) and thus they are the reference group.

Because gender matters in migration research (Mahler & Pessar 2006), it is measured by sex as a single dummy variable: (1) male. Previous findings indicate that females are less likely to be interstate migrants (Saenz et. al. 2007) and thus, they represent the reference category.

Marital status has also been shown to have an association with migration (White et. al. 2005). Marital status is measured by a single dummy variable: (1) married. Persons who are not currently married represent the reference group. The not married category was chosen as the reference group because research shows that married people are less likely to migrate (Hobbs 1942; Long 1992).

In order to take into account any variation in the probability of migrating out of the Southwest due to length of U.S. residence among foreign-born householders, the study includes a series of “nativity/immigration period status” dummy variables in the model. in before 1965. Native-born Mexican Americans are the reference category. These are similar to those used previously in research (Saenz et. al. 2007).

Table 6  
Control Variables

Variable Name	Variable Description	Variable Operationalization
Age	Age of householder	Age will be measured with three categorical dummy variables: (1) 30-34 (2) 35-44 (3) 45-54 (4) 55-64 reference group
Sex	Sex of householder	Gender is measured by a single dummy variable: (1) male (2) females reference group
Marital	Marital status of householder	Marital status is also measured by a single dummy variable: (1) married (2) not-married reference group
Nativity	Refers to householders' nativity/immigration period status	Nativity/immigration period status is established by four dummy variables indicating immigrants' period of entry into the United States: (1) entered between 1985 and 1994 (2) entered between 1975 and 1984 (3) entered between 1965 and 1974 (4) entered prior to 1965 (5) native born reference category
Language	The language that the householder most commonly uses	Language is measured with two dummy variables are used: (1) bilingual-means that the householder can speak both English and Spanish fluently (2) non-English-means that the householder mainly speaks English. (3) mono-Spanish means that householder mainly speaks Spanish at home and this is the reference category
Children	Presence of own children under the age of 18 in household	Presence of children is measure with two dummy variables: (1) householder with the presence of an own child below age 18 (2) householder with no own child below age 18 present is the reference category

The nativity/immigration period status is established in the model with both native-born and foreign-born Mexicans by four dummy variables indicating immigrants' period of entry into the United States: (1) entered between 1985 and 1994; (2) entered between 1975 and 1984; (3) entered between 1965 and 1974; (4) entered

Models are also conducted to evaluate the native-born population and foreign-born population separately. This allows the research to investigate the degree to which the results of the hypotheses are consistent across native- and foreign-born individuals. In the native born population there are no nativity/immigration dummy variables present, while the foreign-born model contains the same dummies as above but uses the fourth category (those entering the U.S. before 1965) as the reference group.

Language is an important factor in the Southwest and in migration research (Martinez-Brawley et. al. 2006) and consequently is included as a control variable. Two dummy variables are used: (1) bilingual (the householder speaks a language other than English---presumably Spanish---at home and English “well” or “very well” and (2) monolingual English speakers (the householder speaks English at home). The reference category is monolingual Spanish speakers (the householder speaks a language other than English---presumably Spanish---at home and speaks English “not well” or “not at all”).

### *Multinomial Logistic Regression*

The unordered and categorical dependent variable (migration status in 2000) is polychotomous<sup>10</sup>. The categories in the dependent variable were determined to be

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<sup>10</sup> Polychotomous simply means that the dependent variable is made up of more than two categories.

unordered after a cumulative logit model was regressed using SAS. The results indicate that the log odds assumption in cumulative models is being violated. Thus, a multinomial logistic regression model is used in STATA to estimate the likelihood of interstate migration.

Unordered categorical dependent variable models are nonlinear. This makes ordinary least squares methods biased and inefficient. The trichotomous dependent variable in this research is considered to be a nominal response and will be analyzed using multinomial logit regressions. In this technique, logits are formed from contrast of non-redundant category pairs in the dependent variable. Since the dependent variable has three categories, it creates two equations. The multinomial logistic model (MNL) will estimate a logit coefficient for each of the three outcomes. The logits for regional non-migrant are set to zero in order to represent the change relative to the Y=1 category and when set to zero  $e^0=1$ . This creates the following probability equations for our model:

$$\text{Prob}_{y=1} = \frac{1}{1 + e^{\text{Xb(PeripheryMigrant)}} + e^{\text{Xb(FrotierMigrant)}}}$$

$$\text{Prob}_{y=2} = \frac{e^{\text{Xb(PeripheryMigrant)}}}{1 + e^{\text{Xb(PeripheryMigrant)}} + e^{\text{Xb(FrotierMigrant)}}}$$

$$\text{Prob}_{y=2} = \frac{e^{\text{Xb(FrotierMigrant)}}}{1 + e^{\text{Xb(PeripheryMigrant)}} + e^{\text{Xb(FrotierMigrant)}}}$$

Logistic models use maximum likelihood estimation methods and a logistic probability distribution. As such, they make many assumptions. For example, it is assumed that independent variables are mutually exclusive and errors are assumed to

have a standard logistic distribution. Diagnostics were examined and it was determined that no assumptions are being violated.

Hypothesis testing can lead research to reject the null hypothesis when in fact it is true. When a researcher reports that there is statistical significance among the variables under investigation and there really is none, he/she is committing a type-1 error. The reverse—the investigation fails to reject the null hypothesis when it is false—is called a type-2 error. Relatively speaking, making a type-1 error is the least desirable outcome because it means that associations between variables are being reported as significant when in reality there is no significance in the statistical associations. This investigation has taken precautions, using diagnostic procedures in STATA, to insure that a type-II error has not been made.

The thesis uses different variables and subdivides the sample to investigate Mexican-origin interstate migration. First, it models the variables using all Mexican-origin householders. Because the native<sup>11</sup> and foreign<sup>12</sup> born populations are shown to differ in the first model, the first specified sample is then split into two groups. The first sub-sample and second model is made up only of native-born, and the second sub-sample and third model of foreign-born. By using the same variables as in the first model, the information from the two sub-groups is used to run their multinomial models. In sum, three multinomial models are conducted. Three tables showing their coefficients

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<sup>11</sup> Native born individuals are those who were more in one of the 48 Continental U.S. states including District of Columbia.

<sup>12</sup> These include all those NOT born in Continental U.S. and D.C. These may or may not be legal citizens of the U.S. The idea behind the formation of this group is that they have geographically come from outside the U.S. mainland.



are discussed below. Each of the models has a table giving the descriptive statistics for each group.

All these variables and methods are then being used to evaluate the human capital and household and community social capital hypotheses. Before moving on to the findings, the hypotheses guiding the investigation are reiterated below.

- Human Capital:

I hypothesize that householders with a college degree will have a higher likelihood of migrating out of the core compared to householders with less than a high school education.

- Household Social Capital:

I hypothesize that householders with household social capital will have higher likelihoods of migrating out of the core region compared to those with no household social capital.

More specifically, I hypothesize that specific form of household social capital will increase the odds of migration. That is, those with periphery household social capital will be more likely to out-migrate to the periphery region and those with frontier household social capital will be more likely to leave the core for the frontier region.

- Community Social Capital:

I hypothesize that Mexican-origin individuals living in a PUMA with community social capital will have a higher likelihood of migration than those without community social capital.

## CHAPTER IV

### ANALYSIS

#### *Introduction*

The Saenzian concepts require that a trichotomous dependent variable be modeled using a multinomial logistic regression. This chapter discusses descriptive statistics, the reason why an unordered logit model is used and finally the very important findings of the research. The chapter will then explain why three different multinomial models are conducted to evaluate interregional migration.

The three multinomial logistic models only differ in the sample on which they are based: 1) a sample of all Mexican-origin householders; 2) a sub-sample which includes only native-born Mexican-origin householders; and 3) a sub-sample which includes foreign-born Mexican-origin householders. Findings for each of the models will be discussed and a brief discussion of how the control variables are operating will be given.

#### *Descriptive Statistics*

A brief discussion on the descriptive statistics of the trichotomous dependent variable will help show how householders are distributed across the three migration categories in the main sample and two sub-samples. General descriptive statistics can be found in Tables 4, 5, and 6.

In the complete sample (n=73,824), 95.7% of the householders are regional non-migrants, 2.8% are periphery migrants, and 1.5% are frontier migrants. The native-born

only group (n=33,297) has 96.3% regional non-migrants, 2.1% periphery migrants, and 1.6% frontier migrants. In the foreign born group (n=40,530), 95.1% are regional non-migrants, 3.4 are periphery migrants, and 1.4% are frontier migrants. About 55% of the householders in the sample are foreign born. In all cases at least 95% of the group is in the regional non-migrant category. Most householders in my sample are not interregional migrants and in all cases the smallest group is the frontier migrants.

The first of three independent variables of main interest is educational attainment. I will briefly outline how the various educational attainment categories vary in their migration-type percentages. In the complete sample, 94%<sup>13</sup> of college graduate householders (n=5,731) are regional non-migrants, 2.9% are periphery migrants, and 3.1% are frontier migrants. In the same sample, 96.1% of householders with some college education (n=14,463) are regional non-migrant, 2.5% are periphery migrants, and 1.4% are frontier migrants. Of those with a high school diploma or GED (n=14,667), 96.3% are regional non-migrants, 2.5% are periphery migrants, and 1.2% are frontier migrants. Householder with some high school education (n=13,910) have 95.3% regional non-migrants, 3.3% periphery migrants, and 1.4% frontier migrants. The reference category of less than some high school (n=25,053) is 96% regional non-migrant, 3% periphery migrant, and 1% frontier migrant. The college education category is the only one where the regional non-migrant status claims less than 95% of the group and where there are more frontier migrants than periphery migrants.

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<sup>13</sup> Some of the percentages have been rounded for convenience.

When the same variable of education is observed in the native-born population there are some similarities and differences. College graduates (n=4,145) are 94% regional non-migrants, 2.8% periphery migrants, and 3.1% frontier migrants. Householders with some college (n=10,061) are distributed as follows: 96.4% regional non-migrant, 2.1% periphery migrant, and 1.5% frontier migrant.

In the native-born group high school graduates (n=9,377) are 97% regional non-migrant, 1.8% periphery migrant, and 1.1% frontier migrant. Those with some high school (n=5,892) have 97% regional non-migrant, 2% periphery migrant, and 1% frontier migrant. The reference group of less than some high school education (n=3,819) has 96% regional non-migrant status, 2% periphery migrant, and 2% frontier migrant. Similar to the complete sample, the college education category in the native-born sample is also the only one where the regional non-migrant category has less than 95% of the group and where there are more frontier migrants than periphery migrants.

The human capital variable measure with educational attainment is now observed in the foreign-born sample. College graduate Mexican-origin foreign-born householders (n=1,586) are 94% regional non-migrant, 3% periphery migrant, and 1% frontier migrant. Those with some college education (n=4,402) are 96% regional non-migrant, 3% periphery migrant, and 1% frontier migrant. High school graduate householders (n=5,290) have 95% regional non-migrant, 3.7% periphery migrant, and 1.3% frontier migrant. Householders with some high school education (n=8,018) are 94% no-migrant, 4% periphery migrant, and 2% frontier migrant. The reference group of those with less

than some high school education (21,234) are 95.5% regional non-migrant, 3% periphery migrant, and 1.5% frontier migrant.

There are some differences in the foreign-born group. They have lower levels of educational attainment and their distribution into the different migration statuses does not differ by much across educational categories. This group is different in the human capital variable of education in comparison to the vary similar complete and native-born samples.

Household social capital is measured with the second independent variable of interest. The variable accounts for the presence of a household member who may have been born outside the core prior the beginning of the migration period: 1995. In the complete sample, those with household social capital (6,192) are 82.4% regional non-migrant, 11.5% periphery migrant, and 6.1% frontier migrant. In the native-born group those with household social capital (n=4,223), 88% are regional non-migrants, 7% are periphery migrants, and 5% are frontier migrants. From the native-born group with household capital (n=1,969) there are 71% regional non-migrants, 21% periphery migrants, and 8% frontier migrants.

The last hypothesis under review is measure with community social capital. In the complete sample, those with community capital (n=5,168) are 97.5% regional non-migrant, 1.7% periphery migrant, and 0.8% frontier migrant. In the native-born group of those with community social capital (n=2,860) 97.7% are regional non-migrant, 1.5% are periphery migrant, and 0.8% are frontier migrant. The variable is distributed differently in the foreign-born sample where those with community social capital

(n=2,308) are 97% regional non-migrant, 1.9% are periphery migrant, and only 0.1% are frontier migrants.

### *Cumulative vs. Multinomial Model*

Before moving on to discuss what the multinomial model is and how it is used in the thesis, it is important to note that a valid argument may be made that the three categories in the dependent variable are ordered. For example, I could hypothesize that not migrating (i.e., staying in the core) is the first category because most people are more likely not to migrate. Of those that do leave the core, I could hypothesize that most will only move to the periphery because it is spatially closer and contains more co-ethnics. In light of these thoughts I could then expect that my first category (regional non-migrant) is followed by my second category (periphery migrant) which is in turn followed by the third category (frontier migrant). Thus, I could argue that my trichotomous dependent variable is ordered. I do not make such an argument in my thesis. In order to make sure that I am not overlooking the validity of such an argument I will test for it.

If the categories in the dependent variable are ordered, a cumulative logistic regression would be required. If the categories are unordered (as I suspect they are), a multinomial logit model would be more appropriate. I will test the fit of a cumulative logit model using SAS in order to dismiss the possibility that the dependent variable is ordered.

A cumulative logit regression requires that the proportional odds assumption, also referred to as the parallel regression assumption, not be violated. This assumption basically expects that the relationship between all comparisons be the same and this allows the ordinal logistic regression to use only one equation. Testing for the assumption is an important first step when evaluating if a cumulative model is appropriate to model a dependent variable with more than two categories. Testing for the proportional odds assumption will indicate if the categories in the dependent variable are in fact ordered or unordered.

After running a cumulative logit model using the trichotomous dependent variable of interregional migration, I can confirm that the assumption of proportional odds is *not* tenable because there is a significant difference between the coefficients for the dependent variable. The SAS cumulative logistic regression output indicates that there is a violation of the proportional odds assumption. In technical terms, the slopes for the cumulative logits are not common. This is a clear violation of the assumption and in lieu of this significant finding, I conclude that modeling the data as ordered is inappropriate. In simple language, the findings indicate that using a multinomial logistic regression may be more appropriate for modeling my trichotomous migration-dependent variable.

The main sample under statistical evaluation is made up of both native-born and foreign-born Mexican-origin householders. Descriptive statistics are given on Table 7. The first model uses full sample to regress the various independent factors on the migration dependent variable. The findings for the first model are given in Table 8.

This model contains a variable that controls for the amount of time the Mexican-origin householder has lived in the U.S. In general the variable compares foreign-born to native-born people. The coefficients are discussed at the end of this chapter. The important thing being signaled here is that there is some statistical evidence that foreign-born Mexican-origin individuals do have higher likelihoods of outmigration when compared to native-born Mexican origin householders.

Length of residence is an important topic for migration research focusing in on the Mexican-origin population. Issues of assimilation--implied in this variable--are beyond the scope of this study. But it is possible that the native and foreign-born groups are significantly different in many respects. For example, the native-born group may have higher levels of educational attainment than the foreign-born group.

The graphs clearly show that the native-born group has higher levels of educational attainment than the foreign-born group. For this and many other potential reasons, the two groups are subjected to separate multinomial models. This will help us understand if and how the three main hypotheses under investigation and all the other control variables are operating for each of the two groups. In all of the three models the migration dependent variable consists of three potential category outcomes: regional non-migrant, periphery migrant, and frontier migrant. Because there are three categories two comparisons are being made in each of the models. The nonmigrant group is the base<sup>14</sup> in all instances.

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<sup>14</sup> The comparison group is referred to as the “base” in STATA.



The primary questions of interest are on how the different forms of capital influence interregional migration. Some research indicates that interregional migration patterns between the native- and foreign-born are different (Gurak & Kritz 2000). The findings of the first model reported in Table 8 also show that there are differences in interregional migration between native- and foreign-born householders and that these differences are more significant in the periphery vs. nonmigrant contrast than in the frontier vs. nonmigrant equation. For example, foreign-born Mexicans who have only been in the U.S. for 10 or less years have odds of being a periphery migrant versus regional non-migrant that are 196% greater than the odds for native-born Mexicans.

Since there are differences between native- and foreign-born householders, it is important to ascertain how the different forms of capitals are operating in each of these two sub-groups. To understand the different dynamics between native- and foreign-born householders I conduct separate multinomial logistic regressions for each group. The models will help better understand how the different forms of capital are associated with interregional migration.

When the logits for *native*-born regional non-migrant are set to zero, for the native-born Mexican MNLM we have:

$$\text{Prob}_{y=1} = 1 \div 1 + e^{\text{Xb}(\text{NativeBornPeripheryMigrant})} + e^{\text{Xb}(\text{NativeBornFrotierMigrant})}$$

$$\text{Prob}_{y=2} = e^{\text{Xb}(\text{NativeBornPeripheryMigrant})} \div 1 + e^{\text{Xb}(\text{NativeBornPeripheryMigrant})} + e^{\text{Xb}(\text{NativeBornFrotierMigrant})}$$

$$\text{Prob}_{y=2} = e^{\text{Xb}(\text{NativeBornFrotierMigrant})} \div 1 + e^{\text{Xb}(\text{NativeBornPeripheryMigrant})} + e^{\text{Xb}(\text{NativeBornFrotierMigrant})},$$

and when the logits for *foreign*-born regional non-migrant are set to zero for the foreign-born Mexican MNLM we have:

$$\text{Prob}_{y=1} = 1 \div 1 + e^{\text{Xb}(\text{ForeingBornPeripheryMigrant})} + e^{\text{Xb}(\text{ForeingBornFrotierMigrant})}$$

$$\text{Prob}_{y=2} = e^{\text{Xb}(\text{ForeingBornPeripheryMigrant})} \div 1 + e^{\text{Xb}(\text{ForeingBornPeripheryMigrant})} + e^{\text{Xb}(\text{ForeingBornFrotierMigrant})}$$

$$\text{Prob}_{y=2} = e^{\text{Xb}(\text{ForeingBornFrotierMigrant})} \div 1 + e^{\text{Xb}(\text{ForeingBornPeripheryMigrant})} + e^{\text{Xb}(\text{ForeingBornFrotierMigrant})}$$

### *Organization of Tables*

Several tables are used in the discussion of the findings. The three main tables given below are Table 8, 5b, and 6b. I will briefly delineate the layout of the tables in order to make more efficient use of them. Uniformity is maintained across all the three main tables in order to facilitate the discussion and allow the reader a more succinct reference tool. Each table has two columns. The columns represent a comparison. The first column shows the results when the contrast is made between periphery migrants and regional non-migrants. The second column represents the frontier migrant and regional non-migrant comparison.

Within each of the columns--in all the three main tables--there are three numbers given: 1) the logit coefficient; 2) the exponentiated logit coefficient; and 3) the relative risk ratio (referred to simply as the percent). The percent is obtained by simply subtracting one from the exponentiated value and then multiplying the result by 100. The numbers all represent the same result but in different ways. The percents or relative risk ratios--sometimes referred to as percent change in odds ratio--are the numbers being discussed in the thesis. The reason why these numbers are highlighted--rather than others--is because percentages lend themselves to straightforward interpretations.

It is important that the reader keep in mind that all the main tables display all coefficients signaling those with a significance level of .05<sup>15</sup> or better with a single asterisk. The three main independent variables of interest (human capital, household social capital, community social capital) are given at the top of the list followed by the various control variables. Each of the tables gives the models' likelihood ratio chi-square (along with its probability), pseudo r-square, and the number of observations.

### *Interpreting Coefficients*

The coefficients in all the models have similar interpretations. Since all my factors are coded as dummy variables, the odds ratio outputs are interpreted by comparing the variable of interest to its reference category<sup>16</sup>. The ratio is then interpreted by comparing the category of interest to its reference group and then framing the comparison as it relates to the contrast under review. In technical terms, the exponentiated number is the relative risk of being in the non-base category in relation to the reference group. An example follows in order to ground these statistical abstractions.

The model including the complete sample controls for the householder's sex. The periphery- versus regional non-migrant contrast (found in the first column of Table 8) indicates that the MALE variable has a raw coefficient of .44 and when it is exponentiated this number equals 1.55. As indicated by the "ref" input in the table, this

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<sup>15</sup> As a matter of fact more than 85% of the coefficients are significant at the 0.0001 alpha level.

<sup>16</sup> The reference category is given in the table for each variable and can be identified because it only contains a "ref" statement whereas all the others contain numbers.

variable uses females as the reference category. Using the interpretation discussion given above we would interpret the MALE ratio in the first contrast of Table 8 by saying something like: "Males are 55% more likely to be periphery migrants when compared to females."

### *Multinomial Logistic Model for Full Sample*

This section discusses the results for the model using the full sample that contains both foreign- and native-born Mexican-origin householders. Table 7 below gives the descriptive statistics for the complete sample and the STATA multinomial logistic model (from here on only referred to as MNLM) outputs for all Mexican-origin householders are listed in Table 8 below.

When comparing periphery migrants to regional non-migrants in this model, the human capital variables are not significant. Human capital is, however, significant in the frontier versus regional non-migrant contrast. The reason why may have to do with migrating out to the frontier region poses more challenges and thus education becomes a more significant predictor in migration. By way of foreshadowing, this association remains present even when the model is native- and foreign-born specific.

As stated earlier, education is significant in the frontier and regional non-migrants comparison. I will now outline the significant associations in more detail. Mexican-origin individuals with some high school (-19%), high school graduates (-27%), and those with some college (-22%) have a lower likelihood of being frontier migrants (than regional non-migrants) when compared to individuals with less than a

high school education. On the other hand and as hypothesized, those with a college degree are 63% more likely to be frontier migrants (than regional non-migrants) compared to Mexican-origin individuals with less than some high school education. The human capital hypothesis finds support in the frontier and regional non-migrant contrast.

Table 7  
Descriptive Statistics: All Mexican-origin Householders (n=73,824)

Variable	Mean	SD
Community Capital	.07	.26
Household Capital		
HH with Periphery Capital	.04	.21
HH with Frontier Capital	.04	.20
Educational Attainment		
Some High School	.19	.39
High School Graduate	.20	.40
Some college	.20	.40
College Graduate & Above	.08	.27
Age		
30-39	.32	.47
40-49	.35	.48
50-59	.24	.43
Male	.76	.43
Married	.71	.46
Year Entered U.S.		
85-94	.13	.34
75-84	.21	.41
65-74	.15	.36
1964	.06	.24
Presence of Own Child <18	.16	.37
Language		
MonoEnglish	.16	.49
Bilingual	.58	.26

Table 8  
Multinomial Results for Full Model

	Periphery vs. Regional non-migrant			Frontier vs. Regional non-migrant		
	b	Exp (b)	%	b	Exp (b)	%
<b>Human Capital</b>						
8 <sup>th</sup> grade or below	Ref	Ref	Ref	ref	ref	ref
Some High School	.08	1.08	8	-.21	.81	-19*
High School Graduate	-.06	.95	-5	-.32	.73	-27*
Some college	-.01	.99	-1	-.25	.78	-22*
College Graduate & Above	.09	1.10	10	.49	1.63	63*
<b>Household Social Capital</b>						
Householder with Periphery Capital	2.66	14.28	1228*	.88	2.41	141*
Householder with Frontier Capital	.68	1.98	98*	2.41	11.18	1018*
Householder with no H-capital	ref	ref	Ref	ref	ref	ref
<b>Community Social Capital</b>						
Has community capital	-.66	.51	-49*	-.78	.46	-54*
No community capital	ref	ref	Ref	ref	ref	ref
<b>Age</b>						
30-39	1.61	4.99	399*	1.83	6.26	526*
40-49	.81	2.25	125*	.98	2.67	167*
50-59	.43	1.54	54*	.26	1.29	29
60-69	ref	ref	Ref	ref	ref	ref
Male	.44	1.55	55*	.26	1.30	30*
Female	ref	ref	Ref	ref	ref	ref
Married	-.46	.63	-37*	-.46	.63	-37*
Not married	ref	ref	Ref	ref	ref	ref
<b>Year Entered U.S.</b>						
Native-born	ref	ref	ref	ref	ref	ref
85-94	1.08	2.96	196*	.40	1.50	50*
75-84	.53	1.69	69*	-.18	.84	-16
65-74	.33	1.39	39*	-.24	.79	-21
1964 or before	-.07	.93	-7	-.39	.68	-32
Presence of Own Child <18	-.13	.87	-13*	-.25	.78	-22*
No own children <18 present	ref	ref	ref	ref	ref	ref
<b>Language</b>						
MonoEnglish	-.25	.78	-22*	-.45	.61	-39*
Bilingual	-.39	.67	-33*	-.78	.64	-36*
MonoSpanish	ref	ref	ref	ref	ref	ref
LR chi(2)	4273.57					
Probability > chi2	0.0000					
Pseudo R2	0.1404					
Number of observations	73,824					

\*Significant at the  $p < 0.05$  level or lower

Strong support is found for the household social capital hypothesis across both equations. Under the periphery and regional non-migrant comparison, householders with any type of household social capital have higher likelihoods of being periphery migrants (than regional non-migrants) when compared to individuals with no household member over the age of five who was born outside the core.

As hypothesized more specifically, the periphery versus regional non-migrant contrast shows that those with periphery household social capital have odds of being periphery migrants that are 13 times greater than the odds for those with no household social capital and those with frontier household social capital have 68% greater odds of being periphery migrants than those without such household social capital. The frontier vs. nonmigrant equations indicate that those with periphery household social capital have odds of being frontier migrants (versus regional non-migrant) that are 141% greater than the odds for those with no periphery household social capital, while they have 1018% greater odds of being a frontier migrants (than a regional non-migrant) compared to those with no household social capital.

A clear pattern shows up here: those with periphery household social capital have greater odds of being periphery migrants while those with frontier household social capital have greater odds of being a frontier migrant when compared to Mexican-origin householders with no form of household capital. The household capital hypothesis finds supported in the full sample MNLM.

The community social capital hypothesis is not supported<sup>17</sup>, however the results are significant but opposite of what was expected. Individuals living in PUMAs with community social capital have lower odds of being migrants than those with no community social capital.

Table 8 shows that those with community social capital have odds of being a periphery migrant (than a regional non-migrant) that are 49% lower than the odds for those with no community capital. The odds of being a frontier migrant (versus a regional non-migrant) are 54% lower than the odds for those with no community social capital. A possible explanation here may be that in-migrants are going to communities where there is a robust economy. If this is so, then residents of those PUMAs may have less of an incentive to move out of the region because economic conditions are favorable for them to stay.

In short, Mexican-origin individuals living in PUMAs with community social capital have lower likelihoods of being migrants than regional non-migrants. This finding fails to support the community social capital hypothesis that speculated that Mexican-origin individuals living in areas with community capital would have higher likelihoods of being migrants than those living in PUMAs with no community capital.

Before moving on to the following two models subdividing the full sample by nativity status, I briefly discuss the findings for the control variables in the model.

The relationship between the control variables and migration are as expected. They relationships are fairly consistent across all the models. Householders below 60

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<sup>17</sup> Background analysis has shown that the variable is working as hypothesized by



years of age have a greater likelihood of being migrants than those who are 60 or older. For example, in the periphery vs. nonmigrant comparison those between the ages of 30 and 39 have odds of being periphery migrants vs. nonmigrant that are 399% greater than the odds for those between the ages of 60 and 69.

In addition, males have greater odds of being migrants than females. Married householders have odds of being frontier or periphery migrants versus regional non-migrant that are 37% lower than the odds for currently unmarried individuals.

Year entering the U.S. is significant in most categories in the periphery and regional non-migrant contrast--and only in one instance in the frontier and regional non-migrant equation. The pattern is as expected: those who have less time living in the U.S. have greater odds of being migrants (than regional non-migrants) when compared to native-born individuals.

Finally, having an own child below the age of 18 is associated with lower odds of leaving the core and being a monolingual-Spanish speaker is found to be associated with higher odds of leaving the core. For instance, the presence of an own child is associated with having odds of being a frontier migrant (vs. nonmigrant) that are 22% lower than the odds for those householders without a child. In the case of language in the periphery versus regional non-migrant contrast, both monolingual-English speakers (-22%) and bilinguals (-33) have lower odds of being migrants compared to monolingual-Spanish speakers and in the frontier and regional non-migrant equation the same pattern appears and is significant.

*Multinomial Logistic Model for Native-born Sample*

This section discusses the results for the model using only the native-born individuals in the sample. Table 9 gives the descriptive statistics for this group and the STATA regression outputs are listed in Table 10 below.

Table 9  
Descriptive Statistics: Native-born Mexican-origin Householders (n=33,294)

Variable	Mean	SD
Community Capital	.09	.28
Household Capital		
HH with Periphery Capital	.06	.24
HH with Frontier Capital	.07	.25
Educational Attainment		
Some High School	.18	.38
High School Graduate	.28	.45
Some college	.30	.46
College Graduate & Above	.12	.33
Age		
30-39	.29	.45
40-49	.34	.48
50-59	.27	.44
Male	.71	.45
Married	.64	.48
Presence of Own Child <18	.11	.31
Language		
MonoEnglish	.29	.45
Bilingual	.67	.47

Table 10  
Multinomial Results for Native-born Model

Variable	Periphery vs. Regional non-migrant			Frontier vs. Regional non-migrant		
	b	Exp (b)	%	b	Exp (b)	%
8 <sup>th</sup> grade or below	ref	ref	ref	ref	ref	ref
Some High School	-.14	.87	-13	-.77	.46	-33*
High School Graduate	-.25	.78	-22	-.87	.42	-13*
Some college	-.14	.87	-13	-.61	.54	-39*
College Graduate & Above	.08	1.08	8	.06	1.07	7
Household Social Capital						
Householder with Periphery Capital	2.16	8.65	765*	.85	2.33	133*
Householder with Frontier Capital	.78	2.17	117*	2.01	7.51	151*
Householder with no H-capital	ref	ref	Ref	ref	ref	Ref
Community Social Capital						
Has community capital	-.42	.66	-34*	-.79	.46	-54*
No community capital	ref	ref	Ref	ref	ref	Ref
Age						
30-39	2.04	7.66	666*	1.96	7.13	663*
40-49	1.01	2.73	173*	.96	2.62	162*
50-59	.60	1.83	83*	.18	1.20	20
60-69	ref	ref	Ref	ref	ref	ref
Male						
Female	.42	1.52	52*	.24	1.27	27*
Married						
Not married	ref	ref	Ref	ref	ref	Ref
Presence of Own Child <18						
No own children <18 present	-.53	.59	-41*	-.48	.62	-38*
Language						
MonoEnglish	-.89	.41	-59*	-.62	.54	-46*
Bilingual	-1.28	.28	-72*	-.75	.47	-53*
MonoSpanish	ref	ref	Ref	ref	ref	Ref
LR chi(2)	1638.15					
Probability > chi2	0.0000					
Pseudo R2	0.1352					
Number of observations	33294					

\*Significant at the  $p < 0.05$  level or lower

Similar to findings with the full sample, human capital is not significant when comparing periphery migrants to regional non-migrants among native-born householders. Education is significant in the frontier versus regional non-migrant comparison up to the some college category. The college degree category is no longer significant as in the earlier analysis involving the full sample. The human capital hypothesis finds no support when only the native-born Mexican-origin group is used to conduct the analysis.

Support for the household social capital hypothesis remains present; however individuals with either form of periphery or frontier household social capital have greater odds of being migrants than those with no household social capital. Household specific capital still has the same effect of increasing the odds a bit more for the region under contrast with the base. For example, the native-born model under the periphery and regional non-migrant equation indicates that Mexican-origin householders with periphery household social capital have odds of being a periphery migrant (versus a regional non-migrant) that are 8 times greater than the odds for those without household social capital. While the same contrast shows that those with frontier household social capital only have 117% greater odds of being periphery migrants than regional non-migrants when compared to individuals with no household social capital.

Nonetheless, the community social capital hypothesis is not supported here either. The findings are significant but with an association contradicting the one expected through the stated hypothesis. The coefficients indicate that native-born Mexican-origin householders living in PUMAs with community social capital have

lower odds of being migrants (than regional non-migrants) compared to those with no community social capital. This is the opposite of what was expected. Table 10 shows that those with community social capital have odds of being a periphery migrant (versus being a nonmigrant) that are 34% lower than the odds for those with no community social capital. In sum, those living in areas with community social capital have lower likelihoods of being migrants when compared to householders living in PUMAs with no community capital.

The control variables stay the same as in the first model except for one difference: the presence of an own child under the age of 18 is no longer significant.

#### *Multinomial Logistic Model for Foreign-born Sample*

Results for the foreign-born sample are given in Tables 11 and 12.

The human capital variable of education is even less significant among foreign-born Mexican-origin householders. In the first model (full sample) all the education categories were significant under the frontier and regional non-migrant contrast. In the second model (native-born sample) being a college graduate is a significant predictor for migrating to the frontier. In this third model (foreign-born sample) the only significant category is the college graduate: those with a college degree have odds of being a frontier migrant (versus regional non-migrant) that are 95% lower than the odds for those with less than some high school education. In lieu of these findings, the human capital hypothesis finds support when the foreign-born population is used to conduct the analysis.

Table 11  
Descriptive Statistics: Foreign-born Mexican-origin Householders (n=40,530)

Variable	Mean	SD
Community Capital	.06	.23
Household Capital		
HH with Periphery Capital	.03	.17
HH with Frontier Capital	.02	.14
Educational Attainment		
Some High School	.20	.40
High School Graduate	.13	.34
Some college	.11	.31
College Graduate & Above	.04	.19
Age		
30-39	.36	.48
40-49	.36	.48
50-59	.22	.41
Male	.79	.40
Married	.76	.43
Year Entered U.S.		
85-94	.24	.43
75-84	.38	.49
65-74	.27	.44
Presence of Own Child <18	.21	.41
Language		
MonoEnglish	.05	.26
Bilingual	.52	.50

Table 12  
Multinomial Results for Foreign-born Model

Variable	Periphery vs. Regional non-migrant			Frontier vs. Regional non-migrant		
	b	Exp (b)	%	b	Exp (b)	%
8 <sup>th</sup> grade or below	Ref	Ref	Ref	Ref	Ref	ref
Some High School	.13	1.14	14	-.02	.98	-2
High School Graduate	.03	1.03	3	.02	1.02	2
Some college	.05	1.05	5	-.28	0.76	-24
College Graduate & Above	-.04	.96	-4	.67	1.95	95*
Household Social Capital						
Householder with Periphery Capital	3.08	21.78	2078*	.96	2.60	160*
Householder with Frontier Capital	.56	1.75	75*	3.04	21.00	2100*
Householder with no H-capital	ref	ref	Ref	ref	ref	Ref
Community Social Capital						
Has community capital	-.92	.40	-60*	-.82	.44	-66*
No community capital	ref	ref	Ref	ref	ref	Ref
Age						
30-39	1.13	3.10	210*	1.61	5.00	400*
40-49	.52	1.69	69*	.96	2.61	161*
50-59	.22	1.25	25	.33	1.39	39
60-69	ref	ref	ref	ref	ref	ref
Male	.45	1.57	57*	.31	1.36	36*
Female	ref	ref	Ref	ref	ref	Ref
Married	-.40	.67	-33*	-.41	.66	-34*
Not married	ref	ref	ref	ref	ref	ref
Year Entered U.S.						
85-94	1.48	4.39	339*	1.09	2.97	197*
75-84	.84	2.32	132*	.45	1.57	57
65-74	.51	1.67	67*	.28	1.32	32
1964	ref	ref	ref	ref	ref	ref
Presence of Own Child <18	-.16	.85	-15*	-.26	.77	-13*
No own children <18 present	ref	ref	Ref	ref	ref	Ref
Language						
MonoEnglish	-.43	.65	-35*	-.66	.52	-48*
Bilingual	-.21	.81	-19*	-.39	.68	-32*
MonoSpanish	ref	ref	Ref	ref	ref	Ref
LR chi(2)	2753.74					
Probability > chi2	0.0000					
Pseudo R2	0.1513					
Number of observations	40530					

\*Significant at the  $p < 0.05$  level or lower

The household social capital hypothesis, however, is supported here as in the previous two models based on the full sample and the native-born sample). Foreign-born Mexicans with household social capital have greater odds of being migrants (than regional non-migrants) compared to their counterparts that lack household social capital. The household capital specific association with out-migrating to the specific region where the capital was attained is even more pronounced in this group.

For example, foreign-born Mexicans with periphery household social capital have odds of being a periphery migrant (versus a regional non-migrant) that are 20 times greater than the odds for those without periphery household social capital. Among the foreign-born, those with frontier household social capital have 21 times greater odds of moving to the frontier compared to those with no frontier household social capital.

Nonetheless, the community social capital hypothesis is not supported here either: the opposite of the expected is still occurring as in the first two models. Foreign-born Mexican-origin householders living in PUMAs with community social capital have lower odds of being interregional migrants than those who reside in areas with no community social capital. The regressions indicate that those with community capital have odds of being a periphery migrant versus regional non-migrant that are 60% lower than the odds for those with no community social capital.

### *Summary of Findings*

In sum, the analysis examined three hypotheses involving the relationship between different forms of human and social capital and migration. Overall, the



hypothesis suggesting that more educated individuals have a greater propensity to migrate out of the core region than less educated individuals receives support in the analysis involving the full sample and the foreign-born sample. In addition, the hypothesis suggesting that individuals with household social capital have a greater tendency to migrate out of the core region than those without such social capital receives consistent support. Finally, the hypothesis indicating that individuals living in areas endowed with community social capital have a greater likelihood of migrating out of the core region compared to those who live in communities that lack this form of social capital is not supported, with the results consistently in the opposite direction.

The next chapter discusses the implications of these findings.

## CHAPTER V

### SUMMARY

It is my believe that advancing sociological knowledge by studying how the different forms of human and social capital relate to the interregional migratory behavior of Mexican-origin individuals across the Saenzian regions will help sociologist better understand the factors associated with their migration.

A premised in this research has been that migration is a dynamic process by which populations can find a sustenance equilibrium through which communities can insure their survival. Although it is beyond the scope of this study, an underlying assumption within this premise is that migration is important as human beings adjust to their environment. In this final chapter I explain how the various hypotheses under investigation help us better understand how the Mexican-origin population engages in the migration process to insure its survival.

I will first outline the general conclusions of the study, and then I will delineate some shortcomings in the project and how future researchers may contribute further research to this topic. I will conclude the chapter by discussing the implications of the study.

#### *Conclusions*

In examining Mexican-origin interregional migration from the Southwest region, the thesis hopes to have expanded demographic theory and methods. By using multinomial logistic modeling the research has expanded academic knowledge on the

complex migration patterns of Mexican-origin individuals residing in the United States. The investigation addresses the following general question: How are human capital and household social capital and community social capital associated with Mexican-origin interregional migration from the Southwest into the other U.S. regions?

By using the various sociological schools of thoughts, the study tested three different hypotheses to evaluate if interregional migration theories of the general population are useful in helping us understand the migration of the Mexican-origin population living in the Southwest. The results indicate that they are useful in this pursuit.

The human capital hypothesis that householders with a college degree have a higher likelihood of migrating out of the core compared to those with less than a high school education is only given support in both the full and foreign-born samples. The educational attainment variable loses significance in the native-born sample, where it plays a significant role only in the mid-range educational categories. One of the reasons for this findings may be that the human capital measure is significant because in general foreign-born (who as a group have lower levels of educational attainment than the native-born group) have greater odds of migrating than the native-born and those with high education have even greater odds of migrating.

Because foreign-born Mexican-origin householders may be moving about in different labor sectors than their native-born counterparts and maybe even in different social networks where human capital is not as instrumental in actualizing the desire to migrate, it is possible that the level of education variable is not as useful in expanding

our understanding of how the native-born successfully engage in migration social networks relative to their human capital. The “formal”<sup>18</sup> nature of human capital may only matter in the migration process when the potential migrant needs to move through more “formal” migration links.

Using household social capital, I hypothesized that those with *periphery* household social capital would have greater odds of out-migration to the *periphery region* than those with no household social capital or frontier social capital. By extension, I also hypothesized that those with *frontier* household social capital would have higher likelihoods of out-migration to the *frontier region* than householders with no social capital or with periphery social capital. These two specific expectations under the household social capital hypothesis are strongly supported. This variable is significantly associated with outmigration when modeling Mexican-origin interregional migration across nativity-status group. The presence of a household member born outside the core region has a more powerful association among foreign-born householders than native-born. The “informal”<sup>19</sup> nature of household social capital may be exerting a consistently significant influence on the interregional migration process in the Southwest among the Mexican-origin population because it is a useful measure that actually detects migration network links.

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<sup>18</sup> By *formal* I mean that attaining higher levels of human capital require the individual to engage for longer periods of time with formal institutions where successful completion of requirements is acknowledge through formal certifications.

<sup>19</sup> In most cases household associations are developed through interpersonal relationships with others through informal settings. Thus, by *informal* I mean that household members are a privately held and informally attained capital.

The last of three hypotheses, the community social capital hypothesis, posited that Mexican-origin householders residing in a PUMA with community social capital have greater odds of migration than those with no community social capital finds no support. The original hypothesis may have relied too heavily on the idea that the increased presence of accessible migration social networks in PUMAs with community social capital would “pull” potential migrants more easily into the periphery and frontier regions.

This measure may be like a double-edged sword. On the one hand, a PUMA with community social capital does afford its residence the potential for increased migration social contacts, while on the other hand it may also mean that if others (i.e., non-core in-migrants) are migrating to it, the PUMA may be experiencing a healthy economy which may mean better labor market conditions for its Mexican-origin residents. Thus, it is necessary that future research find a way to control for the PUMA’s economic situations while accounting for how community social capital may be associated with interregional migration among in the Mexican-origin population.

By using Saenzian concepts, the research assessed the extent to which Mexican-origin individuals migrated to the different regions of the country and the factors are associated with their out-migration from the core into the rest of the U.S. By using multinomial logistic models I have measured the association of human capital and household social capital and community social capital with interregional migration among Mexican-origin U.S. residents.

In general I find that migration-selectivity sociological theories derived from studies of the general population and Saenzian region concepts are useful in explaining Mexican-origin interregional migration. While the findings are unable to support the community social capital hypothesis and find limited support for the human capital hypothesis, they are able to lend strong support for the household social capital hypothesis.

### *Shortcomings*

One of the limitations of the study is that the Saenzian regions are created using state level aggregations, it calculates the percent of Mexicans by taking quantities representative of the whole state. For example, Florida is considered a frontier state in 2000 when its total population of 9,938,444 contains 220,769 persons of Mexican-origin. The results indicate that 2.22% of the state is Mexican-origin and this falls below the relative average across the 44 states of 2.4% discussed in an earlier chapter.

The state level percent Mexican-origin concentration hides the fact that at smaller geographical areas there are significant ethnic-geo-density-differences. For example, at the county level Michigan has 83 counties ranging from 0.25% to 8.98% in their percent of Mexicans in the county. Using the 2.4% threshold would mean that 15 counties would be considered as part of the periphery areas instead of frontier areas. For example, using the above stated threshold would mean that 18 of the 83 counties are periphery areas and that the remaining 65 are frontier counties. Several counties—

Otawa, Lenawee, Saginaw, Van Buren, and Oceana—even have over 5% Mexican-origin concentrations.

Another limitation concerns how the household social capital variable was created. When creating this variable, the relationship of the child to the householder is not ascertained. That is, if a child below the age of 5 was present in the household unit, then the householder is assigned a value of “1” on the household social capital variable. The non-core born-child may be a niece/nephew, grandchild, own or adopted child, and even non-biologically related child among other potential relationship types. This may not be such a big problem because—hypothetically—any relationship within the household associated with a non-core region signifies a tie.

This means that those with an own biological child born outside the core are given the same "network" connections as those who may have a non-biologically related non-core-child in the household. The first scenario may be more appropriate for measuring if the individual under investigation has a physical and direct connection to a state outside the core while the latter may be measuring weaker non-core-network connections.

### *Future Research*

An important project in the future may undertake the same endeavor but instead of using state level information for creating the Saenzian regions, it could use PUMA level information using multilevel modeling. Creating the ethnic concentration estimates for all the PUMAs requires a serious commitment and an explanation of the

sophisticated Bayesian hierarchical may be a tedious job, but such a project may help show important associations in the variables being used in this project and even demonstrate if context is important. This multileveling approach (using PUMA level aggregations to create the Saenzian regions) may also find help from spatial modeling with GIS software to determine a potentially different way of the designation of areas comprising the core, periphery, and frontier.

An extensive evaluation of new destinations for Mexican-origin individuals may also help illuminate research as to current migration trends that may be influenced by the post 9/11 anti-immigrant sentiment. Examining what regions have continually increased in their Mexican-origin population may help ethnic population studies understand how previously frontier regions are not becoming more like the periphery.

Another potential modification of this thesis for future study may be to include Mexican-origin individuals who live in the Southwest and migrate crossing international borders. The variables may indicate a different selectivity mechanism for those leaving the core and moving to Alaska, Puerto Rico, Hawaii, and/or other non-U.S. countries. Including such migrants and return-migrants may help understand if their migration has any association with the capital hypotheses under investigation.

The study may be conducted using more recent data. This would help evaluate how the different hypotheses operate in the current U.S. Mexican-origin population. Recent data may be used to study their interregional migration using multilevel and spatial analysis that includes other context level factors beyond the community social capital measured used in this study.



For example, it may include an ethnic-concentration PUMA measure. What percent of the area is composed of co-ethnics and those this exert any pull forces on their migration or are there any significant interactions between this context measure and the individual level human capital? Future researchers may also want develop an “economic health measure” of the PUMA. These types of context measure may help ascertain if and how different labor sectors at the place of residence and the place of destination interact with individual-level factors to influence interregional migration though the various human and social capitals used in the analysis with Saenzian concepts.

### *Implications*

The research helps further migration theory by studying how general sociological theories on interregional migration apply to the Mexican-origin population. The thesis expands on the existing sociological literature by delineating how the different forms of human and social capital influence the odds of Mexican-origin householders migrating from the core region to the periphery and frontier region. The analysis only finds clear and consistent support for the household social capital hypothesis.

Latinos/as are the largest minority group in the United States. Mexican-origin people are the largest group under the Latina/o ethnic umbrella. Understanding how various factors are associated with their movement out of the core region may further inform policy makers and demographers on this ethnic population. In general, only 5 percent of the Southwest Mexican-origin population of 1995 migrated out of the core.

Most people stayed in their region of residence. It is important to understand how the small group of people leaving influence their communities.

If poverty stricken PUMAs suffer brain-drain and having more educated residents lowers poverty, then remedying poverty in poor communities may be more challenging. The full sample model shows that college graduates have higher odds of migrating out of the Southwest than those with less than some high school education, while those between some high school and some college education had lower odds of leaving the core than householders with less than a high school education. Thus, “mid-range” educated householders (some high school to some college) may be more willing to stay in the core region than their less than high school educated counterparts because the former are more equipped for participation in potentially depleted local labor markets.

The mid-rangers' apparent advantage may not be the motive for their non-migration, because college graduates may be more equipped to act on the *need* to increase their educational returns by migrating, while mid-range householders may be more limited by their formal education skills. As a consequence, the less than high school educated Mexican-origin householders may be “forced” to face the many struggles and obstacles necessary in the migration process, whereas college graduates have the “advantageous choice” of migrating in order to increase their returns on education.

Policy makers trying to improve impoverished conditions among Mexican-origin areas need to look for ways of keeping college educated individuals in their challenged

communities. This may help improve the economic condition of this growing ethnic minority and by doing so allow a more stable integration mechanism that supports our North American democratic ideals.

On the theory side, the findings highlight how the processual migration idea is on a potentially fruitful path for scientific discovery. Of the three hypotheses investigated, the household social capital seems to be the most stable predictor for interregional migration among Mexican-origin householders living in the Southwest. Across nativity-status models demonstrate that if a household member born outside the core is present; there may be “strong” social network connections to the periphery or frontier region influencing the decision to migrate. This variable seems to best capture the presence of non-core migration network links. Using variables that account for actual links to migrating social networks may help social demographers better specify how a hypothetical social network measure is being conceptualized to frame the migration networks link.

The main research question of how human capital and household social capital and community social capital are associated with Mexican-origin interregional migration from the Southwest into the other U.S. regions is answered after examining three hypotheses. I find that human capital theory is supported in the full and foreign-born samples and that the community social capital hypothesis is not supported. I also find that the household social capital hypothesis is consistently supported even across nativity-status groups.

An important conclusion I make is that using Saenzian concepts to trichotomize the continental U.S. into three ethnic population based regions helps the various variables used in statistical models to render us with nuanced and crucial associations. For example, using Saenzian concepts allowed me to show that region-specific household social capital matters in migration and that human capital matters more in frontier migration than periphery migration. The project has explored Mexican-origin interregional migration from the Southwest and finds that general sociological theories apply.

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