

Ethno-Racial and Nativity Group Differences in U.S. Intercounty Migration and Move Distances

Mary M. Kritz¹ · Douglas T. Gurak²

Published online: 29 January 2018

© Springer International Publishing AG, part of Springer Nature 2018

Abstract This paper examines nativity differences in intercounty migration and move distances for U.S. Asian, Black, Hispanic, and White ethno-racial groups drawing on confidential micro-data samples from the 2007–2011 multiyear ACS. Human capital and spatial assimilation theory guided the research. The analysis shows that net of group differences in individual characteristics, all foreign- and native-born minority groups were significantly less likely to move counties than native-born non-Hispanic Whites. The differential was greatest for foreign-born Hispanics. If nativity is not considered, Asians have a higher rate of intercounty migration than non-Hispanic Whites. The findings for ethno-racial nativity differences in move distances indicated that native born Asians and Hispanics moved comparable distances as native-born Whites but that was not the case for native-born Blacks. All the foreign-born groups moved significantly shorter distances than native-born non-Hispanic Whites. We found that the correlates of migration are consistent with human capital and spatial assimilation theory. Compared to non-migrants, migrants have more education and English language fluency, and are more likely to be men, never married, younger, school attendees, and non-citizens. Longer distance movers are younger, more educated, and residents in mixed nativity households. The examination of racial differences within 13 national origin groups found evidence of racial effects on migration and migration distance for only a few groups. Non-Whites from five of 13 origins had higher rates of county migration than Whites, but those differentials disappeared after controlling for individual characteristics. Non-Whites from Mexico, Honduras and the Dominican Republic migrated significantly shorter distances than did their White co-ethnics.

✉ Mary M. Kritz
mmk5@cornell.edu

¹ Department of Sociology, Center for Demography and Ecology, University of Wisconsin-Madison, 5550 Far Look Road, Spring Green, WI 53588, USA

² Department of Development Sociology, Cornell University, Ithaca, NY, USA

Keywords Migration · Distance · Race · Nativity · Assimilation · Dispersion

1 Introduction

Ethno-racial diversity in the United States used to be concentrated in the largest metropolitan areas and coastal regions but it is now spreading to cities, towns, and rural areas across the country that previously had populations that were largely native-born non-Hispanic Whites. A growing body of research documents America's ethno-racial population change and settlement shifts (Frey 2015; Johnson and Lichter 2016; Kandel and Cromartie 2004; Martin et al. 2017; Newbold 1996; Singer 2004). The growth of ethno-racial diversity in non-traditional destinations stems from decades of large-scale immigration from Latin America, Asia, and the Caribbean and differential ethno-racial fertility across population subgroups and places (Lichter et al. 2012). Increasing enforcement of non-discriminatory housing and employment laws throughout the country has also made it easier for minorities to find opportunities in new places. Internal migration is the main demographic process driving the spread of diversity to new destinations but its role in that process has received limited research attention. That likely occurs because sample sizes for population subgroups in most data sets are too small to study low incidence outcomes such as internal migration in micro geographic areas. Therefore, relatively little is known about the role of internal migration in the dispersion process, including whether and how migration patterns and determinants differ for ethno-racial groups, whether foreign- and native-born members of ethno-racial groups differ in their migration tendencies, whether racially different immigrants from the same country make similar migration choices, and, to the extent that ethno-racial and nativity group differences in migration occur, what accounts for them? Given that race has historically shaped where people live in the United States, and residential location matters for housing quality, job opportunities and access, social services, and a host of other quality of life conditions (Bishop and Cushing 2008; Moretti 2012; Timberlake and Iceland 2007), these are important issues to address.

We study those questions in this paper by comparing individual-level migration differences in intercounty migration and move distances of America's four largest native- and foreign-born ethno-racial groups (Asians, Blacks, Hispanics, and Whites). From a conceptual standpoint, internal migration is not only a core demographic process that determines the population size and change of different places but it also is a social indicator of ethno-racial integration in those places. Decisions about whether to migrate and how far afield to move are shaped by people's perceptions regarding whether they are welcome in different communities. Historically, ethno-racial groups lived apart in segregated residential neighborhoods and segregation continues to be the norm today albeit decreasing (Clark 2015; Iceland 2009; Iceland et al. 2014). In the past, migrations of Blacks and other minorities consisted largely of intra-metropolitan housing moves into nearby fringe areas or inter-metropolitan moves to similarly segregated neighborhoods but those settlement patterns are changing (Kritz and Gurak 2015; Lichter and Johnson 2006; Massey 2008b; Newbold 1996; Singer 2004; Zúñiga and Hernández-León 2005). Johnson and Lichter (2016) studied the sources of

population growth in counties classified as Hispanic established, new, emerging, or other destinations and found that net migration (from abroad or internally) accounted for most of the growth in new and emerging counties. In an earlier paper, they found that most Hispanic in-migrants to new destinations came from elsewhere in the USA rather than abroad (Lichter and Johnson 2009). Gurak and Kritz (2016) found that most immigrant pioneers to new destinations migrated from elsewhere in the USA rather than from abroad.

The study of intercounty migration of small population subgroups has been minimal because doing so requires a dataset that has more geographic detail and larger sample sizes than PUMS files have. Only Census Bureau confidential files have the requisite detail for the study of ethno-racial and nativity group differences in internal migration in micro-geographic areas. Therefore, for this analysis, we draw on the confidential data files from the 2007–2011 American Community Survey (ACS) to address four research questions: (1) do ethno-racial groups differ in intercounty migration and move distances; (2) do intercounty migration and move distances differ for the native- and foreign-born segments of ethno-racial groups; (3) do individual differences in human capital, acculturation, and place of residence account for ethno-racial group differences in intercounty migration and move distances; and (4) do intercounty migration and move distances differ for immigrants from the same origin country that differ racially?

2 Spatial Mobility Theory and Internal Migration

According to neoclassical economic theory, people decide whether to migrate after considering the costs and benefits of relocation and they move if the benefits outweigh the costs (Greenwood 1981). Longer distance moves usually occur for job-related reasons while shorter distance ones tend to be housing-related (Ihrke 2014). As globalization forces increased after World War II, several international forces emerged that encouraged American firms to move manufacturing abroad to countries where wages were lower. Those forces included advancements in international transportation and communication as well as trade agreements that made it cost-effective for firms to do business abroad. Domestically, state differentials in labor and land costs and tax and labor policies encouraged firms to move manufacturing to Southern states that have right to work laws and lower wages than Northeastern and North Central states where manufacturing used to be concentrated (Bishop and Cushing 2008; Jaret and Baird 2013; Moretti 2012; Pandit and Withers 1999; Partridge et al. 2012). In addition, the widespread use of air conditioning in homes and other buildings during the 1960s made it attractive for businesses and people to move to the South. These international and domestic forces led net migration to the South to become positive in the 1970s and negative in the Northeast and Midwest as job opportunities diminished in those regions (Greenwood 1985; Jaret and Baird 2013).

Human capital theory posits that migrants have more education and job skills than non-migrants at origin do and a large body of literature supports that tenet (Greenwood 1985). That theory, however, is silent about how people's ethno-racial and nativity

statuses shape internal migration and move distances. Spatial assimilation theory, which was based on the study of European immigrants and their descendants in the past century, provides some insights into that question. That body of research indicates that European immigrants settled initially in areas where others from their homelands lived but as they acculturated and advanced their education and job skills they, or more often their descendants, moved outward to better neighborhoods within the metropolitan area (Alba et al. 1999; Gordon 1964; Massey 2008a; Park 1950). The link between socio-economic and spatial mobility observed by assimilation analysts held up well for White Anglo-Saxon Europeans but did not work as well for some White non-Protestant religious groups (the Irish, Italians, and Jews) or American Blacks. Although the pace of assimilation was slower for the descendants of White non-Protestants, they too eventually blended into the White mainstream but Blacks continued to live apart in segregated communities (Denton and Massey 1988; Logan and Schneider 1984). Widespread institutional racism and structural discrimination in housing and jobs are usually cited as determinants of Black-White segregation patterns (Clark 2015; Iceland 2009, pp. 19–22; Lieberson 1963; Massey and Denton 1993; Taeuber and Taeuber 1965b)

There has been less study of Black-White differentials in migration but most studies that have been done show that Blacks are less likely to migrate internally than Whites (Taeuber and Taeuber 1965a; Tolnay 2003). Ritchey (1976) reviewed studies of Black-White migration differentials and found that they were not accounted for by socio-economic and other characteristics. Only a few scholars have looked at race differences in move distances. Tolnay et al. (2005) compared move distances of Southern Blacks and Whites across three decades (1920s, 1940s, and 1970s) and found that Southern Whites migrated longer distances than Blacks did in all three decades. Those group differences held up even after they limited the analysis to out-migrants from the same Southern states. They found that migrants' individual characteristics (education, age, marital status, and presence of young children in the household) did not account for their findings. They speculated that White Southerners had more economic resources than Black Southerners, which made migration costs more affordable for them. They also argued that out-migration of White Southerners started earlier than Black out-migration, which gave Whites more time over which to build social networks and obtain information about job opportunities in different places. In a British study, Finney and Simpson (2008) compared move distances of White Britons and 12 ethno-racial groups composed of first or second-generation immigrants from Asia, the Caribbean, and Africa and found that eight of the groups moved shorter distances than White Britons did. Other than those two studies, most social scientists except geographers have ignored move distances in recent years based on the premise that distance is less important in a world where the internet and transportation systems diminish the importance of space (Eldridge and Jones 1991). However, we agree with Shameen and colleagues (2014:219) who argue that “distance still matters in the maintenance of social networks” and “changes in geographical distance triggered by life cycle events have significant influence on social interaction frequency.”

As the composition of the U.S. population continues to diversify, questions not only need to be asked about Black/White differentials in migration and move

distances but also about how their patterns compare to Asian/White and Hispanic/White differentials. After Whites, Hispanics are now the second largest ethno-race group in America, followed by Blacks and Asians. The latter are the fastest growing group. While some Asians and Hispanics have lived in the USA for centuries, their numbers have grown rapidly since passage of the 1965 Immigration Act (Frey 2015; Perez and Hirschman 2009), which gives them a very different nativity composition than Blacks and Whites. For instance, 67% of Asians and 52% of non-Mexican Hispanics are foreign born compared to only 8% of Blacks and 4% of Whites. If Mexicans are included in the calculation, the Hispanic foreign-born percentage drops to 33%. The differences between Mexican and other Hispanic groups stem from their settlement histories. Some Mexicans were in the USA before European settlers arrived and others have been crossing the Rio Grande for centuries. Mexican's long settlement history is reflected in the large size of their native-born population (67%).

Nativity differences in internal migration among ethno-racial groups and immigrants from different origins have also received limited research attention and findings are inconclusive from studies that have been done. Rogers and Henning (1999), for instance, compared interregional migration rates for the total foreign- and native-born populations and found that the foreign-born were more likely than the native-born to migrate internally. Bartel and Koch (1991) examined ethno-racial and nativity differences in SMSA out-migration and found that foreign-born Asians had higher out-migration rates than their native-born counterparts. However, that pattern did not hold for Latin American and European foreign born. Frey and Liaw (1999, 2011), in contrast, found that the Asian and Hispanic native-born were more likely than the foreign-born to leave traditional areas. Other studies indicate that there are origin differences within the heterogeneous Asian and Hispanic populations in migration tendencies (Frey and Park 2011). Kritz and Nogle (1994) found that foreign-born Indians and Koreans were more likely to migrate states than native-born non-Hispanic Whites but Italians, Greeks, Poles, Cubans, and Mexicans were less likely to do so. Newbold (1999) found similar national origin differences in migration.

The main conclusion to draw from previous studies of nativity differences in internal migration is that findings vary depending on the spatial units (regions, states, SMSAs) and ethno-racial and nativity groups examined. National level studies of the total foreign born, all ages, usually show that immigrants are more or as likely to migrate internally as natives are (Belanger and Rogers 1994; Rogers and Henning 1999). That finding could occur because migration begets more migration—immigrants have migrated at least once while many natives have never migrated (DaVanzo 1983). Cohn and Morin (2008) estimated that nearly 40% of Americans have never left their home town. Immigrants also have a younger age structure than natives do and that difference could inflate migration differences for the total population because people of productive ages are more likely to migrate. The larger size of immigrant families can inflate differences between native and foreign-born household migration (Tienda and Angel 1982). Finally, immigrant households are more likely to be renters than owners, which could underlie nativity differences because renters move more frequently than owners do.

In this analysis, we focus jointly on ethno-racial and nativity differences in intercounty migration and move distances. By examining intercounty migration rather than patterns for larger states, regions, or other relatively large geographic units, this study sheds insights into patterns for relatively small spatial units that are more homogeneous than states are. Given the dearth of comparative research on ethno-racial differences in migration, we focus the analysis on two parts of the dispersion process, namely intercounty migration and move distances. Although destination choices of internal migrants are an important part of the dispersion process and integral to ethno-racial relationships, settlement choices raise issues beyond those that can be addressed fully in a single paper. Moreover, several papers have examined the changing settlement choices of ethno-racial and nativity groups and show that residential distributions are changing (Baird et al. 2008; Donato et al. 2007; Frey and Park 2011; Jaret and Baird 2013; Kritz and Gurak 2015; Liaw and Frey 1998; Martin et al. 2017; Newbold 1996; Singer 2004; Zúñiga and Hernández-León 2005). Therefore, three group differentials in intercounty migration and move distances are focused on in the analysis, namely ethno-racial group differences, nativity differences within ethno-racial groups, and race differences within national origin groups.

We expect ethno-racial groups to differ in migration and move distances given that residential segregation continues to be the norm. Because Black/White segregation remains high, that is consistent with the expectation that they will be less likely to migrate internally than Whites and if they do migrate, that they will move shorter distances. Blacks, however, are composed largely of natives while Hispanics have a larger foreign-born component. This leads us to expect that Hispanic/White differences may be larger than those between Blacks and Whites. Since studies show a strong correlation between English language fluency and migration, that too leads us to expect that Hispanic/White differences will be larger than those between Asians/Whites or Blacks/Whites. We expect to find the smallest group differences between Asians/Whites because educational attainment and English language fluency are higher among Asians than they are among other groups (see Appendix 1). However, after controlling for group differences in human capital and acculturation, we expect the Asian advantage to diminish.

Regarding nativity differences within and across ethno-racial groups, we expect that the native-born segments in each ethno-racial group will be more likely to migrate counties than their foreign-born counterparts and if they do migrate, they will move longer distances because they are more integrated into U.S. society than immigrants are. That expectation is consistent with spatial assimilation theory which holds that immigrants and their descendants leave their ethnic enclaves after “Americanizing” their socio-economic and cultural skills. In addition, the presence of strong social networks among the foreign-born plays an important role in shaping whether they move (Gurak and Caces 1992; Massey and Garcia-España 1987; Thomas and Znaniecki 1984) and determining where they settle if they do move (Ellis and Goodwin-White 2006; Frey and Liaw 2005; Kritz and Nogle 1994; Logan et al. 2002). We expect foreign-born Hispanics to be less likely to migrate internally than their native-born counterparts and other foreign-born groups because of their relatively high undocumented shares and lower levels of educational attainment and

English language fluency compared to other groups. For native-born Asians and non-Mexican Hispanics, community social ties likely remain strong given that they are largely second-generation nationals who retain close ties to immigrant compatriots. While native-born Blacks have deep U.S. roots, we expect that they will be less likely to migrate than native-born Whites because the institutional racism that discouraged them from moving historically contributes to Black exceptionalism today. Foreign-born Blacks, on the other hand, may be more prone to migrate than other groups because they have relatively high human capital levels and English language fluency (Thomas 2016). Asians, native- and foreign-born, are also a relatively high skilled population, which should facilitate their spatial mobility. But Ellis and Goodwin-White (2006) found that nativity concentration deterred the interstate migration of highly educated Asians. Other researchers (Bartel and Koch 1991; Frey and Park 2011) have found that Asians have relatively high rates of internal migration compared to native Whites.

Our analysis focuses on ethno-racial and nativity differences but there may well be race cleavages among immigrants from different countries that also shape intercounty migration and move distances. Previous research (Hall 2013; Iceland 2009; Kritz and Gurak 2015) indicates that there is considerable national origin heterogeneity in migration and settlement patterns. However, race diversity within national origin groups has largely been ignored because of insufficient study cases in PUMS and other datasets. Drawing on data from the Panel Study of Income Dynamics (PSID), South et al. (2005) did look at whether skin color made a difference for neighborhood migrations of immigrants from different Latino national origins and found that it did not. Although many national origin groups have ethnic and religious cleavages within them, those are not measured by census and ACS data. The Census Bureau does collect ethnic and race data but most immigrants from Asia and Africa report that they are “Asian” or “Black,” which means that there is too little measured race diversity among immigrants from those regions for study purposes. But thirteen countries from the Americas that send large numbers of immigrants to the USA do have sufficient cases to examine differences between Whites and non-Whites in intercounty migration and move distances. The thirteen groups include Mexicans, three Central American Hispanic groups (Salvadorans, Hondurans, Guatemalans), two Caribbean Hispanic groups (Cubans and Dominicans), three South American Hispanic groups (Colombians, Ecuadorans, Peruvians), three West Indian groups (Guyanese, Jamaicans, Trinidadians/Tobagonians), and Brazilians. Ethno-racial diversity was introduced into these countries through the same historic processes by which it was introduced into the USA, namely conquest, colonization, slavery imports, and immigration. Nonetheless, racial identities and institutional racism is less pronounced in those countries than it is in the USA. Therefore, we do not expect to find significant differences in migration outcomes among White/non-White immigrants from the study countries.

3 Data and Measurement

The analysis draws on confidential, restricted-access data from the 2007–2011 ACS Microdata Samples that are available for analysis at Federal Statistical Research Data Centers. The analytic sample selected from that multiyear file includes all the foreign born and 20% of the native born aged 24–65 living in the USA 1 year before the ACS survey. Immigrants who arrived in the past year are excluded because they were not at risk of internal migration. Individuals in group quarters are also excluded. Because restricted-access files have more sample cases and geographic detail than PUMS files do, they are a rich data source for studying migration patterns of small population subgroups in micro-geographic places. No alternative database has the requisite number of cases and geographic detail to permit study of ethno-racial group differences in migration at the county level. The Census Bureau defines internal migration as a residential move from one county to another one in the past year and we use that definition in this study. The move distance measure specifies the number of miles that people moved based on the distance between the centroids of origin and destination counties. Because the USA has a large number of counties or county equivalents (3143) they are relatively homogenous economic and social contexts compared to states. While migration across any geographic boundary includes some local residential moves, that is less problematic in this study because we also examine the correlates of county move distances.

Given that internal migrants are unlikely to be randomly selected from the place of origin population, selectivity in intercounty migration can bias model estimates. To minimize that possibility, we estimate intercounty migration and move distance simultaneously using Heckman selection models (StataCorp 2013). Heckman models produce two sets of coefficients. The first set summarizes the relationships between covariates and intercounty migration and the second set uses information from the migration selection model to estimate the relationships between covariates and move distances for intercounty migrants. Model estimation utilized the maximum likelihood procedure and the likelihood ratio test for the independence of the two component models was significant for all models. All models were estimated using probability weights.

The nativity characteristics of Asians, Blacks, Hispanics, and Whites are the main explanatory measures in the analysis. The Hispanic category includes all native- and foreign-born persons who responded that they were Hispanic to the ACS Hispanic identity question, and the Asian, Black, and White categories are limited to non-Hispanics in each of those race categories. Pacific Islanders are in the Asian category. We examine ethno-racial and nativity relationships with migration from several perspectives. We first estimate a Heckman model that has an indicator measure for nativity but not for ethno-racial status. The second model adds ethno-racial indicators for Asians, Blacks, Hispanics and Whites (reference) and the third model replaces the separate nativity and ethno-racial indicators with two nativity indicators for each ethno-racial group. The full model addresses the question of how intercounty migration and move distance patterns for foreign- and native-born ethno-racial groups compare to those of native-born Whites.

Because the eight groups differ considerably in individual characteristics and settlement patterns that underlie migration patterns, the models have several control measures, including covariates for age, education, and never married status because studies show that migrants tend to be relatively young, more highly educated, and single or never married (Bartel and Koch 1991; Ellis and Goodwin-White 2006; Frey and Liaw 2005; Gurak and Kritz 2000; Kritz and Nogle 1994; Molloy et al. 2011). Although studies used to indicate that men migrated more frequently than women did, recent data for the U.S. total population suggest that sex differentials are diminishing (Molloy et al. 2011). Immigration studies, on the other hand, continue to show the traditional pattern (Kritz and Gurak 2015) and, therefore, the models have a covariate for sex (male = 1). The education measure consists of four dummy variables: less than high school degree [reference]; high school/some college; college degree; and graduate or professional degree. The relationship of never married status to migration is expected to be positive because single people have fewer family attachments that constrain mobility. English language fluency is controlled for because previous studies of the foreign-born indicate that internal migrants have more English language fluency than non-migrants.

We also control for other factors that have received less research attention, including school attendance, mixed nativity household, citizenship, residence in a foreign-born traditional area, and residence region (West, Northeast, Midwest, and South [reference]). Because the sample is limited to adults aged 24–65, if people in that age group are in school, they likely are enrolled in graduate or professional programs that require relocation to a different place, which suggests that this measure should be positively related to migration. The mixed household nativity measure specifies whether the nativity of the household head differs from that of the respondent. For native-born respondents, this variable is set to one if the householder is foreign born and for foreign-born respondents it equals one if the householder is native born. Ellis et al. (2006) found that immigrants living in mixed households were less likely to live in co-ethnic communities, which would be consistent with the expectation that immigrants in those households will move longer distances. That pattern likely occurs for mixed nativity households because native-born householders likely live in areas populated by other natives and if immigrants join those households following marriage or other events, they move to the area where the native householder lives. Another dichotomous variable specifies whether the county where respondents lived a year ago was a traditional foreign-born metropolitan area. Counties in that category had more than 200,000 foreign-born, which means that they include most metropolitan areas regularly referred to as traditional foreign-born places. In the 2010–2014 ACS PUMS file, there were 42 counties that had 200,000 or more foreign-born and 52% of all foreign born lived in those counties.¹ That ACS also indicated that 31 of the 42

¹ We did not obtain disclosure for the metro concentration statistics that correspond to those shown in Table 1, we did get disclosure of other statistics that show large differences across the four groups in nativity concentration in metropolitan areas. For instance, 45% of foreign-born Whites but only 16% of native-born Whites live in metro areas with large foreign-born concentrations. The corresponding foreign-born and native-born figures for Blacks are (54 and 22%), for Asians (57 and 66%), and for Hispanics (58 and 48%), respectively.

counties were constituent parts of just seven SMSAs—Los Angeles, New York, San Francisco, Miami, Washington DC, Dallas-Ft. Worth, and Boston.² These counties are the ones that have the largest U.S. settlements of foreign- and native-born Asians and Hispanics.

To avoid model over-identification in Heckman models, the selection and outcome models need to have one or more variables that differ. In our specifications, the migration selection equations included all the variables described above except the mixed household nativity measure. The nativity of the household head was only included in the move distance model because native-born household heads are more likely than foreign-born ones to live in non-traditional places located beyond immigrants' concentrated communities. Thus, that measure should increase move distances. Exploratory analysis confirmed that many moves within traditional metropolitan areas are local ones to neighboring counties rather than long distance moves. Measures dropped from the move distance equation included three other covariates that were in the selection models, including male sex, school attendance, and prior year residence in a concentrated foreign-born metropolitan area. Exploratory analyses confirmed that those measures correlated with whether people migrated but were less important for move distance.

Descriptive statistics in Fig. 1, Table 1, and Appendix 1 provide information on nativity and ethno-racial differences in intercounty migration, individual characteristics, and residence region. Figure 1 shows that 5.0% of the native-born migrated to another county but only 4.2% of the foreign-born did so. Those intercounty migration estimates are consistent with findings by Molloy and colleagues that about 5% of the U.S. population migrates annually (2011).³ In the 2007–2011 period, native-born Asians had the highest rates of intercounty migration (6.4%) followed by their foreign-born counterparts (5.2%). Foreign-born Hispanics had the lowest intercounty migration rates (3.2%). Native-born Hispanics, on the other hand, were almost as likely to migrate internally as native-born Whites. Contrary to historical patterns, intercounty migration rates for Blacks, native- and foreign-born, were comparable to those of native-born Whites, which is consistent with findings by Molloy et al. (2011) that Black/White migration percentages were comparable in 2000 (1.8 vs. 1.7%, respectively) although Whites had higher rates than Blacks in 1990 (3 vs. 2%, respectively).

Nativity and ethnorracial groups differ in demographic, socio-economic, acculturation, and geographic characteristics that can contribute to group differences in migration (see “Appendix 1”). Table 1 shows the relationships between selected individual characteristics and intercounty migration for the total, foreign-born, and

² The remaining 11 counties were: Phoenix (Maricopa), Tampa (Hillsborough), Orlando (Orange), Atlanta (Gwinnett), Chicago (Cook), Las Vegas (Clark), El Paso (El Paso), San Antonio (Bexar), Edinburg-Brownsville (Hidalgo), Houston (Harris), and Seattle (King).

³ Molloy et al. (2011) pointed out that estimates of annual intercounty migration rates vary in different data sets. In 2010, those rates were just over 3 percent based on Current Population Survey (CPS) data but 5.2 and 5.6 percent based on ACS and IRS (Internal Revenue Service) data. They argue that the differences occur because definitions and measurement differ in the three datasets. Nonetheless, they found that there was consistency in migration trends across the three data sources. However, because the IRS and ACS estimates are from larger samples, they argued that they were more reliable.

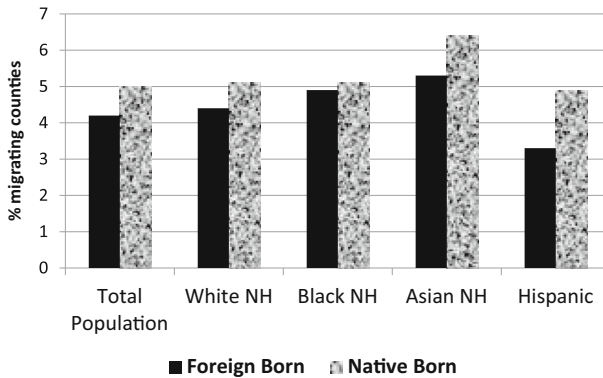


Fig. 1 Ethno-racial and nativity differences in county migration, ACS 2007–2011. *Note* NH refers to non-Hispanic

native-born. Education differences stand out and have the most implications for migration. While only 8% of the native-born had no high school degree, that statistic rose to 30% for the foreign-born (see columns d and f, Table 1). Table 1 also shows that foreign-born migrants were more likely to have graduate or professional degrees than foreign-born non-migrants or native-born migrants. 19.5% of foreign-born migrants had advanced degrees compared to 11.4% of native-born migrants. In addition, 57% of foreign-born internal migrants were fluent in English although less than half (46.5%) of the total foreign born were fluent. Never married status was more common among the native-born than the foreign-born—34.4 versus 26%, respectively. Foreign-born migrants, on the other hand, had more mixed nativity households (15%) than their native-born counterparts (2.3%). Where people lived was also important for intercounty migration. Most foreign-born migrants originated in the West (36%, col d) but native-born migrants tended to come from the South (43%, col. g).

4 Ethno-Racial and Nativity Differences in Intercounty Migration and Move Distance

Table 2 shows the weighted nativity and ethno-racial coefficients for intercounty migration and move distances from three models. These models include controls for human capital, acculturation, and residence place that were previously described and are listed in the note at the bottom of the table. In addition to those controls, Model 1 has an indicator variable for foreign-born status and shows that net of group differences in individual characteristics, foreign-born adults were less likely than natives to move counties in the second half of the 2000s and if they did move, they moved shorter distances than the native born. The second model adds the four ethno-racial indicators and has the same control variables. Non-Hispanic Whites are the reference group in that model. As expected, it shows that Blacks and Hispanics were significantly less likely than Whites to migrate counties and if they did

Table 1 Means of individual covariates in Heckman Selection Models for the total, foreign-born, and native-born by nativity status, adults aged 24–65, ACS 2007–2011

	Total population			Foreign born		Native born	
	Total Col. a	Non-Migrants Col. b	Migrants col. c	Total Col. d	Migrants Col. e	Total Col. f	Migrants Col. g
Percent of intercounty moves	4.9	0.0	100.0	4.2	100	5.1	100
Mean distance moved (miles)	–	–	414.5	–	485.5	–	402.6
Percent native born (NB)	82.9	82.8	85.6	0.0	0.0	100	100
Percent citizens	90.6	90.6	90.7	44.6	35.2	100	100
Percent male	48.8	48.7	50.8	49.5	53.1	48.6	50.3
Age in years	44.0	44.3	37.8	42.3	37.5	44.3	37.9
Percent never married	22.0	21.4	33.0	19.8	26.2	22.4	34.4
Percent living in mixed nativity households ^a	3.9	3.9	4.1	11.5	15.0	2.3	2.3
Percent speaking english very well/only	89.8	89.7	92.8	46.5	56.5	98.9	100.0
Percent attended school in past 3 months	6.3	6.1	10.3	6.2	9.8	6.3	10.4
Percent with less than high school degree	12.1	12.2	10.0	30.0	21.0	8.4	7.7
Percent with high school degree/some college	57.7	57.9	53.5	41.9	38.1	60.9	56.7
Percent with college degree	19.5	19.3	23.8	16.7	21.5	20.1	24.2
Percent with graduate or professional degree	10.7	10.6	12.8	11.3	19.5	10.6	11.4
Percent living in northeast year ago	18.3	18.4	15.3	21.5	21.5	17.6	13.9
Percent living in west year ago	23.3	23.3	23.0	31.2	35.8	21.6	20.3
Percent living in midwest year ago	21.7	21.8	21.2	10.9	13.6	24.0	22.8
Percent living in south year ago	36.7	36.5	40.6	36.3	29.1	36.8	43.0

A dash indicates that the variable is either not applicable for a category or that the information was not disclosed. NB indicates native born and FB indicates foreign born

^aFor foreign-born respondents, this measure equals one if the householder is native-born; for native-born respondents, it equals one if the householder is foreign-born

migrate, they moved significantly shorter distances. The coefficient for Hispanics ($-.111^{***}$) is more negative than the one for Blacks ($-.042^{***}$), which is consistent with our expectation that Hispanics would be the group least likely to move. While both Blacks and Hispanics move significantly shorter distances than Whites, that difference was more negative for Blacks ($-.207^{***}$) than it was for Hispanics ($-.080^{**}$). Asians, on the other hand, were significantly more likely than

Table 2 Coefficients from Heckman models that predict intercounty migration (selection model) and move distance (outcome model) for different ethno-racial and nativity groups, ACS 2007–2011

	Model 1: 2 Nativity groups (no ethno-racial controls)		Model 2: Nativity + 4 Ethno-racial groups		Model 3: 8 Ethno-racial and nativity groups	
	Intercounty migration	Move distance	Intercounty migration	Move distance	Intercounty migration	Move distance
Model 1: Native born (NB) (= ref)	Ref	Ref	Ref	Ref		
Foreign born (FB)	– .083	– .155	– .088***	– .173***		
Model 2: Non-Hispanics (NH) White (= ref)			Ref	Ref		
Blacks			– .042***	– .207***		
Asians			.045***	.087**		
Hispanics			– .111***	– .080**		
Model 3: Native Born Non-Hispanic White (= ref)					Ref	Ref
FB Non-Hispanic White					– .074***	– .183***
NB Black					– .051***	– .230***
FB Black					– .060***	– .230***
NB Asian					– .045**	– .124
FB Asian					– .030***	– .048*
NB Hispanic					– .071***	– .008
FB Hispanic					– .275***	– .397***
Constant	– .804***	2.626***	– .710***	2.656***	– .666***	2.729***
Sample N (rounded)	3,757,400	157,400	3,757,400	157,400	3,757,400	157,400
Rho	.636***		.649***		– .159***	
Chi2	4095***		4177***		1125***	

The county migration coefficients are from the selection model and predict intercounty migration in the past year. The move distance coefficients are from the outcome model and predict intercounty move distances of migrants. Control measures in all three models include: age, sex, citizenship, never married, less than high school (ref), high school degree/some college, college degree only, graduate or professional degree; attending college, mixed householder nativity, speaks English only or very well, South (ref), West, Midwest, and resident of traditional county a year ago that had 200,000 or more foreign-born

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Whites to move counties (.045***) and they also moved longer distances than Whites (.087**). There was little change in the nativity coefficients in Model 2.⁴

The third model addresses whether there are nativity differences in intercounty migration and move distances within and between ethno-racial groups. The model

⁴ While coefficients in Heckman models that are only included in the selection or outcome model represent the marginal effect of a one-unit change in a given variable on the dependent variable that is not the case for variables included in both equations. The adjusted coefficients, however, are usually not reported and we follow that practice here.

coefficients show that the four foreign-born groups and the three native-born minority groups had significantly lower rates of intercounty migration and move distances than native-born Whites did. We also expected to find that the foreign-born in each ethno-racial group would be less likely than their native-born counterparts to migrate counties and if they did, they would move shorter distances. Findings are mixed for that expectation. The expected pattern was observed for Hispanics—foreign-born Hispanics were significantly less likely than native-born Whites to migrate counties ($-.275^{***}$), as were native-born Hispanics ($-.071^{***}$) but the magnitude of the differences with Native-Born Whites were considerably larger for the foreign born. In addition, foreign-born Hispanics moved significantly shorter distances ($-.397^{***}$) than native-born Whites but there was no significant difference between native-born Hispanics and native-born Whites in move distances. Since the model had controls for several factors that might contribute to these findings, including educational attainment, age, sex, marital status, English language fluency, mixed nativity composition, and citizenship, we suspect that these findings stem from the large number of undocumented migrants in the Hispanic group.

Asians have a different pattern. Their intercounty migration coefficients indicate that both foreign- and native-born Asians were significantly less likely to migrate counties than native-born Whites but the coefficients were of comparable magnitude ($-.045^{**}$ for NB Asians and $-.030^{***}$ for FB Asians). *Ceteris paribus*, there were no significant differences between native-born Asians and native-born Whites in move distances but foreign-born Asians tended to move slightly shorter distances ($-.048^*$). The intercounty migration coefficients for Blacks, native- and foreign-born, were also negative and somewhat smaller than those for native-born Hispanics and foreign-born Whites. But Blacks showed no nativity difference in move distances—both native- and foreign-born Blacks moved significantly shorter distances than native-born Whites ($-.230^{***}$). This finding suggests that foreign-born Blacks perceive, just as native-born Blacks do, that some neighborhoods are more receptive to them than others. The findings for foreign-born Whites are also of interest. For that group, both the intercounty migration and move distance differentials with native-born Whites are significant and relatively large ($-.074^{***}$ for intercounty migration and $-.183^{***}$ for move distance). Foreign-born Whites have received little attention in immigration studies but these findings suggest that factors other than race shape migration outcomes given that only foreign-born Hispanics had larger differentials for intercounty migration and move distance. The move distance coefficients for Blacks, native- and foreign-born, were more negative than those of foreign-born Whites.

4.1 Accounting for Intercounty Migration and Move Distances

Table 2 models had control variables for several human capital, acculturation, and residence place indicators. While the paper has highlighted the ethno-racial and nativity findings from those models, the relationships of those measures to intercounty migration and move distances are also of interest, especially those that have not been examined in previous studies. Table 3 shows the full set of model coefficients for Model 3, Table 2. Several of the model relationships for intercounty migration are consistent with previous research. Age had the expected negative relationship to

Table 3 Full model predicting intercounty migration and move distances for eight ethno-racial and nativity groups, ACS 2007–2011

	Intercounty migration	Intercounty Move distance
Ethno-racial group		
Native-born Whites	Ref	Ref
Foreign-born White	– .074***	– .183***
Native-born Black	– .051***	– .230***
Foreign-born Black	– .060***	– .230***
Native-born Asian	– .045**	– .124
Foreign-born Asian	– .030***	– .048*
Native-born Hispanic	– .071***	– .008
Foreign-born Hispanic	– .275***	– .397***
Age	– .022***	– .018***
Sex (male = 1)	.026***	ni
Never married (= 1)	.075***	.014
Education (less than high school = ref)	Ref	Ref
High school/some college (= 1)	– .009	.106***
College degree only (= 1)	.084***	.469***
Graduate degree	.148***	.771***
Attending school (= 1)	.045***	ni
Citizen (= 1)	– .129***	– .318***
Householder nativity (= 1)	ni	.086**
Speaks English only or very well = 1	.079***	.107***
Resident of traditional county that had 200,000 foreign born a year ago (= 1)	– .107***	ni
Resident region year ago		
South	Ref	Ref
Northeast (= 1)	– .141***	– .419***
West (= 1)	– .022***	.584**
Midwest (= 1)	– .087***	– .178***
Constant	– .666***	2.729***
Observations	3,757,400	157,400
rho	0.650	
chi2	4386.0	

“ni” indicates that variable was not included in Heckman model

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

intercounty migration and male sex and never married status had the expected positive relationships. Intercounty migration was also positively related to school attendance and education, as expected. People attending school had significantly higher rates of intercounty migration. College grads and advanced degree holders were significantly more likely to move counties than adults with no high school degree but there was no significant difference between high school grads/some college and adults with no high school degree. English language fluency had the expected positive and significant

relationship to intercounty migration. In the model that included only nativity (Model 1, Table 2), the English language coefficient was almost double the magnitude of the language coefficient in Table 3 (.132*** vs. 079***). That finding suggests that once one takes into account that foreign-born Asians, Blacks, and Whites have relatively high levels of English language fluency compared to Hispanics, the residual effect stems from the low language fluency of Hispanics. Citizenship had a significant and negative relationship to intercounty migration.

Where people live is another important factor that shapes intercounty migration. The South is the region that attracted the largest number of internal migrants in recent decades but it is also the one where intercounty migration was highest. Northeasterners were the least likely to move counties followed by Midwesterners, and then Westerners. An article by Spring et al. (2017, p. 1300) found that “kin location is an important driver of residential mobility and neighborhood choice that must be situated among ... other factors.” That claim is consistent with the finding that intercounty migration is highest in the South because most migrants moving to that region in recent years would probably not have had kin living there. Residents of metropolitan areas with more than 200,000 foreigners were also significantly less likely to move counties. Because those findings could be related to the very different settlement distributions of the foreign- and native-born, we estimated separate nativity models to explore whether those two groups had different responses to the residence measures (models not shown but available upon request). Those models indicated that residence region was not a significant correlate of foreign-born migration but was related to native-born migration—natives living in the Northeast and Midwest were significantly less likely to move counties than their counterparts in the South and West but that pattern did not hold for the foreign born. Intercounty migration was also significantly lower for residents of traditional metropolitan areas that had foreign-born populations greater than 200,000 but that relationship did not hold for the native-born. The foreign-born findings are consistent with those of Spring et al. (2017) as well as with a large body of immigration research, which shows that social networks play an important role in channeling people to destinations where they have kin or friends and deterring them from leaving co-ethnic communities (Choldin 1973; Gurak and Caces 1992; Kritz et al. 2013; Massey 1990).

Given the dearth of research on determinants of move distance, we had a less clear set of expectations regarding those relationships. However, we did expect and found move distances to be negatively associated with age and positively associated with education levels. That relationship likely stems from the deep community roots that people build as they age and their tendency, if they do move, to select a downsized residence located nearby. The education pattern is also not surprising because people with more education have management and technical skills that employers throughout the country seek. Indeed, employers often cover the moving costs of advanced degree holders to recruit them. That idea is supported by the size of the intercounty move distance coefficients for college degree and advanced degree holders (.469*** and .771***, respectively), which are larger than most other coefficients in the determinants model. The two acculturation measures, English language fluency and residence in a mixed nativity household, also had positive and significant relationships with move distances. While English language

fluency is consistent with previous migration and settlement studies, the finding of the importance of residence in a mixed nativity household adds to knowledge and suggests that household composition should be given more attention in migration and settlement studies.

The region of the country where people live also matters for how far they moved. Residents of the Northeast and Midwest moved significantly shorter distances than Southerners but Westerners moved significantly longer distances than Southerners. It is unclear what accounts for these regional differences in move distances but many of the Western moves probably involved intercounty migration out of California to Arizona, Nevada, and Texas, which have received many migrants from California in recent years (Henrie and Plane 2008). Migrants moving from California to those states would have had to move relatively long distances to reach those states. Shorter distance moves are more common in the Northeast because several large metropolitan areas are located relatively close to each other. In addition, Western states tend to have larger counties and more Federal land, which could also shape the patterns of intercounty migration and move distances observed in this paper.

4.2 Race Differences within National Origin Groups and Intercountry Migration

The last question addressed is whether race differences within national origin groups are related to intercounty migration and move distance. The analysis thus far has focused on nativity cleavages between and within ethno-racial groups and assumed that other cleavages are less significant for migration but it is important to assess whether that is indeed the case. Previous research establishes that national origin groups differ in their propensity to migrate internally (Frey and Park 2011; Kritz and Gurak 2015; Newbold 1999) but we have not found any study that looks at whether race diversity within national origin groups also leads to migration differences. For 13 national origin groups from the Caribbean and Latin America, Heckman selection models were estimated that had most of the same control measures used in Table 2 models, including citizenship, sex, never married, four education dummies, school attendance, English language fluency, mixed household nativity, and four residence region measures. Additional variables were included in those models that are only available for the foreign born, namely age of arrival, years since arrival, and residence a year ago in a county with larger numbers of compatriots. Foreign-born Whites from each origin are the reference group in these Heckman country models.

The White/non-White classification varied by country of origin. For Hispanics from Spanish-speaking countries, the race categories correspond to those measured by the ACS race question, which asks respondents whether they are White, Black, or Asian. The non-White category for Hispanics includes immigrants who said they were Black. Some of the Spanish-speaking countries have small numbers of immigrants of Asian origins but they were dropped for this analysis. We used a similar method for Brazilians—if they identified as Hispanic or Asian, they were dropped. For the three Anglophone West Indian countries that have relatively small White immigrant populations but sizable Asian and Black populations, we combined Whites and Asians to increase the size of the White category.

Table 4 Race differentials in intercounty migration and move distances for Whites and non-Whites from 13 Caribbean and Latin American countries, ACS 2007–2011

National origin	% Non-White ^a (Col. a)	Intercounty migration (%)		Mean Intercounty move distance (Col. d)	Heckman model coefficients	
		White (Col. b)	Non-White (Col. c)		Intercounty migration models (Col. e)	Intercounty move distance models (Col. f)
Cuba	10.1	2.9	4.6***	462.7	.010	– .393
Brazil	20.5	5.8	7.1	467.3	.076	– .021
Colombia	25.7	4.4	4.6	415.4	– .001	– .110
Mexico	39.1	3.0	3.2***	407.4	.039	.123*
Peru	39.4	3.9	4.6*	442.9	.065	– .290
Ecuador	44.3	2.9	3.1	498.1	.049	– .511
Honduras	44.6	4.7	5.3***	430.6	.053	– .451**
El Salvador	48.0	3.4	3.4	408.7	.046	– .200
Guatemala	50.3	3.2	3.4	404.5	.095*	– .105
Dominican Republic	65.6	3.8	4.4***	309.6	.091	– .738***
Guyana	68.6	2.4	3.0	327.0	– .063	.296
Trinidad and Tobago	82.5	4.5	4.2	461.2	.014	– .063
Jamaica	96.1	4.0	4.1	449.2	.047	– .399

*** $p < .001$; ** $p < .01$; * $p < .05$

This table has statistics for White and non-White immigrants from 13 national origins. Columns e and f show the coefficients from 13 separate Heckman models that predict the likelihood of intercounty migration and move distances of non-Whites versus Whites. For each origin country, race is coded one for non-Whites. For Hispanic Whites, the 0 category only includes Whites. For Guyana, Trinidad/Tobago, and Jamaica, the non-White category includes Whites and Asians. Column (c) has asterisk symbols that indicate whether the White versus non-White differences in intercounty migration were significant (columns b versus c)

The findings from the migration selection and move distance models for the 13 national origin groups are listed in Table 4. Column (a) shows the percentage non-White in each origin group (countries are ranked on this measure), columns (b) and (c) show the percentages of White and non-White intercounty migrants, column (d) has the mean distances migrated, and columns (e) and (f) show the coefficients from the Heckman selection models. For each country, the coefficients specify the relationships of intercounty migration and move distances based on their race characteristics. Whites are the reference group in these models. Jamaica and Trinidad/Tobago have the largest non-White percentages (96 and 83%, respectively). Cuba and Brazil have the smallest non-Whites shares (10 and 21%, respectively) even though both countries have large non-White populations. About half of the Brazilian population is Black or Mulatto, which suggests that there is a lot of race selectivity in the Brazilian emigration flow to the USA. A comparison of

the White/non-White intercounty migration statistics shows significant race differentials among Cubans, Mexicans, Hondurans, Peruvians, and Dominicans (col. b and c). Non-Whites from these Latin American origins were more likely than their White compatriots to move counties. Brazilians had the highest rate of intercounty migration but the Hispanic groups, including Mexicans, had relatively low intercounty migration rates. Guyanese rates were also low. Mean distances migrated varied from a low of 310 miles for Dominicans to a high of 498 miles for Ecuadorians (col. d).

The Heckman country models predicted non-White versus White intercounty migration and move distances. In the intercounty migration models, only one coefficient was significant—Guatemalan non-Whites were significantly more likely to migrate counties than their White compatriots. Three coefficients were significant in the move distance models—Mexican, Dominican, and Honduran non-Whites moved significantly shorter distances than their White compatriots did. The latter finding suggests real or perceived race constraints for non-Whites from those countries but further research is needed to clarify whether that is the case. New destination research indicates that many Mexicans and Central Americans have moved to small metropolitan and non-metropolitan places throughout the country in recent years (Kandel and Parrado 2005; Zúñiga and Hernández-León 2005). The significant coefficients for Mexicans and Hondurans suggests that it may be Whites from those groups who are taking the risk of moving to new destination areas. That explanation, however, would not hold for Dominicans because internal migrants in that group moved relatively short distances compared to other groups (col d), which suggests that they are moving to counties located within or relatively close to the NY/Northern New Jersey metropolitan region where 61% of Dominicans lived in 2007.

Overall, the analysis of the effects of race differentials within origin countries on intercounty migration and move distance provides mixed results. At the zero-order level five of the 13 groups had significant race differences in the percent migrating to another county with non-Whites being more likely to migrate. In the multivariate analysis, the race variable was insignificant for county migration in all five of these cases though it became significant for Guatemalans. This suggests that compositional differences across race categories are responsible for the zero-order findings for county migration. 12 of the 13 coefficients for migration distance were negative with three being significant. Thus, a weak tendency for non-Whites to be more likely than Whites to migrate is accompanied by a weak tendency for them to migrate shorter distances. Since the distance coefficient is significant for three groups in the multivariate models, in these cases compositional differences do not appear to be the cause. The results suggest that there is a need to improve understanding of the nature of racial and other cleavages within national origin groups. That race proved unimportant for most of the study groups may be due to the variable and limited way it is measured in this analysis.

5 Conclusions and Discussion

In this paper we examined whether there are nativity differences in intercounty migration and move distances within and between America's four largest ethno-racial groups (Asians, Blacks, Hispanics, and Whites). We also examined whether there were race differences in intercounty migration and move distances for immigrants from the same national origin. To address these questions, we drew on restricted-access data files from the 2007–2011 ACS because they have more cases and geographic detail than PUMS files do. Our findings indicate that there are indeed differences across nativity and ethno-racial groups in intercounty migration and move distance. When we examined ethno-racial differences in intercounty migration and move distances, we found patterns consistent with previous research, namely that Blacks and Hispanics were significantly less likely to move counties than non-Hispanic Whites, and Asians were significantly more likely to do so. That pattern changed, however, when we compared the migration patterns of foreign- and native-born Asians, Blacks, Hispanics, and Whites. In Heckman migration selection models that controlled for group differences in individual characteristics, we found that all native- and foreign-born Asians, Blacks, and Hispanics, as well as foreign-born Whites, were significantly less likely to move counties than native-born non-Hispanic whites. Our models also showed that the foreign-born in three ethno-racial groups (Blacks, Hispanics, Whites), especially foreign-born Hispanics, were significantly less likely to move counties than their native-born counterparts. The findings for nativity differences in move distances showed that native-born Asians and Hispanics were as likely to move longer distances as native-born Whites but that was not the case for native-born Blacks. Foreign-born Asians, Hispanics, and Whites moved significantly shorter distances than native-born non-Hispanic Whites and their coefficients were more negative than those of their native-born counterparts. Blacks, native- and foreign-born, had negative and significant move distance coefficients that were comparable.

The model findings indicate that the nativity of ethno-racial group members does matter for intercounty migration and move distance patterns, which means that it is important to take these differences into account when examining the dispersion of diversity to new destinations. They also provide insights into how ethno-racial group patterns would compare if group members had similar human capital, demographic, acculturation, and residence characteristics. Intergroup differences with native-born Whites in intercounty migration were smallest for foreign-born Asians and largest for foreign-born Hispanics in both intercounty migration and move distances. To the extent that inferences can be drawn from move distances for settlement patterns, Black exceptionalism held for both foreign-born and native-born Blacks. The findings suggest that Blacks were selecting destinations closer to their origin places than other groups were. Only foreign-born Hispanics were staying closer to their origin places than Blacks. The findings that White foreign-born also moved significantly shorter distances and that there were no significant within group race differences for ten of 13 Caribbean and Latin American immigrant groups suggest that factors other than race can contribute to shorter distance moves of national origin groups.

These findings provide grounds for optimism regarding the current assimilation pathways of most ethno-racial and nativity groups. Although the three native-born minority groups and the four foreign-born groups were significantly less likely to migrate counties than native-born Whites, *ceteris paribus*, several model findings are consistent with spatial assimilation tenets. We expected to find that intercounty migration would be lower among the foreign-born because they have higher levels of nativity concentration and less familiarity with U.S. society than their native-born compatriots. Both the joint nativity/ethno-racial models and the 13 country models confirmed that expectation. Residence in a household that had a native-born head was another assimilation indicator that was significant and correlated with longer distance moves for the foreign born. Whether mixed nativity households arise from marriages between Americans and foreigners or between different generations from the same national origin requires further study. Other family arrangements or dynamics that bring immigrants into native-born households should also be studied given that these households have higher dispersion levels. The findings that education and English language fluency were significantly related to intercounty migration and move distances is consistent with spatial assimilation tenets. Ethno-racial group differences underscore the importance of these factors. Foreign- and native-born Asians, for instance, were the minority groups with the highest levels of intercounty migration and they have the highest education levels and are more likely than other groups to be employed in professional, managerial, and research positions that require English language fluency. The analysis also showed that native-born Asians and Hispanics moved comparable distances as native-born Whites, which suggests that they are adopting native-born White migration patterns quickly even though most native-born Asians and non-Mexican Hispanics are second generation. According to spatial assimilation findings for European immigrants, it took multiple generations for them to assimilate.

However, cautionary notes need to be sounded for three groups, namely native- and foreign-born Blacks and foreign-born Hispanics. Compared to native-born Whites, all three groups were significantly less likely to migrate or to move comparable distances. Those differences were greatest for foreign-born Hispanics. Not only did the latter differ significantly from native-born Whites in intercounty migration, there was also a large difference between them and native-born Hispanics. That pattern might stem from composition differences between native- and foreign-born Hispanics. While most native-born Hispanics have Mexican ancestry (78%), that percentage drops to 62% for foreign-born Hispanics. In contrast, 52% of non-Mexican Hispanics are foreign born. A more likely explanation might be differences between foreign- and native-born Mexicans in legal status. An estimated 52% of Mexican foreign-born are undocumented immigrants (Warren 2016) and they likely have reduced migration propensity compared to their compatriots who have permanent residency. The lower propensity of both native- and foreign-born Blacks to migrate coupled with their shorter move distances, is consistent with that group's historic settlement and migration patterns. Although some research indicates that Black/White residential segregation is decreasing, it likely will remain high compared to levels for Asians and Hispanics in the years ahead (Clark 2015). Whether Black exceptionalism in spatial dispersion

occurs because of discriminatory practices, because Blacks lack the social networks or economic resources that would give them a broader range of migration choices, or because Blacks perceive that they will not be welcome in majority White communities requires further study.

While destination choices have received minimal attention in this paper, given that ethno-racial diversity is increasing in new destinations throughout the country, it is reasonable to expect that ethno-racial groups that migrate more frequently and move longer distances will likely have a more dispersed settlement pattern in the years ahead. In contrast, groups that migrate less and move shorter distances are likely to remain more concentrated and, therefore, less likely to live in integrated neighborhoods. The lower propensity of Blacks, native- and foreign-born, to migrate, coupled with their shorter migration distances indicates that their levels of residential segregation are likely to remain higher than those of Asians and Hispanics. The determinants of ethno-racial differences in migration patterns and the implication of group differences in move differences need further research attention.

While ethno-racial differences in migration and move distances likely have implications for group dispersion, it is important to keep in mind that destination choices also shape whether migration leads to spatial and social integration of ethno-racial groups. Jaret and Baird (2013, p. 25) did compare state destination choices of Asians, Blacks, Hispanics, and Whites and concluded that they make similar destination choices. They found that all four groups were moving southward to states with robust economic conditions, namely lower costs of living and taxes, more construction employment, and better business climates. All four groups had high rates of net migration to Texas, Georgia, Florida, and Arizona. Patterns for Asians differed the most from the other ethno-racial groups because large numbers of them also moved to some other Western states. They speculated that nativity differentials within ethno-racial groups might account for some of their findings but they could not look at that possibility because they drew on aggregate data. It should be noted that even if today's patterns of residential concentration of ethno-racial groups continue to weaken in the years ahead, it is likely that regional ethno-racial differences in composition are likely to linger given that Lieberman and Waters (1987) found that U.S. geographic regions continue to have ethnic compositions that correspond to the origins of European immigrants who arrived to those regions a century ago. Zelinsky (1971) has advanced a similar argument.

Acknowledgements Any opinions and conclusions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Census Bureau. All results have been reviewed by the Bureau to ensure that no confidential data are disclosed. Support for this research at the New York Census Research Data Center (NYCRDC, Cornell) from NSF (ITR-0427889) is gratefully acknowledged. We also acknowledge grant support from the Russell Sage Foundation (RSF #88-07-03) for an initial phase of the research.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Appendix 1

Descriptive statistics for ethno-racial and nativity groups for selected covariates used in Heckman Selection Models, ACS 2007–2011

	Non-Hispanic Asians			Non-Hispanic Blacks			Hispanics			Non-Hispanic Whites		
	Total	NB	FB	Total	NB	FB	Total	NB	FB	Total	NB	FB
% Migrated state/puma	5.5	6.3	5.3	4.9	4.9	5.1	3.9	4.9	3.2	4.8	4.9	4.5
% Native Born	18.2	100.0	0.0	88.7	100.0	0.0	43.1	100.0	0.0	95.6	100.0	0.0
% Citizens	66.8	100.0	59.4	94.8	100.0	54.1	60.3	100.0	30.2	98.1	100.0	56.1
% Male	46.6	50.6	45.7	44.7	44.3	47.7	50.2	47.9	52.0	49.4	49.4	48.9
Age in years	42.0	38.2	42.9	42.9	42.9	42.7	40.1	39.6	40.5	44.7	44.7	45.0
% Never married	21.0	42.1	16.3	38.3	39.9	25.8	26.7	31.4	23.1	18.5	18.7	13.8
% Speaking English very well/only	62.0	94.2	54.9	97.2	99.7	78.0	54.1	88.6	28.0	98.4	99.6	71.3
% Attended school in past 3 months	8.9	12.5	8.1	9.6	9.0	13.8	5.9	8.6	3.9	5.6	5.6	6.7
% Less than HS degree	11.2	3.7	12.9	13.6	13.5	14.1	35.5	17.6	49.0	6.8	6.7	9.2
% HS and some college	36.6	42.3	35.3	66.9	68.0	57.7	51.0	64.2	40.9	59.1	59.7	47.2
% With Bachelor's degree	31.2	35.4	30.2	13.1	12.5	17.9	9.5	12.8	7.0	22.0	21.9	23.9
% With graduate/professional degree	21.0	18.6	21.6	6.4	5.9	10.4	4.1	5.4	3.1	12.1	11.7	19.8
% In northeast year ago	20.8	13.7	22.4	16.4	13.0	42.3	14.6	15.5	13.8	19.4	18.8	31.7
% in west year ago	46.4	62.9	42.8	8.7	8.8	7.9	40.4	40.0	40.8	19.7	19.3	28.0
% In midwest year ago	10.5	7.9	11.0	16.8	17.9	8.4	8.2	8.2	8.3	23.9	24.2	16.1
% In south year ago	22.3	15.6	23.8	58.2	60.3	41.2	36.8	36.3	37.2	37.0	37.6	24.2

The statistics in this table were estimated from the PUMS ACS file. Because county of residence is not in the ACS PUMS file, the percent migrating states and PUMAs within states was used to estimate the statistics. The % migrated state/puma is coded 1 if R moved to a different state or moved to a different PUMA in the same state in the past year

References

- Alba, R. D., Logan, J. R., Stults, B. J., Marzan, G., & Zhang, W. (1999). Immigrant groups in the suburbs: A reexamination of suburbanization and spatial assimilation. *American Sociological Review*, *64*, 446–460.
- Baird, J., Adelman, R. M., Reid, L. W., & Jaret, C. (2008). Immigrant settlement patterns: The role of metropolitan characteristics*. *Sociological Inquiry*, *78*(3), 310–334. <https://doi.org/10.1111/j.1475-682X.2008.00242.x>.
- Bartel, A. P., & Koch, M. J. (1991). Internal Migration of US Immigrants. In J. Abowd & R. Freeman (Eds.), *Immigration, trade, and the labor market* (pp. 121–134). Chicago: The University of Chicago Press.
- Belanger, A., & Rogers, A. (1994). The internal migration and spatial redistribution of the foreign-born population in the United States: 1965–70 and 1975–80. *International Migration Review*, *XXVI*(4), 1342–1369.
- Bishop, B., & Cushing, R. (2008). *The big sort: why the clustering of like-minded America is tearing us apart*. New York: Mariner Books.
- Choldin, H. M. (1973). Kinship networks in the migration process. *International Migration Review*, *7*, 163–176.
- Clark, W. A. (2015). Residential segregation: Recent trends. In J. D. Wright (Ed.), *International encyclopedia of the social & behavioral sciences* (2nd ed., pp. 549–554). Oxford: Elsevier.
- Cohn, D. V., & Morin, R. (2008). *American mobility: Who moves? Who stays put? Where's home? Social & demographic trends report*. <http://www.pewsocialtrends.org/files/2010/10/Movers-and-Stayers.pdf>. Accessed 25 Jan 2018.
- DaVanzo, J. (1983). Repeat migration in the United States: Who moves back and who moves on? *The Review of Economics and Statistics*, *65*(4), 552–559. <https://doi.org/10.2307/1935923>.
- Denton, N. A., & Massey, D. S. (1988). Residential segregation of Blacks, Hispanics, and Asians by socioeconomic status and generation. *Social Science Quarterly*, *69*, 797–817.
- Donato, K. M., Tolbert, C. M., Nucci, A., & Kawano, Y. (2007). Recent immigrant settlement in the nonmetropolitan United States: Evidence from internal census data. *Rural Sociology*, *72*(4), 537–559.
- Eldridge, J. D., & Jones, J. P. (1991). Warped space: A geography of distance decay. *The Professional Geographer*, *43*(4), 500–511. <https://doi.org/10.1111/j.0033-0124.1991.00500.x>.
- Ellis, M., & Goodwin-White, J. (2006). 1.5 Generation internal migration in the US: Dispersion from states of immigration? *International Migration Review*, *40*(4), 899–926. <https://doi.org/10.1111/j.1747-7379.2006.00048.x>.
- Ellis, M., Wright, R., & Parks, V. (2006). The immigrant household and spatial assimilation: partnership, nativity, and neighborhood location. *Urban Geography*, *27*(1), 1–19. <https://doi.org/10.2747/0272-3638.27.1.1>.
- Finney, N., & Simpson, L. (2008). Internal migration and ethnic groups: Evidence for Britain from the 2001 census. *Population, Space and Place*, *14*(2), 63–83. <https://doi.org/10.1002/psp.481>.
- Frey, W. H. (2015). *Diversity explosion: How new racial demographics are remaking America*. Washington, D.C.: Brookings Institution Press.
- Frey, W. H., & Liaw, K.-L. (1999). Internal migration of Foreign-born Latinos and Asians: Are they assimilating geographically? In K. Pandit & S. D. Withers (Eds.), *Migration and restructuring in the United States* (pp. 212–230). New York: Rowman and Littlefield.
- Frey, W. H., & Liaw, K. L. (2005). *Migration within the United States: Role of race-ethnicity*. Brookings-Wharton Papers on Urban Affairs, 207–262. www.jstor.org/stable/25067420. Accessed 25 Jan 2018.
- Frey, W. H., & Park, J. (2011) Migration and dispersal of Hispanic and Asian Groups: An analysis of the 2006–2008 multiyear American community survey. In C. Grim (Vol. Ed.), *Center for economic studies papers CES-WP- 11-33*. Washington, D.C.: U.S. Census Bureau.
- Gordon, M. M. (1964). *Assimilation in American Life: The role of race, religion, and national origins*. Lexington: D.C. Heath.
- Greenwood, M. J. (1981). *Migration and economic growth in the United States*. New York: Academic Press.
- Greenwood, M. J. (1985). Human migration: Theory, models, and empirical studies. *Journal of Regional Science*, *25*(4), 521–544.

- Gurak, D. T., & Caces, F. (1992). Migration networks and the shaping of migration systems. In M. Kritz, L. L. Lim, & H. Zlotnik (Eds.), *International migration systems* (pp. 150–176). Oxford: Clarendon.
- Gurak, D. T., & Kritz, M. M. (2000). The interstate migration of U.S. immigrants: Individual and contextual determinants. *Social Forces*, 78(3), 1017–1039.
- Gurak, D., & Kritz, M. M. (2016). Pioneer settlement of U.S. immigrants: Characteristics of pioneer migrants and places. *Demographic Research*, 34(25), 705–740.
- Hall, M. (2013). Residential integration on the new frontier: Immigrant segregation in established and new destinations. *Demography*, 50(5), 1873–1896. <https://doi.org/10.1007/s13524-012-0177-x>.
- Henrie, C. J., & Plane, D. A. (2008). Exodus from the California core: Using demographic effectiveness and migration impact measures to examine population redistribution within the Western United States. *Population Research and Policy Review*, 27, 43–64.
- Iceland, J. (2009). *Where we live now: Immigration and race in the United States*. Berkeley: University of California Press.
- Iceland, J., Weinberg, D., & Hughes, L. (2014). The residential segregation of detailed Hispanic and Asian groups in the United States: 1980–2010. *Demographic Research*, 31(20), 593–624.
- Ihrke, D. (2014). *Reason for moving: 2012 to 2013*. Washington, D.C.: U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Department. <https://www.census.gov/library/publications/2014/demo/p20-574.html>. Accessed 25 Jan 2018.
- Jaret, C., & Baird, J. (2013). Patterns of interstate migration in the mid-2000s: Are racial groups moving in different directions? *The Journal of Public and Professional Sociology*, 5(1/3), 1–42.
- Johnson, K. M., & Lichter, D. T. (2016). Diverging demography: Hispanic and Non-Hispanic contributions to U.S. population redistribution and diversity. *Population Research and Policy Review*. <https://doi.org/10.1007/s11113-016-9403-3>.
- Kandel, W., & Cromartie, J. (2004). *New patterns of Hispanic settlement in rural America*. Retrieved from Washington, D.C. <https://www.ers.usda.gov/webdoc/publications/47077/rdr-99.pdf?v=41056>. Accessed 25 Jan 2018.
- Kandel, W., & Parrado, E. A. (2005). Restructuring of the U.S. meat processing industry and new Hispanic migrant destinations. *Population and Development Review*, 31(3), 447–471.
- Kritz, M. M., & Gurak, D. T. (2015). U.S. immigrants in dispersed and traditional settlements: National origin heterogeneity. *International Migration Review*, 49(1), 106–141. <https://doi.org/10.1111/imre.12177>.
- Kritz, M. M., Gurak, D. T., & Lee, M.-A. (2013). Foreign-born out-migration from new destinations: Onward or back to the enclave? *Social Science Research*, 42(2), 527–546. <https://doi.org/10.1016/j.ssresearch.2012.09.013>.
- Kritz, M. M., & Nogle, J. M. (1994). Nativity concentration and internal migration among the foreign-born. *Demography*, 31(3), 509–524.
- Liaw, K.-L., & Frey, W. H. (1998). Destination choices of the 1985–90 young adult immigrants to the United States: Importance of race, educational attainment, and labour market forces. *International Journal of Population Geography*, 4, 49–61.
- Lichter, D. T., & Johnson, K. M. (2006). Emerging rural settlement patterns and the geographic redistribution of America's new immigrants. *Rural Sociology*, 71(1), 109–131.
- Lichter, D. T., & Johnson, K. M. (2009). Immigrant gateways and Hispanic migration to new destinations. *International Migration Review*, 43(3), 496–518.
- Lichter, D. T., Johnson, K. M., Turner, R. N., & Churilla, A. (2012). Hispanic assimilation and fertility in new destinations. *The International migration Review*, 46(4), 767–791. <https://doi.org/10.1111/imre.12000>.
- Liebertson, S. (1963). *Ethnic patterns in American cities*. New York: Free Press.
- Liebertson, S., & Waters, M. (1987). The location of ethnic and racial groups in the United States. *Sociological Forum*, 2, 780–810.
- Logan, J. R., Alba, R. D., & Zhang, W. (2002). Immigrant enclaves and ethnic communities in New York and Los Angeles. *American Sociological Review*, 67(2), 299–322.
- Logan, J. R., & Schneider, M. (1984). Racial segregation and racial change in American suburbs, 1970–1980. *American Journal of Sociology*, 89(4), 874–888.
- Martin, M. J. R., Matthews, S. A., & Lee, B. A. (2017). The spatial diffusion of racial and ethnic diversity across U.S. counties. *Demography*, 5(3), 145–169. <https://doi.org/10.1007/s40980-016-0030-8>.
- Massey, D. S. (1990). Social structure, household strategies, and the cumulative causation of migration. *Population Index*, 19(3), 3–26.

- Massey, D. S. (2008a). Assimilation in a new geography. In D. S. Massey (Ed.), *New faces in new places: The changing geography of American immigration* (pp. 343–354). New York: Russell Sage Foundation.
- Massey, D. S. (Ed.). (2008b). *New faces in new places: The changing geography of American immigration*. New York: Russell Sage Foundation.
- Massey, D. S., & Denton, N. A. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge: Harvard University Press.
- Massey, D. S., & Garcia-España, F. (1987). The social process of international migration. *Science*, 237, 733–738.
- Molloy, R., Smith, C. L., & Wozniak, A. (2011). Internal migration in the United States. *Journal of Economic Perspectives*, 25(3), 173–196.
- Moretti, E. (2012). *The new geography of jobs*. Boston: Houghton Mifflin Harcourt.
- Newbold, K. B. (1996). Spatial distribution and redistribution of the foreign-born in the U.S.: 1980 and 1990. *Economic Geography*, 75, 254–271.
- Newbold, K. B. (1999). Internal migration of the foreign-born: Population concentration or dispersion? *Population and Environment*, 20(3), 259–276.
- Pandit, K., & Withers, S. D. (Eds.). (1999). *Migration and restructuring in the United States: A geographic perspective*. New York: Rowman & Littlefield Publishers Inc.
- Park, R. E. (1950). *Race and culture*. Glencoe: Free Press.
- Partridge, M. D., Rickman, D. S., Olfert, M. R., & Ali, K. (2012). Dwindling U.S. internal migration: Evidence of spatial equilibrium or structural shifts in local labor markets? *Regional Science and Urban Economics*, 42(1–2), 375–388. <https://doi.org/10.1016/j.regsciurbeco.2011.10.006>.
- Perez, A. D., & Hirschman, C. (2009). The changing racial and ethnic composition of the US population: Emerging American identities. *Population and Development Review*, 35(1), 1–51. <https://doi.org/10.1111/j.1728-4457.2009.00260.x>.
- Ritchey, P. N. (1976). Explanations of migration. *Annual Review of Sociology*, 2, 363–404.
- Rogers, A., & Henning, S. (1999). The internal migration patterns of the foreign-born and native-born populations in the United States: 1975–80 and 1985–90. *International Migration Review*, 33(2), 403–429.
- Sharmeen, F., Arentze, T., & Timmermans, H. (2014). Dynamics of face-to-face social interaction frequency: Role of accessibility, urbanization, changes in geographical distance and path dependence. *Journal of Transport Geography*, 14, 211–220.
- Singer, A. (2004). *The rise of new immigrant gateways*. Retrieved from Washington D.C.
- South, S. J., Crowder, K., & Chavez, E. (2005). Geographic mobility and spatial assimilation among U.S. Latino immigrants. *International Migration Review*, 39(3), 577–607.
- Spring, A., Ackert, E., Crowder, K., & South, S. J. (2017). Influence of Proximity to kin on residential mobility and destination choice: Examining local movers in metropolitan areas. *Demography*, 54(4), 1277–1304. <https://doi.org/10.1007/s13524-017-0587-x>.
- StataCorp. (2013). *Stata statistical software: Release 13.1*. College Station: Stata Corporation LP.
- Taeuber, K. E., & Taeuber, A. F. (1965a). The changing character of negro migration. *American Journal of Sociology*, 70(4), 429–441.
- Taeuber, K. E., & Taeuber, A. F. (1965b). *Negroes in Cities*. Chicago: Aldine.
- Thomas, K. J. A. (2016). Highly skilled migration from Africa to the US: Exit mechanisms, demographic determinants, and the role of socioeconomic trends. *Population Research and Policy Review*, 35(6), 825–849. <https://doi.org/10.1007/s11113-016-9402-4>.
- Thomas, W. I., & Znaniecki, F. (1984). *The Polish peasant in Europe and America, Abridged Version*. Urbana: University of Illinois Press.
- Tienda, M., & Angel, R. J. (1982). Headship and household composition among blacks, hispanics and other whites. *Social Forces*, 61(2), 508–531.
- Timberlake, J. M., & Iceland, J. (2007). Change in racial and ethnic residential inequality in American cities, 1970–2000. *City & Community*, 6(4), 335–365. <https://doi.org/10.1111/j.1540-6040.2007.00231.x>.
- Tolnay, S. E. (2003). The African American ‘Great Migration’ and Beyond”. *Annual Review of Sociology*, 29, 209–232.
- Tolnay, S. E., Curtis White, K. J., Crowder, K. D., & Adelman, R. M. (2005). Distances traveled during the great migration: An analysis of racial differences among male migrants. *Social Science History*, 29(4), 523–548.

- Warren, R. (2016). US undocumented population drops below 11 million in 2014. *Journal of Migration and Human Security*, 4(1), 1–15. <https://doi.org/10.14240/jmhs.v4i1.58>.
- Zelinsky, W. (1971). The hypothesis of the mobility transition. *Geographical Review*, 61, 219–249.
- Zúñiga, V., & Hernández-León, R. (Eds.). (2005). *New destinations: Mexican immigration in the United States*. New York: Russell Sage Foundation.