

RACIAL AND ETHNIC COMPARISON OF MIGRATION SELECTIVITY:
PRIMARY AND REPEAT MIGRATION

by

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ABSTRACT

Racial and Ethnic Comparison of Migration Selectivity:

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The purposes of this study are to examine migration disparities in primary, onward, and return migration by Hispanics, non-Hispanic black, and non-Hispanic white and to inspect the differences among the various types of migration. In addition, this study explores explanations of the migration disparities. These have been rarely studied because of a lack of proper migration data. This research employs the National Longitudinal Study of Youth (NLSY79) for a logistic regression of primary migration and for a hierarchical generalized linear model (HGLM) of the two types of repeat migration, namely onward and return. The results demonstrate that whites are more likely to make primary and onward migrations compared to blacks and Hispanics. But, with return migration, significant differences between whites and other minorities are not found. With respect to the contributors or explanations, this study indicates that the racial/ethnic migration disparities are not explained by socioeconomic status as opposed to explanations by human capital perspectives. The racial/ethnic disparities in migrations

seem to be produced by discrimination and an unequal distribution of opportunities. Return migration presents several interesting different patterns compared with the other type migrations, including the effects of age and educational attainment. For return migration, old and less educated individuals have higher odds, showing reversed pattern of total, primary, and onward migration. The findings seem to indicate that different characteristics are involved in different types of migration.

(122 pages)

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CHAPTER I

INTRODUCTION

Migration is often depicted as a process that entails some individuals migrating to places more suitable to them in terms of the level and kind of social and economic opportunities available in different places. Many individual do not migrate, thereby raising questions about differences that might exist between these two populations, namely migrants and non-migrants. There is a large body of research showing that members of some socioeconomic and demographic groups are more likely to migrate than others and that a relatively small proportion of individuals make multiple migrations, particularly as young adults (DaVanzo and Morrison 1981; Goldstein 1954; Morrison 1971; Wilson et al. forthcoming).

The differences between groups in propensities for migration are thought to be due to the human capital and personal dispositions that differentiate the groups (White and Lindstrom 2006; Wilson et al. forthcoming). As such, members of some groups are viewed as having greater resources and motivation for seeking opportunities than members of other groups. An allied view is that the level and kinds of social and economic opportunities are unevenly spread across places and that differential migration is a response to the availability of opportunities in alternative places for members of some groups (Lee 1966).

This study has three interrelated objectives that are examined with logistic and multinomial logistic regression. The purpose of this research is to contribute to research on group disparities with a multivariate comparison of the propensities for types of migration by Hispanics, non-Hispanic blacks, and non-Hispanic whites, the predominant

racial and ethnic groups in the United States. The types of migration to be examined are derived from panel-based research that distinguishes between individuals on the basis of past migration. The two fundamental types are primary and repeat migration, with the former of these consisting of individuals who never migrated at the beginning of the interval over which migration is observed (DaVanzo and Morrison 1981). Individuals who have never migrated and are at risk of primary migration have an exceptionally low propensity for migration (Lee 1974; Liaw 1990; Miller 1977; Newbold 1997; Shryock and Larmon 1965).

The latter group, consisting of individuals who have previously migrated, are at risk of two sub-types of repeat migration, returning to a former place of residence or moving onward to a place where they have not previously lived. Their rate of repeat migration is relatively high (Morrison and DaVanzo 1986). The first of these is referred to as return migration, and the latter is called onward migration. Specifically, the foremost goal of this research is to employ a multivariate analysis to determine if Hispanics and blacks, the two largest minority groups in the United States, have different odds of primary, onward and return migration than whites.

The second purpose of this research is to examine the relative importance of other key determinants in explaining observed racial/ethnic differences in each of the types of migration. Significant social and economic differences among Hispanics, blacks, and whites are known to exist and could account for or mask differences in migration (Saenz and Morales 2006). For the most part, Hispanics and blacks tend to be lower in socioeconomic status, differ in marital patterns, and are unevenly distributed across places in the United States when compared with whites. Other variables employed in the

multivariate analyses include both individual level and place characteristics. The inclusion of these two levels of variables is important since various theoretical perspectives depict migration as a differential response of individuals to the level and types of opportunities existing in alternative places (White and Lindstrom 2006).

Individual level characteristics to be included in the analyses are age, gender, marital status, length of residence, education, employment status, household income, number of children, parents' country of birth, respondent' s country of birth, and home ownership. These are key individual level characteristics that past research has shown to be associated with migration (Borjas 1999; Jones 1990; Krieg 1991; Long 1973a; Reagan and Olsen 2000; Ritchey 1976; Sandefur and Scott 1981). In line with our foremost interest in studying the effects of race and ethnicity at the individual level, the racial/ethnic composition for places of residence is also included in models. A second place characteristic, unemployment rate, is also introduced as an indicator of level of opportunity. These place characteristics represent key measures of social and economic factors that might help explain race and ethnic migration patterns.

A third purpose is to report on the relationships among the three types of migration and other variables introduced in the logistic and multinomial logistic analyses. While most of these variables have been investigated in prior studies, whether relationships observed between the respective variables and migration in past studies exist with the combination of variables included in this research is not known. As previously noted, race/ethnicity has not been included in prior panel-based analysis of primary migration. Findings for this study that are similar to findings of past research would point to the validity of the data and measures employed in this study.

The data for this study come from the 1979 Longitudinal Study of Youth, referred to as the NLSY79. This is a valuable data set for studying primary and repeat migration because it provides information on places of residence at many more points in time than are available in censuses or cross-sectional national surveys of the U.S. population. The NLSY79 also provides information that allows a determination of whether respondents had ever migrated at the date of their first interview. This is critical for a precise separation of respondents at risk of primary and repeat migration. Although a complete residential history is not available, identifying information is available on places of residence at two key times, place of birth and place of residence at age 14. This information permits an enhanced distinction between onward and return migrations.

Equally important is that identification of places of residence at the date of each interview allows a high-quality measurement of migration from one interview to the next and a sound distinction between the types of migration analyzed in this study. Also, it is important to note that time varying control variables are measured at the beginning of the intervals over which migration is measured. This is an important advantage offered by panel data when compared with typical cross-sectional derived variables that are measured at the end of migration intervals and therefore might be a consequence of migration (DaVanzo and Morrison 1981; Long and Boertlein 1990; Rindfuss et al. 2007; Xu-Doeve 2007).

Panel-based comparisons of racial/ethnic odds of primary migration in the United States have not been made in previous studies. Hence, the comparisons of the primary migration of Hispanics, blacks, and whites are a unique contribution to studies of migration. Some recent migration research has used NLSY79 data to compare the

propensities for onward and return migration by Hispanics, blacks, and whites (Wilson et al. forthcoming). However, this prior research used a statistical method, logistic regression, that did not permit a simultaneous comparison of the odds for onward and return migration, and measures of racial/ethnic composition or employment levels were not included as place characteristics. This research expands the prior research by utilizing multinomial logistic regression as a way to concurrently analyze onward and return migration as separate options for individuals at risk of repeat migration and include important place characteristics. Also, prior research has not examined the relative importance of specific factors in affecting primary, onward, and return migration.

IMPORTANCE OF MIGRATION IN AMERICAN SOCIETY

The volume and rates of migration for subgroups in the United States point to the importance of migration. According to the most recent Current Population Survey (CPS), the annual migration rate, i.e., the number of migrations across county boundaries per 1,000 people in the United States, was 46.1 between 2006 and 2007 (U.S. Census Bureau 2008). The rates of migration per 1,000 Hispanics, blacks, and whites between 18 and 39 years old were 61.3, 63.4, and 80.6, respectively. Indeed, these groups are known to differ with respect to several characteristics that may influence migration. These are among the control variables included in logistic and multinomial logistic regression analyses in this study to isolate the effects of race/ethnicity.

Migration is also important because it has played a leading role in shaping the spatial distribution of the U.S. population. In doing so, migration has had an utmost influence on the distribution of racial and ethnic groups across places in the United States.

Indeed, the large differences in the numerical representation of Hispanics, blacks, and whites in communities are primarily a result of differences between their past and ongoing migration tendencies. If opportunities were perfectly and evenly distributed throughout places in the U.S. and equally accessible to all groups, all racial/ethnic groups would likely have very similar migration patterns and be more equally distributed across the American landscape.

As Figure 1 shows, however, the 2000 U.S. census demonstrates very uneven racial/ethnic distribution of race and ethnic groups. Hispanic populations are mainly concentrated in western and southern states, while the black population is more prevalent

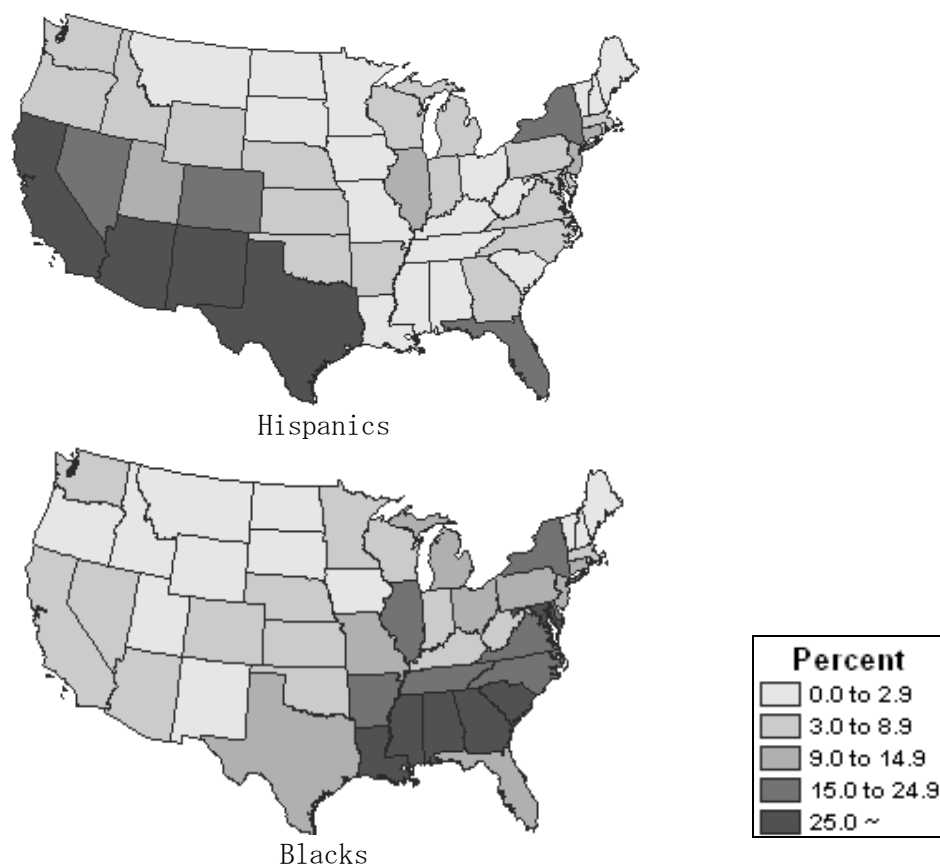


Figure 1. Population Distribution of Hispanics and Blacks
Source: U.S. Census Bureau 2007

in the southern region. These groups are essentially absent from some areas of the country, whereas whites are represented by substantial numbers throughout all areas of the country. The race/ethnic-specific levels of the types of migration examined in this research is important in determining if a more even racial/ethnic distribution results.

Migration is also of great importance to the lives of individuals in a mobile society like the United States. This is particularly salient for this study since it is concerned with whether individuals in some groups are more likely to make certain types of migrations than are members of other groups. Since migration is a means for individuals to find and secure opportunities that are unevenly distributed across geographical areas, lower levels of migration, especially primary and onward migration, for members of some groups would likely limit their chances for socioeconomic mobility (DaVanzo and Morrison 1981). Higher levels of return migration by some groups than for others might suggest a tendency for individuals in those groups to limit their searches for opportunity to fewer places and thereby decrease their chances for socioeconomic mobility (Morrison and DaVanzo 1986). Different tendencies by members of racial and ethnic groups to use different types of migration might be an important reason for variations in levels of socioeconomic achievement that have been observed for these groups (Long 1988; Newbold 1997; Saenz and Morales 2006; South and Deane 1993).

THEORETICAL GUIDANCE

By empirically analyzing the effects of individual level and place characteristics at the time of leaving a place, this study contributes to a better understanding of why people leave a place. In their recent overview of migration, White and Lindstrom (2006) note that explaining who moves is associated with a “set of personal traits linked to

economic activity, the life cycle and sociocultural context...” (311). As such, human migration has been viewed to partly represent individual responses to real and perceived social and economic opportunities in places where individuals reside (e.g., Massey 1990; White and Lindstrom 2006).

A typical example of this approach is the broad push-pull model of migration (Lee 1966) and human capital perspectives (e.g., Becker 1975; Sjaastad 1962; Todaro 1969). This research draws on these two perspectives for guidance in the selection of individual and place characteristics employed in logistic and multinomial models. A guiding proposition derived from these theoretical perspectives is that responses to the distribution of opportunities are conditioned by the characteristics of individuals.

In the comprehensive push-pull model, a migration event is the consequence of interactions between pushing factors in an origin and pulling factors in destination (Lee 1966). Push factors refer to an individual’s circumstances at a place that motivate or propel him/her to leave. These might include social and personal circumstances as well as economic considerations (Lee 1966). Pull factors are place characteristics that attract migrants and help retain residents. The push component of the model suggests a mismatch between some individuals and the places in which s/he resides. More importantly, the mismatch is more serious for individuals in some social and economic groups than for individuals in other groups. This results in higher outmigration rates for members of some groups than for individuals in other groups.

Human capital perspectives explain the migration decision with the concept of individual investment and efforts to maximize economic well-being. According to some versions of this model, individuals are viewed as continually assessing their fit in their

places of residence and thereby are repetitively faced with deciding whether to stay or migrate (Sjaastadd 1962). According to this theory, an individual's level and type of human capital have significant effects on whether s/he migrates from a place. Characteristics may be indicative of an array of past experiences, knowledge, and other factors that help determine whether individuals migrate. Related to this is the fact that opportunities are more lacking for members of some groups than for others. This results in higher levels of out migration for some groups than for others.

OVERVIEW OF DISSERTATION

Research on migration is an ongoing endeavor that is usually traced back to an Ernest Ravenstein's 1885 article entitled "The Laws of Migration." The vast number of studies published since 1885 have been concerned with an array of issues related to migration. Chapter 2 of this dissertation reviews migration studies from this larger body that are of central relevance to primary and repeat migration. The reviewed studies include general theories of migration as well as empirical research. The push-pull and human capital perspectives on migration are discussed as general theories of migration. Research on migration selectivity, particularly empirical research on racial/ethnic differences in migration is reviewed. Chapter 2 ends with a set of hypotheses that are drawn from past theoretical and empirical studies that are reviewed.

A major concern in migration research has been the lack of data to adequately investigate primary, onward, and return migration. Chapter 3 briefly reviews these problems and provides a more thorough discussion of the NLSY79 panel data and their utility for research on migration. This includes a description of the variables employed in the empirical analysis. The statistical methods used in the analysis, logistic and

multinomial logistic regression and multi-level techniques, and the rationale for their use is also presented.

Chapter 4 presents the empirical results of the research. This includes a presentation of descriptive findings on the levels of primary, onward and return migration and the bivariate relationships between these types of migration. In addition, individual and place level characteristics are examined. This is followed by a presentation and interpretation of the multivariate analyses of primary, onward, and return migrations, with an emphasis on findings that relate to race/ethnicity.

The final chapter, Chapter 5, of this dissertation provides a summary of the key findings and a discussion of their importance to migration research. Again, a significant amount of attention is given to considering the importance of the similarities and differences among Hispanics, blacks, and whites with respect to the three types of migration.

CHAPTER II

LITERATURE REVIEW

GENERAL MIGRATION THEORY: PUSH AND PULL MODEL

In their recent analysis of prevailing issues in migration research, White and Lindstrom (2006) note that the literature on migration is too extensive and broad to be fully covered in their overview of research on internal migration. They note that the literature on migration is broad and interdisciplinary and that as a demographic process it is affected by economic, social, psychological, and cultural factors. For these reasons, this chapter provides a review of migration studies that are of most relevance to this research.

The first section of the chapter provides a review of the push-pull perspective of migration, generally considered to be the most general theory dealing with migration. The following section reviews literature on race and ethnic migration since racial/ethnic comparisons in migration types are the main concern of this research.

This is followed by an examination of basic economic approaches in migration research and an assessment of noneconomic consideration in the migration process. The role of racial and ethnic communities as a place characteristic is then highlighted. Age and life cycle, two related factors that are prominent in migration research, are discussed. Importantly, prior studies of primary and repeat migration, including studies of onward and return migrations, are reviewed. Finally, the hypotheses guiding the empirical analysis are drawn from the literature.

The push-pull model of migration largely depicts migration as individual responses to the relative attractiveness of places. Some of the general assumptions of the

push-pull model of migration are often traced to Ravenstein's (1889) report in which he makes several generalizations that he calls "the laws of migration." One of his assertions is that migrants move from places of lesser opportunities to places with higher levels of opportunity and that economic circumstances are the most important factors that push and pull people from one place to another. Lee's (1966) illumination of factors influencing migration is typically considered as the most comprehensive presentations of the push-pull model. Figure 2 illustrates this model.

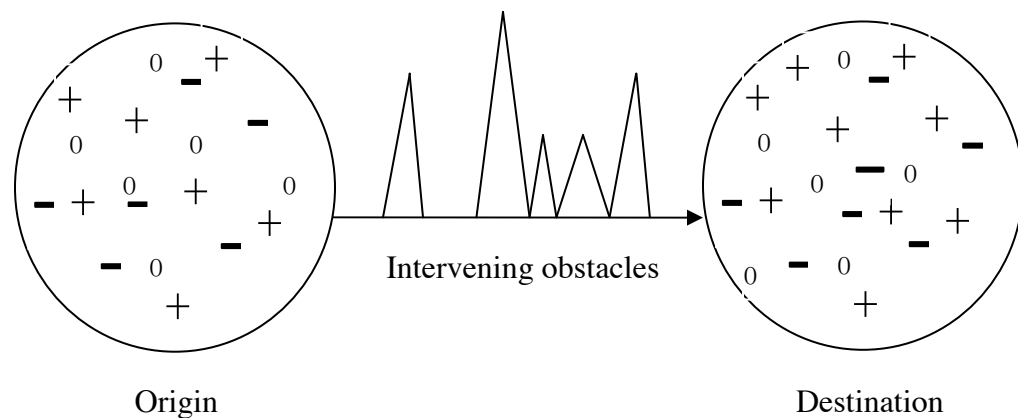


Figure 2. Push and Pull Model (Lee 1966)

Lee (1966) points to four central factors in the push and pull migration process: factors in origins, factors in destinations, intervening obstacles, and personal factors. Lee explains that every migration involves a place of origin and a place of destination. These places are depicted as having numerous factors or conditions that affect migration. Some of the factors are positive features that hold or attract individuals, and others are negative factors that push or repel individuals.

Lee elaborates that there are also obstacles between any origin and destination

and that these also influence migration between places. The fourth factor in Lee's model, personal factors, are characteristics or traits possessed by individuals that influence how they respond to the obstacles and the positive and negative conditions at origins and destinations.

For example, the presence or absence of school age children influences how the quality of schools affects an individual or family's migration. In the end, Lee (1966) views individual migration or nonmigration as a response to the weighing of relevant origin and destination factors along with an assessment of the intervening obstacles. However, he notes that it is the individual's perception of the pushes and pulls that ultimately determines his/her migration response.

A central theoretical and methodological feature of the push and pull model is the emphasis on individual decisions in migration, as is common among microeconomists (David 1974; Dejong and Gardner 1981; Harris and Todaro 1970; Sjaastad 1962). Even though a migration decision is made by individual migrants or individual families, that decision is affected or structured by local socioeconomic conditions (Brown 2002; Massey 1990; Portes and Walton 1981). Therefore, multiple individual and socio-structural factors simultaneously affect individual migration decisions. Hence, numerous place and individual level characteristics are important in full expressions of the push-pull model of migration.

There are a large number of studies on migration selectivity, the tendency for migrants and non-migrants to differ with respect to their demographic, social and economic characteristics (Krieg 1991). In research on migration selectivity, knowledge about the connections between migrants and places as portrayed in the push-pull model is

important. Through examination of place characteristics, researchers identify what particular aspects of places push or pull which variety of migrants (White and Lindstrom 2006).

Variables measuring a location's features are wide ranging and include economic factors (e.g., employment opportunity, industrial structure, wage level, and economic growth), social factors (e.g., racial and ethnic proportion, social infrastructure, welfare policy, and discrimination), and natural environment factors (e.g., temperature, weather, and environmental amenity) (e.g., Borjas 1999; Borjas and Bratsberg 1996; Findley 1987; Greenwood and Hunt 1984; Haas and Serow 1993; Krieg 2006; MacDonald and MacDonald 1974; Massey 1990; McGranahan 1999; Reagan and Olsen 2000; Rindfuss et al. 2007). Some variables usually considered as individual characteristics are indicative of an individual's experiences with places through his/her migration. These variables include resident duration and frequency of migration experiences.

The push and pull model has been criticized by structuralists for the absence of consideration of historical and macro-level social and economic structures (Morawska 1990; Portes and Walton 1981). For instance, though migrations are responses to different opportunities provided to individuals, the individualistic approach of the model cannot explain how different opportunities are distributed across a society and how the disparity of opportunities are generated. For example, Portes and Walton (1981) state:

The most common empirical trend is that of studies that search for causes of migration in individualistic factors.... Nothing is easier than to compile lists of such "push" and "pull" factors and present them as a theory of migration. The customary survey reporting percentages endorsing each such "cause" might be useful as a sort of first approximation to the question of "who migrates?" In no way, however, does it explain the structural factors leading to a patterned movement, of known size and direction, over an extensive period of time (25).

In empirical migration research, push factors in origins and pull factors in destinations are rarely analyzed at the same time. A major reason for this is that the number of alternative destinations is vast. In most analyses, migration behavior (e.g., leave or stay) and migration direction are separately examined (see South, Crowder, and Chavez 2005), or migration flows are presented at the ecological level (see Newbold 1997).

Although models focusing only on migration behavior may not provide a comprehensive account of migration, they may indirectly suggest how opportunities are spatially distributed. For example, locations with limited opportunities across a society usually have lower levels of immigration than locations having high levels of opportunities. The push-pull perspective on migration remains one of the most influential perspectives employed in migration studies (Sirkeci 2007).

RACE/ETHNICITY AND MIGRATION

Racial and ethnic stratification in socioeconomic achievement is an enduring property of the U.S. population (Brittain 1993; Farley 1984; McLemore and Romo 1998). Members of minority groups, defined along race and ethnic identities, continue to have lower levels of education, occupational status, and income than whites in American society. The differences in socioeconomic resource distribution lead to unique cultural and social experiences for members of minority groups. These include unique patterns and levels of migration. As previously noted and depicted in Figure 1, the past migrations of Hispanics and blacks have resulted in their populations being much more concentrated in certain areas of the country than is true for whites.

Farley (1984) makes statistical comparisons between white and black populations

in the trend of poverty, earnings, occupational achievement, and employment in the post-war period in the U.S. He concludes that in spite of significant changes in social policy such as the establishment of the Fair Employment Practice Committee (FEPC) and school integration, black poverty and racial inequality persists. Farley's study shows that though institutional changes in the U.S. have made discrimination illegal, opportunities are still limited for members of minority groups. Minorities face various kinds of discrimination that limit their access to opportunities in the labor and housing markets (Bonilla-Silva 1997; Farely et al. 1994; Hondagneu-Sotelo and Avila 1997; Morrison 1993; Shaly 1988; South and Deane 1993; Yinger 1995; Zurbrinsky and Bobo 1996).

These produce differences in demographic indicators for fertility, mortality, migration, and population structure at local and national levels (Farely and Allen 1989; Momeni 1983; Saenz and Morales 2006). For instance, Saenz and Morales (2006) show racial and ethnic disparities in migration rates per 1,000 in the U.S. between 1995 and 2000 based on 2000 Census data (e.g., Asian Indian 137.2, Korean 119.2, Mexican 56.1, white 93.9, and black 71.1). Such disparities may imply that Hispanics and blacks do not have access to opportunities in some areas of the nation. Therefore, at the individual level, race and ethnicity appear to be characteristics along which migration selectivity operates. This also suggests that the factors identified in the push-pull model of migration operate differently for Hispanics and blacks than for whites.

Comparisons of differences between Hispanics and other groups with respect to their internal migration patterns are rare. A large body of literature on the migration of Hispanics has addressed immigration issues including undocumented migrant issues and residential segregation (Bean et al. 1994; Durand et al. 2000; Hernandez-Leon and

Zuniga 2000; Massey and Singer 1995; Portes and Jensen 1989; Warren and Passel 1987). Research that focuses on recent immigrants may overlook the complex process of internal migration by limiting attention to entry or settlement in the early period of the migration process. Findings from studies of migration that are limited to immigrants may not be generalized to members of minority groups who were born in the United States or have lived in the country for many years (Fang and Brown 1999; Kritz and Nogle 1994). A significant body of research is emerging on the recent increases in migration of Hispanics to new destination states, states which have historically received few Hispanic migrants (Durand et al.; Leach and Bean 2008; Singer 2004).

Previous migration studies on racial/ethnic groups involve other limitations in terms of their focus. Many of these studies are focused on a single minority group or provide comparisons between racial and ethnic groups, usually blacks and whites (Wilson, et al. forthcoming). The racial/ethnic comparisons in migration patterns between whites and blacks may not be generalized to other minority groups.

Long (1988) studies differences in migration patterns between blacks and whites with respect to geographic location and historic trends by employing Current Population Survey data. His findings reveal that the difference in the mobility dimension is quite small in a racial comparison using a life-table analysis approach to migration.

Blacks typically have been found to have somewhat higher rates of moving within counties but whites have higher between-county rates. The 1966-71 rates of moving imply that a black person could expect 10.2 intracounty moves in a lifetime compared with 7.7 for whites. The cross-sectional rates for whites imply 2.3 moves between counties within state (compare with 1.2 for blacks) and 2.4 moves between states (compared with 1.5 for blacks). (307)

This similarity in migration volume between whites and blacks is corroborated by other studies (e.g., Newbold 1997; South and Deane 1993). For instance, Newbold (1997)

traces interstate migration streams for whites and blacks between 1985 and 1990 using the U.S. 1990 Public Use Micro Sample (PUMS). Long also indicates that whites migrated across state borders more often than blacks in a given period, showing overall out-migration rates of 9.6% for whites and 6.7% for blacks. Although this gap in migration rates is somewhat larger than in other studies (e.g., Long 1988; South and Deane 1993), the larger racial disparity may be due to the difference in the geographic boundaries employed in the studies. Newbold argues that the disparity in migration pattern between whites and blacks has been narrowing.

However, despite similar mobility patterns, multivariate analyses show that determinants of migration may also vary by race/ethnicity (Kritz and Nogle 1994; South and Deane 1993; Trovato 1988). South and Deane (1993) compare residential mobility patterns between black and non-blacks using data from the Annual Housing Survey in 1979 and 1980. In the study, the mobility rate for blacks is higher than that of whites, but the differences are quite small. In their multivariate analysis, however, whites still show a higher mobility tendency after controlling for other sociodemographic factors. Several sociodemographic determinants, such as age, housing type, and residential segregation, present quite similar influences on the residential mobility of blacks and whites. However, the impeding effects of home ownership and neighborhood dissatisfaction are much weaker for blacks than whites.

South and Crowder (1997) also compare mobility patterns in central cities and suburbs between whites and blacks with respect to migration rates and determinants. The results reveal that the effects of life-cycle related factors including age and presence of children are very comparable between these racial groups, although the difference in

educational level increases the variance of residential mobility with blacks more than it does with whites. Blacks in both central cities and suburbs with a high proportion of blacks are less likely to move out of their residence place (South and Crowder 1997). Conversely, the racial segregation effects at the ecological level are not apparent in the white population.

These previous findings demonstrate that migration decisions and behaviors are varied by race and ethnicity, although differential racial groups also share similar influences of some specific determinants. Racial differences in the associations between socioeconomic factors and migration behaviors may indicate that the responses to individual and place conditions are differently structured across race and ethnicity. The divergence suggests that different racial/ethnic groups select different strategies even in the same less favorable circumstances.

Numerous multivariate studies of demographic behaviors, such as mortality, fertility, and migration, commonly demonstrate that even after adjusting individual and place of residence characteristics variables, racial/ethnic disparities remains (Hummer 1996; Poston et al. 2006; Ritchey 1975; Wilson et al. forthcoming). These 'unexplained residuals' are most likely caused by prejudice and discrimination (Bonilla-Silva 1997).

Newbold (1997) points out:

Such differences were related, in part, to the lower levels of education and income of blacks that limited their access to employment opportunities, but more importantly these differences were due to discrimination in the housing and labor market. (13)

With respects to the effects of discrimination, many scholars emphasize the individual level experience of racism and prejudice against members of minority groups by the dominant racial/ethnic group (Farely et al. 1994; Yinger 1995; Zurbrinsky and

Bobo 1996). Bonilla-Silva criticizes these individualistic and psychological approaches, suggesting instead a structural concept of a “racialized social system” as an alternative framework (1997 and 2001). According to this structural concept, racism is based on an institutional system through which the dominant race group takes economic, social, and political advantage. This system reproduces racialized life chances and social orders (Bonilla-Silva 1997). Indeed, such structural explanations have been partly suggested by previous literature in demographic studies (e.g. Farelly 1993; Massey and Denton 1993).

For example, Farelly (1993) states:

Changes in the law seemingly removed all barriers to equal opportunities for blacks, thereby giving whites moral absolution and a certainty that discrimination, if it ever were directed against blacks, was a practice of the distant past. Furthermore, this change was made at almost no cost to whites, since few whites saw their own opportunities or economic prosperity constrained by black gains. (228)

This structural approach regarding racial discrimination advocates an interdisciplinary approach based on historical, qualitative, and contextual methods as well as quantitative survey methods. This is because covert and overt discrimination matters are structurally embedded at various economic, social, political, and ideological levels (Bonilla-Silva 1997). These methodological suggestions correspond with those of structural and historical approaches in the study of migration.

In summary, past studies have revealed both similarity and differences between racial/ethnic groups in migration behaviors. Members of minority groups tend to have lower levels of long-distance migration than whites but higher levels of local mobility. These differences persist in multivariate models and across time periods. The extent to which the differences are due to discrimination as opposed to other cultural factors has not been adequately determined. Also, although multivariate analysis has been done, the

mix of individual level and place level characteristics has not exhausted all of the possibilities.

ECONOMIC APPROACHES TO MIGRATION

Economic approaches have made important scholarly contributions to migration research and are a dominant theoretical basis for explanations of migration (de Haas 2007; Frey and Liaw 2005; Van Hook et al. 2006). Economic theory on migration can be divided into macro level equilibrium approaches and micro level human capital perspectives (Van Hook et al. 2006). The former considers migration as a self-regulating function of a market economy generated by disequilibrium between demand and supply, while the latter focuses on individual investment choices to maximize economic well-being. This perspective is labeled as “human capital theory” (Sjaastad 1962).

At the macro level, this view considers migration as a sum of individual flows that ultimately redistribute the labor force, thus balancing the factors of production, such as labor, land, and capital, between origin and destination. Economic disequilibriums, such as wage gaps and employment differences between origin and destination, are considered as the most important factors (Greenwood 1981; Harris and Todaro 1970; Ravenstein 1885).

For example, Ranis and Fei (1961) consider migration as the process of creating a balance in labor income between the rural agricultural sectors and the urban industrial sectors. Harris and Todaro (1970) argue that rural to urban migration in less developed countries is a response to rural-urban differences in expected earnings in spite of high unemployment in urban areas. According to them, high rural to urban migration will

continue so long as the expected urban income at the margin exceeds the agricultural product.

The equilibrium approach has many limitations in explaining migration patterns (Massey 1990; White and Lindstrom 2006). First, it fails to explain the timing of the onset of migration streams between places or sectors, such as rural and urban. Second, it ignores some migration streams to destinations with seemingly low levels of economic opportunity (Uhlenberg 1973). Finally, this approach offers a limited explanation of why there is not more migration despite persistent disparities in resources and opportunities (White and Lindstrom 2006). These limitations lead researchers to pay attention to the degree that social contexts are embedded in migrations.

At the micro level, human capital theory views the migration process as individual attempts to recoup investments that individuals make in themselves (Harris and Todaro 1970; Sjaastad 1962; Todaro 1969). Investments include the money, time, and effort individuals have devoted to preparing themselves for success in the economic market. Education is a major area of human capital investment in modern societies. Therefore, the migration decision is a problem of individual rational choice emphasizing economic well-being on the basis of a cost-return calculation (Todaro and Maruszko 1987). This perspective posits that migrants choose to leave origins in order to obtain the highest yield on their investments in human capital (Sjaastad 1962).

In the investment process, individual assets associated with economic production including education and specific job skills are essential capital. This accounts for disparities in migration propensity by various personal characteristics, such as higher mobility among the highly educated compared to individuals with low education (Bauer

and Zimmermann 1998).

The mobility patterns or likelihood of migration by human capital characteristics, however, are not universal across regions (de Haas 2007; Krieg 1991; Long 1973b; Skeldon 2002; Uhlenberg 1973; Zodgekar and Seetharam 1972). For example, migration rates of people with low education can be higher in particular areas, because migration decisions and destination choices correspond to various local conditions including industrial or labor market structures, policies, leaving cost, and so on. This illustrates migration selectivity based on the economic perspective (de Haas 2007). The human capital investment view limits the main interests of migration studies to income and employment, at both individual and locational levels, although recent empirical studies have focused on a diverse set of utility differentials between places (e.g., Massey 1990).

NON-ECONOMIC APPROACHES TO MIGRATION AND LENGTH OF RESIDENCE

Ethnographic scholars (e.g., Massey 1996; McHugh 2000; Smith 2002) provide important views on the migration process. They criticize both the more general economic perspectives and the human capital investment perspective for relying on economic considerations and their emphasis on quantifying the multitude of factors individuals consider in the migration process (Smith 2002). According to the ethnographic approach, the dominant perspectives in migration studies have considered migration as separate events that can occur whenever benefits outweigh costs (McHugh 2000). The alternative view considers residential place as cultural and political involvement and migration as culturally events rich in meaning for individuals, families, social groups, communities, and nations (McHugh 2000).

Migration decisions, therefore, are strongly influenced by emotional and social meanings of place rather than just by economic opportunity, and migrants may keep strong emotional and cultural attachments to their origins even after leaving for new destinations (Uhlenberg 1973). Such cultural, social, and emotional place attachment patterns likely differ by subpopulations that have experienced divergent historical, political, and social backgrounds (Tolnay and Eichenlaub 2006). For individuals, place attachment is generated by interactions between individual migration experience and residential place. In an economic view of a migration, however, this dimension of residence is usually ignored or considered as an oversimplified factor, such as the psychic cost of migration (Sjaastad 1962).

These variables representing place attachment of individual migrants can be considered to have unique characteristics that connect individual spatial mobility history, residence, and resident places (Dublin 1998; Newbold 2001; Schram and Soss 1999; Toney 1976). These variables include social ties, family structure, number of friends, social networks, and ethnic and religious organizations. In this context, duration of residence in a place reflects individual cultural, social, and emotional place attachments (Toney 1976). Further, this variable is often explained by the economic perspective. For instance, when a migrant decides to leave his/her community, s/he should abandon job familiarity, occupational networks, and customers in their place of residence (Newbold 2001).

Place attachments are referred to as “location specific capital” in the human capital investment perspective (DaVanzo 1983). These two concepts, place attachment and place specific capital are similar in the sense that they play a role in determining

whether an individual stays in or leaves a place. The concept of location specific capital focuses on economic costs, while place attachment emphasizes nonmonetary factors, although there is not a clear cut line between these two dimensions. Another key distinction is that a cultural and social emphasis in migration approach better corresponds to the continuousness of the migration process through an individual life than the economic view separating each migration stage.

In a number of empirical migration studies, residential duration has been employed to play the role of an 'anchor' in migration decisions (DaVanzo and Morrison 1981; Morrison and DaVanzo 1986; Newbold 2001; Toney 1976). These studies show that previous migrants who have remained in a place for many years are much less likely to out-migrate than recent immigrants. Also, individuals who lived in a place for a long period of time prior to leaving are much more likely to return to the place than are outmigrants who had not lived in the place for many years (Wilson et al. forthcoming).

As mentioned above, because residential duration reflects complicated social and cultural features of migrants, the effects of residential duration may differ by characteristics of the migrant, such as race/ethnicity, education, and migration history. Therefore, comparisons of the influences of individual and place characteristics between various subpopulations may provide important explanations in relation to social and cultural implications of different migration patterns.

ETHNIC COMMUNITIES

Many studies (Clark 1992; Fang and Brown 1999; Kobrin and Goldscheider 1978; Massey and Denton 1988; Portes and Bach 1985; Zhou 1992) emphasize the role of community influences for explaining different mobility patterns by race and ethnic

groups. These influences are associated with residential segregation along the lines of race and ethnicity. Hence, some areas of large cities and large geographical areas of the country are largely inhabited by a single race or ethnic group. The near absence of Hispanics and blacks in many areas of the country is a result of past migration patterns that also continues to help shape the migration pattern of race and ethnic groups in American society (Tolnay and Eichenlaub 2006). The socioeconomic stratification of race and ethnic groups in the United States is also reflected in place stratification models (Alba and Logan 1991) and in segmented assimilation perspectives (Portes and Zhou 1993; Zhou 1992).

The place stratification model stresses the correlation between social and spatial rankings, wherein racial and ethnic minorities are spatially distanced from dominant groups (Farely 1991; Massey and Denton 1988). Clark (1992) postulates that racial and ethnic concentration is an important contributor in determining racial/ethnic mobility patterns. His proposition is supported by an empirical analysis of residential segregation in the Los Angeles metropolitan area in 1987. According to Clark, the residential preference to live in neighborhoods with substantial numbers of one's own racial/ethnic group and to avoid living in neighborhoods strongly dominated by other groups applies to members of minority groups as well as to whites. The mobility patterns into those areas dominated by one's own group are found for blacks, Hispanics, Asians, and whites, although the tendency of whites is stronger than those of other racial/ethnic groups (Clark 1992).

Residential preference is generated by restricted homeownership opportunities in a housing market (Yinger 1995), practices of discrimination by whites (Farely et al. 1994;

Zurbrinsky and Bobo 1996), or local government (Shaly 1988). These structural factors selectively facilitate or impede racial and ethnic mobility (South and Deane 1993).

Meanwhile, the ethnic resources model and the ethnic affinity thesis attend to the role of ethnic community as a structured system within minority racial groups, especially new immigrants (Portes and Bach 1985; Zhou 1992). The ethnic resources model posits that the economy of ethnic enclaves plays an important role in shaping social mobility and channels migration to desirable locations. This also preserves cultural and internal solidarity within ethnic communities.

Past research indicates that ethnic concentrations in metropolitan areas and ethnic economic ties discourage minorities from migrating to distant new places (Forbes 1985; Kritz and Nogle 1994; Nogle 1994). Ethnic communities also provide opportunities that are channeled along social networks that deter outmigration as well as pull in new residents with backgrounds similar to those of existing residents (Kobrin and Speare 1983; Trovato 1988).

In a study using the Public Use Microdata Sample (PUMS) of the 1980 US Census, Kritz and Nogle (1994) inspected the effects of individual human capital measured by educational level and English fluency, economic context such as state unemployment rate, and nativity concentration on intra- and interstate migration. Their results show that a high level nativity concentration at the state level has a negative influence on only interstate migration.

Fang and Brown (1999) suggest a more complicated model. They test the ethnic resources model using PUMS data from the 1990 Census. Their study explored the migration pattern of Chinese born outside of the U.S. and living in New York, Los

Angeles, and San Francisco. The results of this multinomial analysis reveal that mobility patterns of ethnic enclave workers differ by macroeconomic conditions of ethnic economies while a part of the ethnic resources model is still supported. Nevertheless, the deterring influences of ethnic community are not identical across all ethnic members in an ethnic community (Kobrin and Goldscheider 1978; Kobrin and Speare 1983).

In a study of an ethnic community in Rhode Island, Kobrin and Goldscheider (1978) indicate that highly educated and middle class residents in an ethnic community of high ethnic concentration are more likely to move out than the less educated and lower class residents. The authors posit that education provides more opportunities beyond ethnically concentrated residence places, though education is strongly related to economic success in ethnic communities as well.

In summary, prior research on the effects of ethnic communities on migration indicates that members of both minority and majority groups tend to move to where members of their group are well represented. This body of research also reveals that members living in communities where their own group is not dominated by other groups are less likely to outmigrate. These results vary to some extent for socioeconomic groupings within racial and ethnic groups. The larger context in which an ethnic community exists may also influence the immigration and outmigration of race and ethnic groups.

AGE AND LIFE CYCLE

Migration shows a strong association with age (Détang-Dessendre et al. 2002; Jones 1990; Long 1973a; Thomas 1938; White and Lindstrom 2006). In general, the migration rate increases between the late teen ages and the early twenties, and then

migration propensity declines after peaking around age 30 (Jones 1990). It is known that while the intensity of the age-specific migration pattern in a society fluctuates over a period of time, the shape of the pattern appears stable (Pandit 1997; Rogers 1979).

The high residential mobility of young adults is explained by job-career, position, and life cycle, such as union formation, child-rearing, children development and weak place attachment (Jones 1990; Ritchey 1976). These factors increase the cost of migration with respect to economic and opportunity cost (Lee and Roseman 1999; Sandefur and Scott 1981).

Indeed, the research of Sandefur and Scott (1981) reports that the effect of age on migration almost completely disappears after controlling the effects of family and career variables. In their study, marital status and family size are introduced in the analysis as the variables representing family life cycle and variables of wage, prestige, same employer, and self-employment are employed for career.

Other interesting previous findings on age effects center on the association with return migration. Studies using 1960 and 1970 US Census data (Lee 1974; Miller 1977) show that the rates of return migration defined as migration to state of birth decline with age after the mid- twenties. But, DaVanzo and Morrison (1981) point out a potential problem with measurement of Census data, which does not allow for an accounting of the effects of residence duration in a non-birth place.

PRIMARY MIGRATION AND REPEAT MIGRATIONS

Migration is a recurring process that may result in multiple changes in place of residence over a given period of time. The frequency at which migration may occur distinguishes it from the two other demographic processes, namely fertility and mortality.

A first migration, referred to as primary migration, may not result in a suitable residence for a migrant and thereby lead to a repeat migration. Further, the suitability of place of residence may change at points in the life course. Some migrations may end with failure to achieve what a migrant sought, and the migrant may return to his/her prior origin or move to a new destination. Also, some migrants who achieve success in new destinations keep moving in search of even better opportunities. Some individuals never migrate from their place of birth while others establish short and long-term residences in numerous places or may move back and forth between a small number of places. Migration is therefore a complex form of behavior that can be separated on the basis of several facets, such as primary and repeat migration, along which migration selectivity might vary. Indeed, prior research suggests some important differences between primary and repeat migrants and between onward and return migrants (DaVanzo and Morrison 1981).

Primary migration, which is conceptually defined as a first migration in an individual's life, has been rarely studied, largely because of data requirements. Some studies of migration define primary migration simply as the first migration observed during the period of time covered in the data being employed in their research (Bohara and Krieg 1996; DaVanzo and Morrison 1981; Howell and Frese 1983; Shyrock 1964; Shyrock and Larmon 1965). Primary migration has also been defined as a migration from one's state of birth, since this can be detected in Census data between censuses (Eldridge 1965; Lee and Roseman 1999; Liaw 1990; Miller 1977; Newbold 2001 and 1997; Newbold and Bell 2001; Shyrock 1964). These alternative measurements risk misclassifying some repeat migrations as primary migrations. Some studies use other classifications such as native migration (Liaw 1990) or initial migration (Bohara and

Krieg 1996) in recognition of data limitations that prevent a precise distinction between primary and repeat migration.

In measurements based on Census data that report state of residence at three points in time, at birth, five years ago, and currently, primary migration could be overrated because repeat migrants who returned to their birth states in the first period and moved out in next period are defined as primary migrants. Moreover, such data do not provide any information about basic characteristics of individuals at the time of leaving, such as age, education level, income, or marital status. This problem prevents multivariate analysis of potential determinants of migration. The studies concerning primary migration using census data are restricted to presentation of statistics on descriptive migration volume or rates between areas of the country and for subgroups that can be identified on the basis of characteristics that do not change over time, such as gender and race (Eldridge 1965; Miller 1977; Liaw 1990; Newbold 2001 and 1997; Newbold and Bell 2001; Shyrock 1964). Some researchers utilize characteristics at the time of the census to describe differences between various types of migrants with the notion that it is impossible to determine the extent to which differences existed at the beginning of the migration interval (Liaw 1990; Newbold 1997).

The identification of primary migration with panel data is also often hampered by measurement problems. Typically, a comprehensive list of places of residence prior to the first interview is not collected. This compromises the ability to detect primary migrations and to precisely distinguish between onward and return migrations.

Studies using census data indicate that primary migration accounts for about half of total migrations in the United States (Eldridge 1965; Lee 1974; Miller 1977; Newbold

2001; Newbold and Bell 2001). But, the real portion of primary migration is likely to be much smaller because of a classification problem. Nevertheless, it is reported that primary migration rate is lower than the rate of repeat migration (Lee 1974; Liaw 1990; Miller 1977; Newbold 1997; Shyrock and Larmon 1965). For instance, the study by DaVanzo and Morrison (1981) shows that the primary migration rate decreases as people age

There are several reasons why primary migration rates are lower than repeat migration rates. One reason is that people at risk of primary migration may have a much longer length of residence compared to their counterparts. As mentioned above, residential duration has a negative effect on migration by strengthening place attachment and increasing leaving cost. A second reason is that experiences of migration could encourage additional migrations (Liaw 1990; Morrison 1971; Newbold 1997; Van Arsdol et al. 1968). The social, economic, and personal costs for first migrations are likely to be much higher than for migrants who may have learned how to reduce material and psychological costs entailed in migration (DaVanzo 1976).

Finally, people who remain in a place for a long time may have some special characteristics or social psychological dispositions that accounts for low primary migration rates. Similarly, repeat migrations might have a characteristic or set of characteristics that propels further migration (Morrison 1967). These factors include human capital, personal dispositions, or opportunity distribution. Admittedly, the factors include some “unobserved factors” that may affect mobility.

Several empirical studies show that primary migrants are relatively young (Eldridge 1965; Lee 1974; Miller 1977). This may be due to the fact that primary

migration is strongly related to entering the labor market, schooling, or building a new family, as well as to the fact that it is by definition the first migration. A study by Eldridge (1965) using 1960 census data reveals that primary migration rates decline more steeply at younger ages (e.g., between 20-24) than the other types of migrations. Her study also indicates that a higher portion of primary migration (69%) flows in prevailing directions, such as rural to urban, compared to the other types of migration (e.g., 57% in onward migrations and 38% in return migrations).

Comparisons of primary migrations and repeat migrations reveal other interesting differences. Bohara and Krieg (1996) show that after leaving their initial place of residence, the determinants of migration propensity change. For instance, the results demonstrate that though education plays an important role in primary migration, it does not show any significant influence on the frequency of subsequent migrations. An analysis of longitudinal data from the Southern Youth Study by Howell and Frese (1983) discloses that the first move after high school graduation plays an important role with respect to the size of place youths prefer to live during their young adult ages.

Goldstein also shows a need to distinguish between movers and non-movers in the United States (1954 and 1964). His analysis of the migration rate from Norristown, Pennsylvania demonstrates that the total frequency of migration does not correspond with the number of migrants, because a large proportion of migration is produced by a highly mobile subpopulation that migrates frequently (1954).

The fact that the out-migrants from a community tend to be in large measure the in-migrants of an earlier year suggest that despite a high migration rate, there is available in the continuous residents a core population group which gives stability to what otherwise might be a highly unstable social organization and which insures a continuity of the system of social values existing in the local community. (Goldstein 1954, 540)

The significant point of his findings is not just that a large proportion of repeat migrants make a return migration but that the characteristics of onward and return migrants might differ. Goldstein (1954) also suggests the potential for important discrepancies between non-migrants and repeat migrants in terms of their social and economic characteristics.

Yang (1994) points out that there can be diversity among migrants in terms of migration adjustment. Her study documents that repeat migrants, identified as newcomers in Bangkok who want to leave Bangkok are more likely to be homeowners and part of the out-of-labor force population than newcomers who intend to stay in Bangkok. Although Yang's study does not divide repeat migrants into return and onward migrants, the findings demonstrate that there is negative selectivity for repeat migrants who leave again compared to migrants who stay in the destination. Therefore, the loss of repeat migration, particularly return migration, in cross-sectional data may produce a bias to underestimate the differences between return migrants and non-migrants.

Researchers have presented contradictory findings with respect to the socioeconomic characteristics of onward and return migrants (DaVanzo and Morrison 1981; Falk et al. 2004; Wilson et al. forthcoming). The contradictory findings apply mostly to return migrants and are concerned with whether they have lower levels of human capital than stayers or other migrant groupings. Most findings indicate return migrants have lower levels of education and may be returning because of employment and other difficulties at their destinations (DaVanzo and Morrison 1981). Others suggest that return migrants have equal or higher levels of human capital than those who do not return (Falk et al. 2004). Shortcomings in extant data have made adequate assessments of

this difficult.

DaVanzo and Morrison (1981) conducted one of the most extensive panel-based studies of repeat migration in which a distinction between return and onward migrations was made. They focused on the effects of duration of residence and human capital, primarily educational attainment and employment status. The results indicated a strong association between migration rate and residence duration especially during the initial two years. Although all types of migrations showed a similar pattern, the effects of length of residence are strongest with return migration.

In terms of education and employment status, DaVanzo and Morrison (1981) found the highly educated were more likely to move onward to another new place. The authors conclude that the propensity of onward migrations of the educated is due to superior information for reinvestment in new places. They assert that the pattern of return migration supports the concept of “failed migration.” More specifically, their results show that the less educated and unemployed were more likely to return to their initial origin when compared to onward migrants and stayers. There were some serious data limitations with the data employed in DaVanzo and Morrison’s research. Perhaps most important was that their data set did not include information regarding where respondents had lived prior to the first interview nor information about duration of residence at the time of the first interview. Also, data from the first seven waves of their data set were all that were available when their study was conducted.

Some recent studies on repeat migration, on the other hand, posit that the characteristics of return migration are overidentified into failed initial migration (Hunt 2004; Newbold 2001; Newbold and Bell 2001). These researchers find that a significant

portion of black return migrants are more skilled and educated, perhaps indicating that return migration is planned in advance for career development.

Newbold and Bell (2001) also compare migration patterns with respect to characteristics of return and onward migration in Canada and Austria using census sources. They examine migration patterns and characteristics of migrants at three time points 1986, 1990, and 1991. They reveal that a substantial number of repeat migrants (36% and 26% in Australia and Canada, respectively) who moved between 1990 and 1991 returned to a same dwelling where they had been living in 1990. They note that:

The fact that this location-specific capital was not disposed of before the first migration suggests that these return moves were planned events rather than response to failure. (1167)

Their comparison of return migrants who return to a same dwelling with those who return to the same area but not the same dwelling reveal that the members of the first group tend to be older in age, more highly educated, and in a professional occupation. They interpret these results as indicating that those who return to the same dwelling had preplanned their return. Their characteristics are very similar to those of onward migrants in DaVanzo and Morrison's (1981) study.

Hunt (2004) also finds heterogeneity among return migrants based on the data from the German Socio-Economic Panel from 1984-2000. He suggests a distinction between migrants that is based on whether migrants change employers. His research indicates that migrants who remain with the same employer account for 23% of all interstate migrants. Among migrants who are employed by the same employer before and after their migration, 18% are onward migrants, and 5% are return migrants compared to 50% and 17% of the migrants who changed employers. In the comparison of labor

market characteristics of migrants, same-employer migrants have higher education attainment and hourly wage and work less as part-time workers than other migrants and nonmigrants. Hunt (2004) concludes that a substantial portion of return migrants make return migrations as a process of investment of human capital. Importantly, Hunt refines prior findings that suggest failure at a destination as the reason for return migration by showing that a portion of return migrants, those who seemingly planned to return when leaving an origin, are like most onward migrants with respect to socioeconomic characteristics.

Borjas and Bratsberg (1996) extend the research on characteristics of return migration within a country to international migration. Their analysis relies on the data from Public Use of the 1980 U.S. Census and Immigration and Naturalization Service (the microdata on Aliens Legally Admitted for Permanent Residence in the U.S.) to compare outmigration patterns by origin of the foreign born. The results reveal the selection of return migrants, which is related to characteristics of aggregated immigrants flowing from origins (sending counties), in addition to individual features in destinations (in the U.S.).

[The] implication is that return migration intensifies the type of selection that generated the immigration flow in the first place. In other words, if the immigrant flow is positively selected, so that immigrants have above-average skills, the return migrants will be the least skilled immigrants. In contrast, if the immigrant flow is negatively selected, the return migrants will be the most skilled immigrants. (175)

Overall, past research indicates the importance of examining the different types of migration to determine if the socioeconomic characteristics of primary, onward and return migrants differ. And, while these studies contribute significantly to the general body of literature on migration, they do not provide a comprehensive or simultaneous comparison

of the three types of migration, namely primary, onward, and return migration. Moreover, the data used in these studies did not allow a precise distinction between primary and repeat migration because information on previous places of residence was lacking and information on whether respondents had ever migrated was not available. The gap is particularly acute for primary migration, again because of data limitations.

In addition, primary migration, that is, the first migration in an individual life history, has remained little researched and is considered as another migration type. Additionally, other important social determinants of migration including race and ethnicity have not been analyzed, even though it can be hypothesized that a dominant population is more likely to have advanced human capital (for example, high educational attainment and superior information for opportunity in a new place).

Drawing on key findings and gaps in prior studies, eight hypotheses have been derived that will help guide the empirical research conducted in this dissertation. The overarching basis for the hypotheses is prior findings that indicate a need to further explore the effects of individual and place level characteristics on primary, onward, and return migrants. The push-pull and human capital perspectives indicate that individual-level characteristics influence the tendency for individuals to respond to place characteristics. Another major justification for six of the hypothesis is the lack of panel-based research that compares primary, onward, and return migrations of Hispanics, blacks, and whites. National panel data employed in prior research did not include sufficient numbers of Hispanics and blacks to permit racial/ethnic comparisons. Also, there is a lack of multivariate analyses of these types of migration and assessments of the extent to which individual and place level characteristics affect the respective types of

migration. Finally, data employed in this dissertation allow a more accurate distinction between primary and repeat migration and contain more information for distinguishing between onward and repeat migration. The specific hypotheses that guide the empirical analysis are:

Hypothesis 1. Whites will have higher odds of primary migration than Hispanics and blacks.

Hypothesis 2. Whites will have higher odds of onward migration than Hispanics and blacks.

Hypothesis 3. Whites will have lower odds of return migration than Hispanics and blacks.

Hypothesis 4. The odds of migration for blacks and Hispanics will decline relative to whites, after place attachment factors are introduced.

Hypothesis 5. The odds of migration for blacks and Hispanics will decline relative to whites, after demographic and life cycle variables are introduced.

Hypothesis 6. The odds of migration for blacks and Hispanics will decline relative to whites, after socioeconomic factors are introduced.

Hypothesis 7. The odds of primary and onward migrations for people with the highest education level will be higher than people with lower education level.

Hypothesis 8. The odds of return migrations for people with lowest education level will be higher than people with higher education level.

CHAPTER III

DATA AND METHOD

DATA: THE NATIONAL LONGITUDINAL SURVEY OF YOUTH 79 (NLSY79)

As illustrated in the review of prior studies, migration researchers encounter significant problems in making valid and reliable measurements of migration and migrant characteristics. Hence, the measurement of migration and the quality of data for migration research is a focus of some migration studies. The nature of migration is such that it can occur at any time in a person's life, and the distance or boundaries used to detect migration are often arbitrary (Courgeau and Lelièvre 2004; Long and Boertlein 1990; Xu-Doeve 2007). Conceptually, migration is an ongoing process whereas data regarding migration are collected as though migration were an event that occurs between two or a few points in time. Even in panel studies, migration histories are typically only partially observed since information about movements between interviews is not collected.

A few studies have relied on retrospective migration histories to capture the total migrations of individuals, but whether individuals can recall places is questionable, and the collection of information about characteristics at the time of entering and leaving places is even more difficult and rarely attempted (Toney 1976; Yang 1994). The panel data employed in this research, the National Longitudinal Survey of Youth (NLSY79), provides information that reduces some the most serious problems associated with the measurement and analysis of migration.

The NLSY79 is a panel that began with 12,686 respondents in 1979 and has 7,846

eligible respondents still participating in the twenty-first survey conducted in 2004. The NLSY79 is one of the longest running panels in the U.S., and its relatively early oversampling of Hispanics and blacks makes it particularly valuable for racial/ethnic comparisons. The panel began with four subsamples of individuals who were between the ages of 14 and 21 on December 31, 1978. The four subsamples nationally representative samples of Hispanics, blacks, disadvantaged whites, and military personnel.

The nationally representative sample consists of 6,111 respondents that includes 4,916 non-Hispanic whites (referred to as white), 751 non-Hispanic blacks (referred to as black) and 444 Hispanics (referred to as Hispanic). The other subsamples consist of 1,643 economically disadvantaged, non-black/non-Hispanics (referred to as poor whites), 2,172 blacks, 1,480 Hispanics, and 1,280 respondents who were serving in the military. The military sample and the poor whites were dropped from the NLSY79 survey in 1985 and 1990, respectively, mainly because of funding reasons. These two supplementary subsamples are not included in any of the analyses of this study.

The NLSY79 respondents were surveyed yearly for 16 surveys through 1994. Since 1994, interviews have been conducted every other year. The most recent data employed in this study were gathered in the 2004 survey. An important component of the data is a separate data file of geographical codes that identify counties of residence and information about the characteristics of the counties. Federal Information Process Standards, referred to as FIPS codes, are used to identify counties. This geo-code file is a confidential data file that is only made available with the approval of the United States Department of Labor. Assurance of protection of the identity of respondents is the major consideration in gaining access to the geographical codes. These data are essential for the

development of the measures of migration developed for this study.

Although the NLSY79 provides valuable data for migration research, it does not provide a complete residential history or provide geographic codes for identifying residences as the subcounty level. Nevertheless the availability of contemporaneous information on counties of residence and measures of numerous individual level characteristics at 21 points in time is an exceptionally valuable feature of the NLSY79. The relatively short interval between interviews (e.g., 1 year and 2 years) enables the detection of migrations missed with the typical five-year questions asked in the decennial census and many cross-sectional surveys (Long and Boertlein 1990; Xu-Doeve 2007).

In addition to the identification of county of residence at the time of each survey, retrospective questions were used to identify county of birth and county of residence at age 14. Questions on how long respondents had lived in their place of residence when first interviewed in 1979 and whether they had always lived in their current place of residence allow a more precise distinction between repeat and primary migration than is usual. Other panel data used to distinguish between these types of migration did not include this essential information.

The inclusion of FIPS codes for counties in the NLSY79 allows a researcher to merge numerous county characteristics available from censuses and other county level data sets. The Center for Human Resource Research has already merged considerable census and other data from various issues of the County and City Data Book. The combination of county-level characteristics with the key individual-level characteristics makes the NLSY79 a valuable data source for migration research. For the purpose of this study, the characteristics of individuals and places are measured at the beginning of time

intervals over which migration is measured. The analysis is limited to respondents in the labor force who are 18 years of age or older at the beginning of the time intervals. These time intervals over which migrations are measured, referred to as person-periods, are the main units of analysis. Person-periods are common in demographic research and especially useful in the analysis of longitudinal data (Schoumaker and Hayford 2004).

Again, for the analysis of the waves of panel data, this study transforms the data set into person-periods because person-periods provide an effective way for measuring whether an event occurs during a time interval and for introducing variables measured at the beginning of the person-period to examine their effect on events during the interval (DaVanzo and Morrison 1981; Schoumaker and Hayford 2004). Therefore, in the data set, individuals experience independent risks of migration during each of their qualifying person-periods. Generalizations to individuals may be made as long as the assumption of independence is correct. Person-periods contributed by respondents who are younger than 18 years of age or who are out of the labor force at the beginning of the person-period are excluded from the person-period analysis. The exclusion of these person-periods is consistent with past migration research and is largely based on assumptions about the individuals assuming the role of an adult in making decisions.

Each person-period in the data set includes: 1) variant (for example, age, education attainment, and marital status) and invariant (for example, race and ethnicity, and gender) variables at individual level; 2) variables presenting characteristics of county of residence; 3) an identification variable; 4) a variable indicating interview year; and 5) dependent variable (e.g., migration or non-migration).

There are 129,131 person-periods that meet the criteria for inclusion in this study.

These periods are contributed by 9,638 respondents with some respondents contributing only one person-period and others contributing as many as twenty. Of the 129,131 person-periods 34,436 were contributed by individuals who had never migrated at the beginning of their person-periods. Individuals entering these person-periods are at risk of primary migration that is, at risk of making a first migration. Once respondents make a primary migration, they are at risk of repeat migration in subsequent person-periods.

The remaining 92,805 person-periods are for individuals who had migrated one or more times as they enter their person-periods. Individuals contributing to these person-periods are at risk of repeat migrations with three possible outcomes, staying, making an onward migration, or making a return migration. The number of respondents at risk of repeat migration increases from one survey to the next as former primary migrants become at risk of this type of migration.

A fundamental assumption of a person-period data set is that each cross-sectional set should represent the entire population at the interview year. Indeed, each wave has missing or dropped cases. For instance, the retention rates for the NLSY in 2002 and 2004 are 82.5% and 81.8%, respectively, for respondents at the initial interview (n=9,361). Critical assessments of the NLSY79 indicate it has retained a suitable level of its representativeness (Center for Human Resource Research 2001).

This study explores characteristics of respondents and counties of residence as potential determinants of migration. In this study, the only destination characteristic is limited to determining if a destination is the same as a prior county of residence (return migration) or a new destination (onward migration). And for independent variables, the measurement point of all variables except invariant variables such as gender, birth

country, and parents' birth country, is the beginning of the interval over which migration is measured.

DEPENDENT VARIABLES: PRIMARY MIGRATION AND REPEAT MIGRATION

This study draws on previous longitudinal research on migration by DaVanzo (1983), Morisson and DaVanzo (1986), and Newbold (2001) to develop measures of primary and repeat migration. The FIPS codes for county of residence at 21 points in time are used to develop the measures. Information on whether respondents had ever migrated prior to the first interview in 1979 is employed initially to separate respondents into those at risk for primary and repeat migration. Subsequently, migration from one interview to the next is used to update these at risk populations. Again, when an individual makes a primary migration, his/her subsequent person-periods are at risk of repeat migration.

Unfortunately, the NLSY79 data do not allow detection of primary migrations that occurred prior to 1979. And, although the data provide more information on counties of residence prior to the first interview in 1979, namely county of birth and county of residence at age 14, they do not supply a complete residence history that could be used to completely separate return and onward migrations. County of residence at age 14 and at birth were identified in the initial NLSY79 survey. Prior research (e.g., Goldsmith et al. 1997; Wu and Thomson 2001) suggests this is one of the most critical points in early migration. And, in migration studies, place at age 14 is considered as being where respondents grew up (Borjas et al. 1992; Gibbs 2000).

As mentioned previously, the NLSY79 provides much more information for developing measures of migration than other U.S panel data sets, largely because of the longer period of time over which data have been gathered and the availability of

information on county of birth and at age 14, as well as information about whether respondents had ever migrated at the time of the initial interview.

In this study, the length of the interval over which migration is measured is the time between regularly scheduled interviews. This was one year until 1994 and every two years when the NLSY79 switched to every other year interviews. Primary migration is defined as the first migration in an individual's life history. Operationally, individuals at risk of primary migration are identified by comparing length of residence and age at the beginning of the respondents' respective person-periods. Respondents are at risk of primary migration in person-periods for which the age of the respondent and their length of residence are equal.

Repeat migration refers to additional changes in county of residence following a previous migration. The destination of repeat migration can be to a place a migrant left previously or to a place in which a migrant has never lived. The former indicates return migration, and the later is onward migration.

Because past research on these two types of migration (i.e., primary migration and repeat migration) indicates they are fundamentally different, the examination of migration propensities is conducted in separate analyses. In the first analysis on primary migration, this study makes a comparison of characteristics between primary migrants and those who continue to remain in their county of birth. The next set of analyses explores repeat migration. This group is at risk of the three following outcomes: non-migration, return migration, and onward migration.

When a repeat migration is detected, counties of residence at all prior points in time for which data are available are investigated to distinguish between return and

onward migrations. The operational definition of repeat migration and the distinction between return and onward migrations involve two basic steps. First, a comparison of FIPS codes at the beginning and end of person-periods is made. If comparisons of FIPS codes at the beginning and end of person-periods are equal, the outcome is defined as “non-migrant.” If the FIPS codes are different, the outcome is determined to be a repeat migration.

The second step involves a search of counties of residence at previous points in time. If the FIPS code is the same as the FIPS code at any of the identified prior points in time, the migration is defined as being a return migration. If there is no match, the migration is defined as being an onward migration. Again, the points in time that are checked to determine if a migration is onward or return are county of birth, county of residence at age 14, and county of residence at the time of each prior interview.

INDEPENDENT VARIABLES

Variables employed in the analyses include individual demographic and socioeconomic characteristics and place characteristics. Though some variables are defined as individual level characteristics, they are created by intertwinement between place and individual migration experiences. These variables represent the place attachment of a migrant. The individual and place level variables introduced in this study are shown in Table 1.

Table 1. Summary of Dependent and Independent Variables

Dependent Variables	Possible Values
Primary migration	Migration or Staying
Repeat migration	Onward migration, Return migration, or Staying
Independent Variables	
<i>Individual level variables</i>	
Race/ethnicity	Hispanic, Black, or White
Age	18-21yrs, 22-25 yrs, 26-30 yrs, 31-35 yrs, or 36 yrs and older
Gender	Male or Female
Marital status	Married or non-married
Length of residence	Less than 3yrs, 3-5yrs, 6-10 yrs, 11yrs or over
Education	Not high school graduate, High school graduate, Some college graduate, Bachelor's degree or more
Employment status	Employed or Unemployed
Household income	Lowest, Second lowest, Middle, Second Highest, Highest, or Missing
Number of children	0, 1, 2-3, 4 or over
Parents' birth country	Foreign born, Native born, or Missing
Birth country	Foreign born or Native born.
House Ownership	Own, Not own, or Missing
<i>County level variables</i>	
Unemployment rate	Lowest, 2 nd Lowest, 3 rd Highest, Highest, or Missing
Racial and ethnic composition rate	Lowest, 2 nd Lowest, 3 rd Highest, or Highest
<i>National level variable</i>	
Year (Annual unemployment rate in the U.S.)	Low & Inclining, Low & Declining, High & Inclining, or High & Declining

Individual Level Variables

Race/ethnicity is the key independent variable in this study. This variable is categorized into three groups: Hispanic, non-Hispanic black, and non-Hispanic white. The racial and ethnic identification of a respondent was measured by sample identification of NLSY79, which identifies only one racial/ethnic category. Questions allowing respondents to self-identify with multiple racial/ethnic groups have become preferred in recent years (Fein 1990; Hirschman et al. 2000; Snipp 2003). Indeed, such a question for self-classification was asked in the 2002 survey.

There is a high degree of agreement between the alternative measurements of race/ethnicity (Hirschman et al. 2000). The 1979 measure is used because it allows the use of portions of the residence history for respondents who had dropped out of the survey by 2002. Also, use of race/ethnicity in 1979 is more consistent with the interest of this study in measures representing beginnings of the person-periods.

Educational attainment is employed in the analysis in the form of the highest degree that a respondent has achieved. This variable is gathered as the highest degree achieved at the beginning of each person-period. Based on these variables, educational attainment is categorized into four levels: less than a high school graduate, high school graduate, some college, and bachelor's degree or more.

Employment status is classified as employed and unemployed. For this, a variable created by the NLSY79 named "employment status recode" is employed. This variable is provided in the NLSY79 data set for each survey except 2000, 2002, and 2004. For these years, the employment status measures are derived from work history – weekly labor status in the weeks prior to the respondent being interviewed. To ascertain the

validity of the calculated measure, the same measure was computed for 1998 and compared with the NLSY79 measure for that year. The discrepancy between the two measures was less than 2%.

The NLSY79 data set calculates the total net household income from various income sources, such as wages from full or part time jobs, ownership of a business, unemployment compensation, AFDC payments, supplemental security income, and so on. This variable is applied to the analysis. The data should be revised because the income level at each year cannot be compared directly due to inflation. In this study, the inflation rate of each year is reflected in a household income measure based on annual inflation rates in the U.S. This means the variable of household income in this study indicates a real income level instead of a relative rank of income.

This study employs the number of children in a respondent's household including biological, adopted, and stepchildren. This variable is one of the variables representing place attachment of a household. Number of children is measured in four categories: zero, one, two or three, and four or more.

Duration of residence is measured by the number of years a respondent has lived in a place since last migrating to the place. For those who have never migrated, duration of residence and age are equal. The NLSY79 contains information on duration of residence at the time of the first interview in 1979. This is updated at the time of each subsequent interview for this study. If a respondent does not migrate between interviews, his/her duration of residence is increased by the length of time between interviews, by one year prior to 1994 and by two years afterwards. If a respondent migrates during a person-period, his/her next person-period begins with a duration of zero years and is

updated subsequently according to whether another migration occurs. For this study, duration of residence is categorized into less than 2 years, 2-5 years, 6-10 years and longer than 10 years. Prior research indicates that these categories are appropriate for indicating strength of ties to a place of residence (Morrison and DaVanzo 1986; Toney 1976).

Age of individuals at each year is included in the study. Previous studies show a clear nonlinear pattern between age and migration, and that geographic mobility is the highest in the age group between 21 and 25 years old. Therefore, ages are classified into six categories, less than 21, 21-25, years, 26-30 years, 31-35 years, 36-40 years, and 41 years and older.

The analysis employs birth country of a respondent. This variable identifies whether a respondent is native born or a 1.5 generation immigrant, defined as those who came to the U.S. in their childhood. The variable is presented as native born and foreign born.

Parents' place of birth is also employed in this study. The NLSY79 interview in 1979 asked about the birth country of the respondent, state, and the county of respondent's father and mother separately. This study uses only parents' birth country. Either case in which the father or mother is born in a foreign country is measured as foreign born parents, while having both parents born in the U.S. is considered as native born parents.

Other control variables are also involved in the analysis. The marital status of a respondent is classified as married or not married. A variable presenting the gender of a respondent is included in the analysis as a control variable.

Each correlation between variables was examined to determine whether there are any collinearities. The correlation tests show a strong association between the unemployment rate in county of a residence and place classification (rural/urban) in both the primary and repeat migration data sets. In this research, the variable for the unemployment rate in place of residence is introduced, thus eliminating the variable of place classification because the unemployment rate is considered a more important variable representing the economic circumstance of residents.

Place Level Variables

Many place characteristics were merged into the data by the Center for Human Resource Research. The County and City Data Book (CCDB) was the major source of for the information. The CCDB consists of information about counties available from the U.S. Census Bureau and other U.S. government and private organizations. A shortcoming of the data is that information is not updated on a yearly basis. In the case of unemployment rates, the rates are calculated using geometric means between two years for which measures are available. This estimation procedure is based on an assumption that changes in unemployment rates between two time points occurred at an equal rate.

Racial and ethnic proportion in a county of residence is also merged into the NLSY79 from the CCDB. This variable is used to examine the “anchor effect” of an ethnic community. As such, the variable indicates the proportion of a respondent’s county of residence that are members of the respondent’s racial/ethnic group. More specifically, if the respondent is Hispanic, the proportion of the county that is Hispanic is merged into the data. Similarly, if the respondent is black, the proportion of the county that is black is merged. Finally, if the respondent is white, the proportion of the county’s total population

that is white is merged. Consequently, if two respondents with different race and ethnicity reside in the same county, the values for their county of residence's racial/ethnic composition for these two respondents will be different.

Finally, the U.S. unemployment rate for each wave of the NLSY79 is employed in order to indicate national-level economic conditions in the survey year. The annual unemployment rates in interview years are classified into four categories such as low and inclining, low and declining, high and inclining, and high and declining.

RESEARCH MODEL: PERSON-PERIODS DATA SET AND MULTILEVEL ANALYSIS

Because the populations at risk for primary and repeat migration are different, the analysis is conducted in two separate models. For primary migration, logistic regression is employed because the independent variable has two nominal values (e.g., primary migration and non-migration). Multinomial logistic regression models are used in the analysis of repeat migration because this variable has three nominal values (e.g., onward migration, return migration, and non-migration). In addition, for the repeat migration analysis, multilevel analysis is conducted to control intra-correlation effects.

Person-Periods Model and Multilevel Analysis

For the effective analysis of the longitudinal migration data which includes recurring multiple events, this study transforms the data set into person-periods. Person-periods provide an effective way for measuring whether an event occurs during a time interval and for introducing variables measured at the beginning of the person-period in order to examine their effect on happenings during the interval (DaVanzo and Morrison 1981; Schoumaker and Hayford 2004). Therefore, in the data set, individuals experience

independent risks of migration during each of their qualifying person-periods. Generalizations to individuals may be made as long as the assumption of independence is correct (Gordis 2004).

In the real data set, the assumption that each person-period is an equivalent unit to every other person-period may be violated by dependent observation. In other words, an individual's person-periods may be strongly correlated with one another. Indeed, Goldstein (1954, 1964) indicates that a selected segment of the population frequently migrates. According to him, about 10% of the population is highly mobile, and this mobile population accounts for large portion of total migrations, although their population proportion is small.

For the non-independent or nonrandomized observation problem in analysis for repeatedly observed occasions, a multilevel model, e.g., the hierarchical linear model (HLM), provides a good solution to this problem. This method corrects biases in parameter estimates resulting from intra-coefficient effects. In a multilevel model, each person-period or each observation (Level 1 unit) is considered nested in a person (Level 2 unit).

This study employs a multilevel model to control intra-class correlation within persons and to obtain a within-individual analysis of factors that determine the pattern of repeat migration. Using the HLM model to analyze a continuous dependent variable, random effects are assumed to be normally distributed across person-periods, Level 1 units (Raudenbush and Bryk 2002; Snijders and Bosker 1999).

The model is available only when the error of outcome is normally distributed. The non-normally distributed errors come up in analysis using non-continuous outcome

variables (e.g., binary variable, count variable, ordinal variable, and multinomial variable data). In the relation to this problem, the hierarchical generalized linear model (HGLM) provides various modeling frameworks, such as Bernoulli, binomial, Poisson, and multinomial models, for analysis of outcomes with non-normally distributed variation.

However, the analysis for primary migration does not utilize multilevel analysis, because the data structure is not the type of repeated observation data set. People who migrated once are excluded from the sample of primary migration. In the data set for primary migration analysis, the multilevel model produces a collinearity problem between age and tendency to migrate at the person level. This is due to the data structure.

In primary migration analysis using repeated observation data, intra-class correlation within a person means the tendency to stay in a same residence because persons who conducted primary migration are dropped from the data. Therefore, persons who have stayed at a birth county a long time by definition are at older ages. For primary migration analysis, logistic regression based on person-period is utilized, and the HGLM of the multinomial model is employed in the analysis for repeat migration including onward and return migrations. The formulas of the models are as follows.

Primary Migration. Here, η_i is the log of the odds between primary migration and nonmigration. And, the probability of sum of all outcome events (e.g., primary migration and nonmigration) is one. Therefore, if the possibilities of the two events are the same, which means φ_i is 0.5 for each event, the log is zero. η_i is the transformed value of binary events into a linear model for regression analysis. β s represent vectors of coefficients of individual or place factors, X s.

- Link function

$$\eta_i = \log\left(\frac{\varphi_i}{1 - \varphi_i}\right)$$

- Equation

$$\eta_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_p X_{pi}$$

Repeat Migration. η_{ij} is also the log odds for observation i of person j , between a reference event M and an event of m -th among multiple outcome events. In this study of repeat migration, the outcome events include onward and return migrations and the reference event is nonmigration. In this model, β s also represent vectors of coefficients of observation level factors, X s.

- Link function

$$\eta_{ij} = \log\left(\frac{\varphi_{mij}}{\varphi_{Mij}}\right)$$

Probability ($R_{ij} = 1$) = φ_{1ij} (onward migration),

Probability ($R_{ij} = 2$) = φ_{2ij} (return migration),

Probability ($R_{ij} = 3$) = $\varphi_{3ij} = \varphi_{Mij} = 1 - \varphi_{1ij} - \varphi_{2ij}$ (non-migration)

- Level 1.

$$\eta_{mij} = \beta_{0j(m)} + \sum_{q=1}^{Q_m} \beta_{qj(m)} X_{qij} \quad (m = 1, 2)$$

In a multilevel model, data at Level 1, which means observation level, is nested within persons. The effects of factors at the person level, W_s are presented by the differences of an intercept. W_j means characteristics of person j , and γ_s present vectors of coefficients of person level factors, W_s and $u_{0j(m)}$ refer to the random effect at the person level in outcome event m .

- Level 2.

$$\beta_{0j(m)} = \gamma_{00(m)} + \sum_{s=1}^S \gamma_{0s(m)} W_j + u_{0j(m)}$$

In order to examine the appropriation of multilevel analysis, the intra-class correlation coefficient is calculated. The calculation shows whether the multilevel analysis is appropriate in the model estimating the proportion of the total variance. The intra-class correlation coefficient means to what extent the total variances in Level 1 and Level 2 are explained by person level (Level 2) units. The variance is calculated by one-way ANOVA with random effects, which shows uncontrolled variance. According to Vermunt (2003), in logistic regression models, the intra-class correlation is given by

$$\frac{\tau_{00}}{\tau_{00} + \pi^2/3} \quad \pi^2/3 \approx 3.29$$

The intra-class correlations for onward and return migration models are .158 and .154, respectively. These show that multilevel models are appropriate to control significant intra-person correlation effects, which means non-independent observation problems.

Progression of Regression Models

In multivariate analyses, the variables other than race/ethnicity are classified into three factors, and the factors are introduced in five different models. Model 1 includes only the race/ethnicity variable. In subsequent, other demographic and socioeconomic factors are added to examine the changes in the disparities by race/ethnicity after controlling for these factors. Model 2 includes place attachment factors (e.g., birth place of respondent and parents, residence duration, home ownership, and racial/ethnic proportion in residence place). Model 3 includes demographic and life cycle factors (e.g., marital status, number of children, and residence duration). Model 4 includes socioeconomic factors (e.g., educational attainment, employment status, household income, home ownership, and unemployment rate in residence place). Finally, all of these factors are introduced in the full model (Model 5). Variables of gender, age, and annual unemployment rate are employed as control variables in all models except Model 1.

CHAPTER IV

RESULTS

DESCRIPTIVE ANALYSES

The purposes of descriptive analyses are to determine disparities among racial/ethnic groups with respect to various types of migration, and to examine differences in determinants by migration types. For these goals, this chapter reports the descriptive statistics for distributions of the various type migrations by individual and place characteristics.

Ahead of descriptive analyses of primary and repeat migrations, we need to explore the pattern of total mobility including all kinds of migrations. The results of general migration are then compared with the descriptions of primary and repeat migrations. A comparison between the migration rates of this general mobility and primary and repeat migrations sheds light on the different patterns by migration types.

Many previous studies on migration patterns have been restricted to cross-sectional data, and this limitation has led to migration studies presenting with only general migration rates. Therefore, the comparisons with general mobility are expected to speak to the validity of previous cross-sectional results. Following the descriptive analysis, logistic regression and multinomial regression using multilevel analysis are reported for multivariate analysis on migration patterns.

Total Mobility by Individual and Place Characteristics

Table 2 presents overall migration rates by individual and place characteristics. The descriptions of total migration patterns include all person-periods of entire samples

(n= 129,131) satisfying the migration definition. The figures in Table 2 include missing cases of independent variables. Samples that contain missing values less than 1% in each variable are excluded in the following descriptive and multivariate analyses for primary and repeat migrations.

The total migration rate including all samples is 11.8%. This means that changes in place of residence occurred during about 12% of the all person-years in the data. The statistics for racial/ethnic distribution of total migration rates demonstrate that whites are most likely to migrate in comparison to blacks and Hispanics, with migration rates of 13.4, 10.3, and 9.6%, respectively. This mobility pattern is consistent with previous literature on racial/ethnic mobility patterns. Some part of the differences among racial/ethnic groups, especially between whites and the others, may be accounted for by unequal distributions of other demographic and socioeconomic factors, such as life cycle factors, social economic status (S.E.S.), and place characteristics.

According to statistics, the rate of migration is slightly higher for males than that for females, and native born respondents (11.9%) are more likely to migrate than their foreign born counterparts (9.8%). However, birth place of parents shows an opposite pattern in migration rates. People with foreign born parents present a higher migration rate (12.0%) than their counterparts (10.4%).

The statistics also demonstrate age effect on migration. Overall, migration rates by age show a negative association, although the relationship is not found between the youngest and the second youngest groups. Also, the results indicate that married individuals are less likely to migrate than those who are not married (10.2% vs. 13.1%). With respect to number of children, rates show that the less children people have the

Table 2. Overall Migration Rates by Individual and Place Characteristics of NLSY79 (1979 – 2004)

	Staying	Migration	Migration Rate
Total	129,131	15,190	11.8%
Race/Ethnicity			
Hispanic	21,901	2,325	9.6%
Black	33,543	3,841	10.3%
White	58,497	9,024	13.4%
Gender			
Male	59,124	8,343	12.4%
Female	54,817	6,847	11.1%
Birth Country of Respondent			
Missing	1	0	0.0%
Foreign Born	105,838	14,305	11.9%
Native Born	8,102	885	9.8%
Birth Country of Parents			
Missing	2,743	346	11.2%
Foreign Born	96,041	13,080	12.0%
Native Born	15,157	1,764	10.4%
Age			
18~21	18,656	2,991	13.8%
22~25	23,410	3,901	14.3%
26~30	30,353	3,776	11.1%
31~35	23,282	2,675	10.3%
36+	18,240	1,847	9.2%
Marital Status			
Missing	10	1	9.1%
Non Married	58,938	8,918	13.1%
Married	54,993	6,271	10.2%
Number of Children			
0	20,258	10,168	14.0%
1	28,433	2,246	10.0%
2~3	2,784	2,547	8.2%
4+	62,466	229	7.6%
Residence Duration			
Missing	274	15	5.2%
0~2	17,411	6,006	25.6%
3~5	17,615	3,556	16.8%
6~10	17,446	1,946	10.0%
10+	61,195	3,667	5.7%
Education			
Missing	1,025	145	12.4%
Less than High School	17,261	2,224	11.4%
High School	71,431	8,881	11.1%
Some College	7,623	964	11.2%
BA and More	16,601	2,976	15.2%

Table 2. Overall Migration Rates by Individual and Place Characteristics of NLSY79 (1979 – 2004) (continued)

	Staying	Migration	Migration Rate
Total	129,131	15,190	11.8%
Employment Status			
Employed	102,885	13,479	11.6%
Not Employed	11,056	1,711	13.4%
Household Income			
Missing	20,497	2,667	11.5%
Lowest	18,734	3,139	14.4%
2nd Lowest	18,936	2,699	12.5%
Medium	19,186	2,411	11.2%
2nd Highest	18,975	2,099	10.0%
Highest	17,613	2,175	11.0%
Home Ownership			
Missing	13,170	1,258	8.7%
Non Own	67,743	11,285	14.3%
Own	33,028	2,647	7.4%
Racial/Ethnic Proportion in Residence Place			
Missing	329	94	22.2%
Lowest	8,855	1,667	15.8%
2nd Lowest	16,279	2,505	13.3%
2nd Highest	31,578	4,029	11.3%
Highest	56,900	6,895	10.8%
Unemployment Rate in Residence Place			
Missing	2,240	720	24.3%
<5.9%	44,853	6,114	12.0%
6.0~8.9%	40,854	5,205	11.3%
9.0~11.9%	16,013	1,953	10.9%
12% +	9,981	1,198	10.7%
Annual Unemployment Rate			
Low & Incline	45,102	6,195	12.1%
Low & Decline	11,999	948	7.3%
High & Incline	30,559	4,475	12.8%
High & Decline	26,281	3,572	12.0%

more likely they are to migrate. The migration rate for respondents without children (14.0%) is almost twice as high as the rate for people having four or more children (7.6%).

The most educated group, those who at least graduated from university, displays the highest migration rates (15.2%). Nevertheless, any obvious pattern consistent across all education groups is not found. Unemployed individuals show a higher percentage than employed individuals (13.4% vs. 11.6%). In the terms of relative household income, the lowest quintile displays the highest rate (14.4%). However, the pattern among the highest three quintiles is not clear. The migration pattern by home ownership is pronounced, as demonstrated in previous studies. The migration rate of individuals not owning a home (14.3%) is almost double the rate of their counterpart (7.4%).

The migration comparisons by place of residence characteristics also show some patterns. The lowest quartile of own racial/ethnic proportion and the highest unemployment quartile groups demonstrate higher migration rates (15.8% and 12.0%) than their counterparts. Finally, the migration rates in years when the unemployment rate was low and declining (7.3%) are lower than the rates in the other employment categories. Yet, among the other categories, the differences are not clear.

In these data, variables for respondent's birth country, marital status, educational attainment, and racial/ethnic proportion in a residence place contain insignificant numbers of missing cases, less than 1%. These cases are eliminated in the following both descriptive and multivariate analyses.

Primary Migration Patterns by Individual and Place Characteristics

Descriptive statistics in Table 3 indicate the differences in primary migration rates by various individual and place characteristics. The results show that primary migration occurred during 5% of the all person-years included in this analysis. This migration rate is much lower than the total migration rate (11.8%) presented above. This low level of primary migration is suspected to be strongly related to residence duration effects, which negatively influence the possibility of migration. In this study, the people at the risk of primary migration are over 18 years of age. This means they had lived in the same place at least for 18 years, although this period includes childhood and adolescent periods.

In the comparison of primary migration rates among racial/ethnic groups, whites show the highest rates at 5.8%, followed by blacks at 4.6%, and Hispanics at 3.9%. The results are consistent with previous literature on racial/ethnic disparity in mobility. Among other demographic factors, the age effect is the most pronounced. The youngest group, ages 18 to 21, shows a primary migration rate of 7.5%, while the oldest group, aged over 36, shows a primary migration rate of only 3.0%. The results reveal that the primary migration rate decreases as age increases. The migration patterns by age may indicate the combined effects of both age and the length of residence by the definition of primary migration.

As expected, males have a slightly higher rate of primary migration than females (5.2% of person-years for males, compared with 4.8% of person-years for females). The primary migration rate for married respondents (3.8%) is lower than that for respondents who are not married (5.8%). A negative relationship is found between primary migration

Table 3. Primary Migration Rates by Individual and Place Characteristics of NLSY79 (1979 – 2004)

	Staying	Migration	Migration Rate
Total	34,436	1,721	5.0%
Race/Ethnicity			
Hispanic	5,652	223	3.9%
Black	13,814	634	4.6%
White	14,970	864	5.8%
Gender			
Male	17,772	927	5.2%
Female	16,664	794	4.8%
Birth Country of Parents			
Missing	1,099	31	2.8%
Foreign Born	30,886	1,595	5.2%
Native Born	2,451	95	3.9%
Age			
18~21	8,700	654	7.5%
22~25	8,317	466	5.6%
26~30	8,248	298	3.6%
31~35	5,473	192	3.5%
36+	3,698	111	3.0%
Marital Status			
Non Married	21,087	1,215	5.8%
Married	13,349	506	3.8%
Number of Children			
0	20,712	1,301	6.3%
1	5,721	202	3.5%
2~3	7,320	196	2.7%
4+	683	22	3.2%
Education			
Less than High School	5,886	329	5.6%
High School	24,412	1,149	4.7%
Some College	2,385	101	4.2%
BA and More	1,753	142	8.1%
Employment Status			
Employed	30,012	1,451	4.8%
Not Employed	4,424	270	6.1%
Household Income			
Missing	7,296	377	5.2%
Lowest	6,086	307	5.0%
2nd Lowest	5,825	291	5.0%
Medium	5,787	282	4.9%
2nd Highest	5,327	213	4.0%
Highest	4,115	251	6.1%

Table 3. Primary Migration Rates by Individual and Place Characteristics of NLSY79 (1979 – 2004 (continued))

	Staying	Migration	Migration Rate
Total	34,436	1,721	5.0%
Home Ownership			
Missing	2,954	94	3.2%
Non Own	23,314	1,386	5.9%
Own	8,168	241	3.0%
Racial/Ethnic Proportion in Residence Place			
Lowest	1,878	125	6.7%
2nd Lowest	3,497	186	5.3%
2nd Highest	10,280	452	4.4%
Highest	18,530	941	5.1%
Unemployment Rate in Residence Place			
Missing	264	36	13.6%
<5.9%	11,527	550	4.8%
6.0~8.9%	13,180	655	5.0%
9.0~11.9%	5,663	268	4.7%
12% +	3,802	212	5.6%
Annual Unemployment Rate			
Low & Incline	12,131	593	4.9%
Low & Decline	2,695	43	1.6%
High & Incline	10,397	558	5.4%
High & Decline	9,213	527	5.7%

and the number of children. The rate of primary migration for those not having children (6.3%) is more than double than for people who have two or three children (2.7%).

However, the difference between those with two to three children and those with more than four children (3.3%) is not clear.

Turning to place attachment factors, the statistics show that these factors also contribute to disparities in primary migration. Respondents with foreign born parents are more likely to leave their origins (5.2%) than respondents whose parents were born in the U.S. (3.9%). It is suspected that the lower social connections of immigrant parents may influence social connections and attachments of the respondents, thus encouraging

outmigration.

As for patterns by home ownership, 6% of those not owning or paying for their own home migrated during the survey interval, compared to only 2.9% of those who own their home. At place level, it is found that people in a place with the lowest racial/ethnic proportion show a higher migration rate (6.6%) than the general average (5.0%). The overall patterns of rates indicate that people who are less attached to their place of residence are more likely to leave their hometown compared to those who are more attached.

The distribution of primary migration rates by socioeconomic status (S.E.S.) variables also reveals primary migration disparities. The most educated respondents (graduated university or over) show a much higher primary migration rate than respondents with less education. But it is interesting to note that the rate for those with the lowest educational attainment (less than high school) is the second highest, at 5.6 %, which is slightly higher than average.

In comparisons of relative household income level, no salient differences in primary migration patterns are found. For employment status-related primary migration patterns, primary migration rates are higher for the unemployed than the employed (6.1% vs. 4.8%). Although the rate of primary migration for individuals in a place with highest unemployment rates (5.6%) is higher than in other places, there is insufficient evidence to conclude that there is a negative association between primary migration and county level unemployment rate.

Repeat Migration Patterns by Individual and Place Characteristics

The descriptive statistics for repeat migration including both onward and return migration are presented in a somewhat different way from those for primary migration because of the different analysis model, multilevel analysis. The results of person level factors (Level 2) are presented in Table 4, followed by observation level factors (Level 1) in Table 5. Person level variables include permanent characteristics such as race/ethnicity, sex, birth country, and parents' birth country. Observation level variables include time-varying individual and place variables, such as age, education, marital status, number of children, relative income, employment status, and unemployment rate and racial/ethnic proportion in place of residence.

Table 4 documents the differences in onward and return migrations by person level characteristics that are consistent through a life. The differences of mean by characteristics are reflected in differences in intercepts in multilevel-multivariate analysis. Therefore, the differences of mobility by characteristics at Level 2 are presented by means of migration rates of a person. The mean of a migration rate is calculated in the way that the sum of migration rates of persons is divided by number of persons.

Statistics indicate the means of repeat migration rates are 8.8% for onward migration and 6.1% for return migration. This indicates that NLSY79 participants were more likely to move to new places rather than return to previous places of residence between 1979 and 2004.

Table 4. Repeat Migration Rates by Individual Characteristics at the Person Level, NLSY79 (1979 – 2004)

	N	Onward Migration Mean of Rate	(S.D.)	Return Migration Mean of Rate	(S.D.)
Total	7,747	8.8%	0.123	6.1%	0.104
Race/Ethnicity					
Hispanic	1,555	6.9%	0.112	5.0%	0.099
Black	2,063	7.7%	0.118	7.2%	0.120
White	4,129	10.1%	0.127	6.1%	0.097
Gender					
Male	3,875	9.2%	0.123	6.6%	0.105
Female	3,872	8.4%	0.122	5.8%	0.103
Birth Country of Respondent					
Missing	182	9.7%	0.141	7.1%	0.114
Foreign Born	1,147	7.7%	0.115	4.0%	0.079
Native Born	6,418	9.0%	0.123	6.5%	0.107
Birth Country of Parents					
Foreign Born	7,052	9.0%	0.123	6.5%	0.107
Native Born	694	7.3%	0.113	2.8%	0.059

Differences by race/ethnicity in return migration shows a similar pattern with the patterns in general mobility and primary migration. Blacks have the highest rate of return migration (7.2%), and Hispanics have the lowest (5.0%). The return migration rate for whites is 6.1%. The onward migration rate is highest for whites (10.1%), followed by blacks (7.7%) and Hispanics (6.9%).

Like the results for primary migration, males are more likely to conduct both types of repeat migrations than females (9.2% vs. 8.4% for onward migration and 6.6% vs. 5.8% for return migration for males and females, respectively). The comparison by birth country of parents shows that the repeat migration rates for people with native-born parents are higher than the rates for people with foreign born parents.

This result is inconsistent with the findings in general mobility and primary migration comparisons. However, when the variable is measured as an observation level

variable, the pattern is reversed, showing a higher migration rate for respondents with native born parents than respondents with foreign born parents.

Migration rates by nativity of respondents, which are not examined in the primary migration analysis, show that native-born migrants are more likely to conduct repeat migrations compared with foreign-born migrants. An interesting finding in these disparities is that the difference in return migration is much larger than that in onward migration. Based on this, we could suppose that even if the patterns of determinants in various types of migrations are similar, the effects of a same determinant may be different by the migration type.

Table 5 shows the percentages of return migrations by observation level factors, which may change through a life course. In general, the statistics at the observation level demonstrate higher migration rates in repeat migrations than in primary migration, and the onward migration rate (8.5%) is higher than return migrations (5.7%).

These repeat migration rates at the observation level are not quite as different as those of the migration rates per person. This, of course, does not mean that migration events are that evenly distributed across repeat migrants. According to the rates of primary and repeat migration, it is supposed that the largest part of migrations in the U.S is to move to new places wherein the migrants had not lived before.

The two youngest age groups show the highest rates for each type of migration, and the migration rates are the lowest in the oldest age group. The onward migration rate of the youngest groupings is almost double that of the oldest group (11.3% vs. 6.4%, rate ratio: 1.77).

Table 5. Repeat Migration Rates by Individual and Place Characteristics, NLSY79 (1979 – 2004)

	Staying	Onward Migration	Migration Rate	Return Migration	Migration Rate
Total	79,589	7,907	8.5%	5,309	5.7%
Age					
18~21	10,328	1,416	11.2%	869	6.9%
22~25	15,266	2,039	10.9%	1,318	7.1%
26~30	21,917	2,031	8.0%	1,401	5.5%
31~35	17,657	1,390	6.9%	1,055	5.2%
36+	14,421	1,031	6.4%	666	4.1%
Marital Status					
Non Married	38,266	4,560	9.9%	3,015	6.6%
Married	41,323	3,347	7.1%	2,294	4.9%
Number of Children					
0	42,118	5,332	10.5%	3,372	6.6%
1	14,475	1,130	6.9%	873	5.3%
2~3	20,903	1,331	5.7%	973	4.2%
4+	2,093	114	5.0%	91	4.0%
Residence Duration					
0~2	17,157	2,862	12.4%	3,044	13.2%
3~5	17,350	2,108	10.1%	1,388	6.7%
6~10	17,195	1,360	7.1%	553	2.9%
10+	27,887	1,577	5.3%	324	1.1%
Education					
Less than High School	11,583	1,029	7.6%	854	6.3%
High School	47,854	4,349	7.8%	3,316	6.0%
Some College	5,299	558	9.1%	302	4.9%
BA and More	14,853	1,971	11.2%	837	4.7%
Employment Status					
Employed	72,819	7,108	8.4%	4,703	5.6%
Not Employed	6,770	799	9.8%	606	7.4%
Household Income					
Missing	13,260	1,292	8.3%	960	6.2%
Lowest	12,637	1,554	10.1%	1,237	8.0%
2nd Lowest	13,125	1,334	8.6%	1,028	6.6%
Medium	13,461	1,339	8.6%	757	4.9%
2nd Highest	13,621	1,115	7.2%	727	4.7%
Highest	13,485	1,273	8.3%	600	3.9%
Home Ownership					
Missing	10,126	666	5.9%	482	4.3%
Non Own	44,835	5,811	10.7%	3,887	7.1%
Own	24,628	1,430	5.3%	940	3.5%

Table 5. Repeat Migration Rates by Individual and Place Characteristics, NLSY79 (1979 – 2004) (continued)

	Staying	Onward Migration	Migration Rate	Return Migration	Migration Rate
Total	79,589	7,907	8.5%	5,309	5.7%
Racial/Ethnic Proportion in Residence Place					
Lowest	7,027	951	11.1%	581	6.8%
2nd Lowest	12,755	1,414	9.4%	866	5.8%
2nd Highest	21,461	2,115	8.5%	1,427	5.7%
Highest	38,346	3,427	7.8%	2,435	5.5%
Unemployment Rate in Residence Place					
Missing	1,675	313	13.8%	285	12.5%
<5.9%	33,297	3,243	8.4%	2,255	5.8%
6.0~8.9%	27,897	2,748	8.5%	1,749	5.4%
9.0~11.9%	10,448	983	8.1%	668	5.5%
12% +	6,272	620	8.6%	352	4.9%
Annual Unemployment Rate					
Low & Inclining	32,902	3,348	8.7%	2,160	5.6%
Low & Declining	9,187	532	5.3%	359	3.6%
High & Inclining	20,260	2,258	9.4%	1,553	6.5%
High & Declining	17,240	1,769	8.7%	1,237	6.1%

The results document the negative association between age and general repeat migration rates, as was detected for total and primary migrations. But it is possible that the age disparities in both types of repeat migrations could be confounded by other age-covariant factors, such as education, length of residence, and other lifecycle variables.

Single respondents exhibit higher rates of both types of repeat migration than married respondents. This pattern is nearly the same as with those in the previous migration comparisons. For the number of children, both onward and return migration rates decrease with a greater number of children.

Migration rates comparison by duration of residence in the same place documents the same results as the previous empirical literature, in that long time residents in the same place are less likely to move out than those who have recently moved in. The

rates of the shortest residence duration groups are the highest for both onward and repeat migrations (12.4% and 13.2%, respectively).

The results document much more pronounced differences in return migration rates compared with those in onward migration. In return migration, the rate ratios compared with the other counterparts dramatically increase as compared with groups with longer residence durations (rate ratios: 1.97, 4.55, and 12.00, respectively).

The negative association between onward migration rate and length of residence in a same place is also found in onward migration. Nonetheless, the differences are not as clear as repeat migration pattern indicates (rate ratios: 1.23, 1.75, and 2.34). These results may indicate that migration patterns by residence duration in onward migration are much more stable than those in repeat migration.

A clear difference between home owners and the other groups is found for both types of repeat migration. Both onward and return migration rates for those without ownership (10.7% and 7.1%) are almost double the rates for home owners (5.3% and 3.5%).

The comparison of repeat migration rates by racial/ethnic proportion in residence counties reveals that people living in a county with the lowest proportion in their own racial/ethnic group are more likely to make both onward and return migrations than individuals in counties that have larger proportions of their own group. However, for onward migration, this relationship is very weak.

Meanwhile, interesting patterns in repeat migration are found by comparing different levels of educational attainment. Unlike the findings with primary migration and general mobility, the pattern of return migration is negatively associated with educational

attainment. This association is also inconsistent with that of onward migration. The different pattern between the two types of repeat migrations may indicate that the onward and return migrations imply different features, for instance, such as seeking opportunities in new destinations and failure in previous migration, respectively, as the literature mentions (DaVanzo and Morrison 1981).

In the pattern of relative income level, the results demonstrate that people with low income are more likely to experience both onward and return migration. However, the differences of migration rates by a relative household income level are much more pronounced in return migration than in onward migration. The return migration rate for those with the lowest income (8.0%) is nearly double compared with those with the highest income (4.0%), while the difference in onward migration is comparatively small (10.0% vs. 8.3%). The strong negative association between return migration and income level may confirm that return migrations represent failed migration.

The results show that unemployed respondents are more likely to move again than employed respondents in terms of both onward and return migration. But, the disparity in return migration is a little clearer than in onward migration (rate ratios: 1.34 vs. 1.17). For the characteristics of place, however, the associations between unemployment rate in counties of residence and repeat migration mobility are ambiguous in terms of onward migration and relatively small in return migration.

The overall migration patterns by race/ethnicity are quite similar except for return migration. The migration rates of whites are highest in terms of total, primary, and onward migration. Meanwhile, Hispanics present the lowest migration rates for each migration type. However, with regard to return migration, the rate of blacks is higher than

the other racial/ethnic groups, including even whites.

MULTIVARIATE ANALYSES

Multivariate analyses, including logistic regression for primary migration and HGLM for repeat migration, are conducted to compare racial/ethnic disparities in mobility and to explore differences in migration features by migration type. For the comparison by race/ethnicity, five different models are introduced in each analysis to observe which factors account for the disparities.

As previously mentioned in the method section, Model 1 includes only the race/ethnicity variable. In addition to this basic model place attachment factors, demographic and life cycle factors, and socioeconomic factors are introduced in Models 2, 3, and 4, respectively. Finally, all of these factors are introduced in the full model (Model 5). Further, in the examination of different features by migration type, I compare the differences of full models among various types of migration. For convenience in reading, the results of repeat migration are presented in two separated tables.

Tables 6, 7, and 8 present the results of multivariate analyses in terms of odds ratios. An odds ratio of one for a particular group (e.g., blacks) means that the odds of migration are same with reference group (e.g., whites). An odds ratio higher than one indicates that the people involved in the category are more likely to migrate than the reference group. An odds ratio less than one indicates that the people involved in the category are less likely to migrate than those with the reference characteristic.

The comparisons of odds ratios for racial/ethnic groups in various types of migrations support Hypothesis 1 and Hypothesis 2. The multivariate results indicate that odds of primary and onward migration for whites are the highest among the racial/ethnic

groups (see Table 6 and 7). This indicates that whites, the dominant racial/ethnic group in the U.S., are more likely to migrate to new places compared to the other minority groups such as Hispanics and blacks. The overall racial/ethnic disparities in primary and onward migrations follow the general mobility pattern presented in the previous descriptive section. However, the differences between whites and the other groups in terms of return migration are not clear (see Table 8). For example, the odds ratio in the basic model (Model 1) in Table 8 documents that blacks are more likely to return than whites, but the difference in the odd ratio of return migration between blacks and whites is relatively small (7.8%) and not statistically significant.

Statistically significant differences are not found in the full model (Model 5) for return migration, although the direction of difference between whites and blacks is reversed (see Table 8). In the other models (Models 2, 3, and 4), the odds of blacks and Hispanics to whites fluctuate around 1.0 across the models. Based on the results, we could conclude that obvious racial/ethnic differences in the odds of return migration do not exist.

The examination of contributors to racial/ethnic disparities in migrations provides some interesting findings. In the comparison between Hispanics and whites, the odds ratios in each migration type move closer to 1.0 after controlling the effects of non-socioeconomic status factors (i.e., Models 2 and 3 in Tables 6, 7, and 8). Moreover, the odds ratios for blacks also inch closer to whites in the models controlling for the effects of place attachment factors (Model 2) for return migration and demographic and life

Table 6. Odds Ratios by Individual and Place Characteristics for Primary Migration

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Intercept	.061		.079		.095		.259		.245	
Race/Ethnicity										
Hispanic	.671	(.577, .780)	.687	(.583, .811)	.705	(.606, .821)	.664	(.569, .774)	.715	(.604, .845)
Black (White)	.785	(.707, .873)	.774	(.693, .864)	.838	(.752, .935)	.755	(.672, .847)	.823	(.731, .927)
Gender										
Male (Female)			1.070	(.970, 1.180)	.997	(.902, 1.101)	1.085	(.981, 1.199)	1.009	(.911, 1.118)
Birth Country of Parents										
Missing			.697	(.456, 1.066)					.720	(.471, 1.103)
Foreign Born (Native Born)			1.220	(.970, 1.535)					1.252	(.995, 1.575)
Age										
22~25			.775	(.682, .881)	.795	(.698, .904)	.737	(.646, .841)	.767	(.671, .877)
26~30			.568	(.486, .663)	.582	(.498, .679)	.530	(.452, .621)	.582	(.494, .686)
31~35			.563	(.470, .675)	.578	(.482, .694)	.536	(.445, .646)	.618	(.509, .749)
36+ (18~21)			.541	(.426, .689)	.548	(.432, .697)	.509	(.398, .650)	.595	(.462, .765)
Marital Status										
Married (Non Married)					.991	(.870, 1.129)			.858	(.748, .984)
Number of Children										
1					.629	(.533, .743)			.660	(.558, .781)
2~3					.538	(.449, .644)			.587	(.489, .705)
4+ 0					.708	(.455, 1.101)			.772	(.495, 1.203)
Education										
Less than High School							.479	(.383, .599)	.528	(.421, .663)
High School							.449	(.371, .544)	.483	(.398, .585)
Some College (BA and More)							.508	(.389, .664)	.531	(.407, .694)

Variables in parentheses indicate reference groups.

Table 6. Odds Ratios by Individual and Place Characteristics for Primary Migration (continued)

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Employment Status										
Employed							.887	(.768, 1.023)	.869	(.753, 1.003)
(Not Employed)										
Household Income										
Missing							.856	(.720, 1.018)	.847	(.712, 1.008)
Lowest							.835	(.694, 1.006)	.868	(.720, 1.046)
2nd Lowest							.873	(.729, 1.046)	.884	(.738, 1.060)
Medium							.872	(.729, 1.043)	.876	(.732, 1.048)
2nd Highest							.690	(.571, .834)	.689	(.570, .833)
(Highest)										
Home Ownership										
Missing			.831	(.656, 1.054)			.820	(.646, 1.040)	.839	(.661, 1.065)
Own			.556	(.477, .649)			.561	(.479, .656)	.604	(.511, .714)
(Non Own)										
Racial/Ethnic Proportion in Residence Place										
Lowest			1.236	(1.014, 1.506)					1.152	(.944, 1.407)
2nd Lowest			1.002	(.852, 1.179)					.989	(.840, 1.165)
2nd Highest			.847	(.754, .952)					.825	(.734, .929)
(Highest)										
Unemployment Rate in Residence Place										
Missing							2.827	(1.925, 4.152)	2.845	(1.935, 4.182)
<5.9%							1.072	(.897, 1.280)	1.091	(.912, 1.305)
6.0~8.9%							1.008	(.855, 1.189)	1.011	(.857, 1.193)
9.0~11.9%							.900	(.746, 1.086)	.906	(.751, 1.094)
(12% +)										
Annual Unemployment Rate										
Low & Incline			1.176	(1.023, 1.351)	1.169	(1.024, 1.335)	1.120	(.970, 1.293)	1.121	(.971, 1.295)
Low & Decline			.437	(.313, .610)	.453	(.325, .630)	.418	(.299, .584)	.420	(.300, .588)
High & Incline			.977	(.857, 1.112)	.982	(.865, 1.115)	.946	(.829, 1.080)	.954	(.835, 1.089)
n										
							34,436			

Variables in parentheses indicate reference groups.

Table 7. Odds Ratios by Individual and Place Characteristics for Repeat Migration (Onward Migration)

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Fixed Effect										
Intercept	.109	(.105, .113)	.098	(.085, .114)	.154	(.142, .167)	.253	(.216, .296)	.158	(.130, .192)
Race/Ethnicity										
Hispanic	.654	(.604, .708)	.687	(.631, .749)	.674	(.621, .731)	.640	(.589, .694)	.739	(.677, .806)
Black	.747	(.693, .804)	.693	(.646, .743)	.758	(.703, .818)	.682	(.632, .736)	.714	(.665, .768)
(White)										
Gender										
Male			1.095	(1.038, 1.156)	1.041	(.979, 1.107)	1.126	(1.061, 1.194)	1.076	(1.018, 1.137)
(Female)										
Birth Country of R.										
Native			1.067	(.938, 1.213)					1.053	(.928, 1.196)
(Foreign Born)										
Birth Country of Parents										
Missing			1.168	(.941, 1.450)					1.258	(1.011, 1.565)
Foreign Born			.984	(.883, 1.096)					1.006	(.903, 1.120)
(Native Born)										
Age										
22~25			.945	(.876, 1.020)	1.019	(.943, 1.101)	.883	(.815, .956)	.900	(.831, .975)
26~30			.782	(.720, .850)	.767	(.705, .835)	.694	(.635, .757)	.757	(.693, .828)
31~35			.769	(.704, .840)	.686	(.625, .752)	.645	(.587, .709)	.773	(.702, .851)
36+			.856	(.769, .953)	.661	(.593, .736)	.671	(.599, .751)	.866	(.771, .971)
(18~21)										
Marital Status										
Married					.890	(.835, .948)			1.028	(.964, 1.096)
(Non Married)										
Number of Children										
1					.719	(.663, .779)			.812	(.751, .878)
2~3					.616	(.566, .670)			.759	(.700, .824)
4+					.567	(.453, .709)			.701	(.564, .870)
0										

Variables in parentheses indicate reference groups.

Table 7. Odds Ratios by Individual and Place Characteristics for Repeat Migration (Onward Migration) (continued)

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Residence Duration										
0~2			1.943	(1.810, 2.085)					1.795	(1.670, 1.930)
3~5			1.728	(1.607, 1.859)					1.633	(1.517, 1.758)
6~10			1.288	(1.189, 1.394)					1.252	(1.157, 1.356)
(10+)										
Education										
Less than High School							.576	(.518, .641)	.664	(.600, .735)
High School							.655	(.608, .706)	.723	(.674, .776)
Some College (BA and More)							.871	(.768, .988)	.910	(.809, 1.025)
Employment Status										
Employed (Not Employed)							.902	(.829, .981)	.892	(.820, .969)
Household Income										
Missing							1.012	(.925, 1.108)	.975	(.891, 1.067)
Lowest							1.118	(1.020, 1.226)	1.064	(.971, 1.167)
2nd Lowest							.990	(.905, 1.083)	.955	(.874, 1.044)
Medium							1.031	(.942, 1.128)	1.001	(.916, 1.093)
2nd Highest (Highest)							.906	(.828, .992)	.893	(.817, .976)
Home Ownership										
Missing			.616	(.558, .679)			.602	(.545, .664)	.625	(.566, .690)
Own (Non Own)			.465	(.433, .498)			.450	(.419, .485)	.484	(.450, .522)
Racial/Ethnic Proportion in Residence Place										
Lowest			1.324	(1.217, 1.440)					1.245	(1.144, 1.356)
2nd Lowest			1.120	(1.046, 1.200)					1.094	(1.021, 1.172)
2nd Highest (Highest)			1.031	(.969, 1.096)					1.011	(.951, 1.076)

Variables in parentheses indicate reference groups.

Table 7. Odds Ratios by Individual and Place Characteristics for Repeat Migration (Onward Migration) (continued)

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Unemployment Rate in Residence Place										
Missing							1.650	(1.404, 1.939)	1.481	(1.262, 1.738)
<5.9%							1.088	(.982, 1.206)	1.043	(.943, 1.153)
6.0~8.9%							1.086	(.984, 1.197)	1.056	(.958, 1.163)
9.0~11.9%							.979	(.877, 1.093)	0.961	(.862, 1.072)
(12% +)										
Annual Unemployment Rate										
Low & Incline			1.127	(1.046, 1.213)	1.202	(1.127, 1.283)	1.105	(1.024, 1.192)	1.119	(1.037, 1.207)
Low & Decline			.699	(.629, .776)	.738	(.664, .820)	.682	(.613, .758)	.693	(.623, .770)
High & Incline (High & Decline)			.960	(.894, 1.031)	1.018	(.952, 1.088)	.924	(.860, .993)	.937	(.872, 1.006)
Random Effect										
Person Level Variance	.572		.270		.568		.505		.259	
n (Level 2)						7,747				
n (Level 1)						79,589				

Variables in parentheses indicate reference groups.

Table 8. Odds Ratios by Individual and Place Characteristics for Repeat Migration (Return Migration)

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Fixed Effect										
Intercept	.064	(.062, .067)	.009	(.007, .011)	.083	(.075, .092)	.053	(.043, .065)	.005	(.004, .006)
Race/Ethnicity										
Hispanic	.736	(.666, .813)	1.001	(.912, 1.098)	.749	(.677, .828)	.645	(.583, .713)	.935	(.852, 1.026)
Black (White)	1.078	(.994, 1.169)	1.031	(.961, 1.105)	1.083	(.997, 1.176)	.880	(.809, .957)	.954	(.889, 1.025)
Gender										
Male (Female)			1.126	(1.063, 1.193)	1.096	(1.021, 1.177)	1.152	(1.074, 1.235)	1.104	(1.040, 1.172)
Birth Country of R.										
Native (Foreign Born)			1.603	(1.359, 1.891)					1.648	(1.395, 1.947)
Birth Country of Parents										
Missing			1.170	(.940, 1.456)					1.059	(.850, 1.320)
Foreign Born (Native Born)			1.066	(.946, 1.202)					1.033	(.916, 1.165)
Age										
22~25			.956	(.872, 1.048)	1.071	(.975, 1.177)	1.070	(.972, 1.178)	1.071	(.973, 1.178)
26~30			.953	(.865, 1.050)	.862	(.780, .954)	.949	(.854, 1.054)	1.116	(1.008, 1.235)
31~35			1.189	(1.076, 1.313)	.834	(.748, .929)	.987	(.884, 1.102)	1.429	(1.284, 1.591)
36+ (18~21)			1.388	(1.222, 1.576)	.708	(.621, .807)	.903	(.787, 1.035)	1.652	(1.447, 1.887)
Marital Status										
Married (Non Married)					.870	(.808, .938)			.983	(.916, 1.056)
Number of Children										
1					.873	(.797, .955)			.950	(.873, 1.033)
2~3					.707	(.641, .779)			.852	(.780, .931)
4+					.694	(.547, .880)			.846	(.683, 1.049)
0										

Variables in parentheses indicate reference groups.

Table 8. Odds Ratios by Individual and Place Characteristics for Repeat Migration (Return Migration) (continued)

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Residence Duration										
0~2			13.341	(11.797, 15.087)					13.117	(11.583, 14.854)
3~5			6.485	(5.712, 7.362)					6.498	(5.718, 7.384)
6~10			2.719	(2.359, 3.133)					2.753	(2.387, 3.175)
(10+)										
Education										
Less than High School							1.127	(.991, 1.282)	1.570	(1.402, 1.757)
High School							1.179	(1.073, 1.294)	1.485	(1.365, 1.616)
Some College (BA and More)							1.095	(.936, 1.281)	1.246	(1.084, 1.432)
Employment Status										
Employed (Not Employed)							.886	(.802, .978)	.889	(.807, .981)
Household Income										
Missing							1.365	(1.214, 1.535)	1.219	(1.085, 1.369)
Lowest							1.603	(1.428, 1.800)	1.309	(1.167, 1.468)
2nd Lowest							1.418	(1.264, 1.590)	1.237	(1.105, 1.384)
Medium							1.112	(.989, 1.251)	1.004	(.895, 1.127)
2nd Highest (Highest)							1.147	(1.020, 1.289)	1.090	(.971, 1.222)
Home Ownership										
Missing			.642	(.570, .723)			.660	(.585, .744)	.674	(.598, .760)
Own (Non Own)			.525	(.485, .569)			.515	(.472, .562)	.599	(.549, .653)
Racial/Ethnic Proportion in Residence Place										
Lowest			1.196	(1.082, 1.323)					1.264	(1.142, 1.398)
2nd Lowest			.990	(.911, 1.077)					1.010	(.928, 1.098)
2nd Highest (Highest)			.986	(.918, 1.059)					.996	(.927, 1.071)

Variables in parentheses indicate reference groups.

Table 8. Odds Ratios by Individual and Place Characteristics for Repeat Migration (Return Migration) (continued)

Parameter	Model 1		Model 2		Model 3		Model 4		Model 5	
	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)	O.R.	(95% C.I.)
Unemployment Rate in Residence Place										
Missing							2.764	(2.295, 3.328)	1.970	(1.654, 2.347)
<5.9%							1.397	(1.222, 1.597)	1.227	(1.082, 1.391)
6.0~8.9%							1.211	(1.064, 1.378)	1.124	(.995, 1.270)
9.0~11.9% (12% +)							1.174	(1.024, 1.345)	1.107	(.968, 1.266)
Annual Unemployment Rate										
Low & Incline			.931	(.848, 1.021)	1.049	(.970, 1.134)	.929	(.846, 1.021)	.899	(.817, .989)
Low & Decline			.600	(.527, .683)	.664	(.585, .754)	.603	(.531, .685)	.588	(.515, .671)
High & Incline (High & Decline)			.957	(.877, 1.046)	1.014	(.934, 1.100)	.902	(.825, .986)	.916	(.837, 1.002)
Random Effect										
Person Level Variance	.676		.029		.687		.639		.045	
n (Level 2)						7,747				
n (Level 1)						79,589				

Variables in parentheses indicate reference groups.

cycle factors (Model 3) for both primary and onward migrations (Tables 6 and 8). The results support Hypothesis 4 and Hypothesis 5.

On the contrary, in the all models controlling for socioeconomic factors (Model 4), the disparities between racial/ethnic groups obviously increase (Tables 6, 7, and 8). This is a very important finding of this study as it contrasts with the explanations given by traditional human capital theory. The results indicate that Hispanics and blacks are less likely to leave their places of residence than whites even at the same socioeconomic status, which mainly represents human capital. Based on the results, Hypothesis 6 is rejected.

Above all, the odds ratios for racial/ethnic groups in models of return migration are closer to 1.0 compared to those in the other types of migration (i.e., primary and onward migration). This indicates that there are fewer racial/ethnic disparities in return migration than in the other types of migration. However, when comparing return migration across racial/ethnic groups, the percentage of return migration for Hispanics and blacks are proportionally higher than that of whites.

One of the most interesting differences is found between age groups with respect to return migration. The regression results indicate that return migrations increase with age as opposed to the pattern of declining migration with regard to primary and onward migrations. Age has been known as one of most important migration contributors. In general, many migration studies using cross-sectional data have confirmed the negative association between age and adult migration. These multivariate results are similar to the results of the bivariate descriptive analysis reported in Table 2.

The reversed association in return migration could be explained in two ways. The

first explanation is that old people may be more likely to make conservative decisions in destination choice than those at young ages. Familiarity in previous residence place could reduce the risk of failure. This hypothesis may be supported by two other pieces of evidence: decrease in general mobility at older ages and clear odds ratios in age groups older than 30 years old age.

The second hypothesis concerns the measurement structure of return migration. Old people may have conducted more migrations than young people have. The accumulated migration experiences could provide greater options in terms of destination choice. These two hypotheses do not seem mutually exclusive.

Another interesting inconsistency among migrations of various types is found in the effects of education. The results are consistent with Hypothesis 7 and Hypothesis 8. The odds of returning to a previous place of residence decline as educational attainment increases, although the other types of migration show positive associations. This finding is also opposed to explanations by the human capital perspective. This unique pattern of education effects for return migration appears to relate to the feature of failed migration. Persons with low education have more limited migration opportunities than persons with more education.

The return migration pattern by household income is similar to the pattern by educational attainment. Unlike the other types of migrations, return migration shows a relatively apparent negative association with respect to income level, which could be explained by the same hypotheses of education effects in return migration.

The odds of return migration are much higher for NLSY79 participants who lived in their county of residence between zero and two years dramatically increases

(13.117) relative to the other groups (Table 8). Onward migration presents similar pattern but the odds ratio in the same category is much smaller compared to that for return migration (1.795).

Patterns in primary migration are very similar to that in onward migration. For instance, there is a monotonic decline in the odds of onward migration as age increase. Such patterns of primary and onward migration are found for other variables such as number of children, educational attainment, and annual unemployment rate in the U.S.

In general, indicator variables for number of children, employment status, home ownership, racial/ethnic proportion in place of residence, and annual unemployment rate show very similar patterns at a statistically significant level across all migration types. Considering previous findings of differences together, we could posit that each different type of migration is generated by both general and peculiar mechanisms.

The multilevel analyses for onward and return migration provide evidence of intra-correlation at the person level. The intra-correlation coefficient indicates a tendency for a person to repeat migrations of each kind. For instance, a high person-level variance in onward migration means that people who conducted onward migration are more likely to repeat additional onward migrations. In the results of both onward and return migration, the intra-correlation coefficient still remains high even after controlling the race/ethnicity variable. This indicates the tendency is not explained by race/ethnicity.

However, the intra-correlation in return migration dramatically declines and loses statistical significance in the place attachment factor model (Model 2) and the full model (Model 5). Meanwhile, the intra-correlations of onward migration remain higher than those of return migration. These results show that although the tendency of return

migration is influenced by the variables introduced in the analysis models, other unobserved factors also contribute to the tendency toward onward migration. This is another important finding related to differences between onward and repeat migrations.

CHAPTER V

SUMMARY AND CONCLUSIONS

The most general purpose of this study was to expand research on migration differentials, the tendency for member of some groups to migrate at higher rates than members of other groups. The foremost specific purpose was to use panel data to estimate multivariate models of the relative odds of primary, onward, and return migration for Hispanics, blacks and whites for primary, onward and return migration. These are three important types of migration that take the prior migration history of individuals into account. Prior panel based research had not made racial/ethnic comparisons because of data limitations. Variables employed in the multivariate analyses included both individual and place level characteristics. The data used in this study, the NLSY79 is one of the longest running panel surveys in the U.S. and the first to oversample Hispanics and blacks.

A secondary objective was to assess the relative importance of control variables used in the multivariate analyses in explaining racial/ethnic differences in the three respective types of migration. A third key purpose was to examine the relationships between the three types of migration and other known determinants of migration that were introduced in the multivariate analyses. Eight hypotheses, listed below, were developed and tested as a strategy for pursuing these three important purposes. The broad push-pull and human capital perspectives were used to help guide the research.

Migration is often viewed as a process individuals use to seek opportunity in a new place and to escape unfavorable circumstance in a current place of residence. The responses to opportunities are different by socioeconomic characteristics of individuals,

which generate migration selectivity (Lee 1966). With regard to race/ethnicity, the literature indicates that general mobility of racial/ethnic minorities such as Hispanics and blacks is lower in comparison to whites (Saenz and Morales 2006). This disparity is thought to reflect an unequal distribution of opportunities that members of specific racial/ethnic groups tend to pursue and discrimination against minority populations (Newbold 1997).

In the empirical analyses of the NLSY79 data, descriptive analysis, logistic regression, and hierarchical generalized linear models (HGLM) for multinomial logistic regression were utilized. In addition to the key independent variable, other factors at individual and place levels were introduced in the analyses. These factors included race/ethnicity, age, gender, marital status, length of residence, education, employment status, household income, number of children, parents' birth country, birth country of a respondent, and home ownership for individual characteristics, along with unemployment rate and racial/ethnic composition for place characteristics. These variables were classified into three categories, place attachment factors, demographic and life cycle factors, and socioeconomic factors. Based on prior theoretical and empirical studies, eight hypotheses were formulated and tested. The hypotheses and whether they were supported is as follows:

Hypothesis 1. Whites will have higher odds of primary migration than Hispanics and blacks (supported).

Hypothesis 2. Whites will have higher odds of onward migration than Hispanics and blacks (supported).

Hypothesis 3. Whites will have lower odds of return migration than Hispanics and

blacks (not supported).

Hypothesis 4. The odds of migration for blacks and Hispanics will decline relative to whites, after place attachment factors are introduced (supported).

Hypothesis 5. The odds of migration for blacks and Hispanics will decline relative to whites, after demographic and life cycle variables are introduced (supported).

Hypothesis 6. The odds of migration for blacks and Hispanics will decline relative to whites, after socioeconomic factors are introduced (not supported).

Hypothesis 7. The odds of primary and onward migrations for people with the highest education level will be higher than people with lower education level (supported).

Hypothesis 8. The odds of return migrations for people with lowest education level will be higher than people with higher education level (supported).

Hypotheses 1, 2, and 3 examined migration disparities among racial/ethnic groups, Hypotheses 4, 5, and 6 examined the relative importance of the respective control variables in explaining migration disparity between Hispanics, blacks and whites.

Hypotheses 7 and 8 examined the different effects of other key socioeconomic factors on the three different types of migration. As indicated, about the results of the multivariate analyses support all except Hypothesis 3 and Hypothesis 6.

KEY FINDINGS OF THE STUDY

Racial/Ethnic Disparities in Migrations of Various Types

The key findings of this study were migration disparities between Hispanics,

blacks and whites, even after controlling for a large number of factors. There were differences between these racial/ethnic groups across two of the three types of migration, namely primary and onward migration, but the groups had equal odds of return migration. Hispanics and blacks have lower odds of primary and onward migration than whites. Lower odds of migration to new destinations are important for Hispanics and blacks because it suggests that members of these groups are not pursuing opportunities in as many places as whites. The results are consistent with the broad push-pull perspective of migration. This perspective maintains that some locations will hold and attract members of some groups while repelling members of other groups.

Lower odds of primary and onward migration for Hispanics and blacks may help explain some of the differences in socioeconomic attainment between minorities and whites. Although the results show that the lower propensities of primary and onward migration are not due to key individual level and place level characteristics, they do not reveal the underlying causes for the differences. It seems reasonable to speculate that the differences may be due to discrimination and past migration patterns of these groups. Previous research suggests that members of minority groups are disadvantaged by discriminatory practices that limit minorities to fewer destinations than whites (Farely et al. 1994; Shaly 1988; Yinger 1995; Zuniga and Hernandez-Leon 2002; Zurbrinsky and Bobo 1996).

In terms of return migration, there are no statistically significant differences between Hispanics, blacks, and whites, even after adjustment for various socioeconomic and demographic factors. In addition, differences between Hispanics, blacks, and whites are smaller for return migration than for other types of migration. This may imply that

limited opportunities among Hispanics and blacks result in not only in a lower general mobility level but also differences in their strategies to seek opportunities.

Contributors to Migration Disparities

The results show that no single contributor or combination of contributors eliminate the differences between Hispanics, blacks and whites in primary and onward migration. However, the racial/ethnic differences in the odds for these two types of migration were reduced considerably when non-socioeconomic status factors were controlled. The differences between Hispanics, blacks and whites in their relative odds of primary and onward migration tended to increase when human capital variables were introduced as controls. These results indicate that Hispanics and blacks who are equal to whites in education, income, and employment status are less likely to make primary and onward migrations, thereby providing little support for the human capital perspective on migration.

Differences Between Migration Types

The examination of the relationships between the three types of migration and various known determinants of migration that were employed in the multivariate analyses largely reveals findings that are consistent with prior research. The differences between subgroups were not great with respect to primary migration. The differences in odds ratio were greatest with duration of residence, where individuals with less than two years of residence were thirteen times as likely to make a return migration relative to individuals who last migrated 10 or more years ago. These results are consistent with recent results by Wilson et al. (forthcoming) which show very high rates of return migration to places

recently departed and low odds of returning to former places of residence that were left many years ago.

With respect to onward migration, the odds are nearly twice as high for recent migrants as for prior migrants who have established long-lasting residence in a destination. Another important finding is the high odds of return migration for the less educated compared to the highly educated, but lower odds of onward migration for the less educated. The results of this study reveal several different influences on return migration. The negative associations between return migration and socioeconomic variables such as education and household income are compatible with the concept of “failed migration” that has been discussed in prior studies (Hunt 2004; Newbold 2001; Newbold and Bell 2001).

However, it is not appropriate to posit that return migrations of minorities are more likely to be due to failed migration than those of whites. The results do not provide any empirical evidence to separate the two mechanisms even though blacks and Hispanics might be less likely to achieve socioeconomic success in new destinations. In addition, even failed migrants could seek new opportunities by making additional onward migrations. Furthermore, one should note the possibility of planned migrations of less educated people. The dramatically high likelihood to return between zero and two years in a new place of residence suggests both possibilities of preplanned migration and failed migration.

IMPLICATIONS

The findings of this study have important implications, increasing our understanding of migration patterns. The results demonstrate the clear differences in

migration patterns among racial/ethnic groups, including Hispanics. In all kinds of migrations, Hispanics show the lowest migration tendencies compared with whites and blacks.

According to Zuniga and Hernandez-Leon (2002), Hispanic immigrants who came to the U.S. many years ago and Hispanic natives played the role of pioneers in the recent spatial expansion of Hispanics communities. New immigrants follow community networks, job markets, cultural know-how, and migration routes that the pioneers established. Therefore, the findings on the Hispanic migration patterns in this research could provide important information to anticipate future migration patterns of current Hispanic immigrants.

The patterns of primary migration that have been rarely explored were examined in this study. Though the overall patterns were similar with those of onward migration, some differences including the migration rate were also found. The rate of primary migration is very low compared with the forms of repeat migration. Primary migration is likely to be more strongly related to entering the labor market, schooling, or building a new family than are repeat migrations.

Results of this study suggest that the racial/ethnic disparities in migration patterns are not explained by economic perspective especially human capital theory, which has played a dominant role in study of migration. This indicates the need for a new theoretical approach to elucidate the disparities above the explanation of human investment. Unequal distribution of opportunity and discrimination in the labor market and personal life in the U.S. could be important elements in the explanations. Indeed, the results support previous findings that also suggest discrimination as a factor that affects

migration (e.g., Farely et al. 1994; Shaly 1988; Yinger 1995; Zurbrinsky and Bobo 1996).

Finally, this study utilized advanced analytic methods more appropriate for analyzing longitudinal data and various migration types, such as multinomial regression and multilevel analysis including HGLM. These methods reduce problems associated with logistic regression and person-period models by producing more precise statistical results (Raudenbush and Bryk 2002; Snijders and Bosker 1999).

LIMITATIONS

Some limitations that emerged in this study should be mentioned. First, although a large number of control variables were included in the multivariate analysis, it is always possible that the inclusion of others would have eliminated differences between Hispanics, blacks and whites. Hence, the human capital perspective can not be dismissed as a viable explanation of migration.

Second, the concepts of failed migration and preplanned migration are used in the interpretation of the results on return migration. But this study does not empirically identify these kinds of migrations. Are whites more likely to conduct preplanned migration? Are Hispanics and blacks more likely to return because of their failure in a previous migration? Do some people move to other new destinations to correct or restore their failure in initial migration? Future research should address these important questions.

Third, the cohort data in the NLSY79 provide limited findings. Although this longitudinal data provides very precise migration information, the findings may not be representative of the current U.S. population. Moreover, migration patterns of other cohorts and possible interactions between age and period cannot be examined with only panel data employing a limited age range.

Finally, a shortcoming of the NLSY79 for migration research is the absence of a full migration history. A complete migration history would allow a more precise distinction between primary and repeat migration and allow a precise distinction between onward and return migrations. Migration is so frequent during the early years of young adulthood that multiple migrations might occur between annual interviews as migrants explore and experiment with alternative places of residence. Such movement cannot be measured with the NLSY79.

FUTURE STUDY

The limitations of this research provide ideas for further studies related to migration issues. First, there is a need to develop new measures, including subjective variables, external characteristics, and changes in individual status. For instance, questions about why individuals choose to live in a location and why they move from place to place would enhance the data for migration research. Information of the geographical locations of relatives and close friends might also help in explaining migration and the types of migration. Concentrations of relatives in fewer places, for instance, might help explain lower rates of onward migration by Hispanics and blacks than for whites.

Changes in individual status could be significant predictors of failed or preplanned migration (Wilson 2005). However, to operationalize such construct it is necessary not only to measure the variables, but also to develop proper methods to capture time points of influence and mechanisms of the factors. Changes in status, such as job loss, decrease in income, and disruption of union, may differentially affect Hispanics, blacks and whites.

Many demographic studies of migration seem to focus mainly on objective and internal factors such as SES, life cycle factors, and living place. Subjective variables include occupational satisfaction, residential preferences of certain types of places, personal values, and perceptions of discrimination.

In addition to individualistic approaches, it also is necessary to understand structural effects on migration patterns. The structural approach regarding migration advocates interdisciplinary studies based on quantitative surveys, historical, qualitative and contextual methods (Massey 1990; Portes and Walton 1981). The methodological, conceptual, and theoretical suggestion of structuralist approach may well provide deeper understandings of 'unexplained residuals' in racial/ethnic disparities in migration in terms of volume and direction.

A longitudinal approach could also contribute to further theoretical development in disciplines concerned with migration such as geography, sociology, and demography. For instance, longitudinal analysis may enable an examination of the sequencing of migrations. Economic perspectives that have played a dominant role in migration studies assume that each migration event is independent of each other. From this assumption, migration is considered as separate events that can occur whenever benefits outweigh costs. Questions such as the following are important: Does the age of the first migration affect later migrations? What is the relationship between several migrations that are sequenced over a given interval of time? Do past migration events such as return migration or failed migration limit further migration events? Do destinations of past migration, such as from rural to urban areas or to places with a high proportion of one's own race/ethnicity, influence later migration and destinations? A longitudinal approach

may provide answers to these questions, thus enriching theories of migration.

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- 2005 Lee, Sang Lim and Youngtea Cho "Population Projection with Simple Methods on Small Area." *Korea Journal of Population Studies* 28(1): 149-172 (in Korean).
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- 2008 Lee, Sang Lim, Michael B. Toney, and E. Helen Berry "Racial and Ethnic Comparison of Migration Selectivity: Primary and Repeat Migration" Annual Meetings of the Population Association of America, New Orleans (poster).
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