**The Impact of Demographic Changes
on Transit Patterns in New Jersey**

FINAL REPORT
June 2010

Submitted by:

Daniel G. Chatman, Ph.D.
Nicholas Klein
Stephanie DiPetrillo
Alan M. Voorhees Transportation Center
Rutgers University

DISCLAIMER STATEMENT

1. Report No. FHWA-NJ-2010-005	2.Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle The Impact of Demographic Changes on Transit Patterns in New Jersey		5. Report Date June 2010
		6. Performing Organization Code
7. Author(s) Chatman, Daniel, Ph.D., Nicholas Klein and Stephanie DiPetrillo		8. Performing Organization Report No. FHWA-NJ-2010-005
9. Performing Organization Name and Address Alan M. Voorhees Transportation Center Rutgers, The State University of New Jersey		10. Work Unit No.
		11. Contract or Grant No.
12. Sponsoring Agency Name and Address New Jersey Department of Transportation PO 600 Trenton, NJ 08625	Federal Highway Administration US Department of Transportation Washington, D.C.	13. Type of Report and Period Covered
		14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

Foreign-born residents of New Jersey account for a fifth of its population but almost 40 percent of its transit commuters and all growth in transit commuting since 1980. While immigrants have driven ridership growth, they also rapidly decrease their use of transit the longer they stay in the United States. This study investigates the reasons for higher transit use by immigrants and for the decline in their use of transit over time. Census data, focus groups carried out in 2009, and a survey of households carried out in 2010 reveal not only travel patterns but also residential and workplace location choices. Higher transit use by immigrants seems to be driven primarily by the employment and educational focus that motivates immigration, resulting in an initial choice of home and workplace that is based on optimizing work or school proximity as well access to home-country social networks that are concentrated in areas with high transit accessibility. Higher rail commuting among immigrants is largely explained by their demographic and spatial characteristics, but higher bus commuting is correlated with immigrant status even in analysis controlling for income and citizenship. There are significant differences among the selected region-of-origin groups (India, Latin America and the Philippines). Residents born in Latin America are more likely to use transit for non-work trips, in addition to private shared transportation modes—a new and fast-growing transportation sector. Indian-born residents tend to hold jobs near rail stops while the Latin American-born have poor transit accessibility on the work end. Possible policies to encourage and retain transit ridership by immigrants include deregulation of land use controls to encourage higher work and residential density, subsidies and better regulation of employer vanpools to serve dispersed workplaces of Latin American immigrants, and attempts to integrate existing public transit services with new forms of private transit provision.

17. Key Words Immigration, travel, transit, demographics, commuting, occupation	18. Distribution Statement		
19. Security Classif (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No of Pages 197	22. Price

Form DOT F 1700.7 (8-69)

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

Foreign-born residents of New Jersey account for a fifth of its population but almost 40 percent of its transit commuters and all of the state's growth in transit commuting since 1980. The immigrant population of the state has changed significantly in the past fifty years, with increasing immigration from Asia and Latin America. About 400,000 immigrants, accounting for 24 percent of the foreign-born population, have arrived since 2000. The top five countries of origin for foreign-born residents of New Jersey are India, the Philippines, Mexico, the Dominican Republic and Korea. The same countries, but adding Ecuador and dropping Korea, are the top five for recent immigrants, accounting for 41 percent of arrivals from 2003 to 2008. New Jersey's immigration profile is unlike the rest of the US or the other top immigrant gateway states, being much more evenly distributed across different sending regions of the world.

Foreign-born residents of New Jersey commute via transit at more than twice the rate of the US-born (15.8 vs. 7.5 percent), and recently arrived immigrants commute via transit at an even higher rate. Because population growth in New Jersey has been largely driven by immigration in recent years, this has meant a fairly rapid change of the composition of bus and rail ridership. The higher average transit commuting by immigrants masks a steep drop-off after the first ten to fifteen years and a continuing, but slower reduction associated with longer periods of stay in the US (see Figure 1). New immigrants commute to work via transit almost a quarter of the time, while the rate for those who have been here for twenty years is 14 percent (Table 1). The declining effect is persistent even when accounting for age.
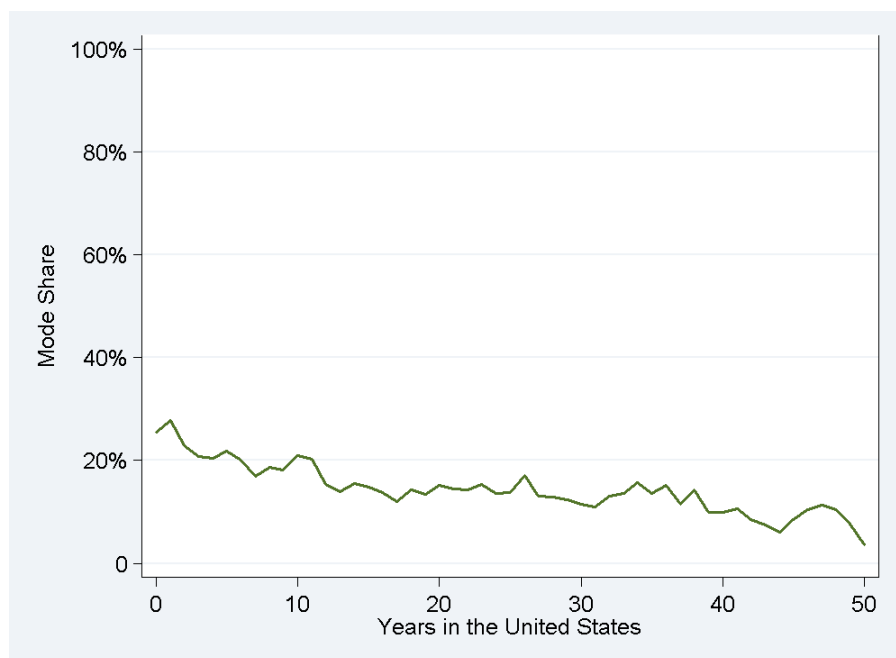
Figure 1. Immigrant transit commuting by years in the US (ACS)

1

Table 1. Immigrant commute trip mode by years in US

Years in the US	Drive Alone	Carpool	Transit	Bike or Walk	Other
0 to 5	36.0%	22.8%	23.2%	12.6%	5.5%
6 to 10	52.8%	16.9%	19.0%	5.5%	5.7%
11 to 15	60.6%	14.7%	16.0%	4.7%	4.0%
16 to 20	65.6%	12.5%	13.8%	3.8%	4.3%
21 to 25	67.3%	11.2%	14.3%	2.8%	4.5%
26 to 30	68.4%	11.2%	13.4%	2.6%	4.4%
31 or more	70.9%	11.4%	5.8%	3.3%	8.6%
NJ Foreign-Born	60.25%	14.22%	15.80%	4.94%	4.79%

This study seeks to understand the reasons for higher transit ridership and lower auto use by immigrants living in New Jersey, and for the decline in transit commuting rates over time. We focus on particular country-of-origin and region-of-origin groups that are most common among recent migrants to the state. Our main purpose in the study is to compare the US-born population in New Jersey to those who were born elsewhere, and to extrapolate from this analysis to better understand transit trends and possible policy implications.

We relied on three main sources of information. The first was secondary data from the American Community Survey of the US Bureau of the Census for the years 2006 to 2008, augmented with 2000 Decennial Census data and data from the 2001 National Household Transportation Survey. The second was a series of six focus groups that we conducted in late 2009 with participants born in the Philippines, India and Latin America. The third was a telephone survey that we carried out in early 2010 with respondents living in New Jersey who were born in South Asia, Latin America and the United States.

Spatial trends in settlement and employment patterns

The foreign-born population in New Jersey has always been spatially concentrated in the northern part of the state, particularly within and north of Newark and Jersey City. This concentration has increased in the past twenty years, but the central part of the state has also become an important receiving area for immigrants. Both areas are relatively rich in transit service and have easy access to the major regional job centers in Newark, Jersey City and New York City. But there are significant differences at the statewide level between countries of origin. In particular, those born in India are more heavily concentrated in central New Jersey, while those born in the Latin American countries are more dispersed throughout the state.

The spatial distribution of jobs held by immigrants in New Jersey, like those held by US-born workers, has changed significantly over the past twenty years. Immigrant employment opportunities were formerly concentrated in Newark, Jersey City, and other

northern New Jersey communities, but they have become, like residential concentrations, more dispersed throughout the state. Jobs held by foreign-born workers remain more highly concentrated than jobs of US-born workers in the traditional areas plus Middlesex County and other parts of Central New Jersey.
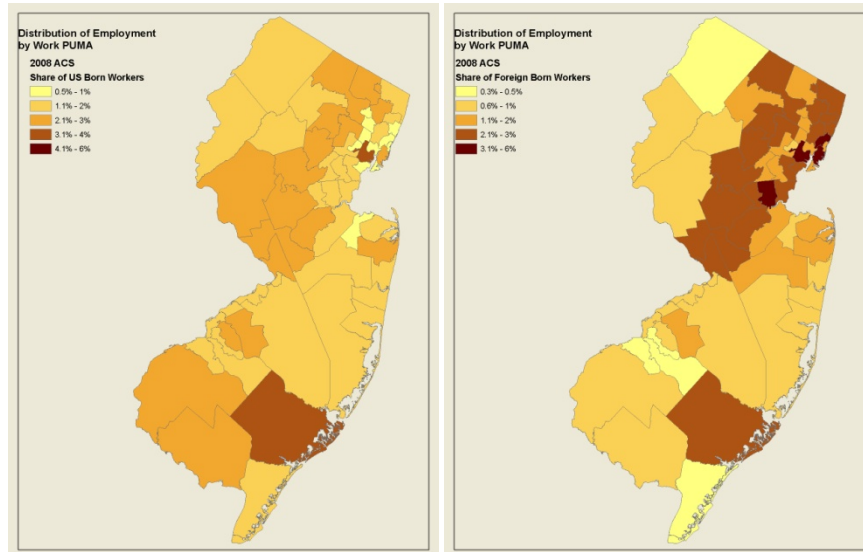
Figure 2. Spatial distribution of employment for US-born and foreign-born workers

The foreign-born are employed at a much higher rate than the US-born population. This is likely because the single most important motivation for immigration is to seek economic opportunities, and therefore most immigrants are of working age. Immigrants are more likely to be employed in science and engineering, construction and extraction, food preparation and serving, cleaning and maintenance, and farming, fishing, and forestry occupations than the US-born population. They are generally underrepresented in management and business, professional services, education, and office/administration occupations. Foreign-born residents of New Jersey, particularly those from Latin America, are increasingly likely to be employed in lower-paid service occupations. These jobs are often spatially dispersed which makes them more difficult to reach by rail and even by traditional bus service.

Census data analysis: Commute mode

Using Census data, we analyzed work commute mode for the three largest country-of-origin groups of transit riders in New Jersey: those born in India, the Philippines and Mexico. A higher share of individuals born in India live in households with children, compared with those born in the Philippines and particularly those born in Mexico. Indian-born residents have the highest incomes, at about $130,000—25 percent higher than the US-born average and twice as high as those born in Mexico. Immigrants from the Philippines have similarly high household income.

Despite this bifurcation of income and education, all three country-of-origin groups live in higher-density regions with substantially greater transit availability, on average, than the US-born. All three groups use transit at a much higher rate than the US-born: 22 percent of those born in India, and 17 percent of those born in Mexico or the Philippines. But there are larger differences by mode within transit. Rail ridership makes up more than 60 percent of transit commuting for those born in India, while bus is by far the dominant transit mode for those born in Mexico. The split among those born in the Philippines is more even.

Most analysis of commute mode share has treated "transit" as a single category. Because the Census dataset is sufficiently large, we were able to distinguish bus from rail commuting when modeling mode choice as a function of demographic and spatial characteristics. We found a striking result: rail commuting among immigrants in New Jersey is largely attributable to residential and workplace location, and to a lesser extent, occupational category. The exception is recent Mexican migrants, who commute far more via rail than would be predicted by their spatial, occupational and demographic characteristics.

The model results for bus commuting are different. In this case foreign-born status increases the odds of bus commuting by 170 percent in the first five years of residence even when controlling for demographic, spatial and occupational factors. After ten years, immigrant status is no longer statistically significant for most immigrant groups. However, for Mexican-born and Philippines-born residents there is a persistent higher likelihood of bus commuting even after 10 years living in the US.

Focus group description

We organized and conducted six focus groups: two each with individuals born in India and the Philippines (all four conducted in English, with side translation as needed), and two conducted primarily in Spanish: one with Mexican-born participants and one with South American-born participants. These structured group conversations lasted from ninety minutes to two hours and were conducted between July and October, 2009. Each group had from nine to twelve participants.

Even within the narrowly selected pool of about fifty participants, there was a great deal of diversity represented in travel habits, residential location, and work history. On the whole, what we heard from focus group participants was not substantially different from what we would expect to hear if we had conducted similar focus groups with US-born residents. The focus groups were helpful in providing a better understanding of transit use and change over time. Findings included the following:

- Immigrants report coming to the United States and to the denser urban parts of New Jersey primarily to seek work opportunities and educational opportunities either for themselves or for their college-age children. For some, the availability

- of networks of other people born in the same country also plays a primary role in choosing where to live within the US and within the state.

- Transportation access is an important but secondary criterion in residential decisions, helping to determine location patterns within metropolitan areas.

- Documentation status and the need to send disposable income to relatives in the country of origin may delay auto ownership and prolong transit use for some immigrants.

- The workplaces and neighborhoods of immigrants seem to be extraordinarily important in determining travel choices. Other determinants of travel change such as increased affluence, the higher social status associated with automobile ownership, and the desire for privacy, seem to be less important. There is little evidence for "cultural" explanations for higher transit use. For the most part, immigrants do not seem more or less likely to have been habitual transit riders in their home countries.

Figure 3. Focus group dates and locations

- Many immigrants arrive focused primarily on obtaining work or higher education, so they tend to prioritize transportation access to work and school. Over time, when family and children start to play a stronger role, location decisions become more complex and are more likely to result in a location with lower transit accessibility.

- Some recent immigrants use employer provided vans, private shared transit services, and other non-traditional modes. Some report being unhappy with these choices but also express frustration with NJ TRANSIT service frequency and treatment by drivers.

Household survey results

We surveyed 909 households in the urbanized parts of the state using special samples designed to target those born in South Asia (primarily India) and those born in Latin America (primarily Mexico, the Dominican Republic, Ecuador, Colombia and Peru). Surveying more country-of-origin groups was not possible given the high cost of screening and the limited budget. We also included a conventional telephone list sample which allowed a comparison with the US-born population of the state. The overall response rate for the sample was 18.6 percent, with lower response for the Latin-American-born sample and higher response for the Indian-born sample. Almost

5

half of respondents were US-born, about 14 percent were immigrants arriving in the previous ten years, and the remaining 38 percent consisted of immigrants who arrived in the US more than ten years ago.

There are five main additional kinds of data collected in the household survey that make it different from the Census data used for most work on immigration and transportation: 1. Timing, mode and location of trips for grocery shopping, going out to eat or to pick up prepared food, and visiting friends or relatives; 2. Home and work addresses, enabling small-scale spatial measures of home and workplace land use and transit accessibility; 3. How households chose their current and past neighborhoods; 4. How people found current and previous jobs; and 5. Detailed mode split data, including explicit questions about type of bus, type of rail, car sharing, van pooling and private transit providers.

Figure 4. Household survey respondent home and work locations

Note: Home locations in brown, work locations in red, rail stops in black

Among Indian-born respondents, a higher-income group, there is very little difference in non-work mode choice in comparison to the US-born population, even for recent immigrants. The Latin American group was much more likely to use taxis, pay neighbors or acquaintances for rides, or ride the bus for non-work trips. This is a notable difference from commuting mode, where Indian-born residents of the state are more likely to use transit to get to work.

The spatial measures enabled by the survey provide some interesting results, although the differences are not always statistically significant. In contrast to substantially higher regional transit accessibility, population density, and employment density found in Census data for Indian born residents, our survey finds that at the local level (half mile radius) Indian-born respondents live in neighborhoods with population density, employment density, rail access, and bus access that are the same or lower than the US-born population. In contrast, Latin-American-born respondents live in places that are substantially higher on all these measures than US- or Indian-born respondents. But Latin-American-born respondents work in places with bus and rail access about the same or lower than US- born respondents, and lower than Indian-born respondents. This contrasting pattern of residential and workplace density for different immigrant groups has strong potential influences on the potential for the use of alternative modes for the work trip versus for non-work trips.

In comparison to US-born respondents, both Indian-born and Latin-American-born respondents report being more likely to prioritize proximity to work when choosing their first neighborhoods in the US. Over time, Indian-born households prioritize work proximity less, while Latin-American-born households prioritize work access more. This could be because Latin American migrants initially rely more on personal and familial connections when deciding where to live.

Conclusions and policy implications

The recent reliance on immigrants for transit ridership could result in a rapid shrinking in transit share if immigration-driven population and employment growth is not sustained. Immigrants more rapidly move homes and more rapidly alter their travel behavior than US-born residents. Recent Indian immigrants report seeking transit access at higher rates over time when choosing where to live, but Latin American immigrants do not. Although current residential locations for Latin American are highly transit accessible on the home end, their workplaces are dispersed and poorly served by transit. Latin American immigrants will likely comprise a substantially greater share of immigrants over time if current economic trends continue in the state. Recent immigrants also seem to be acquiring cars and getting licensed more quickly than previous immigrants.

There is significant income and occupational bifurcation of immigrant groups, which are correlated with spatial characteristics of homes and workplaces. Indian-born residents are of higher income and have workplaces well served with rail and bus, but choose homes somewhat farther away from transit. Latin American immigrants are of lower income and appear to have workplaces generally poorly served by transit but homes that have high transit accessibility. While serving dispersed workplaces of this large group of immigrants may not be practical, NJ TRANSIT might be able to play a role in subsidizing employer vanpools and in advocating for better regulation of vanpool services.

Alternative modes to transit pose a significant competitive challenge to the share of non-work trips made on transit. Non-work transit travel in the state appears to be dependent on the Latin-American-born market. Since non-work trips are a substantial majority of all travel for immigrants and US-born alike, and since Latin American immigrants use traditional and non-traditional forms of transit with some regularity, there is an opportunity here for NJ TRANSIT to better market its services to those groups. While the current generation of Latin American immigrants are possibly more comfortable now with public transit than in previous decades, there remain significant language barriers and evidence of discrimination by drivers. Overcoming these would require a targeted marketing effort by NJ TRANSIT. Such an effort could be critical in holding market share.

Transit-oriented development policies have been a recent focus of NJ TRANSIT. Such policies to allow significant residential and employment densification near transit, driven by the settlement patterns of immigrants, would allow for higher use of transit for

commuting over time, and possibly also affect non-work travel for immigrants from Latin America. Measures of density at the Public Use Microdata Area (PUMA) level and particularly at the workplace appear to be quantitatively related to commuting by transit and other non-auto modes, and both the focus groups and the household survey suggest that immigrants initially prioritize proximity to work and access to transit but that this tends to change over time. Clearly workplace access and transit access are not highly correlated with other factors that in subsequent moves become more important, such as the quality of children's schools and low crime in the neighborhood. Retaining immigrant ridership over time is dependent on these other factors, over which transit agencies unfortunately have little control.

INTRODUCTION

Immigration is the main driver of population growth in the United States, particularly during periods of economic expansion. Recent immigrants are more likely to be of working age, and to hold jobs, than the US-born population. They commute via public transit at a much higher rate than the rest of the population, even after being in the US for more than twenty years, and they drive substantially less for non-work purposes. They are also the primary users of a fast growing private transportation sector including intercity bus services, employment shuttles, and jitneys.

Immigration is dramatically changing the population of New Jersey. The state's population has grown about 3 percent since 2000, while ethnic diversification has increased even more. The state's White population declined 1 percent between 2000 and 2008, while the African-American population grew 3 percent, the Asian population grew 35 percent and other races grew by 12 percent during the period. Estimates are that between 2000 and 2005 all of the state's population growth was due to immigration; in the more recent period of economic decline, there has been a reduction in immigration.

At a national scale, immigrants have been spreading out from traditional gateways like Boston, Chicago, Jersey City, Newark, New York and San Francisco since the early 1990s.[1] The newer destinations are home to recent arrivals from Asia and Latin America, who are relatively poor compared with the US-born population, while older cohorts have poverty rates similar to the US-born population. In addition, continuous gateways, places that have served and continue to function as gateways such as Bergen-Passaic and Jersey City, tend to have a greater diversity of immigrant origins.[1] The recent economic downturn may be affecting these settlement patterns. News accounts indicate that immigrants are returning to the longstanding immigrant gateways such as California, Texas and the New York-New Jersey metropolitan division.[2] Waters and Jiménez suggest that the emergence of new immigrant gateway cities is contingent on the particular circumstances of the 1990s, having had much to do with immigration policies such as the Immigration Reform and Control Act of 1986 (IRCA); refugee resettlement programs run by the US government; the need for low-wage labor in production industries in the new receiving states (and the desire for a more compliant workforce than provided by low-wage American labor); and political and economic conditions pushing Mexican immigrants away from California.[3] Another explanation for Mexican immigration dispersal in particular is provided by network theory, which states that sustained immigration pushes up rents and drives down wages for immigrant/ethnic groups because those land and wage markets are essentially segmented and highly local. Increasing rents and decreasing wages in turn cause former migrants to leave and new immigrants to seek other entry points. This theory provides a simpler explanation for the dispersion of Mexican immigration and intra-US migration during this period, and Light and Von Scheven find fairly strong empirical evidence for it, reinforcing the commonsense notion that cities with relatively high wages for immigrant niche industries, and relatively low-cost housing, are the next likely emerging gateways.[4] This is a particularly important issue for transit services in New Jersey, as future immigrant

9

settlement may be impeded by traditionally high housing costs in many areas, and may be driven to lower cost areas primarily in the southern parts of the state.

The majority of New Jersey's foreign-born population migrated to the US between 1985 and 2000. The largest influx of foreign immigrants (266,000 persons or 22 percent) entered the US during the 1985-1989 period, followed by the 1995-2000 immigration cohort (228,000 or 18.8 percent) and the 1990-1994 cohort (215,000 or 17.8 percent). In 2000, approximately 15 percent of the state's residents were foreign-born immigrants. Between 1990 to 2000, the total number of foreign-born persons living in New Jersey increased 25 percent from 967,000 to 1,208,000. In 2000, only California, New York, Florida and Texas had more foreign-born residents than New Jersey. The leading countries of origin for legal immigrants admitted to New Jersey during the period 1997-1999 were India (12,572), the Dominican Republic (8,100), Peru (5,774), Colombia (5,699) and the Philippines (5,407).[5] Housing production in some parts of the state is partially driven by new immigrants, who are in turn likely attracted by employment opportunities and perhaps even by transit access. Since 2000, 17,000 new housing units have been constructed in the cities of Newark, Jersey City and Elizabeth, near substantial job growth along the Hudson River waterfront and in Manhattan. Essex and Hudson counties accounted for 13 percent of statewide growth between 2000 and 2005. Significant growth has also occurred in southern New Jersey counties, which have the highest growth rate in the state, at 7 percent per year, accounting for one-third of statewide population growth. With a growth rate of 8.6 percent, the Atlantic City region has the highest growth rate, mostly in suburban Atlantic County and parts of Cape May County.

These changes in housing location and demography appear to be increasing transit ridership. The transit usage of recent immigrants is higher than that of the US-born population; NJ TRANSIT ridership grew 13 percent between 2000 and 2007 while the number of households increased by only 6 percent over that period. Ridership from Bergen and Passaic counties has increased six to eight times faster than household growth; New York-bound interstate bus ridership along the Route 9 corridor has grown two to three times faster than household growth; and ridership on southern New Jersey commuter bus routes and Philadelphia-bound interstate bus routes from Gloucester County has also grown faster than the population. Ridership from the Princeton Junction and Metropark rail stations on the Northeast Corridor rail line has grown at rates that exceed housing growth. On the Northeast Corridor rail line, Asian travelers now comprise 25 percent of all riders, up from 17 percent only eight years earlier.

These changes require NJ TRANSIT to understand how transit use patterns vary within the immigrant population and whether current transit ridership trends will continue into the future. Immigrants may use transit more because they have lower incomes, less experience driving, or other characteristics. Recent immigrants to the US may increase their income and driving experience over time, and the composition of the new immigrant pool may also change over time. Investigating the extent of travel differences between immigrants and US-born residents can provide a better understanding of how to maintain and built on recent ridership growth.

Research Plan

We combined quantitative and qualitative research methods to describe the characteristics of immigrant populations in New Jersey; identify residential concentrations of these populations, describe non-work and commute travel of select immigrant groups in detail; investigate the demographic, cultural, and spatial causes of higher transit uses among these groups, and why that difference declines over time; and explore how immigrant travel in the future is likely to affect transit ridership in the state.

The research included:

- A review of literature on immigration and its effects on transit ridership.
- An analysis of Census data from the Public Use Microdata Series (PUMS) from 1980 to 2008.
- A series of focus groups to help design the survey, explore residential location choices, and discuss immigrant experiences and cultures that may help to explain variation in travel behavior among various subpopulations.
- A survey of two targeted immigrant populations and a control group to document and analyze immigrant travel choices.

We tried to address two main questions:

- What factors contribute to higher transit use among the foreign-born population, and their immediate descendants, in comparison to US-born residents?
- Why does transit use change with each generation of immigrants?

Immigrants may use transit because they are accustomed to using transit in their home countries; transit use may be a cultural norm. Or differences in transit use may be attributed to differences in job locations, occupations, and home locations between the two groups. This implies several related research questions. Are immigrant skill sets, occupational categories, and education levels very different from the US-born population, leading to differing job locations more or less compatible with transit commuting? Are immigrants more willing to tolerate long commutes in exchange for higher-income jobs in Manhattan and other transit centers? Do the home locations of immigrants have better transit access than those of the US-born population? A third possibility is that differences in transit use may be because immigrants are younger and more tolerant of physically demanding commutes on public transit; or because immigrants have extended family networks and grandparent care of children, allowing more time to be spent on commuting.

LITERATURE REVIEW

Exploring the factors that affect transit ridership has been a scholarly pursuit for decades. A recent comprehensive review and analysis of the ridership literature by Taylor and Fink inventories the myriad of past studies that explore what the authors describe as the "external and internal influences on transit ridership."[6] The former category includes things generally outside the control of transit operators (such as socio-economic trends, spatial and land use factors, and public finance factors) while the latter includes influences that are largely controlled by transit managers (such as pricing, service quantity, and service quality). External influences, like socioeconomic trends, are often substantially more important than internal influences.

A number of studies have explored the influence of race, ethnicity and immigrant status on household travel. Many have found significant mode share differences among different racial and ethnic groups.[7-13] Hispanics are three to five times more likely to use transit than Whites, while African-Americans are six to almost ten times more likely and other races are about three times more likely to choose transit.[9]

Just as ethnic minorities use transit at a rate higher than Whites, so the foreign-born ride transit, walk and bicycle at a much higher rate than the US-born population. Differences are amplified among recent immigrants, and patterns differ by different country of origin groups. After the first five years in the US, transit use across all immigrant groups declines, albeit at varying rates. In California, Asian immigrants rapidly start using automobiles, while Hispanic immigrants remain more likely to use transit than the US-born population even after 20 years in the US.[9] Much of the difference appears to be explained by lower incomes and residential locations near transit. But even when controlling for these and other factors, some variation remains. Some researchers have suggested that ethnic and cultural differences may account for these persistent differences.

Two theoretical models to explain varying transit use patterns among immigrant subpopulations provide differing predictions about the spatial and economic mobility of immigrants and their travel behavior. The "spatial assimilation" model theorizes that recent immigrants are likely to live in lower income areas, usually in central cities with good transit accessibility, until their economic status improves. As their incomes rise, immigrants, like US-born adults, are increasingly likely to purchase and rely on personal automobiles for their mobility. In addition, they are more likely to relocate to lower density suburban neighborhoods with lower levels of transit service. The "ethnic resources" model theorizes that ethnic enclaves enhance the economic outcomes of immigrants through local and ethnic-specific economic and cultural networks, giving immigrants an incentive to remain in ethnic neighborhoods long after they might have an economic means to relocate. Many immigrant neighborhoods are located in higher density, transit-accessible, central city neighborhoods, and immigrants who remain there may be more likely than their US-born counterparts to rely on public transit even as their incomes rise. In addition, the ethnic resources model posits that the larger

household sizes, differing gender roles, and legal barriers to obtaining a driver's license among immigrants may contribute to lower levels of automobile ownership and usage and therefore higher transit use.

Myers carried out the first study identifying the lower use of autos and higher use of transit by foreign-born residents of the US, and showing that this difference diminished with time spent in the US (Myers 1997).[11] Recent immigration has resulted in changing rider demographics on transit systems. In California, where most of the research on immigrant travel has been conducted, the foreign-born now account for almost half of all transit passengers and recent growth in transit ridership is almost entirely attributable to them.[14] Building on the work of Myers, several authors have used updated data or additional sources to confirm that recent foreign-born use transit at a higher rate than US-born populations.[7, 8, 15] Research has relied on socio-demographic characteristics, country of origin, income, and auto ownership and licensing as explanatory variables to examine cross-sectional Census data to indirectly understand changes in the behavior of immigrant cohorts.

Although we know that recent immigrants are more likely to use transit than settled immigrants or US-born populations, there are several caveats. Evidence from the 2001 National Household Travel Survey (NHTS) found that among foreign-born Latino populations, public transit use did not exhibit a steady decreasing trend as a function of time in the US.[12] Instead, the authors found a bi-modal distribution, with higher levels of public transit use for recent arrivals and for persons who have been in the US more than 15 years, indicating differences among immigrant cohorts. It is difficult to disentangle the degree to which immigrants change their own travel behavior from changes in immigrant cohorts over time and changes in the contexts of receiving regions.

Research that attempts to examine the differences among cohorts has produced different results depending on the context. Evidence from Canada suggests that recent immigrant cohorts have higher rates of transit use those who arrived earlier.[16] In contrast, evidence from California using data from the 1980, 1990 and 2000 US Census indicates recent cohorts are less likely to use transit than earlier arrivals. The different results may be a reflection of the different context of Canadian cities and California and thus do call for further research in different contexts. While both studies used multiple surveys from different times, they were not able to link the files together to follow the changing behavioral of individuals into a longitudinal panel surveys.

Researchers have attempted to address the role that the built environment may play in the travel behavior of the foreign-born. Evidence from the 1995 Nationwide Personal Transportation Survey (NPTS) suggests that not only do neighborhood-level built environment characteristics affect travel choices, but that these differences vary across racial and ethnic groups.[17] For example, living in a neighborhood with a higher proportion of foreign-born persons was associated with fewer miles traveled for White and Black respondents, while it was associated with increased travel for Asian and

13

Hispanic residents.[17] Alternatively, researchers have attempted to analyze mode choice and built environment characteristics at larger aggregation (at the level of Public Use Microdata Areas which are made up of areas of 100,000 persons or more) using a latent class analysis. This method uses models of statistical similarity to segment the population into clusters based on an assumption that there is a latent variable, i.e. not directly measurable, but which can be indirectly measured from other sources. While research using latent class analysis finds that foreign-born status is an important determinant in segmenting the population, the sample is chosen in a manner that as the authors point out results in one or two very different places driving the results.[18] More importantly, latent constructs are not necessary when direct measurement is possible, as is the case with travel.

Research on transit use by immigrants largely shows that the foreign-born use transit at a higher rate than US-born persons but these differences diminish after the person has been in the US for several years. The same is true for other modes of travel, single occupancy vehicle (SOV), carpooling and non-motorized travel. After several years in the US, differences in mode choice diminish.[19] In focus group research, many immigrants who did not own cars cited concerns about operating costs (especially fuel) and fear of being pulled over as reasons for not owning cars.[20] Additionally, this may be due to the difficulty accessing mainstream credit markets to purchase cars, increased accessibility due to living in ethnic enclaves, and learned preferences or habits prior to migration.[21]

Data and Methods in Existing Literature

Most literature on the travel patterns of immigrants is recent, and the field is still in an early stage of development. There have been only a few attempts to explore the effects on travel of occupational choices and industrial concentrations of immigrants, or to control for the fact that immigrants' residential location choices are likely based in part on how they prefer and expect to travel on a daily basis. The importance of occupation and residential location are discussed in the following sections of this report.

Another problem with existing studies is that the majority of studies are unable to capture non-work travel largely because of the reliance on publicly available data sets. Immigrants spend a greater percentage of their travel on the work commute than the US-born population; nevertheless, the great majority of immigrant travel is for non-work purposes.[22] The US Census does not include non-work travel information and the only readily available data including non-work travel come from the National Household Transportation Survey of 2001.

Existing data do not enable household-level analysis along with the spatial specificity necessary to fully explore how travel patterns are affected by transit access and the home and work built environment. The three major sources of disaggregate microdata— the Decennial Census Public-Use Microdata Samples (PUMS), the American Community Survey ACS PUMS and the 2001 National Transportation Household

Survey—all release data for large geographic aggregations. Neighborhood or block-level information about the accessibility to transportation facilities or about residential and job density cannot be included in analysis. While microdata are preferred, since it allows modeling of individual travel behavior, aggregated data is available at smaller spatial units. Analysts can use aggregated data from the 2000 Decennial Census and prior years at small spatial units or ACS data (2005 through 2007 pooled data) at spatial units of 20,000 persons though the ACS data do not provide complete coverage. Regional travel diary datasets enable disaggregate analysis with geographical specificity but these rarely include information about nativity or even race/ethnicity and have not been used in any studies of immigrant travel behavior.

Studies of immigrant travel have also largely ignored the growing role of private transit services. Anecdotal evidence suggests that such services are growing and are important in immigrant communities not only for transportation but also as business opportunities, employment sources, and links between ethnic communities across city, state and national borders.[23, 24] The New York based curbside intercity buses, commonly known as the Chinatown Buses, are the most well-known component of the private transit industry. According to recent estimates, over 2,500 bus trips per week leave New York to Washington, Philadelphia, Boston and other cities, picking up and dropping off passengers at informal street corner stops instead of bus terminals.[25] Other sectors in the private transit industry include local transit oriented and niche services such as airport and casino buses. This industry includes commuter van services in New Jersey that transport 30,000 primarily Latino commuters daily to New York.[26] Thousands of jitneys ("dollar vans") provide connections between urban enclaves and connections to transit for New York's Chinese, Jamaican and West Indian populations in Brooklyn and Queens, New York.[27, 28] Despite the many examples of private transit services serving urban enclaves, determining the size of this industry is difficult due to different local regulations and the frequency with which companies open and go out of business.[29] Evidence from the camioneta industry in the Southwest, which primarily serves Latino immigrants, finds that most users reported choosing camionetas because they were faster, they felt more comfortable with Spanish-speaking drivers, and (contrary to media accounts) that vehicles were safe and reliable.[30] But the literature on the role of private transit in immigrant communities is sparse and offers few clues about the potential role that these services play in establishing and developing immigrant communities, accessing employment, or providing jobs.

The literature on immigrant travel patterns has rarely addressed the role of discrimination. Studies of persons with limited English proficiency in New Jersey reported that many of the participants experienced poor treatment from drivers and other passengers on public transit buses.[31] Interviews with immigrants in San Diego found fear of immigration authorities while waiting at transit stops.[32] Private transit services provided by co-ethnics are found to be more welcoming with less concern about inspection by immigration officials.[30, 31] Undocumented workers, and others without a drivers' license, drive less because of fears of being pulled over by the police and having the vehicle impounded.[20, 21] In addition, discrimination and other difficulties make it difficult for immigrants to obtain financing to purchase vehicles.[21] Immigrants

may also face less obvious forms of discrimination through their exclusion from planning processes. Finally, findings from focus groups indicated that participants feel that transit agencies are not planning services with their needs in mind.[31] For example, transit services do not connect many co-ethnic communities (e.g. Arabic speakers in Jersey City and Paterson).

Settlement Patterns, Social Networks and Occupational Niches

The concentration of residence, work and retail opportunities that are often characteristic of ethnic enclaves implies high levels of accessibility for residents. Concentrations associated with enclaves imply possibilities for walking or biking to destination due to the proximity. Ethnic enclaves combined with niche immigrant occupations may give rise to opportunities for transit services or carpooling among enclave residents. There is evidence that immigrants soon leave ethnic enclaves for auto-oriented suburbs, the so-called "spatial assimilation" theory. The overwhelming evidence from transportation studies is that immigrants initially travel by carpool, transit, bike, and on foot when they arrive in the US but that over time their travel behavior is more similar to their US-born counterparts. A causal connection, however, between the theory of spatial assimilation and travel behavior has not been made. While the spatial assimilation model is rhetorically appealing, recent research has contradicted several of its tenets.

Early quantitative studies of spatial assimilation found empirical validation of the model, but more recent research has shown that there is variation in settlement patterns among immigrants.[33-36] Much of this work is based on an idea that immigrants' first destination is an urban neighborhood, yet recent research argues that immigrants are just as likely to make the first home in the suburbs as in a city.[37] An alternative model of immigrant settlement patterns is demonstrated by the emergence of "ethnoburbs," suburban immigrant enclaves.[38] Residents of the archetypical ethnoburb, the San Gabriel Valley in southern California, live and work in the same community rather than commuting long distances. Light explains the development of ethnoburbs as creations of entrepreneurs from within the ethnic community, organizing investments in land development via social networks in the US and abroad in order to finance, advertise, and sell these new ethnic communities.[39]

Residential and nonresidential concentrations both enable particular transportation choices, and are enabled by the available transportation modes. The potential size of cities, and firm clusters, is increased by lower cost travel.[40] This principle applies to the immigrant enclave; Flushing, Queens, an outer borough neighborhood of New York City, which may have been enabled to grow in part because its Chinese residents can easily and frequently access Manhattan's mixed-use concentrations of Chinese residents and businesses. Auto, carpools and carsharing arrangements, and also cheap, flexible motorized alternatives to transit such as jitneys, vans and intercity buses, may all enable enclave formation. In turn, those concentrations seem likely to encourage local alternatives to the auto, if parking is unregulated and street standards are not too auto-focused, since arguably the single most important determinant of mode

choices is how expensive in time and money terms it is to drive.[41] The geographic specificity of most data sources is poor and most research has simply focused on suburbanization as a sign of spatial assimilation. But the limited evidence using more spatially detailed data, from lower-income immigrants in Los Angeles, indicates that there is a substantial portion of employment near homes that typifies residential immigrant concentrations there.[42] Those findings may not apply for professional and entrepreneurial immigrants so much as for labor and refugee immigrants.

In addition to differences across immigrant groups, there are also differences across "enclaves." Enclaves are concentrations of immigrants in neighborhoods along with immigrant-serving retail and service establishments, as well as (in some classic cases) primary industries employing mostly immigrants. Analyzing the impact of enclaves is difficult because ethnic enclaves are an example of what Markusen has labeled a "fuzzy concept," an abstract entity that is difficult to operationalize.[43, 44] There are several methods for identifying enclaves, many of which are arbitrary. Yet, tests of the different definitions of enclave all reveal that enclaves are associated with a small but significant increase in carpooling.[43] Retail clusters, which are often excluded from studies of ethnic enclaves, may be an important aspect affecting travel behavior of immigrants. We know that immigrants are willing to travel to less convenient stores largely in order to access co-ethnic grocery stores.[45] While the stereotypical "western idea of grocery shopping which is largely functional and is usually done by a single family member in an efficient manner," the perception of grocery shopping as described by Chinese immigrants is a practice that is strongly linked to reinforcing and reshaping one's cultural identity.[45] Their findings indicate that for the Chinese immigrant population, accessibility is not as important as other variables (such as ethnic identity, age, income, and education) in predicting shopping trips. This is in sharp contrast with traditional economic geography in which accessibility and store attributes are paramount.

With the exception of the evidence from retail ethnic clusters, research on ethnic enclaves has not provided much of a theory for how and why transportation is affected by enclaves. There are enclaves of different types; bifurcation mostly by income/class of the immigrant, but there are also enclaves which primarily receive immigrants directly from the home country and those that may be the second or third home of an immigrant who has built up assets and income. For example, current theories of enclaves and travel do not account for residents that feel trapped in a cycle of limited transportation options, limited choices about residential and limited job options. Residents who feel that "because they shared cars, they also had to share work places," are absent from most theoretical formulations of ethnic enclaves.[46] When recently arrived immigrants make choices about where to live, they may weigh factors differently once they have lived in the US several years. Initial choices may be made based primarily on where they have lined up a job or where they know of job opportunities. In contrast, later decisions may be jointly made with a spouse or other household members, based on school districts, taxes or neighborhood amenities. In this way, decision making may not be all that different from how US-born persons make decisions when they make a long-distance household move—initially based on distance to a job and later on based on other factors.

17

Social Networks

Just as settlement patterns describe the spatial relationships among immigrants, social network theories are used to describe the social relations among immigrants. Typically, it is argued that social networks "based on kinship and friendship allows for migrants to draw on obligations implicit in these relationships to obtain assistances—monetary as well as socio-psychological—and information about jobs at the place of destination."[47] Social networks may play a role in three areas of transportation mode choice: forming carpools and carsharing, learning about the transit systems, and in the provision of transit services. Theories of social networks implicitly undergird explanations for why ethnic enclaves facilitate carpooling and carsharing. It is not only the spatial concentration of co-ethnics that lead to carpools but the ability to draw on the resources of others. Participants in focus groups have "described an informal network of communication that facilities carpool organization and eases the process of learning transit systems."[32] Additionally, social networks facilitate borrowing cars and learning to drive.[20] The role of social networks can also be seen in the development of Community-Based Transportation (CBT), which Valenzuela et al describe as arising "when residents—those who share a place or social network—recognize an unmet travel need and organize, either as volunteers or entrepreneurs, [and] fill it."[30]

Occupation Segmentation

In addition to residential location, niche employment in the labor market may be the defining characteristic of the immigrant labor experience.[42] Occupational niches are facilitated by social networks when immigrants leverage social ties for access to job opportunities.[48]

Niche employment may affect transportation modes in several ways. Large agglomerations can create markets for shared transportation modes of various kinds, so occupations in such industries are more likely to benefit from shared rides. Large employment centers can also give rise to a market for housing nearby that caters to the needs of the workers.

Several occupational niches have developed within transportation occupations. According to Bernhardt, McGrath and DeFilippis, the taxi and limousine industry in New York City employs approximately 65,000 drivers, about 60 percent of whom are immigrants.[49] Sassen's 1988 analysis of the informal economy in New York City found that jitney and "gypsy cab" drivers have become an important employment sector in the informal economy, especially for immigrants. In addition, bicycle delivery and courier services, especially in New York, informally employ immigrants and are rarely counted in surveys. As Sassen notes, foreign-born are often employed informally in these areas, thus they likely do not show up in public data sets.[50]

Private transit services represent an interesting focal point for studying several related issues. Jitney vans and mini-buses connect spatially disparate ethnic enclaves and employment agglomerations and as a result, private transit helps to reinforce and

18

strengthen them. The Chinese and Latin American-oriented bus industries are two examples of understudied private transportation services in which immigrants play an important role as entrepreneurs, employees and passengers.

Due to their social position, immigrants' social networks are sometime homogenous, lacking cross-class connections and thus limiting their jobs. These characteristics of immigrant social networks can be important factors in reinforcing employment niches.[42] Immigrant social networks provide important channels for information about job opportunities but the nature of social networks, manifested by strong ties among a smaller group, mean that job opportunities are limited.[42] In her study of the spatial manifestation of labor niches, such as the concentration of Salvadoran and Guatemalan women working as house cleaners in the Los Angeles metropolitan area, Parks finds that immigrant employment in occupational niches goes a long way to explain commute times. Parks argues that understanding immigrant travel "lies not only in what these women do, however, but where they do it".[42]

Several studies cited participants in interviews and focus groups arguing that immigrant-employing occupations such as construction and house-cleaning require cars to get to the dispersed employment sites and to carry tools.[20, 32, 46, 47] Transportation was vital for these immigrants, especially for the women who worked in more than one house. For instance, Lety R. purchased a used car for $1,500 with money that she had been saving for one year plus a loan from her sister. She said it was critical for her to own a car because she could get more houses to clean that way, and also she said she wanted to be able to lend it to her sister and brother-in-law if they ever needed it.[47]

Summary

There are several possible explanations for higher transit use by immigrants. First, immigrants may buy cars as soon as they can afford them—for example, when their income has increased enough both to afford purchasing a car and to send remittances to their families still living abroad. Second, the foreign-born may initially have higher ridership because they live in inner city areas with good transit access, but they may move to the suburbs over time where transit access is poor. Third, cultural differences in their countries of origin may influence their initial behavior in the US, but they may culturally adapt to the expectation of auto ownership and use. Fourth, immigrants may initially seek jobs in industries that tend to be accessible via transit or to be near low-cost housing that enables walking or biking, while moving to other industries and occupations over time.

SECONDARY DATA ANALYSIS

This section of the report presents an analysis of Census data on commuting. The first section describes immigration trends and settlement patterns broadly. This larger story of US immigration sets the context for next section, our primary focus, which is a summary of the characteristics of the foreign-born population in New Jersey. This includes a brief overview of the changes in the major sending countries for the foreign-born population, an analysis of settlement patterns in New Jersey, ethnic enclaves, areas of growth and an overview of transportation and occupational patterns of the foreign-born in New Jersey. The section concludes with a regression analysis of commute mode choice.

Immigration Trends, Past and Present

This first section lays out the basics of immigration past and present in the US. We discuss immigrant gateways and demographic trends among immigrants, forecasts for future immigration trends in the US, discuss the question of documented and undocumented migrants, and uncertainties having to do with national and global economic trends and Federal policies on immigration.

Immigration-Fueled Population Growth in Urban Areas and the Nation

People born outside the US made up almost 13 percent of the US population in 2007, and the foreign-born population has been increasing at a much higher rate than the US-born (Table 2). The net increase in the foreign-born population between 1990 and 2000 was 11.3 million people, an increase of 37 percent, while the US-born population increased by 21.3 million, an increase of just 8.5 percent. From 2000 to 2007 the contrast is even starker, although the annualized population growth rate, so far, is lower. Of the over 20 million additional people added in that seven-year period, 7 million were immigrants, an increase of 18 percent, and 13.2 million were US-born, an increase of just 4.4 percent.

Table 2. Foreign-born persons as a share of US urban and rural population

Year	Total Population			Urban Population			Rural Population		
	All	Foreign-Born		All	Foreign-Born		All	Foreign-Born	
	Total	Number	Percent	Total	Number	Percent	Total	Number	Percent
2007	301,621,159	38,059,694	12.6%	232,632,732	35,213,533	15.1%	68,988,427	2,846,161	4.1%
2000	281,421,906	31,107,889	11.1%	222,358,309	29,606,217	13.3%	59,063,597	1,501,672	2.5%
1990	248,709,873	19,767,316	7.9%	187,051,543	18,504,646	9.9%	61,658,330	1,262,670	2.0%
1980	226,545,805	14,079,906	6.2%	167,054,638	12,914,965	7.7%	59,491,167	1,164,941	2.0%
1970	203,210,158	9,619,302	4.7%	149,332,119	8,720,327	5.8%	53,878,039	898,975	1.7%
1960	179,325,671	9,738,143	5.4%	125,283,783	8,510,152	6.8%	54,041,888	1,227,991	2.3%

Source: US Census, American Community Survey

As a result, new immigrants (net of mortality) accounted for more than a third of population growth between 1990 and 2007. In urban areas, 15.1 percent of the population was foreign born and 37 percent of urban growth after 1990 was due to immigrants. Even more striking, from 2000 to 2007, 55 percent of growth in urban areas was attributable to immigration, and the foreign-born population grew seven times as fast as the US-born.

The stark contrast here is not because immigration has increased in absolute terms; indeed, the per-year increase in the foreign-born population was 5 percent lower over this period of time than over the previous ten-year period, and 20 percent lower in urban areas. Instead the foreign-born share of growth has increased because of a substantial decline in the US birthrate.[51, 52]

Immigrants drive population growth in the US, and are expected to continue to do so. One recent analysis based on Census data, recent immigration and population trends, and accepted projection methods finds that the US will grow to a population of 438 million in 2050, from a current population of about 300 million.[52] The contribution of immigrants to the population is higher than in the immediate past, 47 percent of this growth is expected to be from new immigrants arriving after 2005—82 percent of population growth if their children and grandchildren are included.

The net growth rates in cities with high immigration are substantially higher than growth rates in places without it. In the best-known continuous and post-World War II gateways, such as New York, Los Angeles and Miami, the absolute numbers of immigrants remain very high, but population growth rates are largely dependent on immigration. In emerging gateways, the rate of immigrant population growth is much higher, but there is also substantial population growth from the US-born, which may be from both internal migration and higher fertility.[1] In all such cities immigrants truly make the difference in growth and are likely accounting for the peak travel levels that transportation planners are particularly focused on.

Documented and Undocumented Immigrants

The extent of the undocumented population is a concern for the accuracy of estimates such as the above. The undocumented are less likely to participate in the Census, and even less likely to participate in other surveys that do not have alternatives to telephone participation. Despite the media attention given to border enforcement, 45 percent of undocumented residents in the US are actually "overstayers," persons who legally entered the US but stayed beyond the time permitted by their visas.[53]

Estimates of the undocumented population vary and are generally based on comparing legal immigration to the number of foreign-born residents in the Current Population Survey. Clark and Zimmerman estimated that as of 1992 about 16 percent of foreign-born in the US were undocumented (63).[54] The INS estimated that there were 7 million undocumented aliens in the US in 2002.[55] The most recent research on the size and

extent of the undocumented population comes to the conclusion that there were almost 11 million undocumented residents in the US in 2004, making up 29 percent of the foreign-born population of the US.[56] Most are from Mexico (57 percent) or other Latin American countries (24 percent), and like all immigrants, a growing number are living outside the eight top immigration states (39 percent of all undocumented migrants).

Immigration in New Jersey

This section provides information on the foreign-born population in New Jersey focusing changes in the population, settlement patters and employment characteristics. As an important immigrant destination, New Jersey has a larger share of foreign-born than the national average (Table 3).

Table 3. 2005-2007 New Jersey residents by place of birth

	Population	Percent
Total population	8,669,815	100%
Native	6,958,291	80.3%
Born in United States	6,766,837	78.1%
Born in New Jersey	4,552,495	52.5%
Different state	2,214,342	25.5%
Born in Puerto Rico, US Island areas, or born abroad to American parent(s)	191,454	2.2%
Foreign-born	1,711,524	19.7%

Source: US Census, 2005-2007 American Community Survey 3-Year Estimate, New Jersey Only

While the US Census estimates 1.7 million foreign-born persons in New Jersey, Camarota argues that there are likely an additional 429,000 undocumented persons living in New Jersey as of 2007, accounting for 5 percent of the total population of the state.[57] Further, this would mean that almost one-in-four New Jersey residents are foreign-born.

Immigration Population Changes in New Jersey

The foreign-born population in New Jersey has changed significantly in the past fifty years reflecting the increasing amount of immigration from Asia and Latin America. Approximately 400,000 foreign-born persons, accounting for 24 percent of the foreign-born population, have arrived since 2000 and 15 percent have arrived within the past five-years (Figure 5).
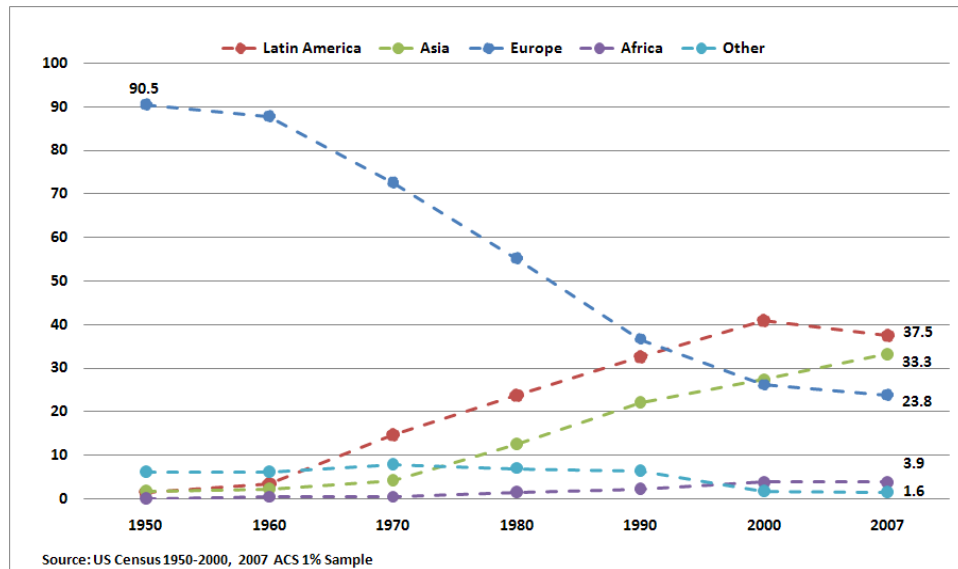
Figure 5. New Jersey: Share of foreign-born sending region overtime

The New Jersey foreign-born population has several important differences from the larger US foreign-born population. Mexico is the dominant sending country for the US as a whole, with approximately 30 percent of all immigrants coming from Mexico, while while the Mexican-born share of immigrants residing in New Jersey is only 5 percent (Figure 6). New Jersey has a significantly higher share of Indians, Koreans and Filipinos.
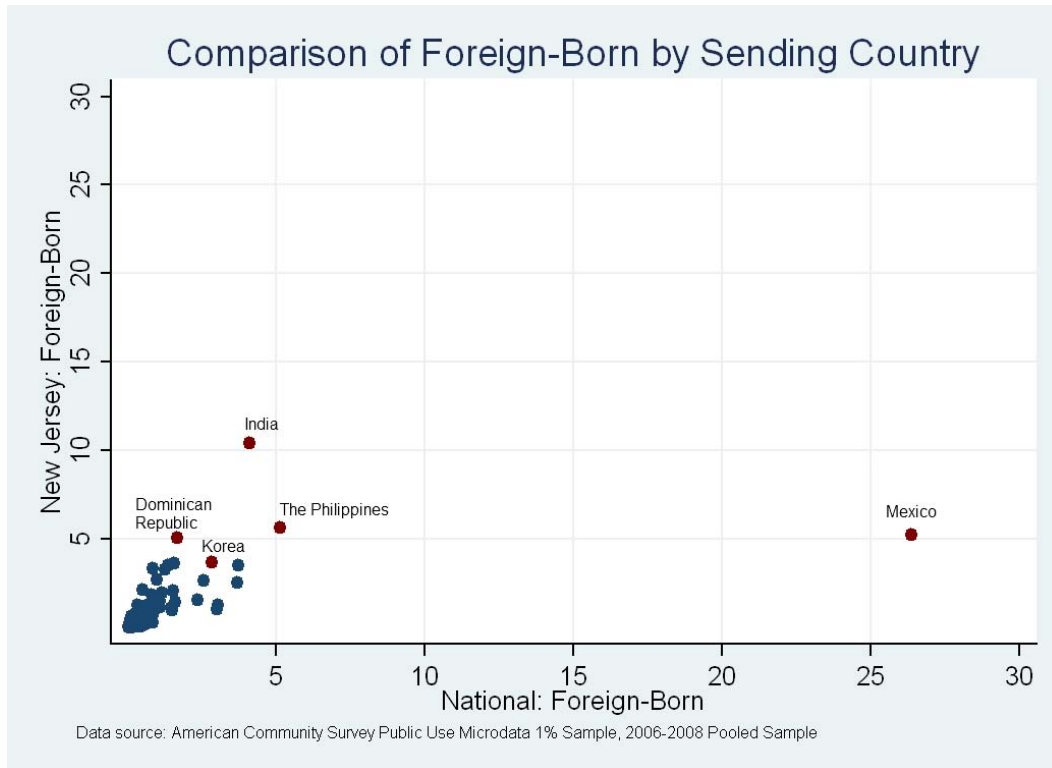
Figure 6. US and New Jersey comparison of foreign-born by sending country

Further, Mexican immigrants are only the third most populous immigrant group as defined by country of origin, although 35 percent of Mexican immigrants are recent immigrants (Table 4).

Table 4. New Jersey foreign-born: sending regions

	Total Foreign-Born			Foreign-Born in the US Zero to 5 Years			
	Sending Country	Percent	Cumulative Percent	Sending Country	Percent	Cumulative Percent	Percent in the US Zero to 5 Years
1	India	10.4%	10.4%	India	16.7%	16.7%	25%
2	Philippines	5.6%	16.0%	Mexico	10.4%	26.6%	32%
3	Mexico	5.2%	21.2%	Philippines	5.6%	32.2%	16%
4	Dominican Republic	5.0%	26.3%	Dominican Republic	4.6%	36.8%	15%
5	Korea	3.7%	29.9%	Ecuador	3.9%	40.7%	19%
6	Columbia	3.6%	33.5%	Korea	3.6%	44.3%	17%
7	Italy	3.5%	37.0%	Peru	3.1%	47.4%	19%
8	China	3.5%	40.5%	China	3.0%	50.5%	14%
9	Ecuador	3.3%	43.8%	Brazil	3.0%	53.4%	26%
10	Poland	3.2%	47.1%	Colombia	2.8%	56.2%	11%

Years in the US

Among immigrants from the top five sending countries, New Jersey residents born in India and Mexico are more likely to be recent arrivals to the US than persons born in the Philippines, the Dominican Republic and Korea. The graphs below (Figure 7) shows the distribution by years in the US for these immigrant groups and the left-sided skewing of the graphs for persons born in India and Mexico indicates the larger representation of recent arrivals. The differences among the sending countries are due to both changes in the flows of immigrants from sending regions and settlement patterns in the US. It is possible that the different distributions may be caused by New Jersey being a destination for immigrants arriving from India and Mexico while persons born in the Philippines, the Dominican Republic and Korea may first settle elsewhere and move to New Jersey after several years in the US.

Figure 7. Years in the US by country of origin

New Jersey Immigrant Settlement Patterns

The following figures and analysis give some insights into the spatial concentration of the foreign-born population in New Jersey. Immigrants make up a higher share of the population in the denser parts of the state (Figure 8).
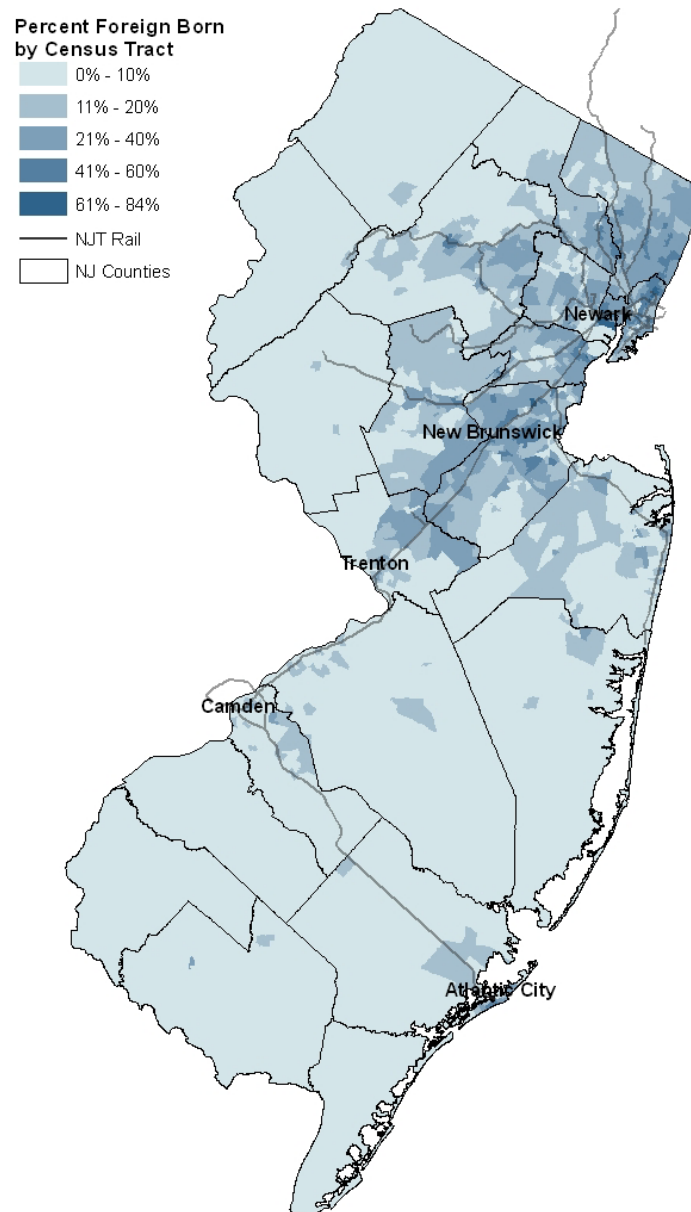
Figure 8. Percent foreign-born by census tract

Source: 2000 US Census, Census Tracts

In the past 20 years, the growth in immigration has led to increased number of foreign-born persons living throughout the state. Figure 9, below, illustrates the growth in foreign-born people living throughout between 1990, 2000 and 2008, showing that the numbers of foreign-born people have increased in both traditional immigrant receiving areas in North Jersey as well as in Central Jersey.
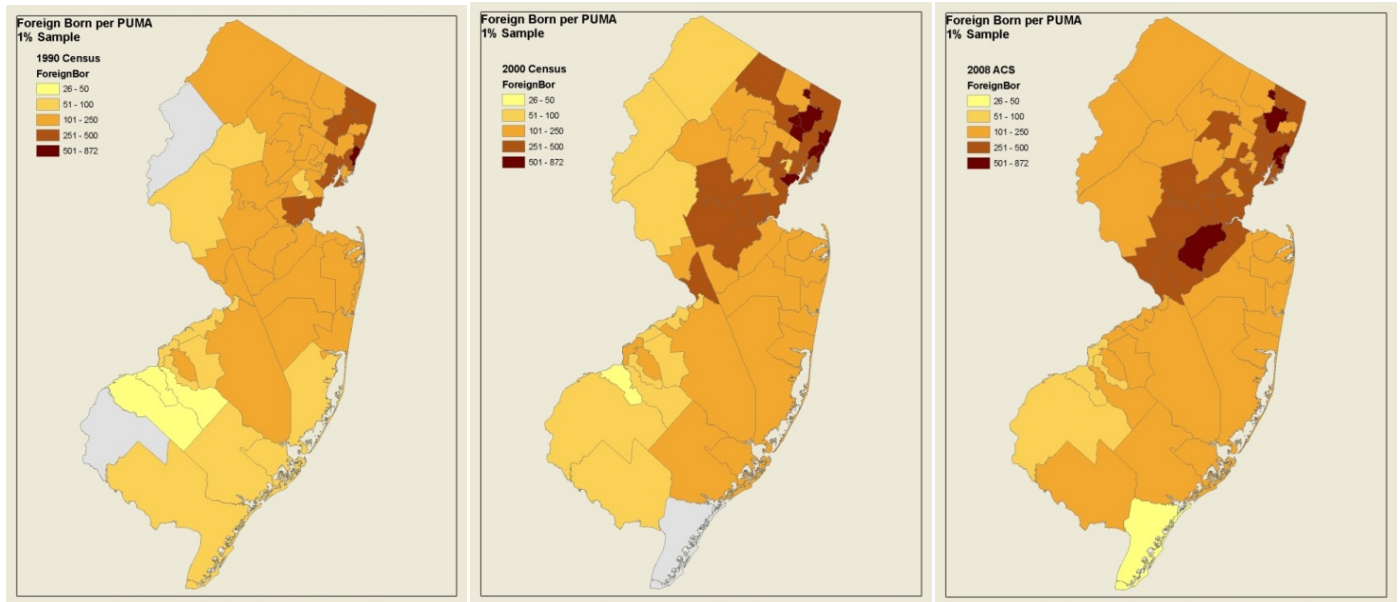
Figure 9. Foreign-Born per PUMA (1 in 100 sample) 1990–2000
(darker areas represent highest density)

Not only has the absolute number of immigrants increased throughout the state, but the foreign-born make up an increasing share of the population throughout the state. The maps below, Figure 10, show the percentage of foreign-born residents for the same years, with darker shading indicating higher shares of area population.
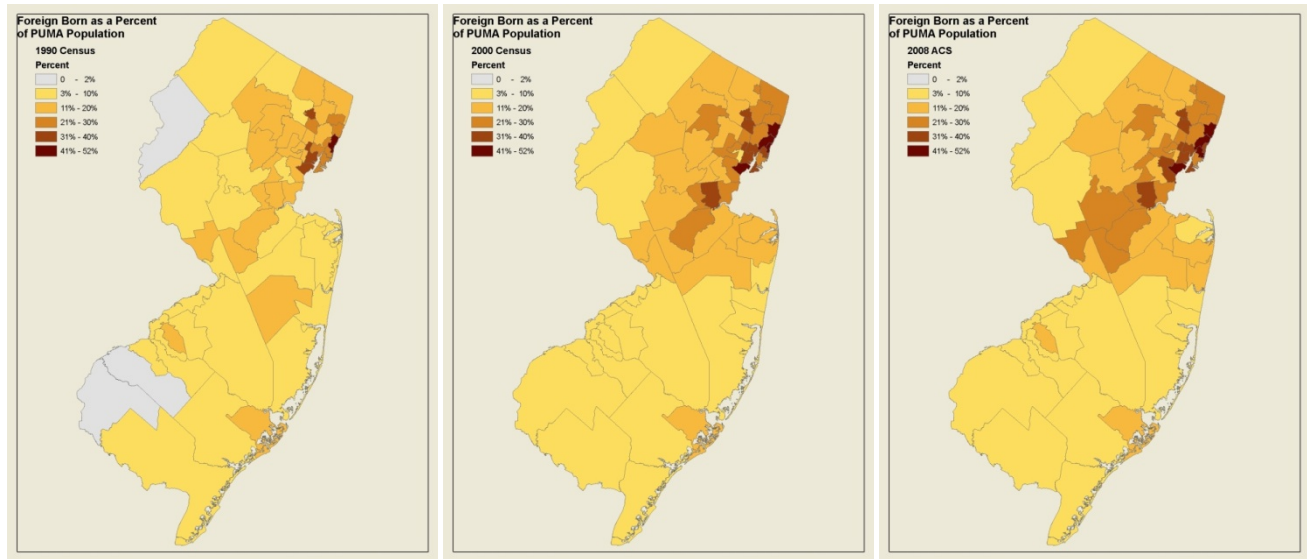
Figure 10. Foreign-Born as a percent of PUMA Population 1980-2008
(darker areas represent highest density)

The diffusion of immigrants in Central New Jersey is more than spatial assimilation. The maps below show the distribution state of recent immigrants (those who have been in the US for less than six years) throughout the state for 1990, 2000 and 2008. The maps (Figure 11) illustrate that in 1990 recent immigrants were concentrated in North Jersey but by 2008 the residential concentration had shifted to include Central Jersey.

28
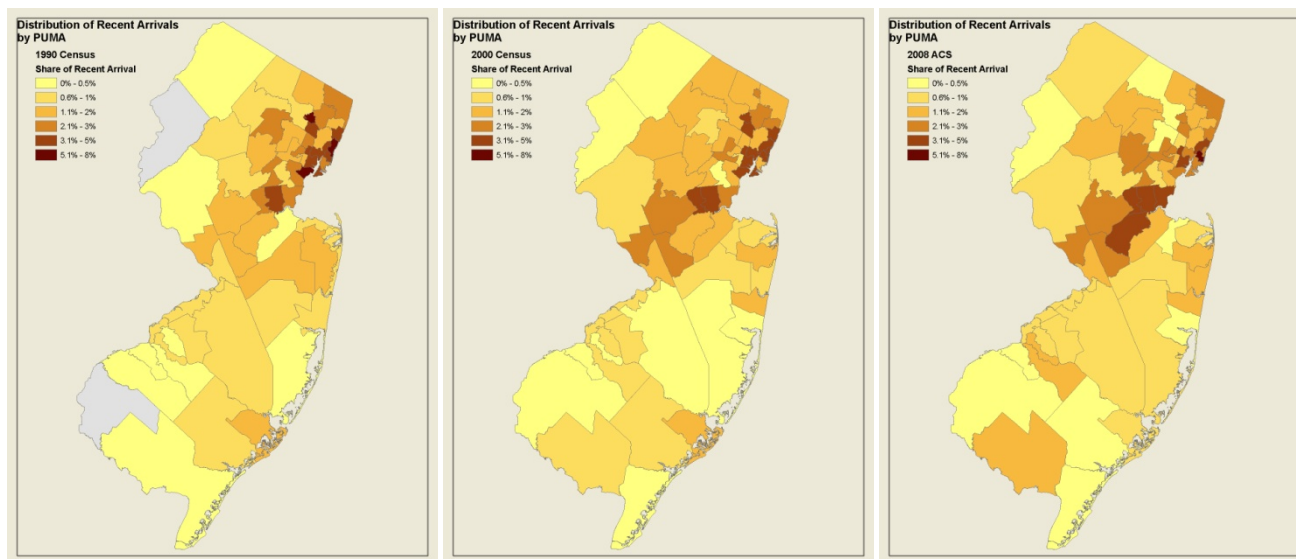
Figure 11. Distribution of Recent Arrivals by PUMA population 1990 – 2008
(darker areas represent highest density)

Segmenting the foreign-born population by sending country or region shows differences in settlement patterns among the groups. The following maps present the distribution of the population by PUMA for the five top countries of origin: India, the Philippines, the Dominican Republic, Korea and Mexico. These maps reveal different areas of concentration (Figure 12) for each sub-population. For example, the Korean foreign-born population is more heavily concentrated in northeast New Jersey than the other groups. Persons born in India are concentrated in central New Jersey.

29
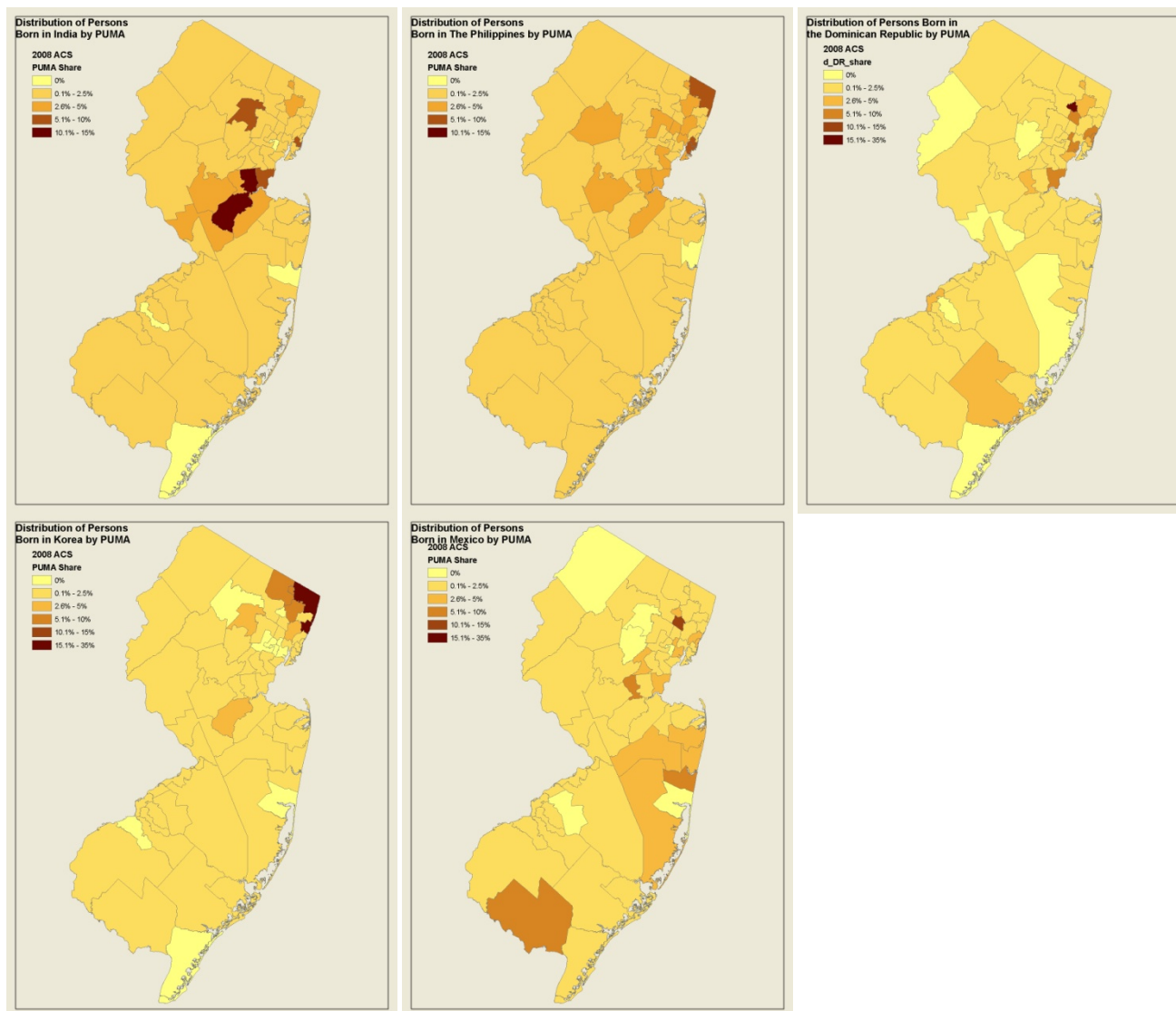
Figure 12. Spatial distribution of persons born in India, the Philippines, the Dominican Republic, Korea and Mexico by PUMA, 2008
(darker areas represent highest density)

Immigrant Employment

In New Jersey, the foreign-born are employed at a higher rate regardless of tenure. These data do not include information on the undocumented population. Including those not of working age gives a different take on the same data (Table 5); here we take into account employment of all US-born individuals, including those not of working age, and find that the foreign-born as a group are employed at a substantially higher rate than the US-born (59 versus 45 percent), though those arriving in 2002 and after have a very similar makeup to the US-born population. These differences are driven by the fact that few immigrants are very young or very old.

Table 5. NJ population: Employment status by nativity and arrival, 2005-2007

	US-Born		Foreign-Born		In the US 6+ Years		In the US Zero to Five Years		Total
	Number	Share	Number	Share	Number	Share	Number	Share	Number
Not Applicable	51,023	24%	2,721	6%	1,317	4%	1,404	18%	53,744
Employed	96,232	45%	26,627	59%	22,825	61%	3,802	50%	122,859
Unemployed	6,145	3%	1,610	4%	1,277	3%	333	4%	7,755
Not in labor force	58,544	28%	13,806	31%	11,735	32%	2,071	27%	72,350
Total	211,944		44,764		37,154		56,781		256,708

Source: US Census, 2005-2007 American Community Survey 1%
Sample 3-Year Pooled Data, New Jersey Only

The age distribution of the foreign-born of working age category is very different from than the US-born population, with few individuals of either young or old age (Figure 13, left side). The distribution of the recently arrived immigrant population is different, with a substantially higher percentage less than 16 years of age (Figure 13, right side).

Some emphasize the importance of the immigrant population in providing a larger working age population and decreasing the "dependency ratio," defined as the number of working age (between 16 and 65) divided by the number of those younger or older than working age (e.g., Myers 2007).[51] According to recent projections, the dependency ratio will increase between now and 2050, from 59 per 100 to 72 per 100, but it would increase even faster if it were not for immigration.[52]
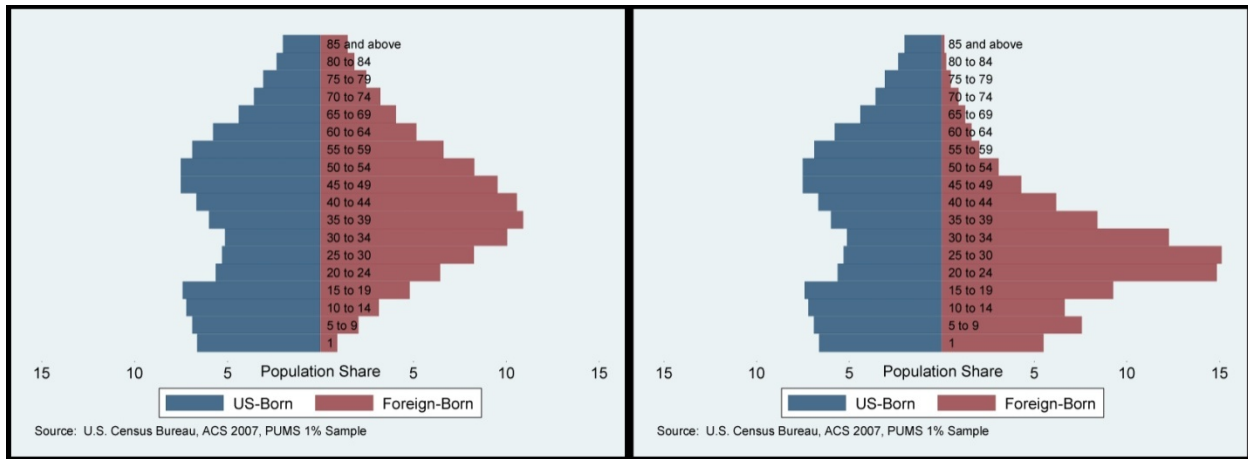
Figure 13. Age distribution: Foreign-born v. US-born (left) and foreign-born arriving after 2002 v. US-born (right)

Employment Location

The maps below illustrate the differences in employment location for US-born and foreign-born. The first map shows distribution of employment for US-born workers and the second map shows distribution of employment for foreign-born workers. The maps illustrate that foreign-born workers are concentrated in North and Central Jersey.
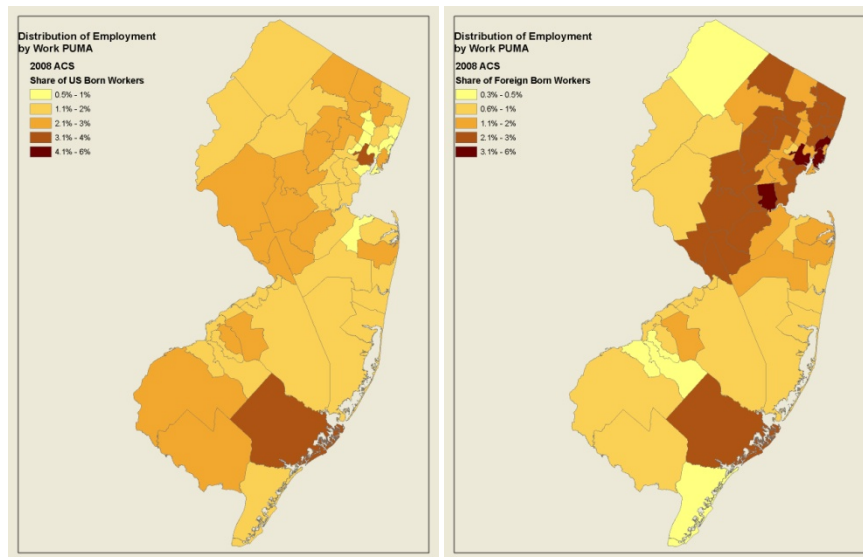
Figure 14. Spatial distribution of employment for US-born and foreign-born workers (darker areas represent highest density)

The distribution of jobs held by foreign-born workers has changed significantly in the past 20 years. The maps below show these changes from 1990 to 2008. These changes in job locations mirror the changes in residential location discussed above.

Workers are now less concentrated in Northern New Jersey and the share of workers throughout Central New Jersey has increased.
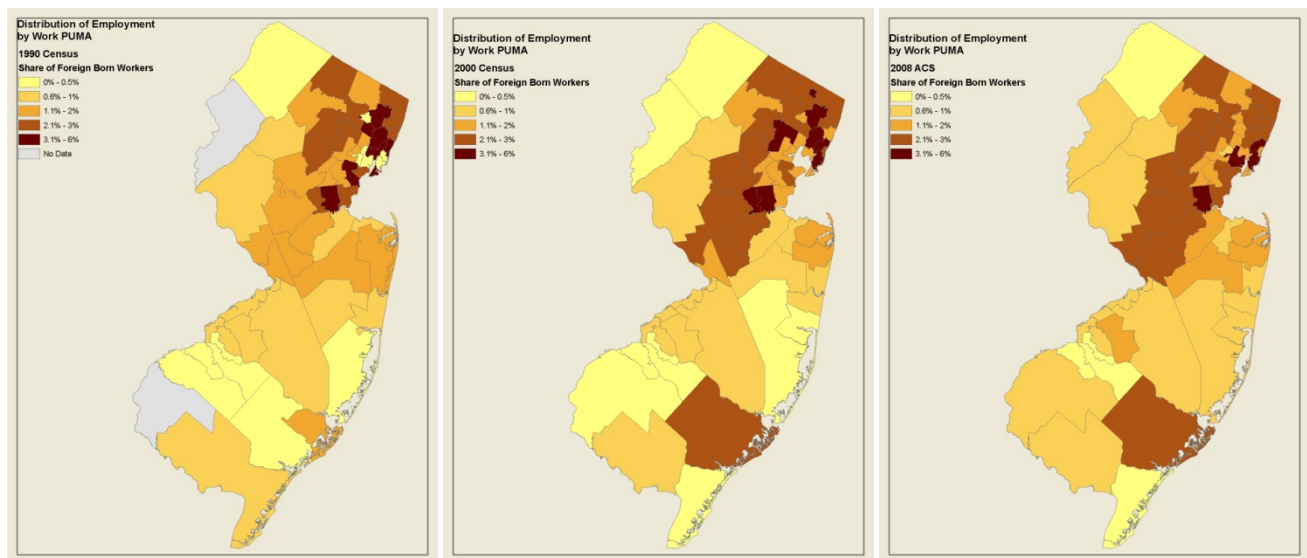
Figure 15. Changes in foreign-born employment locations, 1990 – 2008
(darker areas represent highest density)

The following maps show the spatial distribution of jobs for foreign-born persons living in New Jersey from the top five sending countries (Figure 16). The maps below illustrate variation in where these immigrant groups work with some groups more concentrated in certain areas and others more dispersed. In order, the maps below are workers born in India, the Philippines, the Dominican Republic, Mexico and Korea. Korean-born, Dominican-born and Indian-born workers appear to have the most concentrated work locations. Mexican-born, and to a lesser extent Philippines-born workers, exhibit less concentration. These maps are incomplete because they do not show the significant concentration of jobs held by New Jersey residents outside the state, particularly in New York City.
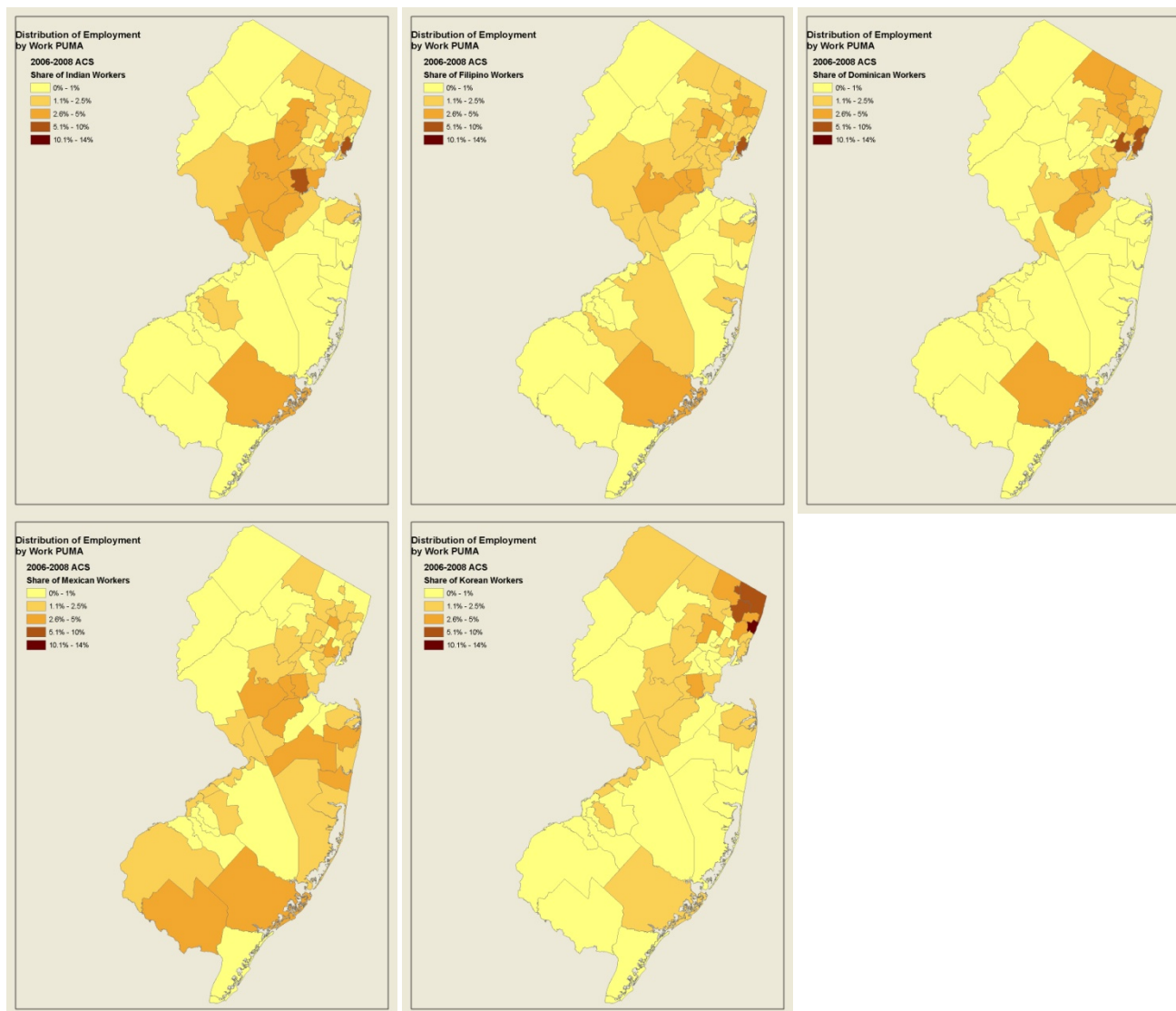
**Figure 16. Spatial distribution of employment for those born in the top five
sending countries (jobs held within New Jersey only)**
(darker areas represent highest density)

Occupational and industry data

The occupations and industries of immigrant workers may affect their transportation
choices. Conversely, limited transportation options may affect their occupational and
industry choices. Sole proprietors, restaurant workers, farm laborers, home healthcare
assistants, construction workers, and engineers not only have different incomes but also
likely have different travel patterns due to different industry clustering patterns, different
work hours, and different responsibilities and requirements during the work day.

Among the occupations, immigrants are generally underrepresented in management
and business, professional services, education, and office/administration occupations;

and overrepresented in science and engineering, construction and extraction, food preparation and serving, cleaning and maintenance, and farming, fishing, and forestry (Table 6). However, these are over-simplified categories that do not give sufficient information enabling a precise discussion of spatial and transportation implications (for more on industrial representation see discussion of Portes and Rumbaut (below)).[58] It would appear that recent immigrants are concentrated in some occupations that are fairly spatially dispersed in existing or emerging residential suburbs (such as construction, convenience restaurant workers, and household cleaning staff), others that are concentrated in large facilities (warehousing, poultry production, food processing), and still others that may be located or co-located in dense urban or suburban job centers (science and engineering, high-end restaurant workers, office building cleaning staff, and certain professional occupations that are more narrow than the general occupational categories below).

**Table 6. Occupations of recent NJ immigrants,
other NJ foreign-born and US-born workers (2007)**

	In US Zero to Five Years		In US 6+ Years		
	Occupation Share	Ratio to US-Born Share	Occupation Share	Ratio to US-Born Share	US-Born Occupation Share
Military	0.0%	0.00	0.1%	0.50	0.1%
Other Services	1.1%	0.39	1.1%	0.39	2.9%
Legal, Community and Social Services	1.0%	0.30	1.7%	0.52	3.3%
Unemployed	1.9%	3.26	0.6%	0.98	0.6%
Farming, Fishing and Forestry	1.0%	5.94	0.2%	1.44	0.2%
Health Care	6.3%	1.01	9.0%	1.45	6.2%
Transportation and Material Moving	7.7%	1.58	6.7%	1.36	4.9%
Education, Arts and Media	5.2%	0.50	5.5%	0.54	10.2%
Science and Engineering	9.6%	1.91	9.9%	1.98	5.0%
Management and Business	10.1%	0.63	13.9%	0.87	15.9%
Office and Administrative	9.9%	0.57	12.5%	0.72	17.3%
Sales	8.6%	0.67	10.3%	0.80	12.9%
Food Preparation and Serving	7.9%	1.91	4.6%	1.12	4.1%
Installation, Repair and Production	9.5%	1.51	10.5%	1.66	6.3%
Cleaning and Maintenance	11.9%	2.04	8.6%	1.47	5.8%
Construction and Extraction	8.5%	1.95	5.0%	1.14	4.4%

Source: US Census, 2005-2007 American Community
Survey 3-Year Estimate, New Jersey Only

In addition to changes over time in immigrant and US-born employment locations, there are also differences in the types of occupations these groups have had over time. As discussed in the literature review, occupational segmentation and niches are defining characteristics of the immigrant labor market in the US. Some occupations are more likely to be located in urban areas served by transit (technical jobs) while others are more likely to be located in rural areas (e.g. farming). Additionally, certain jobs, such as construction, do not have a fixed workplace and workers employed in these areas are

more likely to drive. The following describes the changes in occupation categories between 1980 and 2008.

Figure 17 and Figure 18, below, show the changes in the distribution of occupations over time for US-born and foreign-born workers residing in New Jersey. For both groups, the share of workers employed in Managerial and Professional Specialty Occupations since 1980 and the share of workers is almost the same for 2008 (31.5 percent for US-born and 30 percent for foreign-born). Similarly, the share of workers employed as Operators, Fabricators and Laborers has declined among both groups, though more precipitously among the foreign-born. Finally, US-born workers are more likely to be employed in Technical, Sales and Administrative Support Occupations while foreign-born are increasingly likely to be employed in Service Occupations.
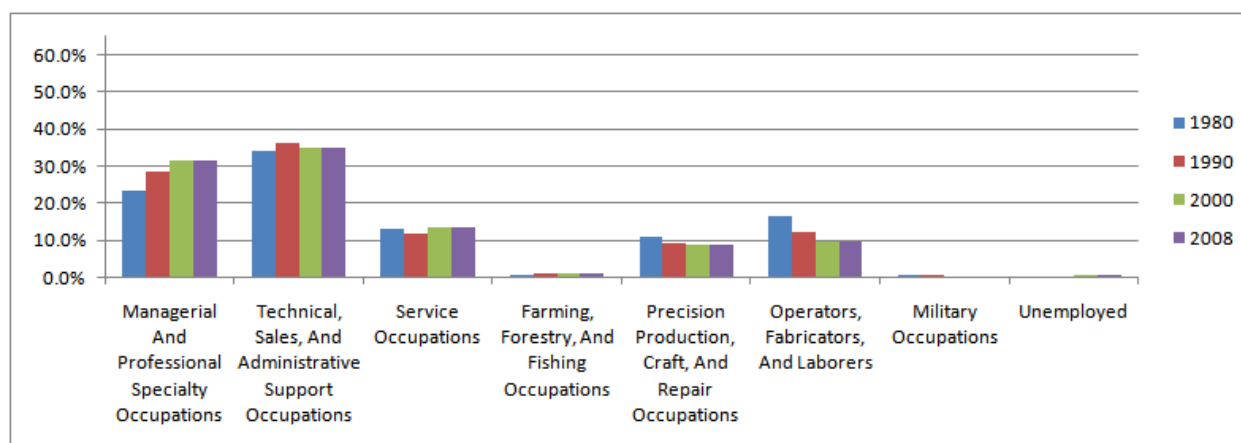
Figure 17. US-born Workers Occupational Distribution over time
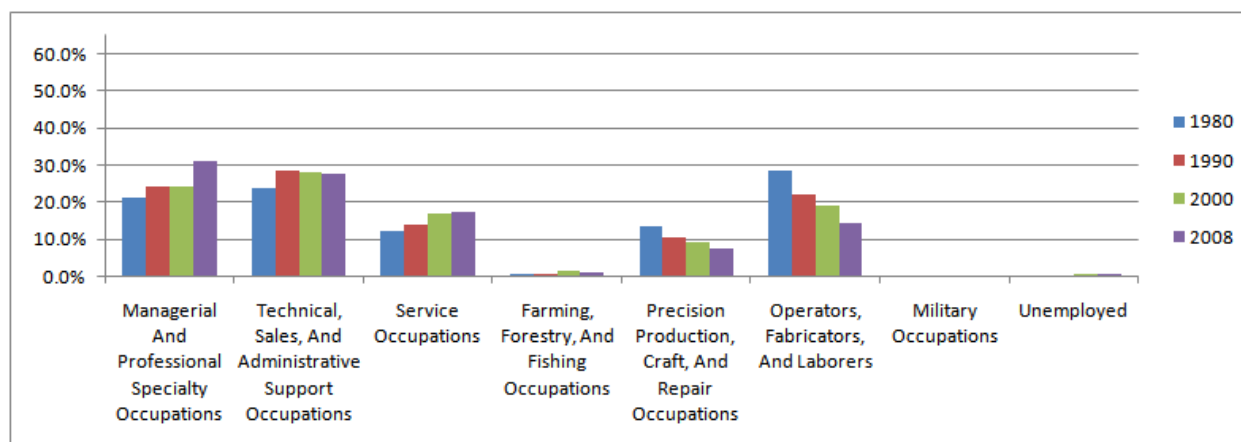
Figure 18. Foreign-Born Occupational Distribution over time

Figure 19, Figure 20, and Figure 21 show the changes in occupational segmentation for three immigrant groups, workers born in India, the Philippines and Mexico. Separating the specific immigrant groups reveals the differences, especially between Mexican

36

workers and the other two populations. Almost 60 percent of Mexican workers are employed as Operators, Fabricators and Laborers or in Service Occupations. Additionally, more than 10 percent of Mexican workers are employed in Farming and related occupations. In contrast, 85 percent of Indian workers and 75 percent of Filipino workers are employed in either Managerial and Professional Specialty Occupations or Technical Sales and Administrative Support Occupation. These occupations which are employing most Indian and Filipino workers are more likely to be high paying professional jobs located in urban areas. Thus we can expect a large share of these workers will drive or take rail to their jobs. In contrast, the jobs employing most Mexican workers pay much less and are more likely local jobs which they commute by bus, carpool or non-motorized forms of transport.
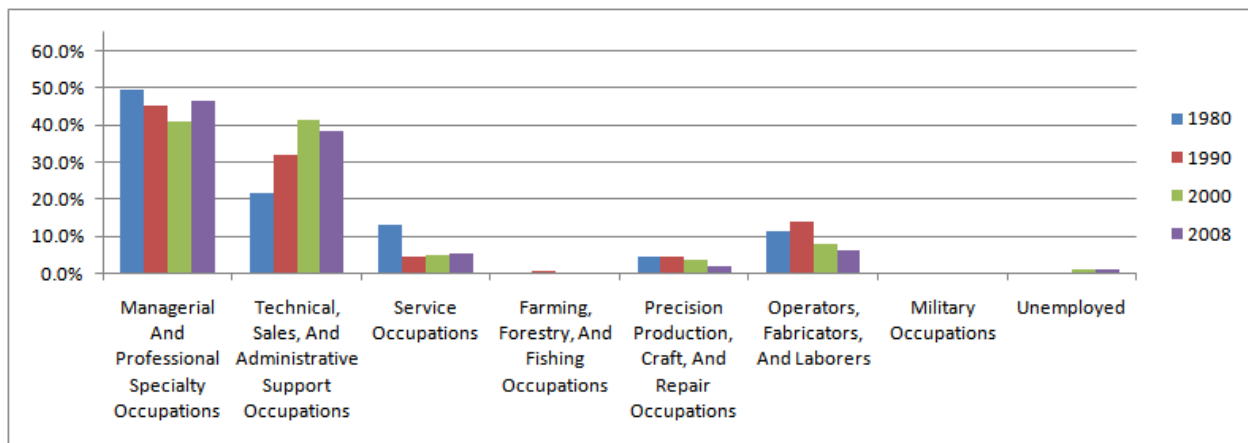
Figure 19. Persons Born in India Occupational Distribution over time
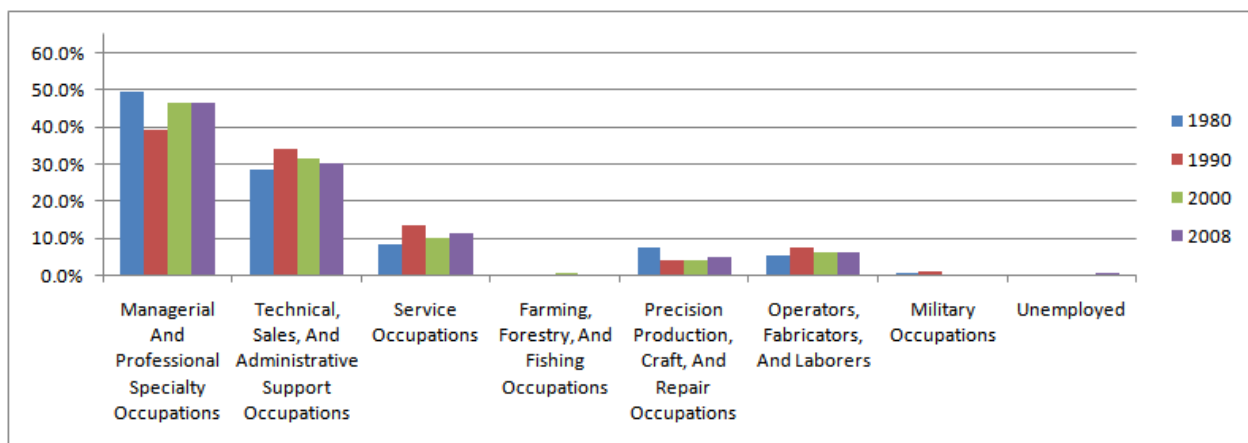
Figure 20. Persons Born in the Philippines Occupational Distribution over time
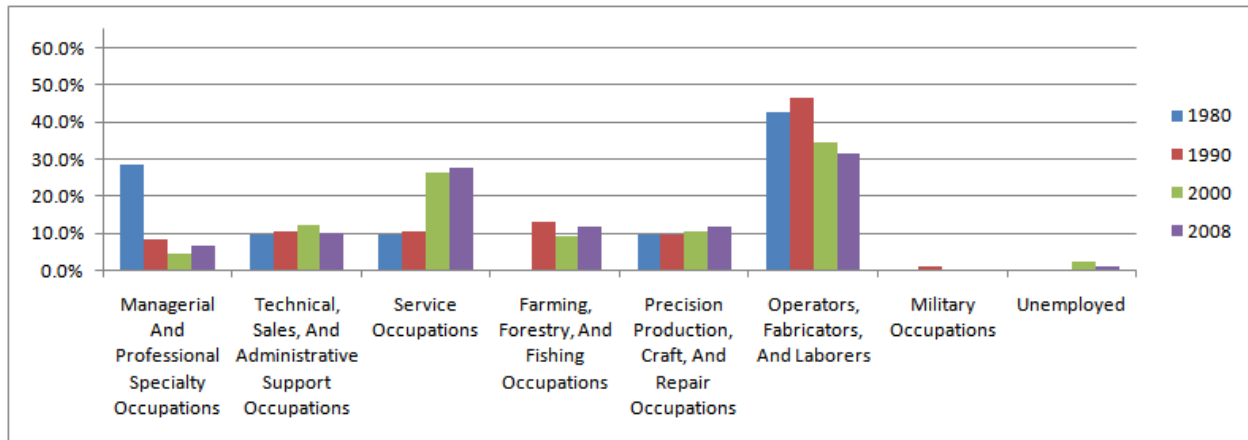
Figure 21. Persons Born in Mexico Occupational Distribution over time

Immigrant Travel in New Jersey: the Most Current Data

Foreign-born workers in the United States are about twice as likely to commute by transit as the US-born (9.4 percent vs. 4.1 percent) (Table 7, Figure 22). In New Jersey, despite much higher transit usage among the US-born population (7.5 percent), the foreign-born still use transit at almost twice the rate (15.8 percent). This difference varies depending on the length of time in the US, but even those who have been in the country more than 21 years have a much higher rate of transit use (12 percent) than the US-born population. Changes in foreign-born mode-choice are most dramatic during the first five years in the US. New immigrants are predictably least reliant on autos: on average they drive to work less than 50 percent of the time. Carpooling is also much more common among immigrants, particularly recent immigrants and particularly Mexican men who make a large share of all immigration.[22] These differences are explained largely by income, experience with driving in the home country (including licensing), and other factors. One question is whether these differences can be expected to remain persistent over time, particularly with the new generation of immigrants.

**Table 7. NJ population: Commute mode by nativity
and years in the US (percentage)**

	Drive Alone	Carpool	Transit	Walk or Bike	Work-at-Home or Other
Total US Population	77.30%	10.30%	4.10%	3.10%	5.20%
US Foreign-Born	65.9%	16.0%	9.4%	3.9%	4.8%
NJ US-Born	78.50%	7.23%	7.54%	2.52%	4.20%
NJ Foreign-Born	60.25%	14.22%	15.80%	4.94%	4.79%
Less than 1 Year	26.97%	18.73%	25.47%	22.10%	6.74%
1-2 Years	30.66%	23.72%	27.74%	11.86%	6.02%
2-3 Years	35.97%	24.52%	22.90%	10.48%	6.13%
3-4 Years	36.36%	26.08%	20.72%	12.52%	4.32%
4-5 Years	42.11%	22.33%	20.48%	10.95%	4.13%
5-6 Years	43.79%	21.16%	21.84%	7.50%	5.71%
6-10 years	53.02%	16.91%	18.48%	5.47%	6.11%
11-15 years	60.65%	14.66%	15.99%	4.70%	3.99%
16-20 years	65.60%	12.51%	13.75%	3.84%	4.29%
21+ years	70.73%	9.74%	11.97%	2.67%	4.88%

Source: US Census, 2005-2007 American Community Survey
3-Year Estimate, New Jersey Only
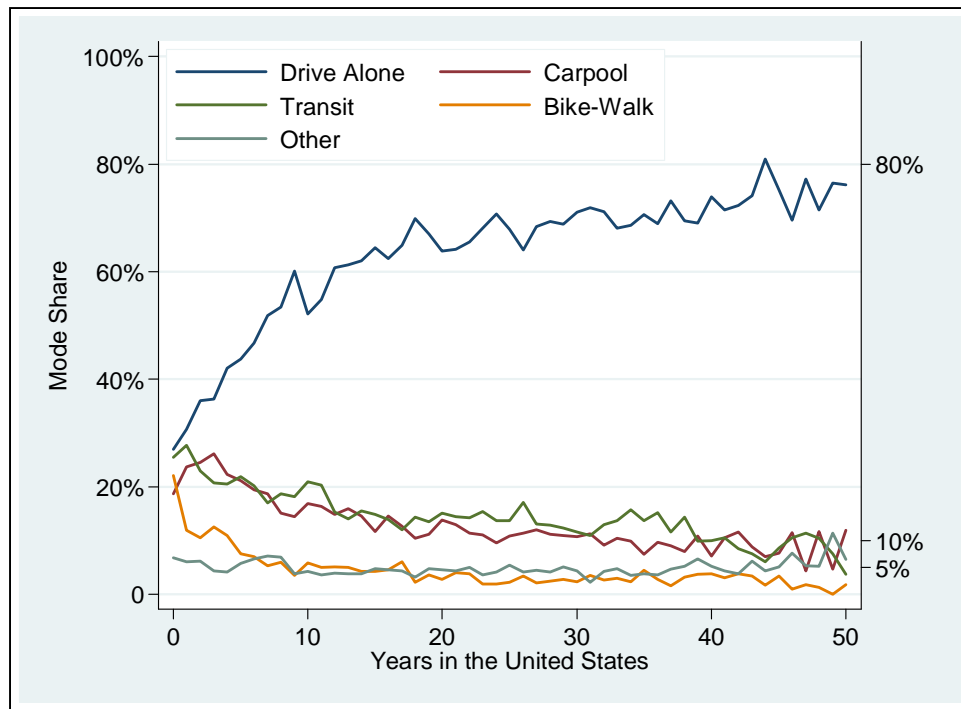
Figure 22. New Jersey foreign-born population: commute mode by nativity and years in the US (percentage)

Table 8. Transit mode share by years in US, 2005-2007 ACS data (New Jersey), 1% sample

Years in the US	Transit Mode Share
0 to 5	23.2%
6 to 10	19.0%
11 to 15	16.0%
16 to 20	13.8%
21 to 25	14.3%
26 to 30	13.4%
31 or more	5.8%

While immigrants make up about a fifth of the population, they make up nearly 40 percent of transit commuting (Figure 23) and have accounted for all of the increase in transit commuting in the state since 1980 (Figure 24). In that year they made up 16 percent of transit commuters. They likely make up a higher share of other uses of transit for non-work purposes such as grocery shopping, but accurate data are not readily available.
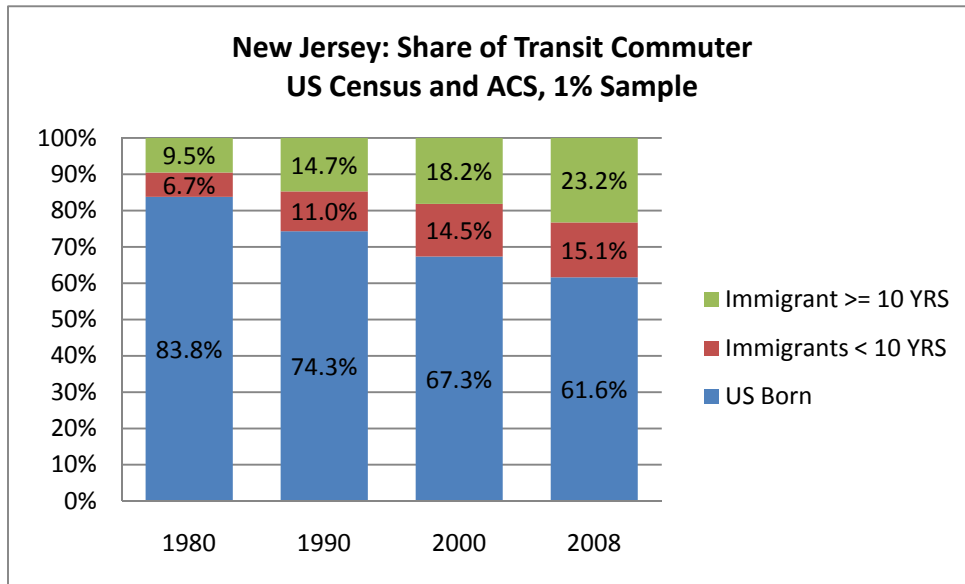
**Figure 23. Share of New Jersey transit commuters –
US-born and immigrants**
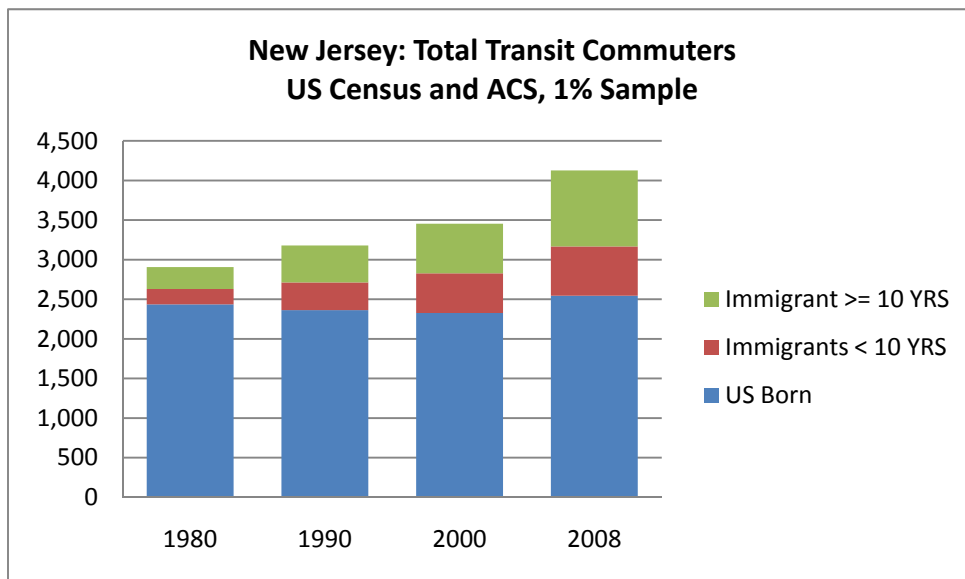
**Figure 24. Total New Jersey Transit Commuters –
US-born and immigrants**

Non-Work Travel

The most recent available data on work and non-work travel comes from the Nationwide Household Travel Survey (NHTS) from 2001, although these are for the entire United States (data for New Jersey are sparse). These data are not quite as reliable as the ACS PUMS data because of underrepresentation of the foreign-born population, and more particularly, a likely far lower representation of undocumented immigrants than the

ACS. It provides extremely valuable information, however, on details of non-work travel, and also information on the distance traveled for various trip purposes.

The foreign-born in the NHTS sample make almost the same number of work trips per capita as the US-born (0.96 and 0.98 work trips respectively), but these are shorter in distance. They make a significantly smaller number of non-work trips—3.27 compared to 3.60 for the US-born (Table 9).

Table 9. Average number of trips, work trips, and non-work trips by nativity

	N	All Trips	Work Trips	Non-Work Trips
US-Born	84,370	4.67	0.98	3.60
Foreign-Born	6,317	4.33	0.96	3.27
Universe: All strata including add-on areas; complete diaries only; excluding non-responses, skips and uncategorizable responses to US-born status question. Work and non-work defined using variable WHYTRP90.				

Source: National Household Travel Survey, 2001

The foreign-born have similar average vehicle mileage for their trips to work, not controlling for carpooling, which would lower the estimate of personal vehicle mileage considerably. Although they are slightly less likely to make work trips, and substantially less likely to drive to work, when they do drive to work, they drive farther. The foreign-born drive autos less for non-work purposes on the travel day, at 25 miles on average compared to 31 miles for the US-born (Table 10). Their non-work trips are shorter, they make fewer of them, and they make a smaller share using personal vehicles.

Table 10. Work and non-work vehicle miles traveled by nativity

	N	All VMT	Work VMT	Non-Work VMT
US-Born	76,545	43.05	12.07	30.83
Foreign-Born	5,459	36.66	11.55	24.95
Universe: All strata including add-on areas; complete diaries only; excluding non-responses, skips and uncategorizable responses to US-born status question; excluding all respondents with one or more trips not categorized by mode, or one or more personal vehicle trips missing mileage information. VMT = vehicle miles traveled. "Vehicle" defined as any personally operated vehicle including motorcycles.				

Source: National Household Travel Survey, 2001

Commute Mode Choice Model

To investigate the determinants of different commute mode choices between immigrants and the US-born, we carried out regression analysis with data from the

2006, 2007 and 2008 American Community Survey (ACS) Public Use Microdata Sample for the state of New Jersey. Each year the ACS surveys about 1 percent of the population. The data from these years were pooled into one dataset containing information on over 300,000 individuals, about 60,000 of whom are foreign-born (Table 11).

There are a number of differences between the US-born population and the foreign-born population in the state that might account for commute mode differences. The US-born population in New Jersey lives in slightly smaller households with fewer children. Interestingly, this is despite the fact that their mean age of 38 is quite a bit lower than the foreign-born average age of 44. Mean household income is about $108,000 for the US-born and about $97,000 for the foreign-born. Education levels are generally higher for the foreign-born in New Jersey, though as we will see this varies a great deal by country of origin. Just 16 percent have less than a junior high school education (compared to 25 percent in the US-born population) and 14 percent have attended graduate school (compared to 9 percent of US-born residents). Almost a third arrived in the US before the age of 18. There is a substantially higher gross employment rate for the foreign-born, at 59 percent compared to 45 percent in the US-born population.

We also measure the spatial characteristics of these New Jersey residents by measuring population density, the availability of rail and the number of rail stops, and the number of bus stops at the residential PUMA, and employment density at the workplace PUMA. PUMAs are areas containing between 80,000 and 120,000 in population that provide the smallest unit of spatial specificity possible with these individual-level data (Figure 25).
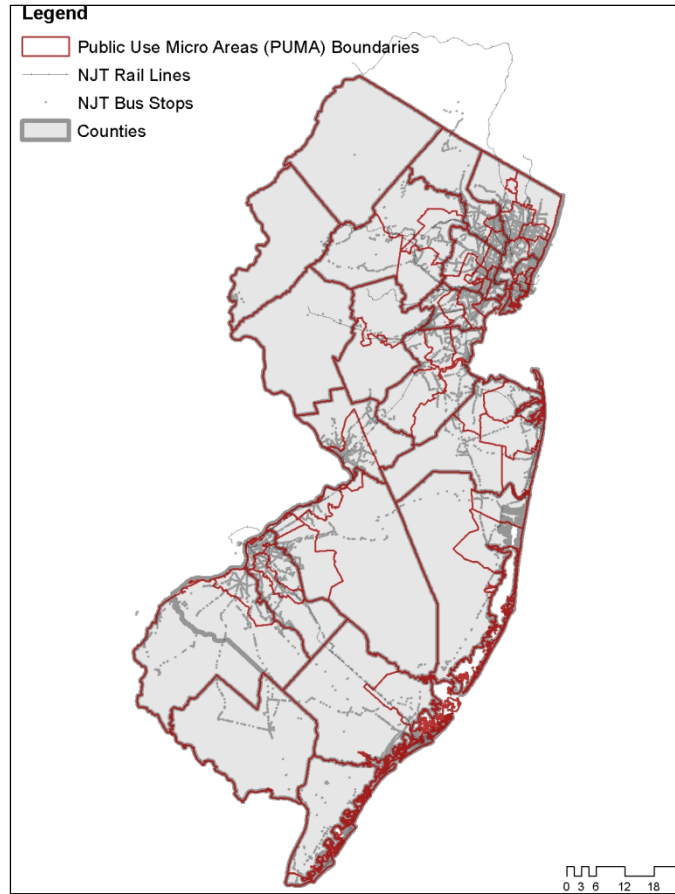
Figure 25. New Jersey PUMA locations

As a whole, the foreign-born live in areas with much higher population density (80 percent higher), more rail stops and more bus stops, although there are differences in country-of-origin groups as discussed below. Immigrants work in areas with 55 percent higher employment density. Of those who are workers, their commute share is just 61 percent drive-alone auto compared to 81 percent for the US-born, and their combined bus and rail share for the commute is 16 percent, twice as high as that of the US-born worker.

Table 11. Characteristics of the US-born and foreign-born residents of New Jersey

		Total Population		US-Born		Foreign-born	
		mean	st. dev	mean	st. dev	mean	st. dev
All Persons							
	Count	336,037		276,688		59,349	
	Age	39.0	23.0	38.0	23.8	43.6	18.4
	Household income	106,203	99,590	108,065	100,933	97,521	92,579
	Family Size	3.25	1.64	3.23	1.62	3.34	1.73
	Number of own children	0.58	0.98	0.52	0.95	0.86	1.08
	HH with Children	0.32	0.47	0.29	0.45	0.49	0.50
	Female	0.52	0.50	0.52	0.50	0.52	0.50
	Education less than junior high	0.23	0.42	0.25	0.43	0.16	0.37
	Some high school	0.08	0.27	0.08	0.27	0.07	0.26
	Completed high school	0.28	0.45	0.28	0.45	0.29	0.45
	Some college	0.14	0.35	0.14	0.35	0.14	0.35
	College graduate	0.14	0.35	0.14	0.35	0.14	0.35
	Graduate school	0.10	0.30	0.09	0.28	0.14	0.35
	Race: African American	0.10	0.31	0.11	0.31	0.09	0.29
	Race: American Indian	0.00	0.05	0.00	0.04	0.00	0.06
	Race: Chinese	0.02	0.12	0.01	0.08	0.06	0.23
	Race: Japanese	0.00	0.04	0.00	0.02	0.01	0.09
	Race: Other Asian	0.06	0.23	0.02	0.13	0.23	0.42
	Race: Other	0.05	0.22	0.03	0.18	0.13	0.34
	Race: Two categories	0.01	0.12	0.01	0.12	0.02	0.13
	Race: Three or more categories re	0.00	0.03	0.00	0.03	0.00	0.03
	Hispanic	0.12	0.32	0.08	0.27	0.30	0.46
	Citizen	0.92	0.27	1.00	0.00	0.56	0.50
	Years lived in US:						
	0 to 5	0.03	0.17	NA	NA	0.16	0.37
	6 to 10	0.03	0.17	NA	NA	0.17	0.38
	11 to 15	0.03	0.16	NA	NA	0.14	0.34
	16 to 20	0.02	0.15	NA	NA	0.12	0.33
	21 or more	0.08	0.27	NA	NA	0.40	0.49
	Arrived 15 or younger	0.05	0.21	NA	NA	0.28	0.45
	Arrived 18 or younger	0.06	0.23	NA	NA	0.32	0.47
	Residential region (PUMA):					1.26	
	Population density	3,761	5,155	3,298	4,672	5,919	6,562
	Number of rail stops	3.41	3.27	3.26	3.18	4.09	3.59
	Presence of rail	0.75	0.43	0.73	0.44	0.86	0.35
	Number of bus stops	474.8	342.5	453.8	331.0	572.4	376.8
	Emp. density of work region	6354.8	6884.3	5693.8	6311.8	8831.7	8242.1
	Auto ownership	0.93	0.26	0.94	0.24	0.88	0.32
	Employed	0.48	0.50	0.45	0.50	0.59	0.49
Workers Only							
	Count	154,563		120,464		34,099	
	Commute Mode:						
	Auto (drive alone)	0.77	0.42	0.81	0.39	0.62	0.49
	Carpool	0.09	0.29	0.08	0.26	0.14	0.35
	Bus	0.05	0.22	0.04	0.19	0.10	0.30
	Rail	0.04	0.20	0.04	0.19	0.06	0.24
	Walk or bicycle	0.03	0.17	0.02	0.16	0.05	0.22
	Other	0.01	0.12	0.01	0.10	0.03	0.16
	Auto ownership	0.95	0.22	0.97	0.18	0.89	0.31

We also compare New Jersey residents who were born in India, Mexico, and the Philippines, which are three of the top countries of origin for immigrants to New Jersey (Table 12). There are notable differences in household characteristics. A higher share of individuals born in India live in households with children (59 percent) compared with those born in the Philippines (53 percent) and particularly Mexico (41 percent). Among these three groups Indians have the highest incomes, at about $130,000, about 25 percent higher than the US-born average and twice as high as those born in Mexico. Philippines immigrants have similarly high household income.

We use education as a proxy to measure occupational characteristics that might influence transit use. More than a third of Indian immigrants have a graduate degree while very few Mexican immigrants do. Those born in the Philippines are a bit more likely to have a graduate degree than the US-born population. Residents born in Mexico are overwhelmingly graduates of high school or less (88 percent).

Despite this bifurcation of income and education, all three country of origin groups live, on average, in higher-density PUMAs with substantially more transit availability than the US-born, and all three groups use transit at a much higher rate than the US-born: 22 percent of those born in India, and 17 percent of those born in Mexico or the Philippines. Rail ridership makes up more than 60 percent of transit commuting for those born in India, while bus is by far the dominant transit mode for those born in Mexico. The split among those born in the Philippines is more even.

Age, household size, income, and education may partly explain the differences between the transit use of immigrants and the US-born. We are particularly interested to determine whether the occupational categories (discussed previously) play a role in transit commuting for immigrants. We also wanted to explore whether the population density, employment density, and transit availability of work and home regions explains some of the variance. If so, this would suggest that immigrants commute with transit at a higher rate because their chosen community permits or enables it. We used regression analysis to test these possibilities.

There are numerous possible influences on commute mode choice. People with children might be more likely to carpool than to drive alone or to take the bus. People with lower income might be more likely to take the bus than to drive alone. Numerous such possible influences might largely explain differences between immigrants and the US-born. As we have seen in the literature review, previous studies using national data have tended to find that there is a persistent "effect" of immigrant status even when controlling for those other factors.

Table 12. New Jersey residents born in India, Mexico and the Philippines

	Born in India		Born in Mexico		Born in the Philllipines	
	mean	st. dev	mean	st. dev	mean	st. dev
All Persons						
Count	6,142		2,942		3,366	
Age	39.7	15.7	30.9	12.6	44.6	17.3
Household income	130,489	99,738	64,018	58,249	123,461	82,078
Family Size	3.50	1.44	3.87	2.47	3.78	1.71
Number of own children	0.93	0.93	0.89	1.27	0.94	1.10
HH with Children	0.59	0.49	0.41	0.49	0.53	0.50
Female	0.48	0.50	0.41	0.49	0.57	0.50
Education less than junior high	0.08	0.27	0.37	0.48	0.07	0.26
Some high school	0.04	0.20	0.16	0.37	0.03	0.16
Completed high school	0.10	0.31	0.35	0.48	0.11	0.31
Some college	0.08	0.27	0.06	0.23	0.17	0.38
College graduate	0.08	0.27	0.06	0.23	0.17	0.38
Graduate school	0.34	0.47	0.01	0.12	0.11	0.31
Race: African American	0.00	0.02	0.01	0.08	0.00	0.02
Race: American Indian	0.00	0.06	0.01	0.10	0.00	0.03
Race: Chinese	0.00	0.06	0.00	0.02	0.01	0.11
Race: Japanese	0.00	0.02	0.00	0.00	0.00	0.06
Race: Other Asian	0.95	0.22	0.00	0.05	0.95	0.21
Race: Other	0.02	0.13	0.52	0.50	0.00	0.03
Race: Two categories	0.02	0.13	0.02	0.15	0.01	0.11
Race: Three or more categories re	0.00	0.02	0.00	0.00	0.00	0.05
Hispanic	0.00	0.03	0.98	0.14	0.00	0.06
Citizen	0.48	0.50	0.14	0.35	0.63	0.48
Years lived in US:						
0 to 5	0.25	0.43	0.33	0.47	0.17	0.38
6 to 10	0.26	0.44	0.28	0.45	0.14	0.35
11 to 15	0.14	0.35	0.15	0.36	0.17	0.37
16 to 20	0.11	0.32	0.12	0.32	0.17	0.38
21 or more	0.23	0.42	0.12	0.32	0.35	0.48
Arrived 15 or younger	0.15	0.36	0.27	0.44	0.21	0.41
Arrived 18 or younger	0.18	0.38	0.38	0.48	0.23	0.42
Residential region (PUMA):						
Population density	4,453	4,991	5,616	7,143	5,854	5,499
Number of rail stops	3.75	3.29	3.41	3.32	4.36	3.17
Presence of rail	0.85	0.35	0.80	0.40	0.88	0.33
Number of bus stops	473.0	306.0	527.0	354.2	512.3	333.4
Emp. density of work region	8054.1	7799.9	6841.9	7679.5	9516.4	8565.7
Auto ownership	0.92	0.27	0.61	0.49	0.95	0.21
Employed	0.63	0.48	0.66	0.47	0.63	0.48
Workers Only						
Count	3,783		1,930		2,097	
Commute Mode:						
Auto (drive alone)	0.62	0.48	0.29	0.45	0.66	0.47
Carpool	0.12	0.33	0.31	0.46	0.13	0.34
Bus	0.08	0.27	0.15	0.36	0.10	0.30
Rail	0.14	0.34	0.02	0.15	0.07	0.26
Walk or bicycle	0.03	0.16	0.15	0.36	0.03	0.18
Other	0.02	0.13	0.08	0.26	0.01	0.08
Auto ownership	0.92	0.27	0.60	0.49	0.95	0.21

We started by specifying a multinomial logit regression model that mathematically models the commute mode choice as a function of individual and household characteristics, and we subsequently added additional variables to test whether those affected our results. We limited the analysis to individuals who commuted via one of the major modes. Because this type of analysis cannot be carried out for too many choices, we excluded those commuting by ferryboat, taxi, or other miscellaneous modes, as well as those who worked at home. This group accounts for about 1.5 percent of the total population. We present only the results for bus (Table 13) and rail (Table 14) in comparison to drive-alone auto. The figures presented are "odds ratios." This expresses the likelihood of a one-unit change in the dependent variable changing the commute mode choice. For example, an odds ratio of 1.08 for "Female" in bus model #2 of Table 13 means that being female is associated with an 8 percent higher chance of taking the bus.

We discuss the bus results first (Table 13). In Model 1 (column 1) we see that age is not a significant factor in the likelihood of taking the bus over driving alone (although this will change in later models). Being in any non-white racial category is associated with substantially higher odds of commuting by bus, particularly for African Americans. Hispanic status has a similar effect. These effects are consistent through the models for the African American group and for Hispanics. (Note that racial categorization is very much like immigrant status as an explanatory variable--it is presumed to be a proxy for any of a number of non-measured factors and we include it not because we have a good understanding of the causal mechanisms, but instead for statistical control purposes.) Each dollar of higher income marginally lowers the odds of transit commuting, while at higher levels of income this effect is muted or reversed (the squared income term is greater than one). Having children in the household substantially lowers the odds of transit commuting.

In the second bus model (Table 13) we add terms representing foreign-born status: years in the country, years in the country by category, and whether the individual came to the US when young. The categorical year variables are highly significant while the regular years variable is not. This implies that the "effects" of immigrant status are highly dynamic; in other words, the effects on commute mode choice change over time. Controlling for other factors, those in their first five years of living in the US have 182 percent higher odds of commuting via transit than a US-born resident. In this model the odds of bus commuting decline for those who have lived in the US longer than that, and then, interestingly, increase again for those who have lived in the US longer than 21 years. However, this latter effect does not persist in subsequent models. Finally, the age of entry into the US does not appear to have a direct effect on bus commuting.

Table 13. Odds of bus versus auto commuting, multinomial logit model

BUS	Model 1	Model 2	Model 3	Model 4	Model 5
Age	0.99	0.99*	0.99*	0.96***	0.97***
Age squared	1	1	1	1.00***	1.00**
Female	1.03	1.08**	1.08**	1.38***	1.35***
Race: African American	4.77***	4.48***	4.49***	5.06***	5.24***
Race: Native American	1.66*	1.56*	1.59*	2.14*	2.18*
Race: Chinese	3.88***	2.58***	2.86***	1.77	1.73
Race: Japanese	3.09***	1.49	1.5	0.75	0.75
Race: Other Asian	3.82***	2.17***	2.42***	2.43***	2.35***
Race: Other	1.58***	1.45***	1.45***	1.57***	1.60***
Race: Two categories	1.75***	1.68***	1.72***	1.92***	1.94***
Race: Three or more	1.78	1.93	1.95	2.33	2.35
Hispanic	3.56***	2.58***	2.54***	1.93***	1.92***
educ_smhs	1.51***	1.48***	1.48***	1.56***	1.48***
educ_smcol	0.76***	0.79***	0.79***	0.58***	0.61***
educ_coll	1.16***	1.16***	1.16***	0.45***	0.52***
educ_grad	1.04	0.99	1.01	0.35***	0.43***
educ_junior	2.72***	2.01***	1.97***	1.93***	1.85***
Household income	0.996***	0.996***	0.996***	0.99***	0.99***
Income squared	1.004***	1.004***	1.004***	1.004***	1.004***
Family size	0.96***	0.96***	0.96***	1.07***	1.06**
Children in household	0.78***	0.78***	0.79***	0.58***	0.60***
Number of years in US		0.97	0.97	0.97	0.97
Number of years squared		1	1	1	1
0 to 5 years in US		2.82***	2.88***	2.74***	2.70***
6 to 10 years in US		2.28***	2.35***	2.02***	1.96**
11 to 15 years in US		2.12***	2.17***	1.79*	1.72
16 to 20 years in US		2.11***	2.15***	1.57	1.5
21 or more years in US		2.46***	2.50***	1.66	1.59
Citizenship status		0.64***	0.65***	0.54***	0.55***
Arrived age 15 or earlier		1	1.02	1.18	1.22
Arrived age 18 or earlier		1.02	0.98	0.85	0.86
Born in India			0.73**	1.12	1.18
Born in China			0.79	1.2	1.13
Born in Philippines			1.05	1.41	1.51*
Born in Korea			0.94	0.37*	0.36**
Born in Mexico			1.43***	2.75***	2.61***
Born in D.R.			0.89	0.79*	0.78*
Home population density				1.00***	1.00***
Number of rail stops				1	1
Rail available				1.57	1.48
Number of bus stops				1.001*	1.001*
Employment density at work				1.001***	1.001***
occ_sci					1.33
occ_health					1.1
occ_food					2.80***
occ_clean					2.44***
occ_sales					1.80***
occ_farm					1.72
occ_install					1.55***
occ_trans					1.42**
occ_constr					1.19
occ_legal					1.15
occ_educ					1.2
occ_other					1.2
occ_office					1.46***
occ_milit					3.5e-17***

In Model 3 (Table 13) we add variables indicating the top five countries of origin, which represent the additional "effects" of being born in those countries on the already high odds of bus commuting for immigrants living in the US for different lengths of time. Two are significant and consistent with the descriptive data: being born in India results in a 27 percent lower chance of bus commuting compared to the immigrant average, and being born in Mexico a 43 percent higher chance compared to that average.

In Model 4 (Table 13) we add measures of population density and transit accessibility for the home PUMA and employment density at the work PUMA (see Figure 25, above). We also add fixed effects for region and home and work to further account for spatial variation in bus and rail accessibility. The effects of the variables are mostly as expected: home-area population density and work-area employment density are highly significant, as is the number of bus stops in the home area. But we are most interested to see how coefficients change on the variables for country of origin and for years living in the US. Interestingly, we find that the coefficient for likelihood of taking the bus becomes insignificant for Indian-born residents--this suggests that the fact that they live in regions that have somewhat lower bus accessibility than other immigrant groups explains their lower ridership. Meanwhile the opposite effect occurs for the variables representing years in the US: they become less significant. This suggests that the higher rates of bus commuting among immigrants are not so different than those of other US-born people living in places with high population density and high bus accessibility, particularly after the first ten years

In Model 5 (Table 13) we add occupational categories for workers. There are a number of reasons why occupation may affect mode choice, as discussed previously. The occupation variables are highly significant. Effects are in comparison to the largest occupational category, managerial and accounting. Food, cleaning and sales occupations have much higher likelihoods of bus commuting. These are relatively low paid jobs and may be concentrated in centers that are bus-served. The net effect on the immigration variables is again to reduce them in magnitude and significance although not as much as the density and accessibility variables.

We now turn to the rail models (Table 14, below). Rail commuting patterns are different than bus, and rail accounts for a smaller share of transit commuting in New Jersey. But it is an important mode for certain occupations and is more common than bus commuting among Indian-born residents, the largest country-of-origin group in New Jersey.

Table 14. Odds of rail vs. auto commuting, multinomial logit model

RAIL	Model 1	Model 2	Model 3	Model 4	Model 5
Age	1.02**	1.02**	1.02**	0.98	0.99
Age squared	1.00***	1.00***	1.00***	1	1
Female	0.68***	0.70***	0.70***	0.79**	0.81**
Race: African American	2.28***	2.17***	2.16***	2.03***	2.10***
Race: Native American	1.57	1.52	1.5	1.69	1.71
Race: Chinese	2.27***	1.74***	1.64***	1.68	1.37
Race: Japanese	2.56***	1.59*	1.62*	1.4	1.37
Race: Other Asian	2.58***	1.77***	1.85***	1.42	1.32
Race: Other	1.39***	1.29**	1.29**	1.23	1.30*
Race: Two categories	1.05	1	1	1.01	1.06
Race: Three or more	1.25	1.23	1.22	2.7e-12***	1.8e-17***
Hispanic	1.68***	1.39***	1.40***	1.06	1.07
Junior high or less	0.92	0.91	0.92	1.12	1.13
Some high school	1.51***	1.53***	1.53***	1.08	1
Some college	3.41***	3.42***	3.42***	1.86***	1.55***
College degree	3.62***	3.52***	3.48***	1.83***	1.56***
Graduate school	1.77***	1.46**	1.48**	1.58*	1.66*
Household income	1.00***	1.00***	1.00***	1	1
Income squared	1.00***	1.00***	1.00***	1	1
Family size	0.79***	0.79***	0.80***	0.96	0.97
Children in household	1.09*	1.08*	1.07	0.85*	0.82**
Number of years in US		0.98	0.98	1.02	1.02
Number of years squared		1	1	1	1
0 to 5 years in US		2.37***	2.30***	1.39	1.4
6 to 10 years in US		1.92***	1.83***	0.89	0.89
11 to 15 years in US		1.85**	1.78**	0.74	0.75
16 to 20 years in US		1.65	1.61	0.7	0.7
21 or more years in US		2.06*	2.02*	0.64	0.67
Citizenship status		0.83**	0.83**	0.67**	0.70*
Arrived age 15 or earlier		0.97	0.98	1.45	1.47
Arrived age 18 or earlier		1.01	1.02	0.77	0.76
Born in India			1.09	1.64*	1.4
Born in China			1.13	0.8	0.71
Born in Philippines			0.84	0.77	0.99
Born in Korea			0.51***	0.89	0.91
Born in Mexico			0.98	3.77***	3.89***
Born in D.R.			0.95	0.78	0.75
Home population density				1.00*	1
Number of rail stops				1.07***	1.07***
Rail available				2.83***	2.79***
Number of bus stops				1.00**	1.00**
Employment density at work				1.00***	1.00***
occ_sci					1.48***
occ_health					0.24***
occ_food					0.81
occ_clean					1.08
occ_sales					0.77*
occ_farm					0.93
occ_install					0.48***
occ_trans					0.24***
occ_constr					0.42***
occ_legal					0.92
occ_educ					0.43***
occ_other					0.39***
occ_office					0.72**
occ_milit					1.8e-17***

In Model 1 (column 1, Table 14), we find a reversal in sign for the age variable: older workers commute on rail at a higher rate in comparison to drive-alone commuting, an effect which tails off for the oldest workers. (However, this effect is apparently not to have so much with age as to do with population and employment density at home and work, and rail and bus accessibility--see Model 4, in which the significance of the age variable vanishes.) Individuals from larger families have lower odds of rail commuting, while those with higher levels of education have higher odds. Women are much less likely to commute by train, consistent with previous research suggesting that rail commutes are generally longer, and women tend to work closer to home due to their disproportionate share of household and parenting responsibilities.

In Model 2 the foreign-born variables are added. For rail, the categorical age variables for early cohorts are highly significant, but smaller than for the odds of bus commuting, and unlike bus commuting the later cohorts are of lower significance. However, similar to the earlier result, we find higher odds of rail commuting for the longest-staying immigrant group.

In Model 3 we add the country-specific dummy variables. Interestingly despite the much higher rate of rail commuting by Indians we do not find a statistically significant country specific effect. Other factors correlated with Indian-born status seem to be more important in explaining their higher rates of rail commuting. Those factors include their higher income, higher education and higher representation in the newly arrived group of immigrants in the past ten years. In New Jersey, higher income is associated with higher rail ridership, as is college and graduate level education.

The main differences in the remaining rail models (Models 4 and 5, Table 14), in comparison to the bus models, are that the apparent effects of foreign-born status in Model 2 are not statistically significant once other factors are accounted for. This is a striking result: rail commuting among immigrants in New Jersey is largely attributable to residential and workplace location, and to a lesser extent, occupational category. The only exception is those born in Mexico--as with the bus commuting odds model, Mexicans are substantially more likely to use rail than to commute via car, even when controlling for the other factors.

IDENTIFYING TARGET GROUPS

In addition to the secondary data analysis described in the previous section, we also analyzed data from the 2000 Census and 2005 to 2007 American Community Survey (ACS) to determine immigrant groups to target for focus group and subsequent surveys. Based on this analysis we confirmed that immigrants from India, from the Philippines, and from Latin America would be our target groups.

While the data in the 2000 Census is several years old and may not represent recent population changes in New Jersey, the data are available at much smaller geographic areas. In December 2008, the US Census released pooled data from the 2005 through

2007 at areas as small as 20,000 persons. This is a vast improvement in terms of geographic specificity from the previous units of 100,000 or more persons. However, data is not available at all areas at the smaller level. Further, in many of the areas where data is available, many of the variables of relevance to us have been suppressed to protect the confidentiality of survey respondents. For example, while we are able to get information on the number of foreign-born persons in small areas using the 2005-2007 pooled ACS data, we are not able to disaggregate this data by country of origin. Thus, we primarily used 2000 Census data for which we could obtain information on the foreign-born population by country of origin at the Census tract level.

We used these data to identify so-called "ethnic enclaves," concentrations of immigrants. To identify enclaves we used a measure of spatial clustering called "local indicators of spatial association" (LISA) using GeoDa software. The data used is aggregated at the Census Tract and comes from the 2000 US Census. The LISA statistic measures the correlation between values in nearby zones (in this case, Census tracts). The relationship between census tracts is defined by a weight matrix such that closer tracts (defined by the centroid) are weighted more heavily than further tracts. In this case, we used a method that calculates the weights from the five nearest neighboring census tracts.

We first tested this method on persons born in India. Four areas are identified roughly corresponding to West Windsor/Plainsboro, North Brunswick, Edison/Piscataway and Jersey City (Figure 26). The tracts are colored in red if they correspond to results from the LISA analysis that are concentrations of foreign-born persons from India and are significant at the 0.01 level. The population in these areas makes up about 17 percent of the foreign-born population from India in New Jersey.

Figure 26. Clusters of foreign-born persons from India

Source: 2000 US Census

In addition to targeting countries of origin that are both important sending countries currently, as well as comprising a large share of immigrants historically, we also examined linguistic isolation. The census defines a linguistically isolated household as one in which all adults had some limitation in communicating English. A household is classified by the Census as "linguistically isolated" if no household member aged 14 years and over spoke English "very well." All members of a linguistically isolated household were tabulated as linguistically isolated; including members under 14 years old who may have spoken only English.

As a result, five likely regions or countries of origin were selected for further analysis—Latin America (a catchall group including Mexico, Dominican Republic, Columbia and Ecuador), India, Philippines, Korea, and China (Table 15). We used the 2000 Census to map the population density of these groups (see Appendix maps).

54
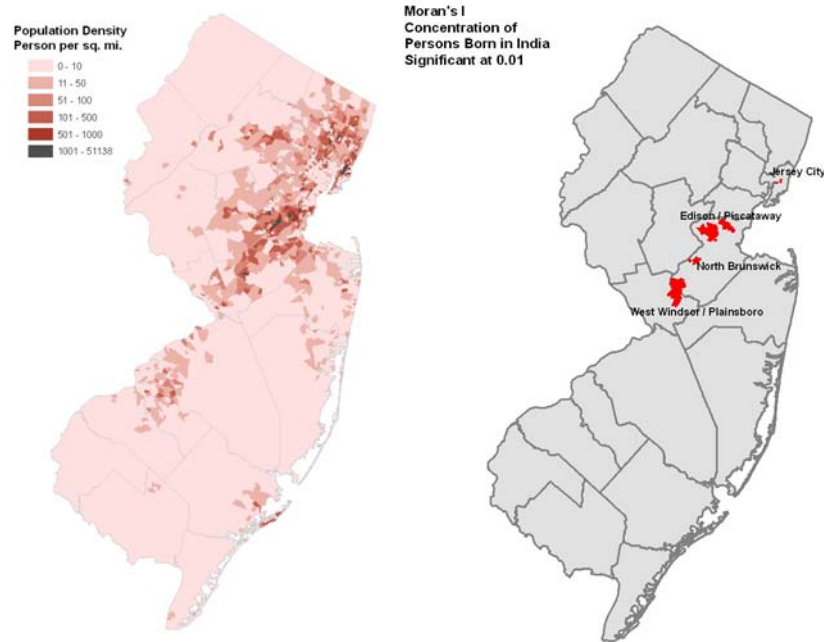
Figure 27. Foreign-born persons from India

Spatial concentration was our final criterion. We want to oversample spatially to enable a large enough sample of transit riders to make the survey useful. A closer examination of spatial concentration (see Appendix maps) suggests Spanish-speaking immigrants, and immigrants from India and the Philippines as the appropriate groups for analysis. Korean immigrants, while highly concentrated, are less prevalent among the New Jersey population than either Indian or Filipino immigrants, while immigrants from China are not highly concentrated spatially. These were the country-of-origin groups targeted in the remainder of the study.

Table 15. Target groups

Country of Origin or Language Group	Justification	Locations
Spanish speaking • Mexico • Dominican Republic • Columbia • Ecuador	• Largest language group (16.5% of all foreign-born) • Comprises 22.0% of all recent arrivals (less than 5 years) • Largest linguistically isolated group (39.5% of this group lives in a linguistically isolated household) • Spatially concentrated • Primarily lower income	• West New York • Paterson • Passaic • Also: Perth Amboy, Newark, Plainfield, New Brunswick
India	• Largest immigrant group from a single country (10.5% of all foreign-born) • Largest group (15.8%) among recent arrivals (less than 5 years) from a single country • Spatially concentrated • Economically diverse population	• Edison • Hoboken/Jersey City • Woodbridge (Iselin) • Princeton
Philippines	• 2nd largest immigrant group (6.1%) from a single country (all foreign-born) • 3rd largest (6.0%) among recent arrivals (less than 5 years) from a single country • Economically diverse population	• South Plainfield • Edison • Jersey City • Hackensack • Belleville • Bergen County (Oradell, Dumont, New Milford, Tenafly, Bergenfield, Teaneck)

FOCUS GROUPS

Because first-generation immigrant populations are difficult to reach, and because the current political climate tends to generate suspicion on the part of recent immigrants of official-appearing activity (such as this research), focus groups provide an extremely effective device for "access to participants' own language, concepts, and concerns" as they relate to transit use, residential choice and work decisions.[59] Compared to individual interviews, focus groups are probably preferable given the likely reluctance of immigrants to "open up" in a structured setting, especially where the conversation is being recorded. [60]

We conducted a series of six focus groups on the targeted immigrant populations for three purposes:

- Gather qualitative data on the nature and dynamics of immigrant residential location choices.

- Gather qualitative data on immigrant community cultural norms that may help to explain variation in travel behavior among these various subpopulations.

- Inform the content and design of the telephone survey questionnaire.

We designed a focus group topic guide which served as an outline script for moderators (Appendix E). The topic guide detailed a form of introduction, discussion of the group "rules" (including the confidential nature of focus groups), the scope of the content to be discussed, and specific points to be covered during the discussion. We also used a short pre-focus group questionnaire to be administered to the participants to inform the moderator of the demographic parameters of the group as well as their use of transit for work trip purposes.

The focus group guide spelled out questions on the essential topics of interest:
- Residential decision making.
- Job decision making.
- Daily travel behaviors.
- The relation of residential location, job location and transportation.
- The effect of enclaves.
- Transportation and transit problems.

Questions were open ended, and designed to elicit conversation among participants. In this way, participants were able to spur each other's memories, talk about shared and unique experiences, and speak about the experiences of other members of their country-of-origin group.

We also sought information about changes in travel behavior and neighborhood choice over time. For example, when discussing residential decision making, participants were asked, "How do you think people end up in a particular metropolitan area in the US to live?" In a follow up question, they were asked, "Over time, does anything change about how people choose where to live? How or why?"

We secured the cooperation of immigrant support services groups in order to conduct the focus groups in familiar community group settings, where an immigrant group could comfortably gather. We were assisted primarily by Nicholas Montalto of the New Jersey Immigrant Policy Network (NJIPN), who relied in turn on a number of organizations to assist with recruitment. We also relied upon Lou Kimmel of New Labor, a services organization for low-wage and young immigrant workers in central New Jersey. Both the NJIPN and New Labor assisted with the recruitment of participants for the focus groups and focus group moderation. New Labor also provided Spanish-speaking moderators.

Six focus groups were conducted from July to October 2009, two for each of the three targeted groups—Filipino, Indian and Spanish-speaking immigrants. Efforts were made to recruit participants from different income groups, ages, gender, locations in the State, and organizations (Table 16). After each focus group, a transcript, and, when appropriate, a translation was prepared.

Table 16. Focus group dates and locations

Date	Targeted Population	Host Group	Location	Language	Moderators
July 1, 2009	Filipino	Pan American Concerned Citizens Action League (PACCAL)	Jersey City	English	Nicholas Montalto & Daniel Chatman
August 14, 2009	Indian	Govinda Sanskar Kendra Center	Jersey City	English	Daniel Chatman & Marc Weiner
October 2, 2009	Filipino	Bergen County Subchapter of the Filipino Nurses Association of New Jersey	Paramus	English	Daniel Chatman
October 3, 2009	Mexican	New Labor	New Brunswick	Spanish	Lou Kimmel, Jose Villanueva & Daniel Chatman
October 22, 2009	Indian	International Business Chamber of Commerce	Princeton	English	Daniel Chatman
October 23, 2009	South American	Bergen County Community Action Partnership	Hackensack	Spanish	Lou Kimmel & Daniel Chatman
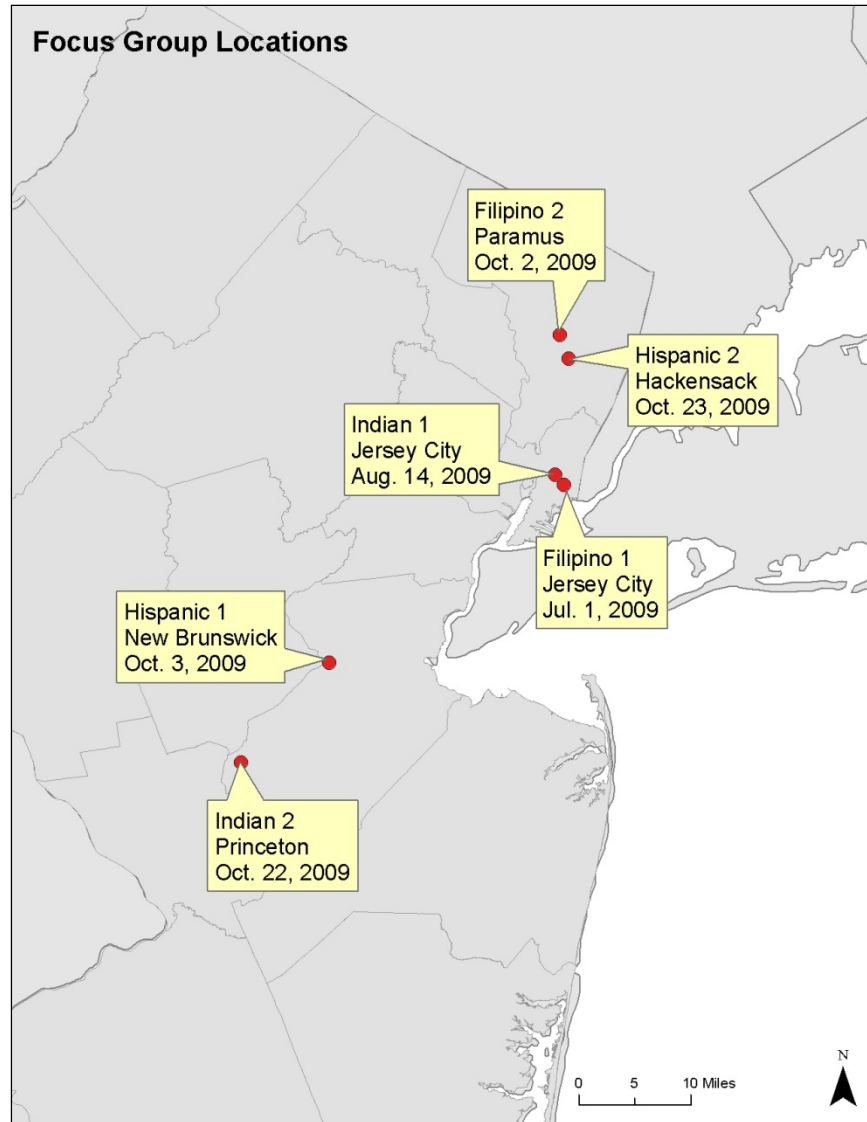
Figure 28. Focus group dates and locations

Our summary of the focus group findings below is centered on reasons that immigrants might be different than the US-born in their location and travel patterns. Even within the narrowly selected group of about 50 participants, there is a great deal of diversity represented in travel habits, residential location, and work history. Our first impression of the focus groups was of this great diversity. Our second impression was that on the whole what we had heard was not different from what we would expect to hear if we had conducted a similar focus group with US-born residents of New Jersey.

However, there were a few instances in which the situation of immigrants—that is, the circumstances of their immigration from one country to another, rather than the culture they brought with them or their travel experiences in their countries of origin—might play a role in their higher use of transit. We also noted a high familiarity with alternative

59

shared private transportation modes, a key complement to, and substitute for, conventional transit services.

We coded the transcripts based on the following five main themes of particular interest to NJ TRANSIT:

- Changes over time in travel habits, and reasons for those changes.

- The importance of different factors for residential location.

- Changes over time in residential location.

- Common problems with transportation.

- The variety in modes and use of private shared transportation, for pay and not for pay.

Each of these areas is discussed in its own section below. Quotes from focus group participants are shown in italics.

When referring to the focus groups we use shorthand as follows:

- F1 - First Filipino focus group (Jersey City, July 1)

- F2 - Second Filipino focus group (Paramus, October 2)

- I1- First Asian Indian focus group (Jersey City, August 14)

- I2 - Second Asian Indian focus group (Princeton, October 22)

- S1 - First Spanish-speaking focus group, Mexican (New Brunswick, October 3)

- S2 - Second Spanish-speaking focus group, South American (Hackensack, October 23)

Initial travel patterns and changes in travel over time

We selected participants and groups of participants in order to get a substantial share of transit users and a substantial share of drivers. One set of travel questions asked participants to describe and discuss their current travel patterns. This was followed by a redirection to explain changes over time which is what we describe in this section.

The expected story about travel patterns over time is that immigrants start to own and use autos more over time, but some of our conversations suggested otherwise. In F1 some participants were adamant that their travel did not change over time. Many of these were people who had stayed in one place, and in fact most of the F1 participants lived within walking distance of the focus group location and were strongly tied to community groups. The same was true with many participants in I1, S1 and S2.

Male Participant: [My travel] didn't change because I lived in my house for almost 24 years already. The same [bus] route. Fortunately, I have already 27 years working. [F1]

There were several additional reasons that emerged for a slow change to auto use. Some participants noted that remittances to relatives back home often reduced the speed of auto acquisition [F1]. Several participants noted that they or their immigrant friends learned to drive once they moved to places farther away, places without transit service.

Others discussed the difficulty of driving in the most congested places in which many immigrants locate. Those same places also tend to have better transit service, of course, but there has been little attention paid to whether driving conditions are more difficult in places where immigrants tend to settle.

Male Participant: And secondly, there are a lot of people, especially in New York City who are used to living in New York City, it was the Bronx. So my friends used to say "Don't drive in New York City. Don't drive in New York City. First of all you should drive in some place like New Jersey or someplace and then start driving." It was real difficult to drive in New York City; it's true so that was a factor for me. I didn't drive for more than six months and then I started driving." F2

In several focus groups a number of people said that they habitually drove in their countries of origin before coming to the US (I2, S1). Some of these immigrants are actually using transit *more* in the US than they did in their home countries. This appears to be for several reasons: because of difficulty adapting to right-hand side driving (India follows the British systems of left-hand side driving); because the participants found driving conditions in New Jersey more difficult (e.g., snow and ice); because parking is more expensive; and because of licensing restrictions or ineligibility. Others frequently drove motor bikes in India but switched to public transit in Jersey City.

For immigrants from warm countries, weather appears to be an important factor in the overall volume of travel (S1, S2).

FP: Logically, when you arrive in this country you don't travel much, you don't go out much, for one of two factors. Because in the cold weather one doesn't go out more than is necessary - food, for work. But you leave, and as you go, you return. Another point: One doesn't have a car to go up and down in street. You go for the most necessary, and come back home, to not go on transportation. Those are the two points, I imagine. In one's own country, one goes out all the time. All day you're not home but on the street, on the beach, at the malls, up, down, because transportation is by foot. Snow doesn't fall, it's not cold. Here when you come you don't travel so much. [S1]

In the Mexican and South American focus groups the use of English language came up frequently. (The use of English language may have come up if we had conducted focus

groups with non-English-proficient Indians and Filipinos as well, but there are substantially fewer non-English-proficient individuals from those country-of-origin groups).

> *FP: I think that for us who came here more than 15 years ago, everything was different. From 10 years ago until now, people who come … because really, they already have a family member, they already have friends, they already have siblings, everybody [is] here. So they come with the knowledge. Because the person who helps them or something says, "Look, this is how things are, it's like this." It's not like when you come, you've come alone. It's very different, because [before] nobody told you what you have to do. And now you have the option of finding a friend on the street [inaudible] who speaks to you in the same language. And you can ask him, "Look, I don't have a job. Do you know at what agency you work?" Or, "I want to go shopping at a store. Do you know what bus I'm going to take?" One says this. But more than 15, 16, 17 years ago you couldn't ask anybody, because an American, a Gringo, or a Black person [would] look at you funny because maybe you didn't know how to say it correctly. One of the ways that one can't communicate well because of the language, because you didn't speak English, you were flatly mistreated - [laughter among the group] - nobody understood you. So it made me afraid to ask and I kept quiet. And now, no, because there are more Latinos here and one asks and one says, "Look, don't you have a job in some place?", and there are a lot of people. But one communicates things. Everything's different now. Yes, I think the manner has changed...*

Public transit and walking likely require (or benefit from) more communication than driving does. But English inability may mean less *overall* travel initially, particularly discretionary non-work travel. Language therefore may cause faster adaptation of newer immigrant groups to transit modes, when asking directions of drivers and of other passengers has become easier. If true, over time, changes in the sheer volume of travel may occur simply because of the existence of existing immigrant communities in the state.

> *FP: Or the same [thing] that comes up in my store where, that is, in the store where I work looks out on the line for the buses… As there's a greater number of of affluent… Hispanics who use the bus, there are bus lines that… are for Hispanics, no? And on the New Jersey Transit [buses], there are many Hispanics who are citizens. And… it's easy to ask them, or for them to let us know… where… how we can get to certain places.*

Participants at all of the focus groups also noted changes in travel over time due to the introduction of private shared transport companies like the "dollar buses" of Paterson. (These are covered in more detail in a section below.)

> *FP1: There are also more… the dollar buses now, than 10, 15 years ago... Here in Hackensack, no, but in other places where there are more Hispanics… Yes, you see that a lot.*
>
> *MOD: And where do those buses go?*

62

FP2: To Paterson.

FP3: New York. [S2]

We heard several descriptions of arduous transit commutes, although these are not unique to immigrants. These were particularly common in the F2 group consisting of health care workers in large institutions, because many of them worked in New York City.

There are family changes that give rise to travel changes, particularly the arrival of children into the family. As we discuss below some of these changes are related to residential location but in some cases they are about driving in order to ferry around children.

> *FP: Okay... In the beginning I was going by bus, but my brother picked me up at night... Now I started to go and come alone on the bus, and I think about having my [own] car in the near future. I've already taken the test on the computer, I need to take the [road] test...*
>
> *MOD: To drive? FP: The "driving", no? But I still haven't taken it, but more than anything I need it for my son... to move him around. Because I can go by bus - winter, summer - but for him... I see it that it's necessary to have [a car]. [S2]*

In several other cases, having children meant having a car in order to work and have quick access back home to children for emergency purposes and to minimize travel time in order to save on hourly costs of babysitting.

> *FP: And when I moved there, I bought a house which is like about a block away from where I was working because my kids were growing up, were still very little and I want to make sure that I don't leave them to long with a baby-sitter. So I work in the evening and I take my car, even though I am only a block away because I leave the house like about three minutes before my time starts. And the baby-sitter gets in there right on time, so that it's more my priority buying a house that is close to where I am working so I don't... So I will, you know it's more of... What do you call this, saving money because my baby-sitter will be there? Coming from the school, they stay at the house, I drive three minutes to work and I get on time, it's more of a priority for me and I took the car with me, even though... [P2]*

Again, these family changes are not unique to immigrants, but they imply a greater average shift in travel behavior because of the average higher use of transit initially.

Reasons for choosing current location

We asked participants to describe how they chose their current neighborhood. Transit was often mentioned by those living in dense transit-accessible areas, although this may be partly because we sometimes explicitly asked about transportation. Since transit is not ubiquitous throughout the state or even in areas near the major job clusters, it makes sense that it would be mentioned.

63

FP: A while ago I lived in Freehold, many of you know, and I lived there like eight months. I looked for work and found it, but the problem is that I couldn't travel because there were no buses. So those days [inaudible], I looked for a ride, and [inaudible] for one or two days, and I had to leave the job. So, [inaudible] I came again to New Brunswick, because transportation is more accessible in this town. And I'll stay here indefinitely because in Freehold I couldn't get around. [Inaudible] Since I don't have a car, it was difficult for me. I think that at times one chooses to move to any place where one would have the possibility of getting to their work. [S1]

A number of participants described a decision making process consisting of a classic tradeoff between housing costs and transportation costs. Many of these participants work in New York City but many also work within New Jersey.

Surprisingly, colleges were frequently mentioned in the initial location decisions in the US both for college-age men and women and their parents.

MP: I had contacted some of my …… from my college in India. So they informed me to come and stay over here, because they said that I'll be getting more of my friends over here, so that I can stay with them, and mainly, my college was in New York. So the commutation was easy to Jersey City. [I1]

Friends and relatives, and access to language specific or culturally specific services, were frequently mentioned as the reason for choosing a residence.

MP: When I landed here, my child was three years, I have a different problem. My problem was to commute with a child to take her to the hospitals and to take her to Indian doctors. To tell you very frankly, when we landed here, we tried to find out Indian doctors. [I2]

In one or two cases this was directly related to employment access or to community-serving business:

MP: When we got married, we moved to Jersey City and I set up my business. One of the reasons that we lived there is because where is the concentration of the Filipinos. And my market is Filipinos, so we live there for ten years and the reason is... The reason for living there is because we are near to our community, because my business is related to the community. And besides, Jersey City is where the Filipinos concentrated. [FP2]

Colleges for older children came up frequently. Since higher education institutions are more likely in dense urban areas perhaps this gives rise to location patterns that then give rise to transit use.

MP: When we first came here, me and my dad were looking for a college, so I could study already, and we had a hard time looking for one in Jersey City. So, we ended up

somewhere in the Bronx. And at first, I was hesitant to go there because it was a bit far. But through the help of transportation, it took me there in like 45 minutes only. So, I think it's really --- I think the transportation is really efficient in terms of bringing us students to places like the Bronx. [I1]

But in some cases networks of family and friends are determinative, particularly when immigrants do not have a certain job location:

MP: I was looking for a job when I moved to Jersey and I just had an interview scheduled and I knew friends living in Jersey City and it had good public transportation when I moved and I just had a license and I didn't have a car. I wasn't able to afford it... But that was the main factor of me choosing living in the city, having good access to public transport and also having friends there... After I got the job, I still have friends there, so I still prefer living with them and commuting using public transport. [P2]

Many women in the Spanish language groups mentioned proximity to home in order to be near children being taken care of there:

FP1: In my case, for example, I have a baby. And so the person who takes care of him for me, then, I had to move there. Because I can't be paying for a taxi and I can't [inaudible] from one place to another every day, taking him or bringing him back, because I have to go to work. So I had to move to the same house so that I don't have problems with traveling. So yes, that affects it.

FP2: The same in my case. I had to move closer to work and also to the person who cares for my daughter. [S1]

Access to Manhattan culture, restaurants and night life were mentioned by some as a reason to stay in northern New Jersey; access to Manhattan is of course quite good by transit from many parts of New Jersey.

The commute is very, very important for me, because I just can go to New York every time I want to go. But people are longing to go to New York, and New York is one of the --- for me --- is the most important place that everybody wants to see, in the world, New York. For me. Because my cousin lives in Minnesota, but he has a Manhattan Club in New York. There's a center. So after retirement, he owns a boat, and [inaudible] and like a condominium there in New York in the heart of the city. Because if you are also --- like, your lifestyle, it depends, you want to go out and everything. They say it's "the city that never sleeps --- New York." [P1]

Reasons for change over time in residential location

Participants often said that they chose places near to work or in places where they had relatives when they first arrived.

FP: When I first got here just before I started working, I stayed with my friends and they lived in Astoria, which is in Long Island City. So just before I started working, I started looking for a place to stay close to Bellevue, so I lived in the same town, which is walking distance. So depending on the weather, I would take the bus to Bellevue or I would just walk. And actually I'd say 90 percent of the time I am walking or maybe close to 95 percent. P2

The most frequent cited reason for change in location was a job change:

FP: Well, I have friends who moved from --- moved out from Jersey City and going to upstate New Jersey or upstate [inaudible]. Depends on their job. Because they were accepted in their new job upstate New Jersey. So that's why they had to move there. [P1]

Another common reason given was seeking better schools, for those people who can afford to move.

FP: I could say, my children moved out of Jersey City. It's because they're thinking of their children, for education, because they want a better school. They know Jersey City is not really a good one. [P1]

MP: I just want to say that you know that I think for the Indian community, you know we tend to focus on this "track" I would say, Edison, North Brunswick, South Brunswick, Princeton, you know for some reason for especially kids and families with kids who are in school. And what I have also seen that you know people who are just coming out of grad school or just starting to work in the city kind of stay closer to the city so they are not like commuting. But once they get married and you know they have kids, that's when they start. [I2]

Another common theme was moving a work location or a home location to allow more proximity to children.

I, part of my choice of where I'm working right now is my children. So in the. . . I have been working in Hackensack now for close to three years. But prior to that, I was working in New York. And part of the reason why I moved close to home is because I have a teenage daughter, so I wanted to be home. . . [P2]

Escaping from density, crime, and traffic came up with these groups as well, similar to the classic story told of the US-born population:

FP1: And another reason is, the crime too. No offense, but one of my friends, or two of my friends, were victims of a crime here in Jersey City.

FP2: That's true.

66

FP1: So, they want to move out of Jersey City because one of their children were victims too --- in school. So, they had to move out in a better location, in a better place, and they're there now, and they're happy. [P1]

Crime is also a factor in why people who have lived for a long time in dense areas choose to stay put.

MOD: Why do you stay?

MP: It's a very quiet neighborhood community.

FP1: There's no crime in our place.

MP: In my place --- I never lost anything there.

FP2: I live in the same street where he lives, and for how many years, no robbing or whatever.

FP1: It's peaceful.

FP3: No robbery, nothing, until now. So, I hope to God nothing happens bad [inaudible]. [P1]

Another change over time is intergenerational; this came up in two of focus groups that had a range of ages. Younger single people may prefer to avoid enclaves of same-origin-country residents.

FP: My son is a junior in the college and he does a summer job, so he did a job in New York and he wanted to live there and see the life. And I told him, "Save your money and stay with us. Why do you want to spend your money in the apartment, why don't you stay with me?" And the next year, he took a promise that he wants to live in New York and for my husband to let him go, let him spend his money and then he has of his life. So young kids as you said, yes..... [P2]

MP: I'd just like to tell about a trend in our generation maybe. Like most of my classmates are my Indian friends from Buffalo... They want to move away from the Indian community, like they don't want to stay where there are a lot of Indian people because they want to mix into the other cultures because it's like you are coming from India and you are staying in a "Little India" after coming here. [P2]

It appears that as these immigrants, or other immigrants they know, became better acquainted with the area in which they were living, or as they began to get married and have children, other criteria such as school quality, crime, noise, privacy, and open space become more important. That said, perhaps younger immigrant couples are becoming less interested in the suburban lifestyle:

FP: Another experience, we met a young couple who came from New York and the lady was so sad because the husband took a house in Plainsboro and she said, "How do you live in Plainsboro?" And I said, "This is the best place, the grocery place, the doctors

are so near, the train station is so near. For us, this is Heaven here." She said, "This is dead. He has brought me here and I hate this place." So it's the driving fact that you said or the decision-making is what we are focusing on, is it kids, either our life or whatever. [P2]

Common transportation problems

Focus group discussion about the problems that participants experienced during or accessing transportation varied greatly across the focus groups. . Participants with lower incomes and those who cannot obtain a drivers license experienced the most significant transportation problems and restrictions.

For public transit users, the most common problems were that service was infrequent and unreliable, especially at night and on the weekends. One participant summarized the problems of infrequent bus service, describing having to wait for a bus in the cold rain,

> *I leave my job, I go to wait for the bus, and still when the bus doesn't come, there I am for an hour, like a penguin [S1].*

Further, in many areas was inadequate for non-work trips. As one participant said:

> *In terms of people using the public transportation, it is probably more for professional reasons. But people, if you talk to they want convenience if you compare it to Europe or any other places or India, for example, there it's very, very limited [I2].*

Participants in the Spanish language focus group discussed communication challenges. One participant felt that "they should put more bus drivers who are bilingual, Spanish and English." However, another participant indicated that this is changing and more drivers now speak Spanish [S1]. Another described an on-board bus survey, which was conducted only in English.

> *Last year, they were taking a survey on the buses. They gave us all paper and pencil to make our review. ... I imagine that if they wanted to take a ... survey with Latinos, at least it would have to be in both languages. ... So I imagine, I believe the survey didn't do much [S1].*

The cost of transportation was one of the most important transportation problems for lower income participants. Participants described fellow immigrants walking two or three miles to train stations because they can't afford a car and bus service is nonexistent or insufficient. On the costs of owning a car,

> *if I lay out to pay insurance, then the gasoline, then with everything, it's not going to give me enough to live, so I prefer to walk [S2].*

The lack of public service in many areas meant that participants were forced to find another form of transport which was generally more expensive. As one participant said,

> *Because public transportation doesn't go to certain places where we work, we have to look for another way to transport ourselves [S1].*

For example, participants talked about paying someone to drive them to work, to go shopping to take their children to and from school (see below).

The inability to obtain a drivers license was another problem for certain groups. This was most common among Latino participants in New Brunswick. For many participants, the fact that they did not have or could not obtain drivers licenses meant that they had fewer travel options.

> *If we were to have a license, how great, everyone would have a car. … truthfully, public transportation is no pleasure for us, it's a necessity [S1].*

Participants noted it is possible for undocumented residents to obtain license plates for vehicles in other states:

> *And what happens? These are the people most pursued by the police. 'Pennsylvania plates - stop, turn off your lights.' The police know exactly who the immigrant is. The police know that one carries such plates. And if one has a car, it's because one uses it, because one needs it or you don't work. One doesn't have a car as a luxury, but to use it for work. … Many people can have money and travel and buy their little car [for] $300, $400. But the license, the plates - no more, no [S1].*

Variety of travel modes

Participants in the focus groups used a variety of unconventional private and shared travel modes including jitneys, raiteros (van services), gypsy cabs, and paying for carpools. The particulars of which services participants used varied by residential and work location, legal status and income, but the use of unconventional modes of transportation was common theme among all the focus groups and most of the participants.

Jitney buses were most common among participants who lived or traveled in Jersey City, Paterson and Passaic. These areas are areas where there are concentrations of Latino immigrants. As one participant said, "There are a lot of jitneys there, also because there are a lot of Hispanics" [S2].

A Filipino participant referred to these buses as "immi buses" because the buses are operated by and for immigrants [F1]. Participants used these jitneys because they are inexpensive (one or two dollars for local trips), and offer high frequency and shorter

travel times. For many users, the fact that the drivers speak Spanish is also an attraction. As a result, participants reported using these services frequently for a variety of trips.

The use of jitneys was not limited to Latino immigrants. Filipino and Indian participants in our focus groups also used these services because of the lower costs and operation advantages. While the buses were used primarily by people who live in areas where they operate, most participants in the other focus groups were familiar with the buses and many had used them in the past. Participants who did not use the jitneys said this was because they felt uncomfortable on the buses or because they did not offer senior citizen discounts.

Often transit agencies claim that jitneys lure riders from public transit agencies, our participants saw this differently. One participant claimed that the increasing numbers of jitneys in Jersey City was a response to cuts in NJ Transit service.

> *One thing I noticed: When there are no NJ Transit, the small minibus comes. I don't know if they talk to each other, 'I won't come. You go there.' … When they're cutting trips on the Transit, the minibuses are there! [F1].*

Raiteros are vans which provide transportation to and from work, and in our focus groups all were provided by an employment agency. Typically, these services provide rides from the employment agency itself or a central location, thus workers are required to travel to the van. In our focus groups, these services were most commonly used by Latino participants in New Brunswick who work in warehouses, but some Filipino nurses also used these services. For the Latino participants, the raitero costs $40 per week and this cost was garnished (illegally) from their paycheck regardless of whether they used the service [S1]. This means that these workers are unlikely to use public transit or other forms, even when it is available. As one participant described,

> *"in case I decide to travel by bus, … I then pay for the bus - but the agency still deducts the $40, whether I travel with them or not [S1].*

Participants described crowded and unsafe conditions on such employer provided vans. One said, "They put you in there like livestock" [S1]. Some participants felt this situation was a direct result of their undocumented status:

> *Definitely. Usually, it is always done to those of us who are immigrants, who the agencies send. The agency people send whoever's there because they know that they need work … That's why they can say, 'You, so-and-so, go to the van. You, go to such-and-such place.' And when you go to the van, you want to go sit on someone's lap or go sit on the floor of the van because everyone's already sitting. So, people know the needs we have, as immigrants. Someone with papers would not be going to an agency to earn $7.15 or $7.25 an hour. And that's why they treat you like that, in that manner. [S1]*

70

Unlicensed private taxis, so-called gypsy cabs, were another common form of unconventional transit used by the focus group participants. These services are found either at a specific location (e.g. near a transit stop or store) or by calling someone. In Jersey City, Filipino participants described a retired person who operated a gypsy cab from the PATH train station to the participants' homes. Another participant had in the past provided a similar service,

> *As a teenager, I have no job, I went to school. So we had an extra car, so I drove people around. I would actually pick people up at the airport and drop them off in the city [F2].*

Another described a common scene on the weekends at his store.

> *In my store every weekend, we have about twenty to thirty Filipinos, which they work as a baby-sitter or they work in the house and normally they are undocumented. And if they. … So what they are doing is they are hiring somebody and pay $10 to $15 just to go from Bergen to Paramus. .. It's like a. . . Like a taxi, but it's not a taxi. [F2].*

In the focus group with Indian participants, participants described using "Indian" or "desi" cabs to the airport or other destinations.

> *There are a lot of mom-and-pop drivers like this in Edison. They can take you to work, they can take you to the laundromat and they can take you to the mall. There are a lot... [I2].*

Participants found these service through word of mouth, a local store or online. One participant offered an explanation of why these services are common among immigrants but not among the US-born;

> *The Gringos don't know about that, because most of them have their own car [S1].*

In addition to gypsy cabs, participants frequently used a form of paid carpooling, generally an agreement to pay someone for travel for work, school or other trips. A final form of unconventional transit consisted of carpools provided by one coworker for another, which typically included some form of payment. Usually, participants paid a regular fee for the ride to work

> *I worked in North Plainfield and one of my co-workers offered me a ride, going there and going back. So I have to pay him like, $15 or $10 every day [F1].*

Though others paid for rides on a less formal basis,

> *I don't have to pay for that … sometimes, like, when I feel like it, I give him a gift [money] [I1].*

For those who had a car, this can be an additional source of income,

My husband… works there in the factory, but on the side he gives "rides" and brings co-workers who…   It's another income for us [S2].

Several of the participants paid for "rides" for their children. One participant could not take her children to school "so we end up paying for a 'ride' for two girls, which is $50 - $25 [per week] for each one. … I pay for a 'ride', well, primarily because I think it's safer. They pick them up from me on foot from the house and leave them on foot at the house" [S2]. Often these "rides" were provided by parents of other children at the school

Summary

The focus groups suggest a number of hypotheses that require further research. Some of these were addressed in the survey portion of the study while others are not so easily amenable to survey research methods.

Immigrants appear to be drawn to the United States, and within the US, to the denser urban parts of New Jersey because of work opportunities and educational opportunities. For some the availability of networks of other people born in the same country plays an important primary role in residential decisions; for others, those networks are secondary but also important. Recent, young immigrants may be less likely to live near other immigrants because of a greater self-consciousness about cultural identity and integration.

Transportation access may be an important but secondary criterion in residential decisions, helping to determine location patterns within the major metropolitan areas in the state. For people who have stayed for a long time in dense areas, transportation access is a major criterion. For those who have left, other criteria are more important.

Some immigrants clearly rely on transit so much because they are not able to drive without fear of arrest because of immigration status. Immigrants also often have close ties to their countries of origin. Some immigrants forgo the expense of auto ownership for some time in order to send remittances back home. Both factors—legal status and remittances of disposable income—may prolong transit use for certain immigrant groups. Other immigrants may be more likely to use the bus because they are recruited from abroad to work at large organizations like hospitals and schools which are more likely to be bus-served.

Workplace or neighborhood locations, and the changes in these locations over time, seem to have been extraordinarily important in determining the travel choices of immigrants—perhaps more important than other determinants of travel change such as increased affluence, the higher social status associated with automobile ownership, or

the desire for privacy. Spatial circumstances and associated levels of transit accessibility may influence travel patterns more than immigrant culture or status, at least for some immigrant groups.

The material circumstances of immigration such as an *intercity* move from another country likely increase the probability of transit use. Cities, particularly large cities, draw immigrants, and transit services are better there. This increases the probability that immigrants rely on those services rather than on solo driving, carpooling or walking.

When they arrive, many immigrants are focused primarily on work or higher education, and their location decisions *within* a metropolitan area also tend to prioritize transportation access to those locations. Over time, when family and children start to play a stronger role, their location decisions become more complex and are more likely to result in a location with lower transit accessibility. US-born households within the United States also make location decisions based on work and higher education, but other considerations may play a larger role for those households because US-born households are more familiar with multiple characteristics of places. In other words, immigrants' lack of familiarity with things other than job locations and college locations, along with their conscious prioritization of work and higher education, may lead to a pattern of settlement with higher transit access.

In both the intercity and the intracity sense, initial residential locations of the average immigrant have higher transit accessibility than the initial locations (at birth) of the average US-born person. Immigrants are more likely to spend at least part of their lives in places where they are exposed to transit and private shared transportation modes. This learning effect may also account for part of their higher transit reliance over time.

HOUSEHOLD SURVEY

Informed by the findings from the focus groups and in consultation with NJ TRANSIT staff, we developed a telephone survey which was administered in English and Spanish. The questionnaire was pre-tested on a small sample in December 2009 and modifications were made in order to shorten its length and to improve data collection on certain questions. A second pretest was conducted in January 2010, and some additional changes were made at that time. The survey was fielded in February through April 2010 to three target groups—Spanish-speaking immigrants from Central and South America, immigrants from the Indian subcontinent (South Asians), and a control group consisting primarily of US-born households. Given the budget constraint we were unable to include Philippines-born participants in the survey.

The survey collected information about transportation choices, including commute mode choice, non-work trip frequency and purpose. We also collected information about residential location choices and attitudes towards different modes of travel. In addition, basic demographic information was collected along with information about immigrant status, length of time in the United States, English proficiency, and other useful classification variables. See Appendix F for the survey questionnaire.

There are five main additional kinds of data collected in the household survey that make it different from Census data used for most work on immigration and transportation:

- Timing, mode and location of non-work trips for three common purposes: grocery shopping, going out to eat or to pick up prepared food, and visiting friends or relatives.

- Home and work addresses, enabling small-scale spatial measures (e.g., network distance to nearest rail station, number of bus stops within a half mile, employment and population density of the block group and Census tract).

- How people chose current and past neighborhoods.

- How people found current and past jobs.

- Detailed commute mode and non-work trip mode going beyond the Census categories, including explicit questions about type of bus, type of rail for transit users, and also questions to capture car sharing, van pooling and private transit providers.

We also collected information on demographic characteristics to help understand how those differences might account for differences in travel and location patterns: home type, tenure, employment status and occupation, household size, presence and age of children in household, sex, race/ethnicity, and income.

The survey posed a number of specific data collection challenges, which were minimized by customizing the research design and sampling strategy. These challenges included:

- South Asians constitute less than 3 percent of the total population in New Jersey, and foreign-born Latin Americans are also a relatively small share. This would require an enormous amount of screening if a conventional mail or telephone sample were used.

- A large share of the Latin American group does not speak English well, necessitating the translation of the questionnaire instrument into Spanish and the use of fluent Spanish-speaking interviewers.

- Cultural and life style barriers may have an impact on respondent cooperation and contact rates.

The first challenge made standard telephone surveying using random digit dialing financially infeasible. We instead contacted households with a high probability of being born in the targeted countries by using specially-designed listed samples purchased from Experian, one of the largest providers of targeted list samples in the country. These samples consist of individuals with known credit histories and with South Asian and Latin American surnames and other identifiers. About 20 percent of the Latin American surname respondents, and about 15 percent of the South Asian surname respondents, were US-born and were included in that comparison group. (Of the random digit dialing sample, 7 percent fell in the South Asian or Latin American subgroups.)

Such samples are of course not perfectly representative of the target population because of the fact that the samples do not include individuals without credit histories. We therefore stratified both the Southeast-Asian-born and the Latin-American-born samples according to Experian's estimates of household income, deliberately oversampling certain income categories (particularly lower income categories) to conform more closely to the distribution of income statewide among the foreign-born population according to the 2008 American Community Survey. We carry out some comparisons below of the respondent pool with ACS data for 2008.

We also interviewed households selected randomly by telephone number and matched to household addresses, which provided a control group of US-born respondents as well as a few additional foreign-born respondents in the target groups.

Both the Experian samples and the supplementary general sample were geocoded prior to fielding so as to determine the locations of survey respondents and to enable spatially specific measures of rail proximity, bus stop density, and population and employment density at the Census tract and block group levels. (Employer locations for workers were also geocoded, but in a post-processing stage.) Also, in order to ensure that we had slight overrepresentation of dense urban areas in which transit would be an

option for all respondents, both the Experian and the random-digit-dialing samples were restricted to the top two-thirds of counties in the state by population.

The overall response rate for the sample was 18.6 percent, with lower response for the Latin American sample and higher response for the Indian/South Asian sample (Table 17). We conducted 909 interviews in total from the three sample types. Home and work locations for successfully geocoded households are shown below (Figure 29).

Table 17. Sample distribution and response rate by sample type

Group	Sample[1]	Number Completed	Response Rate
"Latin American" sample	1685	283	16.8%
"Indian/South Asian" sample	1027	256	24.9%
Random telephone sample	2167	370	17.1%
Total	4879	909	18.6%

---

[1] The adjusted sample size is calculated by subtracting the non-residential numbers, cell phones, fax numbers, numbers out of service and wrong numbers from the original sample.
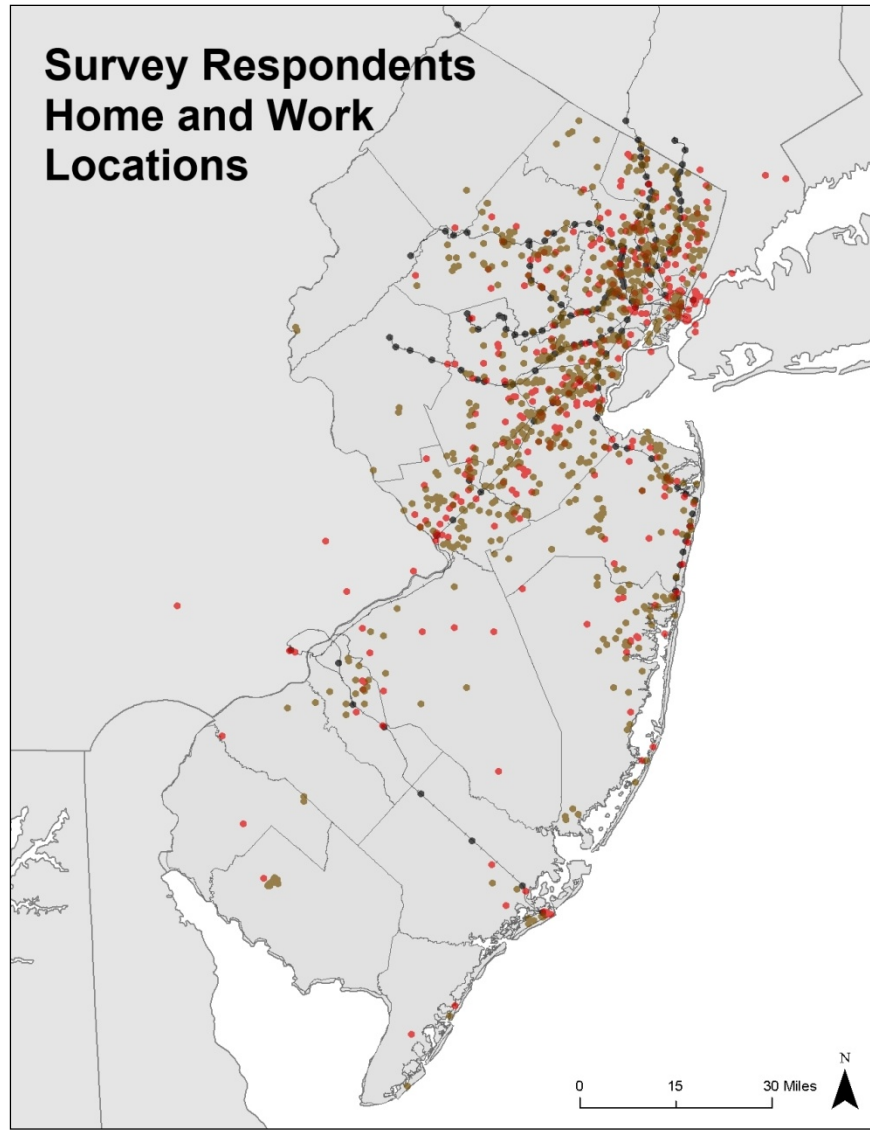
Figure 29. Household survey respondent home and work locations

Note: Home locations in brown, work locations in red, rail stations in black

Background data

In our reporting below we have stratified survey respondents into five groups—1. US-born, 2. Latin American immigrants who arrived in the past ten years ("recent" immigrants), 3. Latin American immigrants who arrived more than ten years ago ("earlier" immigrants), 4. recent Indian/South Asian immigrants, and 5. earlier Indian/South Asian immigrants (Table 18). About half of respondents were born in the US (49 percent). Recent Latin American immigrants represent 7 percent; earlier Latin American immigrants, 19 percent; recent Indian/South Asian, 7 percent; and earlier Indian/South Asian, 19 percent. We refer to the Indian and South Asian group as

"Indian" in the remainder of the report as few people born outside of India were included.

Table 18. Survey Subgroup Summary

	Number	Share
US-BORN	441	49%
LATIN AMERICAN IMMIGRANT (< 10 YRS)	63	7%
LATIN AMERICAN IMMIGRANT (>= 10 YRS)	168	19%
INDIAN IMMIGRANT (<10 YRS)	59	7%
INDIAN IMMIGRANT (>=10 YRS)	173	19%
TOTAL	904	100%

The survey was administered in both English and Spanish. In the Latin American sample a large majority, 72 percent, were administered the questionnaire in Spanish (Table 19).

Table 19. Survey language for Latin American sample

	Number	Share
English	80	28%
Spanish	203	72%
Total	283	100%

Latin American immigrants who answered the survey hail from 14 countries (Table 20). The most common countries of origin from this region in our respondent pool are Mexico (29 percent) and the Dominican Republic (21 percent).

Table 20. Country of Origin: Latin American Sample

	Number	Share
Mexico	68	29%
Dominican Republic	48	21%
Ecuador	27	12%
Colombia	26	11%
Peru	23	10%
El Salvador	13	6%
Guatemala	12	5%
Honduras	3	1%
Nicaragua	3	1%
Bolivia	2	1%
Costa Rica	2	1%
Uruguay	2	1%
Argentina	1	0.4%
Chile	1	0.4%
Total	231	100%

Nearly all the South Asian immigrants who answered the survey were born in India (Table 21.) with just six respondents from Pakistan and Bangladesh. For the remainder of this section we refer to this South Asian group as "Indian."

Table 21. Country of Origin: South Asian Sample

	Number	Share
India	226	97%
Pakistan	4	2%
Bangladesh	2	1%
Total	232	100%

Data description: Target questions

In this subsection we focus on the questions of greatest interest in the survey, reserving until later a description of demographic and control variables.

We asked for the primary reason for immigrating to the United States (Figure 30). Nearly half of all Latin American immigrants and Indian immigrants in the US for 10 years or more, and a third of more recent Indian immigrants, cited employment as their reason for immigration. To join family or relatives was the second most likely reason, regardless of subgroup.

Reasons for immigration
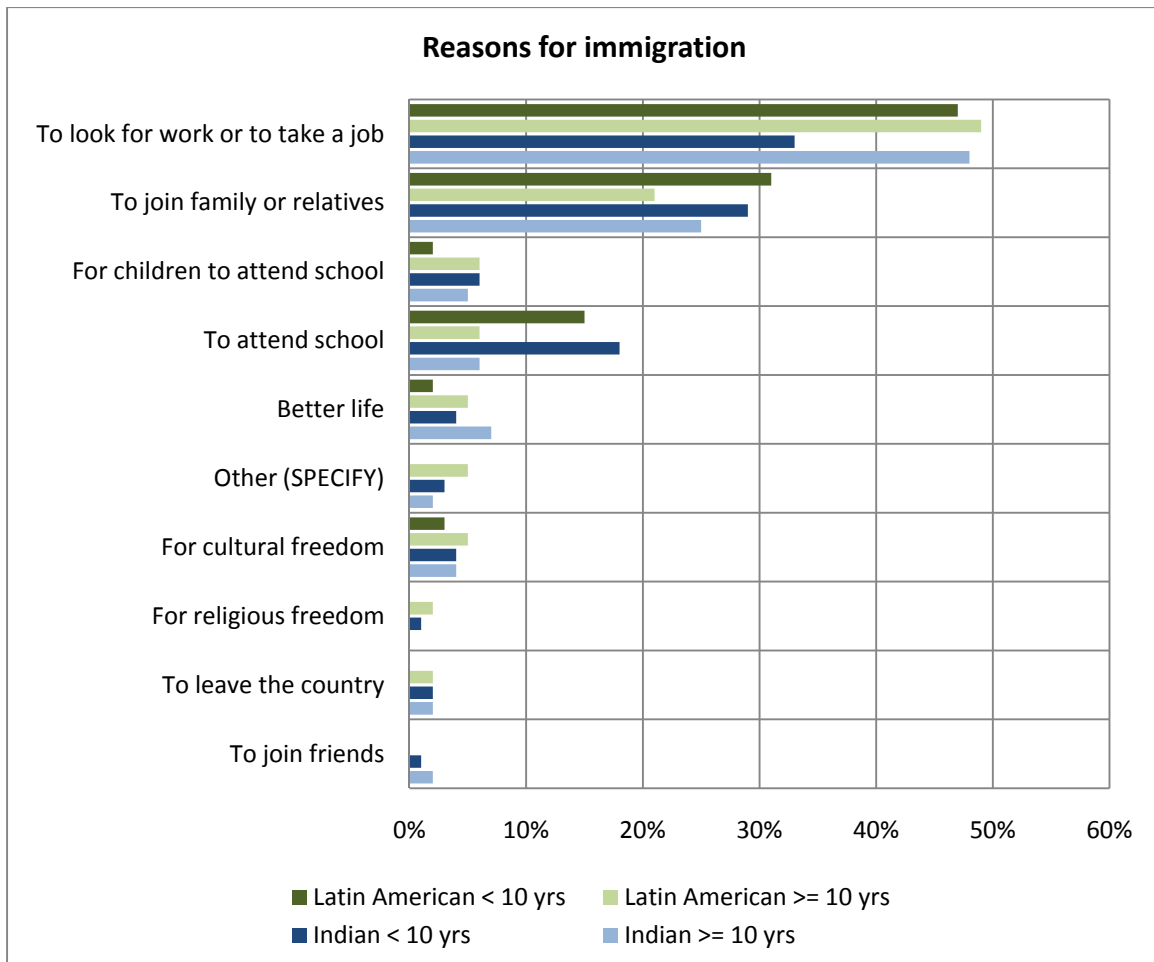
Figure 30. Reasons for immigration (Q9)

Respondents were asked for the factors that helped them find their current job (respondents were asked for the most important factors and any other factors that contributed) (Figure 31). Latin American immigrants and US-born respondents most commonly identified friends and family as the most important factor. Indian immigrants did not single out friends and family, and cited advertising as their most important factor. As noted previously, Indians are of higher income in occupations that may depend more on such market mechanisms rather than social connections.

80
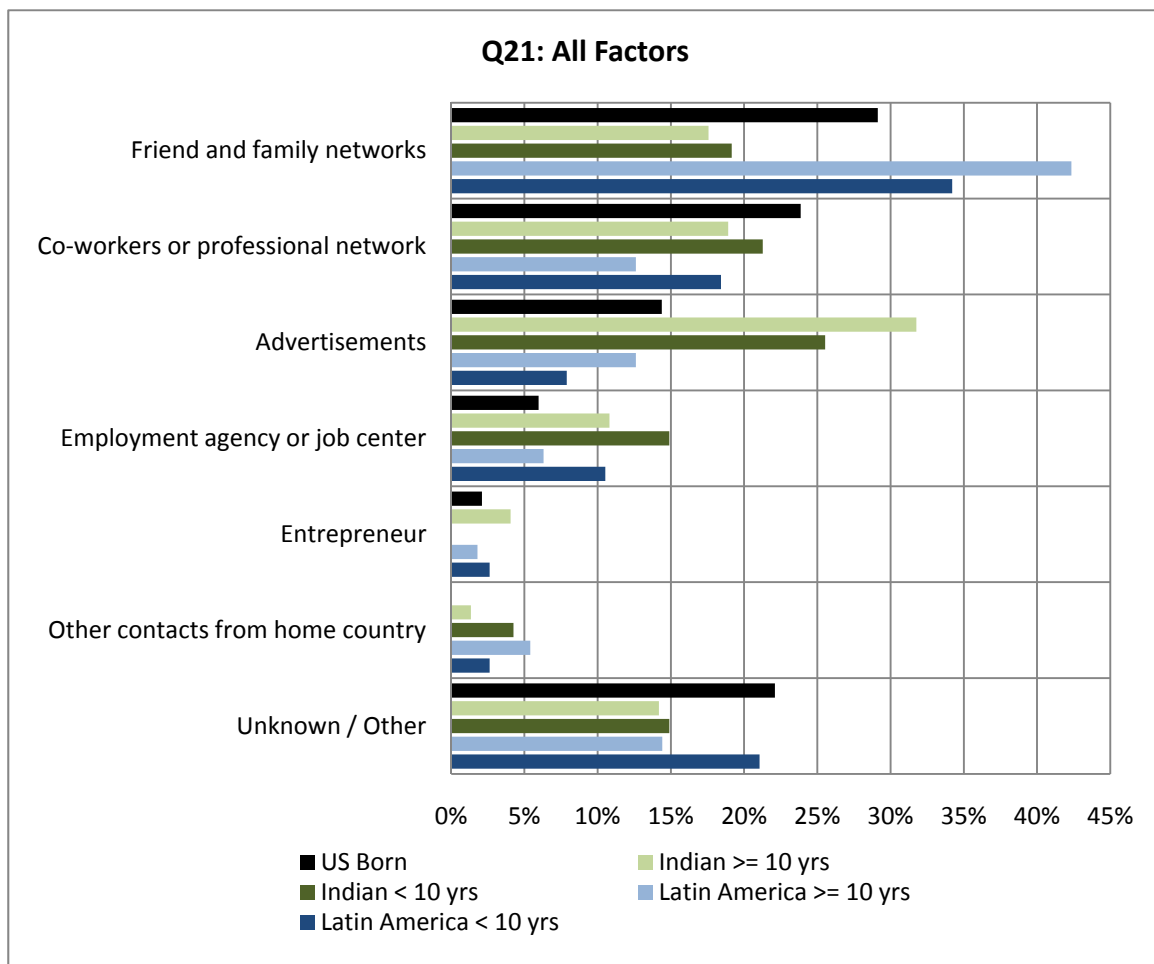
**Figure 31. What was the most important factor
in helping you find your current job? (Q21)**

Respondents were also asked about factors that helped them to find their first job in the US (Figure 32). Again, Latin American immigrants and US-born persons cited friends and family as the most important factor in getting their first job in the US. Indian immigrants also cited friends and family as their most important factors, but cited advertisements, "other", and agencies nearly as high.

Q23: All Factors
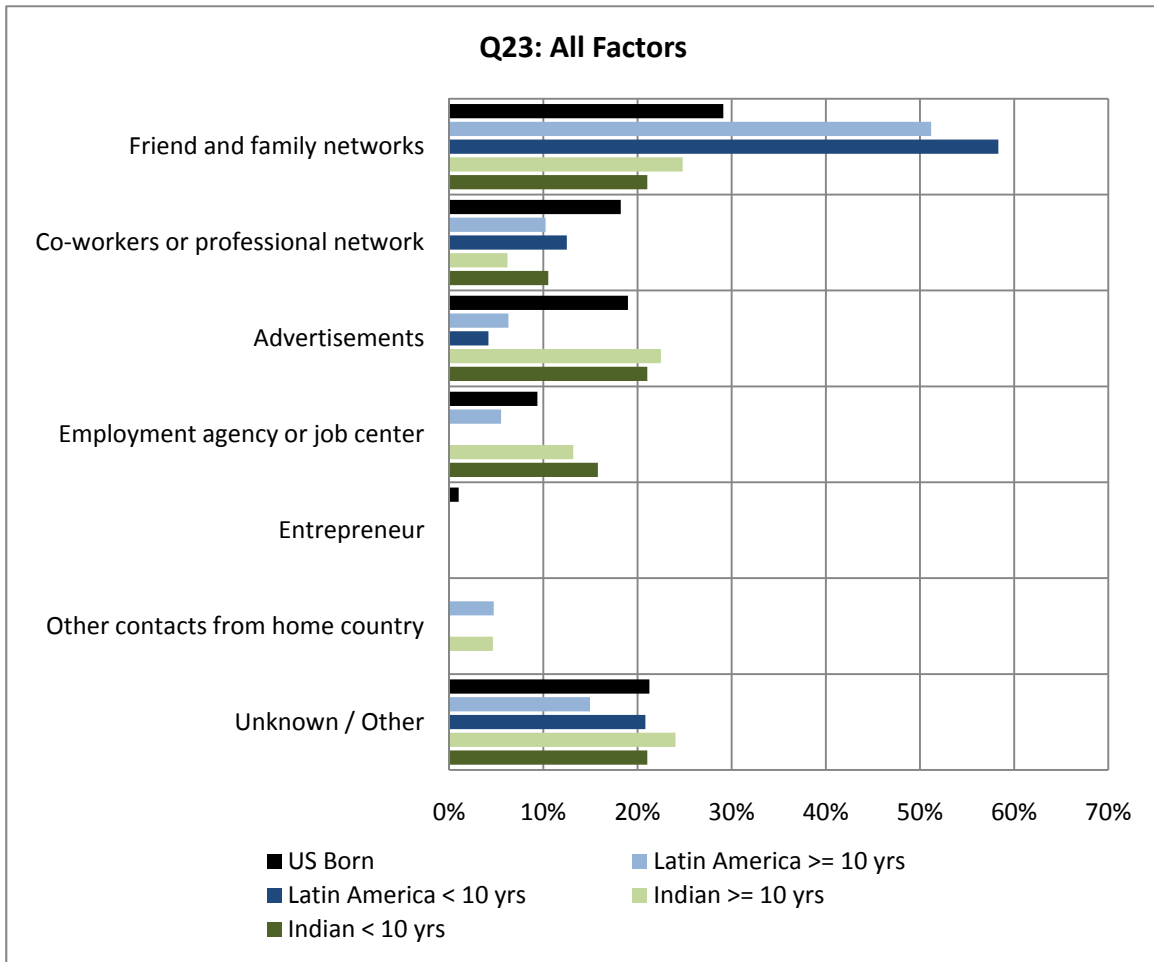
Figure 32. Please tell me the most important reason in helping
you find your first job in the US (Q23)

We asked respondents how they chose their current neighborhood (Figure 33). Living near work was the most important factor for both recent Indian immigrants (33 percent) and recent Latin American immigrants (26 percent). Earlier Indian immigrants were most likely to name living near schools for children (29 percent). Earlier Latin American immigrants (24 percent) and US-born respondents (25 percent) stated that living with or near family or friends was the most important factor.
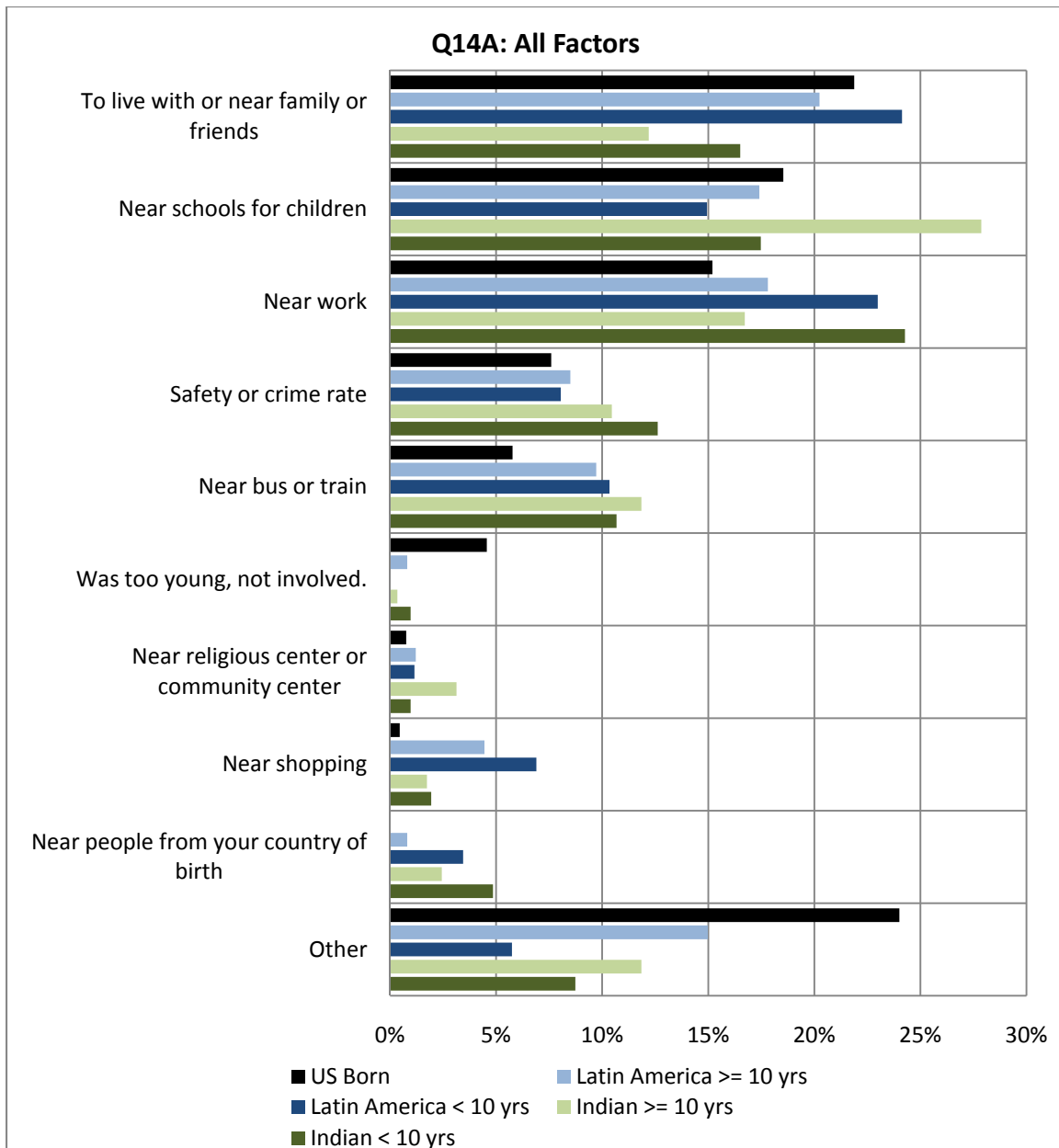
**Figure 33. Think back to when you moved to your current home.
How did you choose the town or neighborhood you currently live in? (Q14a)**

Respondents were asked about how they had chosen their town or neighborhood in the past. US-born respondents were asked about their previous town or neighborhood, and immigrants were asked about their first town or neighborhood (Figure 34). US-born respondents were most likely to respond that they were too young to be part of the decision (38 percent), "other" (18 percent), to live with or near family or friends (14 percent) or to live near work (14 percent). A large percentage of Latin American immigrants in the US for more than 10 years stated to live with or near family or friends (38 percent). About 29 percent of recent Latin American immigrants gave this answer, while 20 percent answered to be close to their work location and 16 percent stated that

83

they chose the location to be near the bus or train. A large number of Indian immigrants in the US for more than 10 years said that they chose to live with or near family or friends (37 percent), near work (22 percent) or near schools for their children (14 percent). Recent Indian immigrants most frequently cited living near work (34 percent) and close to family or friends (25 percent)
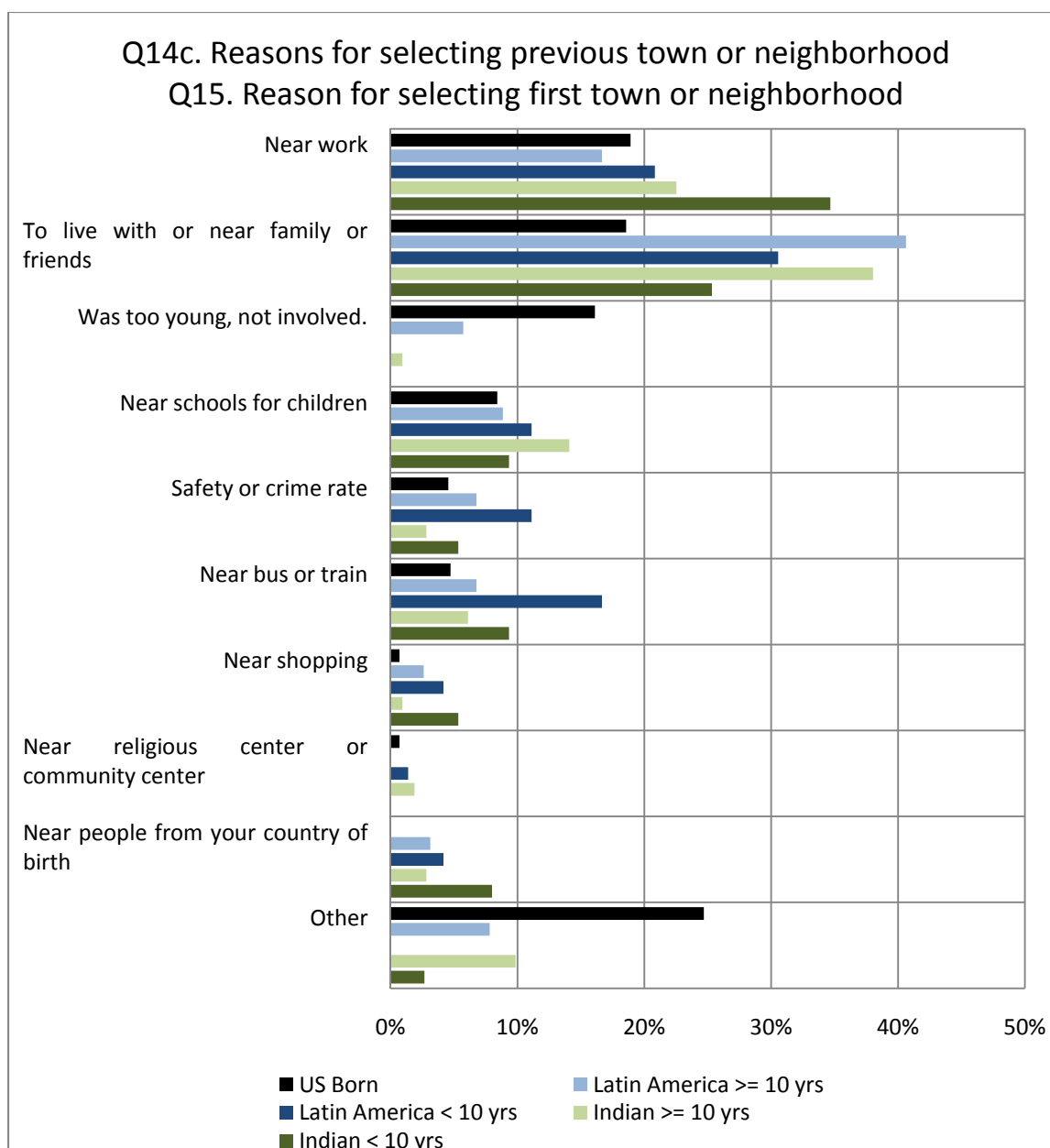
Figure 34. Reasons for selecting previous or first town or neighborhood

Among the survey respondents, recent immigrants, especially Latin American immigrants in the US for less than 10 years, are less likely to drive to work than US-born or earlier immigrants (Table 22, below). While 74 percent of US-born respondents drive,

only 21 percent of Latin American immigrants in the US for less than 10 years (compared to 45 percent of Latin American immigrants in the US for more than 10 years) and 51 percent of recent Indian immigrants (compared to 62 percent of Indian immigrants in the US for more than 10 years). Recent Latin American immigrants were more likely to travel by bus or van (36 percent) or carpool (24 percent). They also had a high propensity to walk to work (15 percent). Earlier Latin American immigrants also showed high use of these modes—14 percent traveling by bus, 21 percent by carpool and 7 percent walking. Besides driving, recent Indian immigrants were likely to travel by train (20 percent) or to carpool (15 percent). Indian immigrants in the US for more than 10 years showed relatively high use of train (12 percent) and carpool (10 percent), but these figures are less than those of recent Indian immigrants.

Table 22. Work mode – How did you usually get to work last week? (Q28)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Drive	185	74%	7	21%	43	45%	21	51%	80	62%	336	61%
Bus (or van)	13	5%	12	36%	13	14%	3	7%	13	10%	54	10%
Train (or light rail, trolley, subway, PATH, etc)	13	5%	0	0%	3	3%	8	20%	16	12%	40	7%
Taxi, limousine, friend driving, etc	1	0%	1	3%	3	3%	0	0%	1	1%	6	1%
Carpool	14	6%	8	24%	20	21%	6	15%	13	10%	61	11%
Walk	13	5%	5	15%	7	7%	0	0%	0	0%	25	5%
Bike	0	0%	0	0%	3	3%	0	0%	0	0%	3	1%
Other	3	1%	0	0%	0	0%	1	2%	0	0%	4	1%
Work from home	8	3%	0	0%	3	3%	2	5%	7	5%	20	4%
Total	250	100%	33	100%	95	100%	41	100%	130	100%	549	100%

$X^2 = .000$

Note: Work mode was re-coded as bus/van when respondent indicated that six or more passengers usually rode in the vehicle.

Both Latin American and Indian respondents in the survey exhibit some differences compared with similar populations in the 2008 ACS data (Table 23). The percentage of workers who drove to work is significantly lower in the survey data compared with the commute mode in ACS data for Latin American immigrants and for earlier Indian immigrants.

Table 23. Work mode – ACS data

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Drive	25,164	78%	184	46%	494	61%	289	48%	482	69%	26,613	76%
Bus (or van)	1,196	4%	60	15%	98	12%	69	12%	36	5%	1,459	4%
Train (or light rail, trolley, subway, PATH, etc)	1264	4%	11	3%	27	3%	107	18%	50	7%	1459	4%
Taxi, limousine, friend driving, etc	31	0%	2	1%	1	0%	1	0%	0	0%	35	0%
Carpool	2,424	7%	76	19%	114	14%	76	13%	78	11%	2,768	8%
Walk	752	2%	35	9%	43	5%	23	4%	17	2%	870	2%
Bike	91	0%	4	1%	0	0%	0	0%	0	0%	95	0%
Other	282	1%	21	5%	24	3%	12	2%	10	1%	349	1%
Work from home	1,259	4%	3	1%	15	2%	19	3%	30	4%	1,326	4%
Total	32,463	100%	396	100%	816	100%	596	100%	703	100%	34,974	100%

$X^2=.000$

We also asked respondents who were driven to work whether and how much they paid to the driver for gas, tolls, etc. (Figure 35) Of the 12 responses, 4 paid no fee. The remaining respondents paid between $20 and $40 per week.
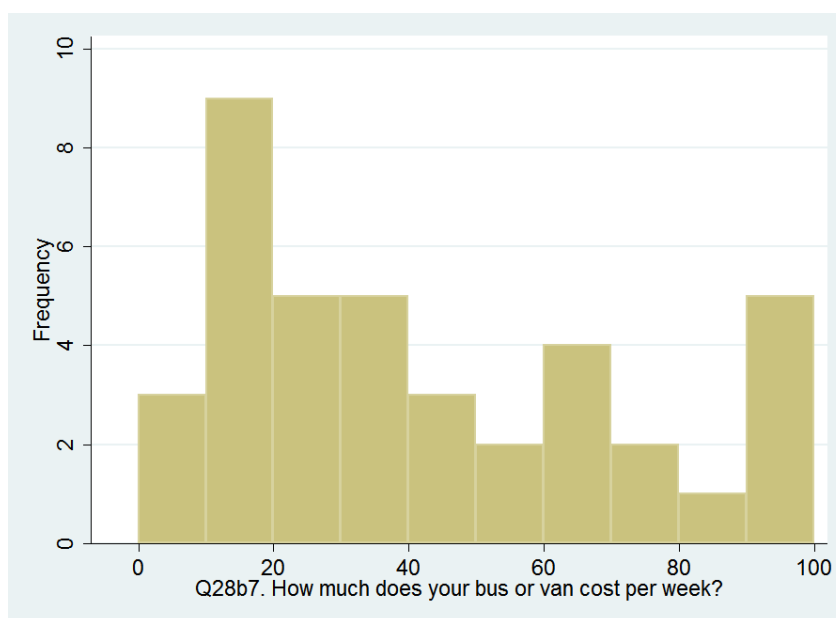
Figure 35. How much does your bus or van cost per week? (Q28b7)

We asked train riders which system they rode. Of the 40 responses, 35 rode NJ TRANSIT commuter rail, 1 rode Amtrak, 3 rode either PATH or NY MTA subway and 1 rode the Hudson-Bergen Light Rail. Of those who rode NJ TRANSIT commuter rail, 19 rode the Northeast Corridor, 6 rode the Morris & Essex Line, 4 rode the North Jersey

86

Coast Line, 3 rode the Main Line and 2 rode either Metro-North or Long Island Rail Road. When asked how they traveled to the rail station, 53 percent drive, 20 percent walked, 15 percent rode an NJ TRANSIT bus and the remainder traveled by private bus or van or taxi or were dropped off by a friend.

Six respondents stated that they traveled by taxi or driven by a friend to work. When asked how much they paid per week for that service, answers ranged from $0 to $60.

Respondents were also asked about how they had traveled to work in the past. While US-born workers were asked about their previous job, immigrants were asked about their first job in the US (Table 24). Of the 703 respondents who responded to the first question about current work commute, 615 (87 percent) responded to this question about the previous commute. The remainder were either not employed previously in the United States (this applies to a large share of recent immigrants) or refused to answer.

We found that 76 percent of US-born workers drove to their previous job. Among Indian-born workers, 56 percent of recent immigrants and 50 percent of earlier immigrants drove to work. The second most common mode to their first jobs for recent Indian immigrants was walking (22 percent) and for earlier Indian immigrants was train (22 percent). Latin American immigrants in the US for less than 10 years were equally likely to travel by bus or van (29 percent) or to walk (29 percent) to their first job in the US. Latin American immigrants in the US for 10 or more years were most likely to travel by bus or van (25 percent) or to specify other; notably, not a single respondent of the 21 recent Latin American immigrants responding to this question said they drove to work in their previous job; however, this is a small subsample.

Table 24. Think back to the first job you had after arriving in the US
How did you typically travel to work for that job? (Q30)
Think back to the previous job you held.
How did you typically travel to work for that job? (Q30a)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Drive	266	76%	0	0%	20	18%	10	56%	55	50%	351	57%
Bus (or van)	29	8%	6	29%	28	25%	1	6%	16	14%	80	13%
Train (or light rail, subway, PATH)	26	7%	1	5%	13	12%	1	6%	24	22%	65	11%
Taxi, limousine, friend driving, etc	2	1%	4	19%	5	4%	1	6%	2	2%	14	2%
Walk	15	4%	6	29%	19	17%	4	22%	10	9%	54	9%
Bike	0	0%	2	10%	2	2%	0	0%	0	0%	4	1%
Other (SPECIFY)	11	3%	2	10%	25	22%	1	6%	4	4%	43	7%
Work from home	3	1%	0	0%	1	1%	0	0%	0	0%	4	1%
Total	352	100%	21	100%	113	100%	18	100%	111	100%	615	100%

We geocoded the current residential locations of respondents to investigate their spatial characteristics and transit accessibility, and determined the network distance from their homes to the closest rail transit station. About 6 percent of all those surveyed live within a half mile of a station (Table 25). Recent and longer-term Latin American immigrants are substantially more likely than other respondents to live near a rail station, which is interesting because this group commutes by rail less often than the US-born and substantially less often than Indian-born respondents. Having a rail station within walking distance may be a proxy for other services such as bus and van, as well as walking-and bicycling-based accessibility to work. Almost 15 percent of Latin American immigrants, who have been living in the US for 10 or more years, live within a half mile of a station, while 8 percent of recent Latin American immigrants live within a half mile of a station. Only about 4 percent of all US-born respondents and 3 percent of all recent Indian immigrants live near a station. The result for recent Indian immigrants is also remarkable because, in the opposite of the pattern of rail proximity vs. rail ridership for Latin American immigrants, recent Indian immigrants have a high rail commute share. The result implies that there is a high share of park and ride use. Less than 1 percent of earlier Indian immigrants live near a station.

**Table 25. Number of respondents living
within a half mile of a station**

	Number	Percentage of Respondents within subgroup
US-BORN	16	3.97%
LATIN AMERICAN < 10 YRS	5	7.94%
LATIN AMERICAN >= 10 YRS	25	14.97%
INDIAN < 10 YRS	3	5.26%
INDIAN >= 10 YRS	5	2.91%
Total	54	6.26%

We collected data on the previous three trips in three non-work trip categories—grocery shopping, going out for a meal or snack, and visiting friends or family—which are three of the most common non-work trip purposes, according to the 2001 National Household Transportation Survey. We asked when and by what mode they traveled the last three times for each of these purposes. We report aggregate responses by subgroup. While US-born and Indian immigrants routinely travel by personal vehicle (car, truck or van) for grocery trips (95 percent or more), recent Latin American immigrants traveled by personal vehicle only 44 percent of the time (Figure 36). While Latin American immigrants in the US for 10 years or more were more likely to travel by personal vehicle than newer immigrant, only 71 percent of these trips were by personal vehicle. Recent Latin American immigrant walked for groceries 34 percent of the time and traveled by NJ TRANSIT bus for 8 percent of trips.
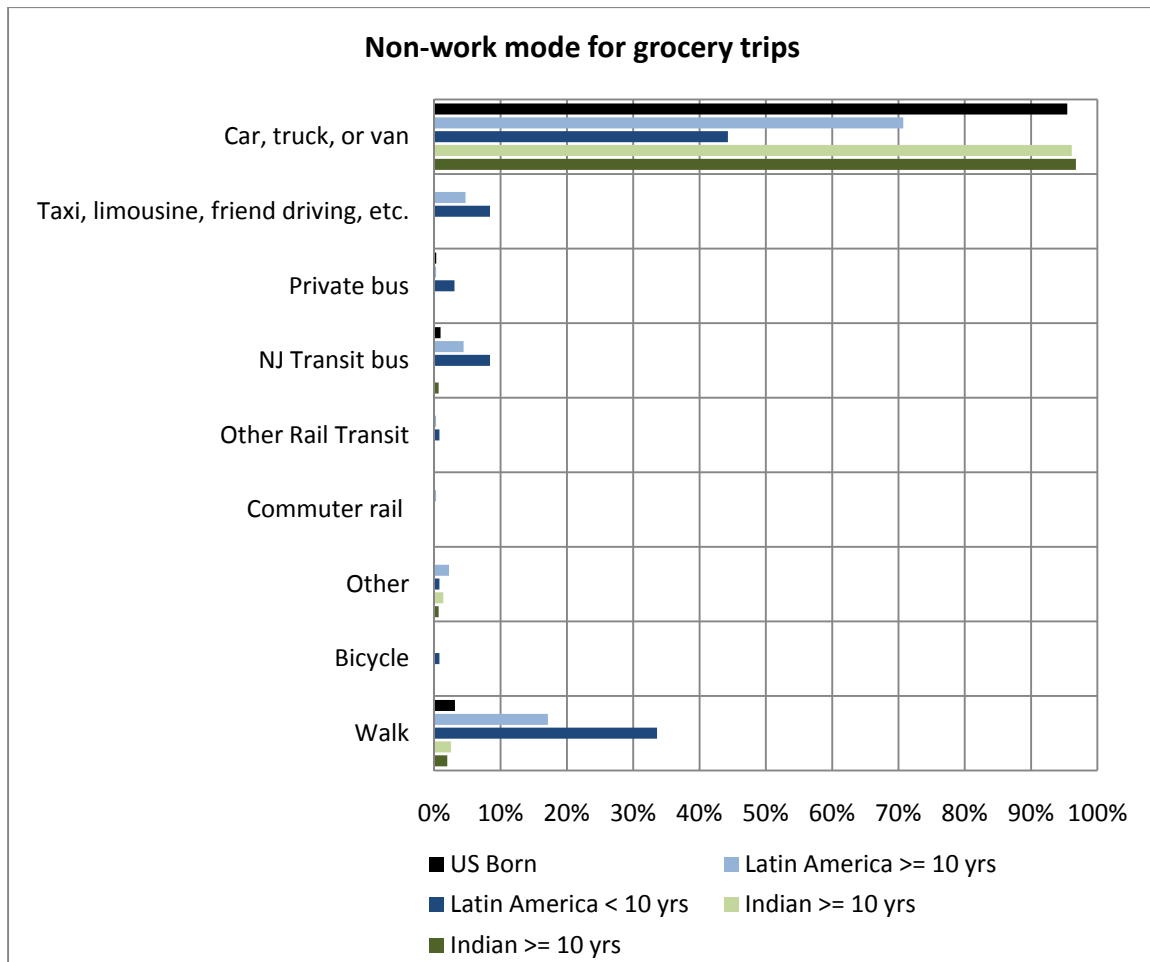
Figure 36. Non-work mode for grocery trips (cumulative)

US-born respondents reported driving for 88 percent of trips to get a meal, drink or food, (Figure 37). The reported behavior of Indian immigrants in the US for 10 years or more is similar to the US-born, as 89 percent reported driving to get a meal. Recent Indian immigrants were somewhat less likely to drive, reporting driving for 80 percent trips to get a meal. About 16 percent of recent Indian immigrants reported walking to get a meal. Recent Latin American immigrants were the least likely to drive for this purpose, doing so only 65 percent of the time. They walked for 22 percent of meal trips and rode a NJ TRANSIT bus for 8 percent of trips. Latin American immigrants in the US for 10+ years drove more than recent Latin American immigrants (but less than the other groups), doing so for 70 percent of trips. They also walked for 22 percent of these trips, but rode buses less frequently than recent Latin American immigrants, doing so only 1 percent of the time.
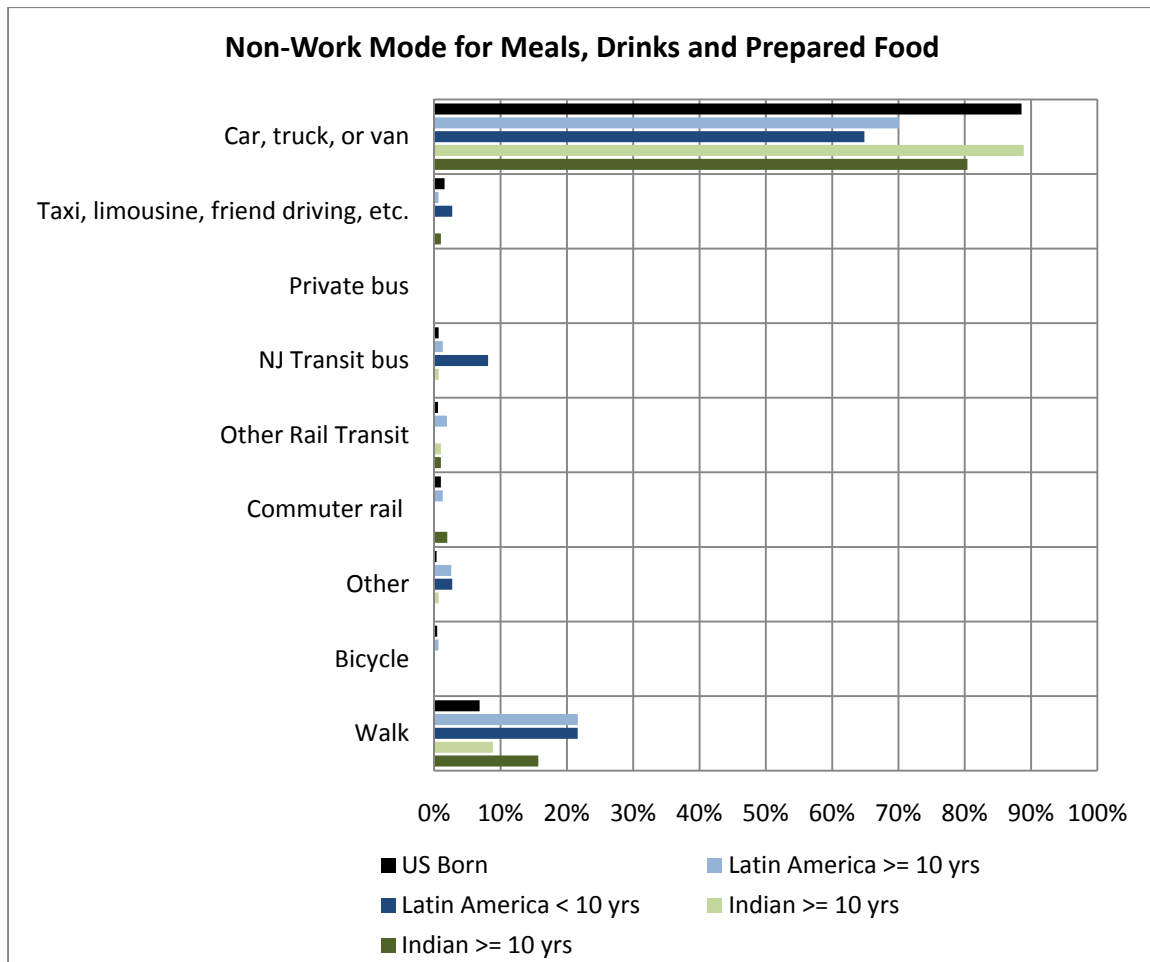
Figure 37. Non-work mode for meals, drinks and prepared food (cumulative)

When visiting friends or relatives, Indian immigrants (both recent and earlier) were more likely than US-born to drive (Figure 38). While 87 percent of the US-born drove, 93 percent of recent Indian immigrants and 91 percent of Indian immigrants in the US for 10 years or more drove to visit friends or relatives. Recent Latin American immigrants drive only 36 percent of the time, while 76 percent of Latin American immigrants in the US for 10 years or more drove. Recent Latin American immigrants traveled by NJ TRANSIT bus for 23 percent and walked for 36 percent of these trips.

Non-Work Mode for Visiting Friends or Relatives

Chart categories (top to bottom): Car, truck, or van; Taxi, limousine, friend driving, etc.; Private bus; NJ Transit bus; Other Rail Transit; Commuter rail; Other; Bicycle; Walk

X-axis: 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Legend:
- US Born
- Latin America >= 10 yrs
- Latin America < 10 yrs
- Indian >= 10 yrs
- Indian >= 10 yrs
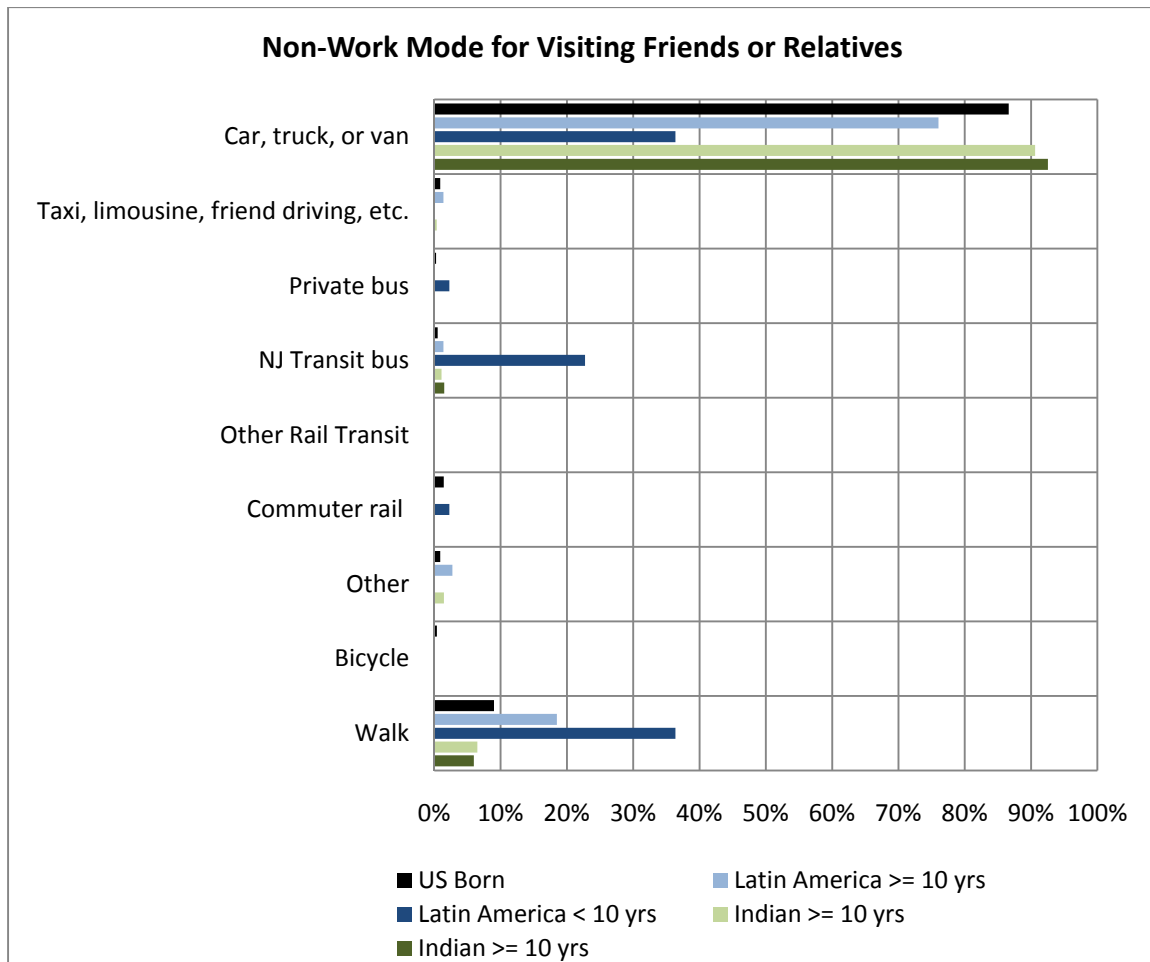
Figure 38. Non-work mode for visiting friends or relatives (cumulative)

Recent Latin American immigrants are less likely to have access to a household vehicle (Figure 39). While only 5 percent of households of US-born respondents lacked a vehicle, 46 percent of recent Latin American immigrants lived in households lacking a vehicle. Latin American immigrants in the US for 10 year or more were more likely to have access to a vehicle in their household than newer Latin American immigrants. However, 24 percent of this group report not having a vehicle.

91
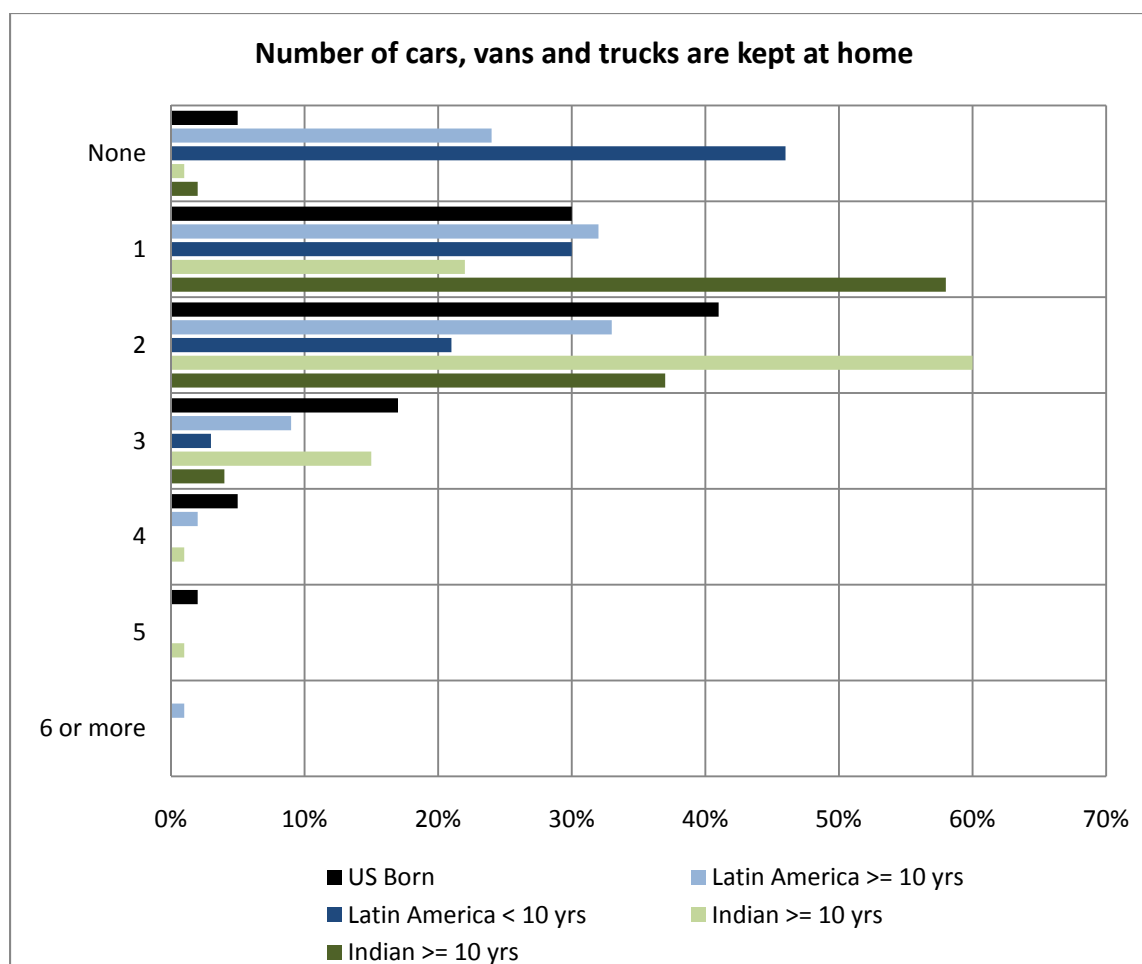
Figure 39. How many cars, vans and trucks are kept at home for use by members of this household? (Q24)

We asked respondents who did not have access to a vehicle at home if they sometimes borrowed a car (Table 26). We found that 13 percent of US-born respondents reported borrowing a car, and that borrowing a vehicle was less common among immigrants. Three percent of recent Latin American immigrants and eight percent of earlier Latin American immigrants reported borrowing a car. We had very few Indian immigrant responses for this question. No earlier Indian immigrants reported borrowing a car and only one recent Indian immigrant reported doing so.

Table 26. Do you sometimes borrow or use someone else's car? (Q25)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Yes	3	13%	1	3%	3	8%	1	33%	0	0%	8	8%
No	19	83%	28	97%	37	93%	2	67%	3	100%	89	91%
Refused	1	4%	0	0%	0	0%	0	0%	0	0%	1	1%
Total	23	100%	29	100%	40	100%	3	100%	3	100%	98	100%

$\chi^2 = .451$

The majority of recent Latin American immigrants had acquired a vehicle within the last two to five years (Table 27); recent Indian immigrants report acquiring vehicles more slowly, although these are small samples.

Table 27. How long has your household had a car, van or truck at home? (Q26)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
One year or less	4	2%	3	14%	3	3%	5	13%	2	2%	17	4%
2 to 5 years	20	12%	14	67%	19	22%	11	29%	5	5%	69	16%
6 to 10 years	22	13%	4	19%	28	33%	21	55%	26	24%	101	24%
11 to 20 years	45	27%	0	0%	29	34%	1	3%	58	54%	133	32%
20 to 30 years	31	18%	0	0%	5	6%	0	0%	12	11%	48	11%
30 or more years	47	28%	0	0%	2	2%	0	0%	4	4%	53	13%
Total	169	100%	21	100%	86	100%	38	100%	107	100%	421	100%

$\chi^2 = .000$

We also asked about sharing of autos. Twenty percent of US-born respondents reported that someone outside their family used their car or rode in it, more than any of the other subgroups (Table 28). Only 6 percent of recent Latin American immigrants and five percent of earlier Latin American immigrants reported that someone outside their family used their car or rode in it compared to 16 percent of recent Indian immigrants and 14 percent of earlier immigrants.

Table 28. Do other people, outside your family, use your car or ride in it? (Q27)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Yes	84	20%	2	6%	7	5%	9	16%	24	14%	126	16%
No	333	80%	32	94%	121	95%	46	84%	146	86%	678	84%
Total	417	100%	34	100%	128	100%	55	100%	170	100%	804	100%

χ^2 =.001
Universe: Households owning autos

Nearly all US-born (93 percent), recent Indian immigrants (90 percent) and earlier Indian immigrants (99 percent) reported having a driver's license (Table 29). Only 25 percent of recent Latin American immigrants reported having a license and 64 percent of earlier Latin American immigrants reported having a license.

Table 29. Do you have a US driver's license? (Q32)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Yes	409	93%	16	25%	107	64%	53	90%	171	99%	756	84%
No	32	7%	47	75%	61	36%	6	10%	1	1%	147	16%
Total	441	100%	63	100%	168	100%	59	100%	172	100%	903	100%

χ^2 =.000

We asked how long immigrants were in the US before they received a driver's license. Recent immigrants tend to acquire driver's licenses more quickly than earlier immigrants, and Indian immigrants get driver's licenses sooner than Latin American immigrants (Table 30). On average recent Indian immigrants received a license in slightly more than one year, while recent Latin American immigrants waited almost three years. Indian immigrants in the US for more than 10 years did not receive a license for more than two years. Latin American immigrants in the US more than ten years waited on average more than six years before getting a license. However, these trends are statistically insignificant due to small sample size.

Table 30. Average time in US before getting driver's license (years) (q33)

	N	Mean	Variance
LATIN AMERICAN < 10 YRS	14	2.8393	26.890
LATIN AMERICAN >= 10 YRS	98	6.1463	31.322
INDIAN < 10 YRS	53	1.3318	4.206
INDIAN >= 10 YRS	165	2.1177	10.104
Total	330	3.2184	19.739

In addition to survey data, spatial attributes about the home and work locations were appended to the survey data using GIS software. These measures are much more micro-scale than the PUMA-level measures discussed in the "Secondary data analysis" section, above. The micro-scale variables give some measures of the land use where the person lives (and works, for those who are in the workforce) and the access to transit facilities at each location. To describe the density of each location, population and employment densities were calculated for the Census Tract in which the home or work location falls. Population density was calculated using 2000 Census data, the most recent year in which data is available at such small spatial units. The employment density for each Census tract was calculated using 2008 Longitudinal Employer Household Dynamics (LEHD) data from the US Bureau of the Census. We also calculated network distances from home and work to both the New York and Philadelphia central business districts. For locations outside of New Jersey, straight-line distances were calculated for the same fields since statewide road network data was not readily available.

Additionally, several spatial measures were appended to the survey data to describe access to transit facilities. Network distances were calculated to measure the accessibility of home and work locations to the nearest commuter rail station, other rail transit stations (including New Jersey Transit, PATH, PATCO and Newark City Subway), and distance to New York and Philadelphia Central Business Districts. For locations outside New Jersey, straight-line distances were used to calculate distance to SEPTA and MTA transit facilities. Finally, access to bus stops was calculate by creating and estimate of the number of bus stops within a half-mile of the home and work locations. For work locations, SEPTA and MTA data were used to calculate out of state bus accessibility measures.

Latin American immigrants, both recent and earlier, are more likely to live in more densely populated locations than the US-born (Figure 40). Recent Indian immigrants live in Census tracts about as densely populated as the US-born, while earlier Indian immigrants live in less dense tracts.
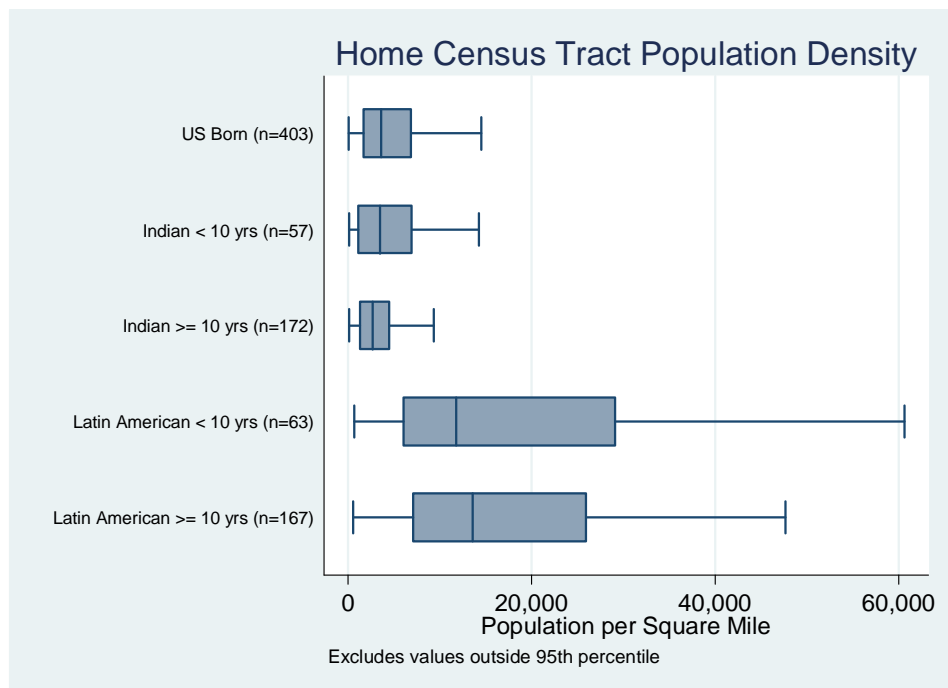
Figure 40. Population density of residential Census tract

Latin American immigrants in the US for more than 10 years live closer to a rail station than any other subgroup. Recent Latin American immigrants are more likely to live close to a rail station than US-born, recent Indian immigrants and earlier Indian immigrants. Indian immigrants in the US for more than 10 years live the furthest from a rail station (Figure 41).
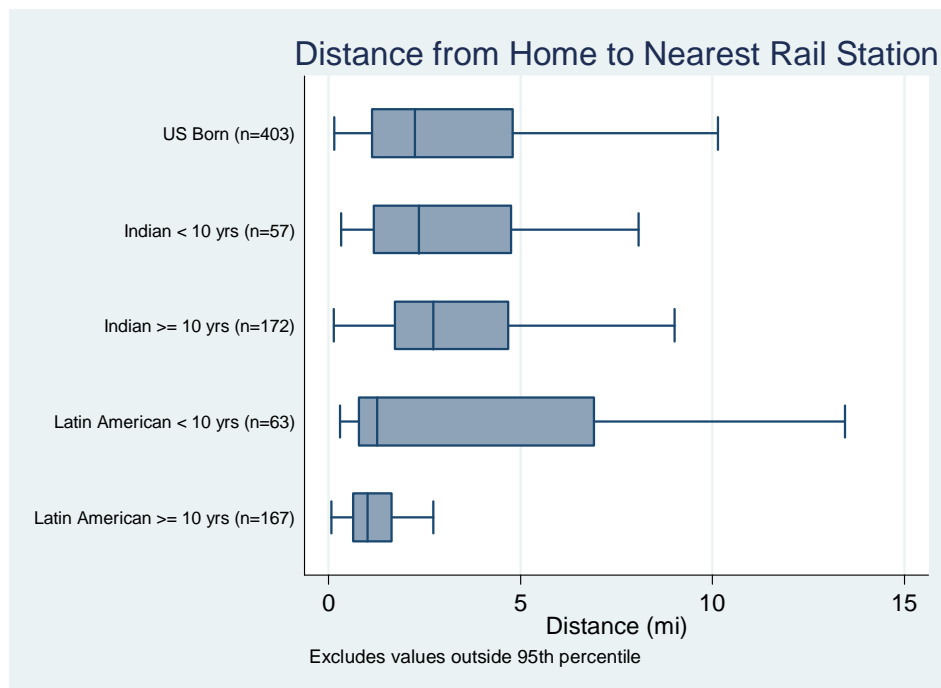
Figure 41. Distance from residence to nearest rail station

Latin American immigrants in the US for more than 10 years have the highest number of bus stops within a half mile of their homes, followed by more recent Latin American immigrants. Indian immigrants in the US for more than 10 years have the lowest bus stop density within one-half mile of home (Figure 42).
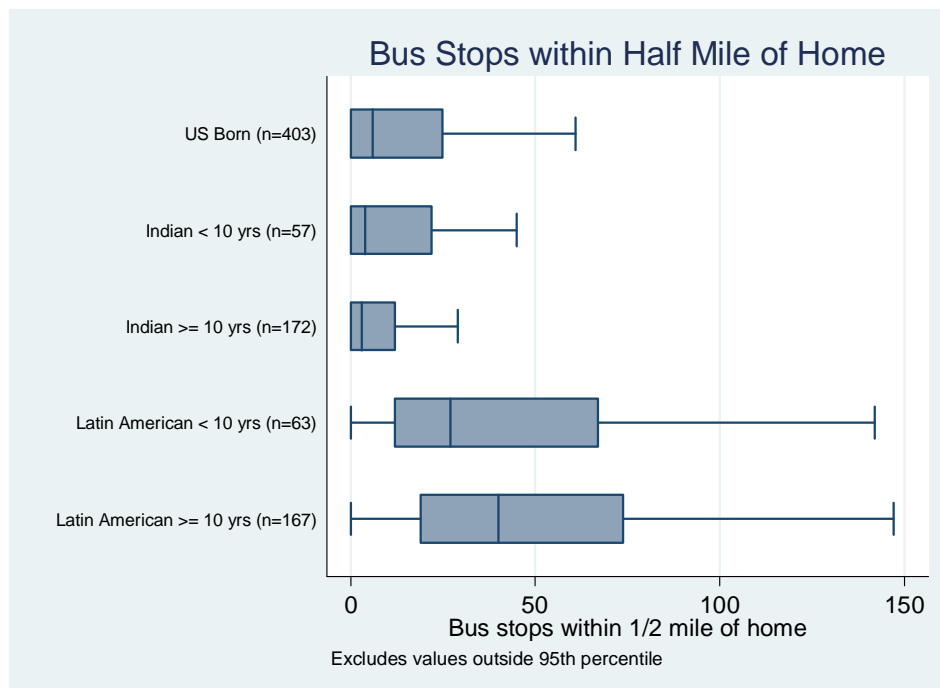
Figure 42. Bus stops within half mile of residence

Both earlier and more recent Latin American immigrants live in places with a large number of workers per square mile (Figure 43).
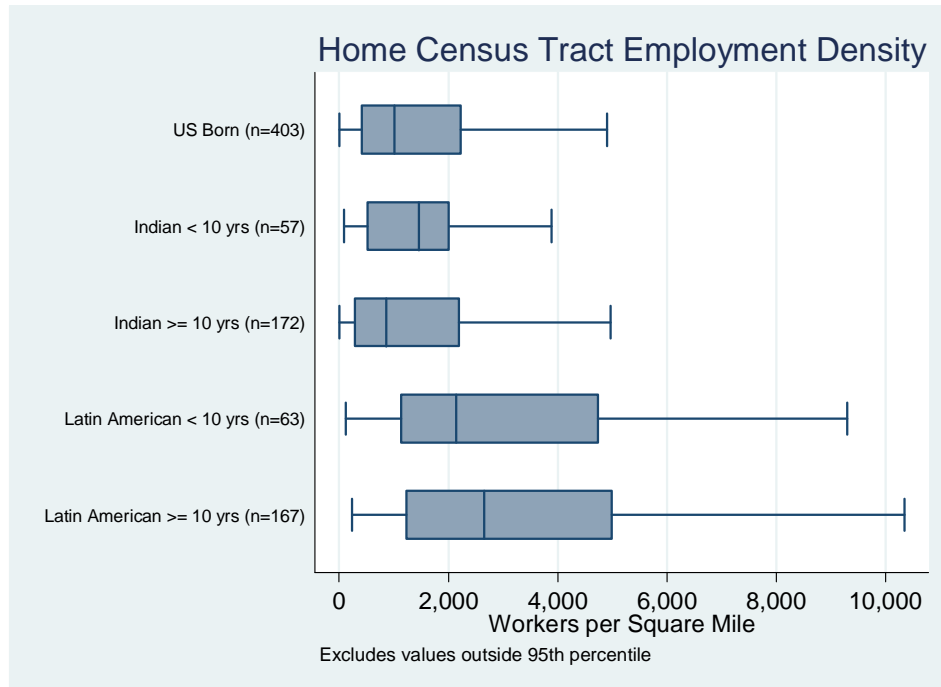
Figure 43. Workers per square mile for home location

Recent Latin American immigrants work further from a rail station than any of the other groups and much further than Latin American immigrants who arrived more than 10 years ago (Figure 44). The median distance from work to the nearest station for Latin American immigrants in the US for less than ten 10 years is five miles. However, when looking exclusively at those in the workforce for whom we were able to geocode workplaces, comparisons with the recent immigrant groups are tenuous because the number of respondents are quite small (just 15 recent Latin American immigrants and 26 recent Indian immigrants).
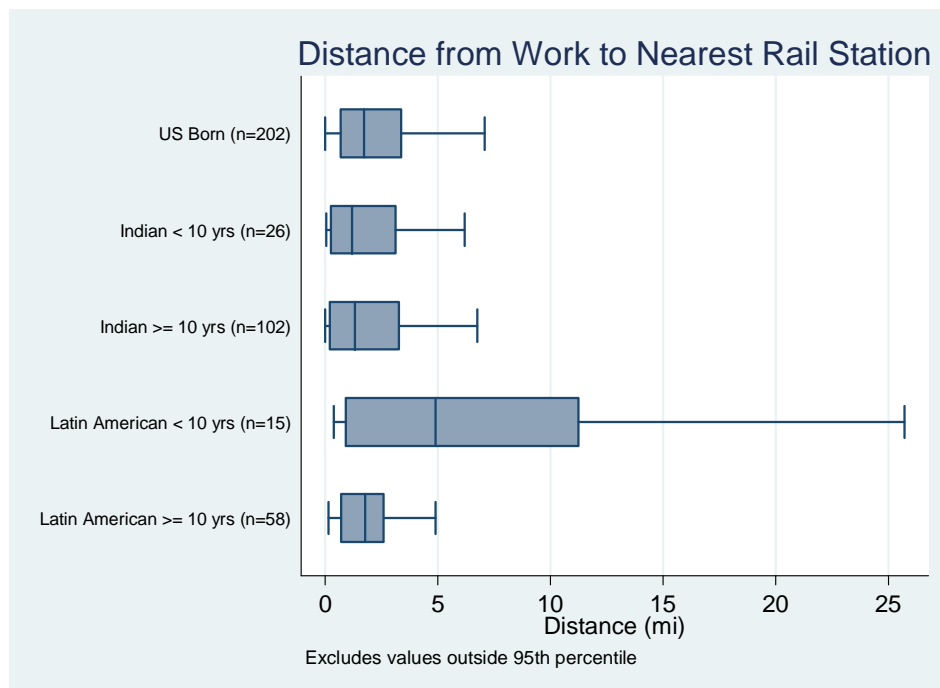
Figure 44. Distance from work location to nearest rail station

Recent Latin American immigrants do not seem to be well served by bus transit for their work locations, which is likely driven by occupational characteristics. The recent Latin American immigrants in the dataset work in occupations including house cleaning, construction, restaurant work, factory and warehouse jobs, and other service jobs that may not be very dense and easily served by bus. Half of all recent Latin American immigrants do not have a bus stop located within a half mile of their work location (Figure 45, below). This is particularly notable given the high rate of bus use for the commute by all Latin Americans (36 percent of recently arrived and 14 percent of earlier Latin American immigrants), although some of what is being called "bus" is likely actually employer provided vans. Indian immigrants in the US for 10 years or more appear to be the best served by bus at their work location, and their bus commute share is high at 10 percent.
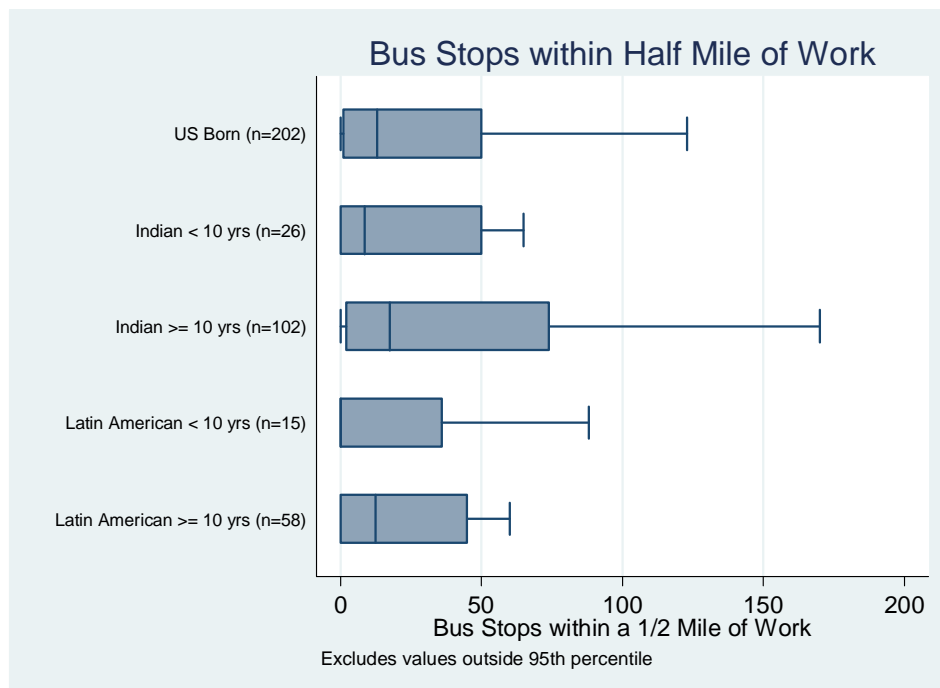
Figure 45. Bus stops within a half mile of work location

Similarly, we find that recent Latin American immigrants tend to work in locations with relatively low population density, though some do work in location with high density. Generally Latin American immigrants in the US for 10 years or more work in locations with much higher population density than do recent Latin American immigrants. We see little difference between the US-born, recent Indian and earlier Indian immigrants in terms of population density at work location (Figure 46, below).
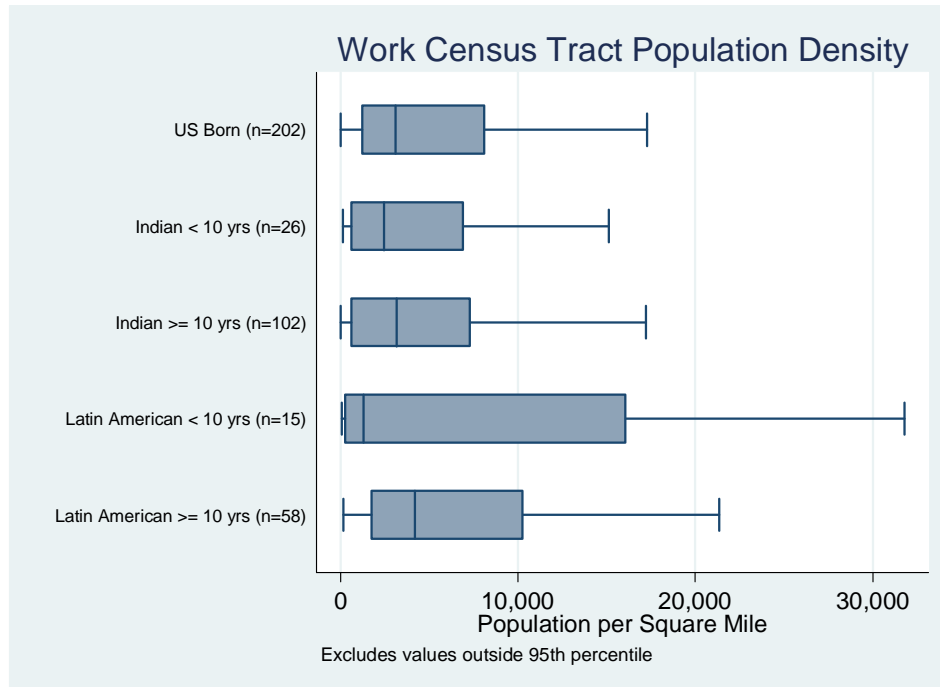
Figure 46. Population density at work location

The majority of US-born, recent Latin American and earlier Latin American immigrants work in low density suburban locations, though a number of US-born workers do so in high-density, typically urban locations. Recent Indian immigrants were more likely to work in higher density locations than earlier Indian immigrants.
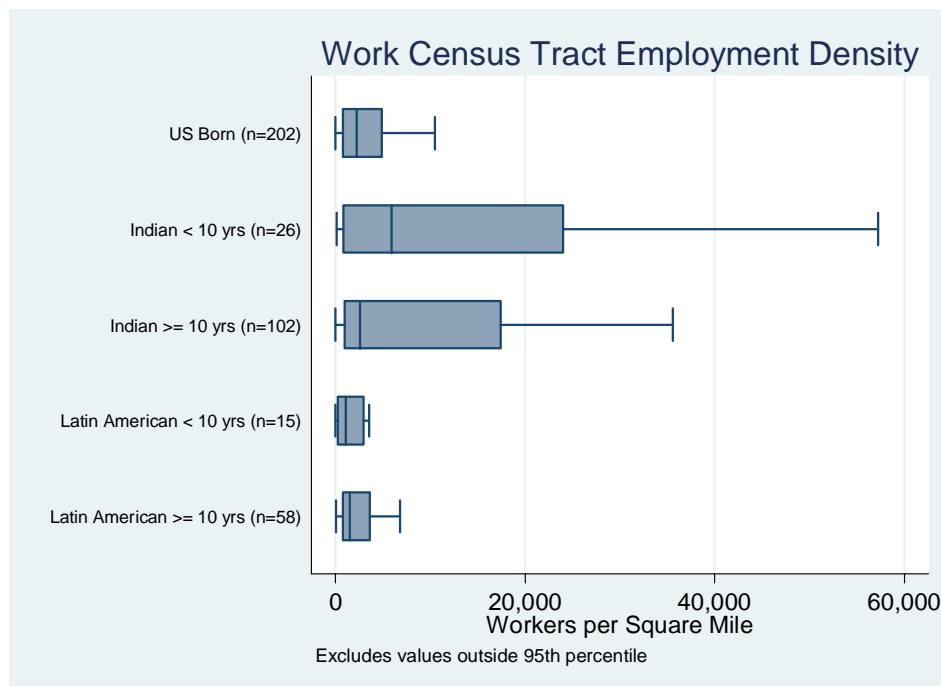
Figure 47. Employment density at work location

Data description: Comparative and control data

In this section we compare the respondent pool from our survey conducted in 2010, to data from the 2008 American Community Survey (ACS), to determine the extent to which our descriptive results appear to be representative. We observe only small differences in between our sample and the ACS and notably none of the differences tested were were found to be statistically significant. Differences to be noted include:

- Length of time in US – Indian immigrants in our sample have been in the US for nearly 18 years vs. 13 years in the ACS.

- Average household size – Latin American immigrants in the sample live in larger households than in the ACS.

- Number of children in household – Latin American immigrants in sample reported more children than in the ACS.

- Income – all strata report lower income in the sample that in the ACS, Latin American respondents having the largest difference.

- Education – US-born and Indian immigrants tended to be better educated in the sample than in the ACS while Latin American immigrants were less educated in the sample than in the ACS.

- Age – Latin American immigrants were slightly younger in the sample than in the ACS.

We expect there have not been dramatic changes in the makeup of the population and the characteristics of immigrants over the two year period although as noted below, income could be an exception. Immigrants in our respondent pool arrived in the US between 1960 and 2010 (Table 31). The largest share of Latin American immigrants arrived in the US between 1990 and 1994 (22 percent). The largest share of Indian immigrants arrived between 1995 and 1999 (26 percent).

Table 31. Arrival year

	Latin American Born		Indian Born		Total	
	Number	Share	Number	Share	Number	Share
2005-2010	27	12%	20	9%	47	10%
2000-2004	36	16%	39	17%	75	16%
1995-1999	42	18%	61	26%	103	22%
1990-1994	51	22%	36	16%	87	19%
1985-1989	35	15%	23	10%	58	13%
1980-1984	15	6%	25	11%	40	9%
1970-1979	20	9%	23	10%	43	9%
1960-1969	5	2%	5	2%	10	2%
Total	231	100%	232	100%	463	100%

$\chi^2=.087$

Latin Americans in our data are much more likely to have arrived recently than the actual target population of Latin Americans, while Indians in our survey data have been in the country on average substantially longer than the actual target population of Indians in New Jersey (Figure 48, below). According the 2008 ACS Data, the mean years in the US for Latin American immigrants is 18.2 (the median is 15) while the mean for Latin American immigrants in our sample is 17.4 (the median is 17). For Indians, the mean number of years in the US according to the 2008 ACS data is 13.1 (the median is 10) while our sample is 17.8 (the median is 15). These differences in tenure in the US between the survey and the ACS data are not statistically significant.
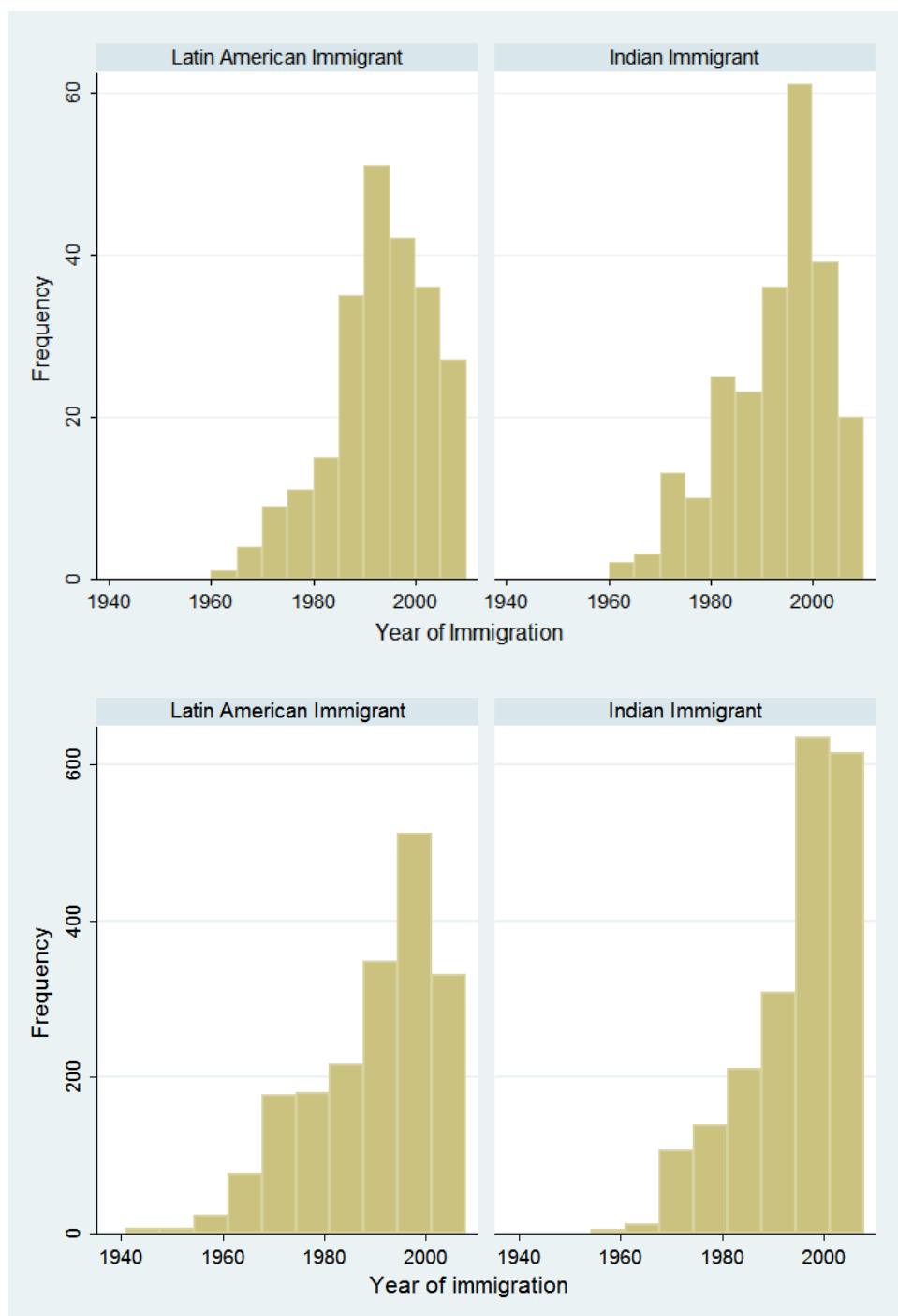
Figure 48. Year of immigration: Survey Data (top) vs. Census data for 2008 (bottom)

Immigrant households tend to be larger than those of US-born respondents. Recent Latin American immigrants reported an average of 4.8 household members, while Latin American immigrants in the US for 10 years or more reported an average 3.8 household members (Table 32 and Table 33). Recent Indian immigrants reported an average of

3.2 household members and earlier Indian immigrants reported 3.5 household members.

Table 32. Average household size, sample vs. ACS

Subgroups	Average HH size	
	Sample	ACS
US-BORN	2.8	3.2
LATIN AMERICAN < 10 YRS	4.8	3.4
LATIN AMERICAN >= 10 YRS	3.8	3.3
INDIAN < 10 YRS	3.2	3.4
INDIAN >= 10 YRS	3.5	3.8
All	3.3	3.2

Table 33. Including yours, how many people are living or staying at this address full-time? (Q35)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
1	74	17%	1	2%	8	5%	1	2%	7	4%	91	10%
2	151	34%	4	7%	33	20%	16	28%	38	23%	242	27%
3	80	18%	11	18%	30	18%	15	26%	29	17%	165	19%
4	78	18%	20	33%	49	30%	22	38%	69	41%	238	27%
5	34	8%	5	8%	26	16%	4	7%	17	10%	86	10%
6	15	3%	7	12%	12	7%	0	0%	4	2%	38	4%
7	5	1%	6	10%	1	1%	0	0%	2	1%	14	2%
8	0	0%	2	3%	2	1%	0	0%	0	0%	4	0%
9	1	0%	1	2%	1	1%	0	0%	0	0%	3	0%
10+	0	0%	3	5%	4	2%	0	0%	1	1%	8	1%
Total	438	100%	60	100%	166	100%	58	100%	167	100%	889	100%

$\chi^2 = .000$

In our sample US-born residents had on average the fewest number of children living in the household, only 0.64 children (Table 34). Recent Indian immigrants reported 0.88 children per household, while earlier Indian immigrants reported 1.05 children per household. Recent Latin American immigrants had most children, reporting 1.58 children, while Latin American immigrants in the US for 10 years or more reported 1.24 children. Comparing this table with the ACS data (Table 35) reveals that the Latin American respondents in the sample have more children than Latin American immigrants in the ACS data. The numbers of children for the Indian and US-born respondents in the same are more similar to the ACS Data. However, none of the differences are statistically significant.

Table 34. Number of children in household (Q37)

Subgroups	Count	Mean	Variance
US-BORN	435	0.64	1.10
LATIN AMERICAN < 10 YRS	60	1.58	1.81
LATIN AMERICAN >= 10 YRS	165	1.24	1.76
INDIAN < 10 YRS	58	0.88	0.74
INDIAN >= 10 YRS	167	1.05	1.03

Table 35. Number of children in household (ACS)

Subgroups	Count	Mean	Variance
US-BORN	206358	0.69	1.09
LATIN AMERICAN < 10 YRS	2012	0.79	1.02
LATIN AMERICAN >= 10 YRS	4443	1.02	1.30
INDIAN < 10 YRS	2904	0.81	0.80
INDIAN >= 10 YRS	3835	1.23	1.11

Indian immigrant respondents, especially those living in the US for more than ten years, were more affluent and better educated than non-immigrants and Latin American immigrants. Latin American immigrants surveyed were less affluent and less well educated than either US-born respondents or Indian immigrants.

Household survey respondents in the five subgroups have much lower incomes than the same groups in the 2008 ACS data (Figure 49, Figure 50). There has been a marked economic downturn in the state and lower incomes; reported yearly household income is from 2009 and 2007 respectively. The largest differences in income are among households with Latin American born respondents. These households may have been more dramatically affected than households with Indian-born or US-born respondents, but the numbers are small and not statistically significant so we cannot be certain our sample is in this case significantly different from the population.
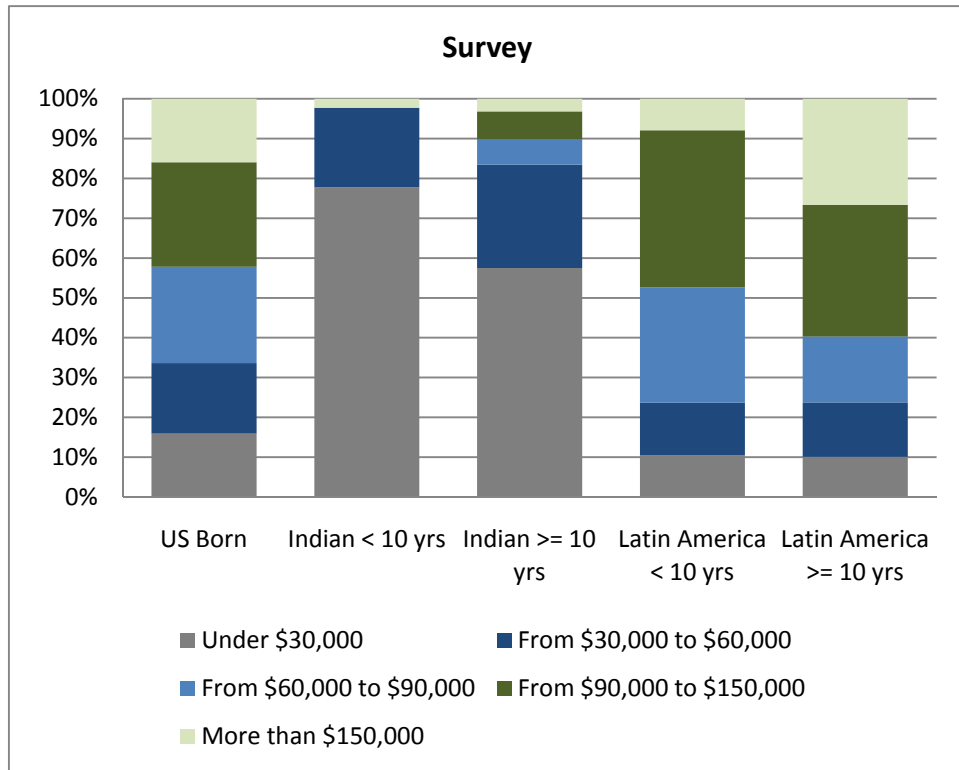
Figure 49. Household income, survey respondents (2009 yearly income)
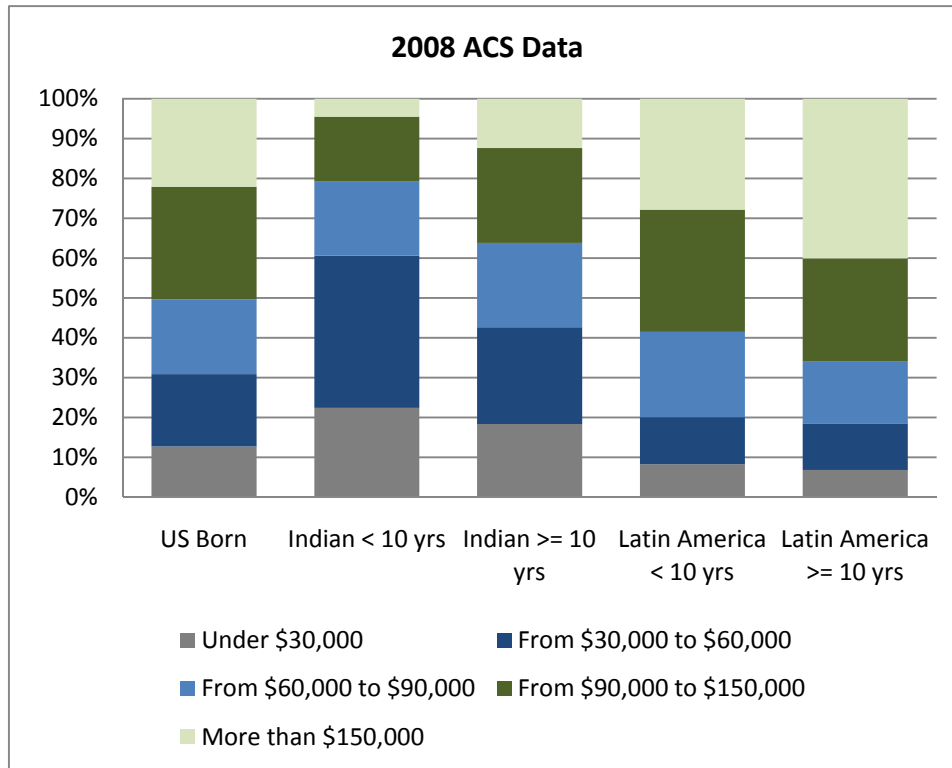
Figure 50. Household income, 2008 American Community Survey (2007 yearly income)

Of household survey respondents, a majority of Indian immigrants living in the US for more than ten years earned graduate degrees (52 percent) and a large percentage earned college degrees (24 percent). Only 6 percent of Latin American immigrants in the US for more than ten years hold graduate degrees while 8 percent earned college degrees. Latin American respondents in our survey have less educational attainment than Latin American immigrants in the 2008 ACS survey (Table 36 and Table 37).

Table 36. Education reported in Survey

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Less than high school graduate	13	3%	21	34%	54	33%	2	3%	0	0%	90	10%
High school graduate	89	20%	26	42%	56	34%	4	7%	8	5%	183	20%
Some college or technical vocational school	61	14%	3	5%	18	11%	2	3%	3	2%	87	10%
Two-year college degree	38	9%	3	5%	11	7%	2	3%	5	3%	59	7%
Four-year college degree	133	30%	5	8%	22	13%	14	24%	51	30%	225	25%
Graduate work, but no degree	12	3%	0	0%	2	1%	4	7%	11	7%	29	3%
Graduate degree	94	21%	4	6%	2	1%	30	52%	91	54%	221	25%
Total	440	100%	62	100%	165	100%	58	100%	169	100%	894	100%

χ^2=.000

Table 37 Education reported in 2008 ACS

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Less than high school graduate	4,889	7%	21	3%	17	1%	28	3%	13	1%	4,968	7%
High school graduate	18051	25%	199	29%	193	16%	140	14%	87	9%	18670	25%
Some college or technical vocational school	20202	28%	244	35%	488	41%	100	10%	155	15%	21189	28%
Two-year college degree	10504	15%	102	15%	230	19%	77	8%	103	10%	11016	15%
Four-year college degree	11114	16%	76	11%	180	15%	370	36%	321	32%	12061	16%
Graduate work, but no degree	6443	9%	47	7%	78	7%	308	30%	325	32%	7201	10%
Graduate degree	71,203	100%	689	100%	1,186	100%	1,023	100%	1,004	100%	75,105	100%
Total	4,889	7%	21	3%	17	1%	28	3%	13	1%	4,968	7%

χ^2=.000

The survey is fairly representative of the age of immigrants in New Jersey. The following tables (Table 39 and Table 40) show a breakdown of age groups for the survey data and from the ACS data. US-born respondents are slightly older in the survey (mean of 51.1 compared with 49.4 in the 2008 ACS), and immigrant groups are slightly younger

in the survey. For example, then mean age for recent Latin American immigrants in the survey is 35.6 compared with 38.1 in the 2008 ACS data.

The average age of US-born respondents was about 51 years, older than any of the other subgroups (Table 38). Recent immigrants, both Indian and Latin American were younger than older immigrants. Recent Indian immigrants were about 34 years old, while earlier Indian immigrants were about 47 years old. Latin American immigrants om the US for less than 10 years surveyed were about 36 years old, while Latin American Immigrants in the US for 10 or more years were 47 years old.

Table 38. Average age of respondent (Q36)

Subgroups	Count	Mean	Variance
US-BORN	431	51.2	279.6
LATIN AMERICAN < 10 YRS	62	35.6	122.3
LATIN AMERICAN >= 10 YRS	161	46.7	211.7
INDIAN < 10 YRS	58	33.7	79.4
INDIAN >= 10 YRS	159	46.6	139.7

Table 39. Age of respondent (Survey)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
18 to 24	34	8%	8	13%	5	3%	7	12%	1	1%	55	6%
25 to 44	113	26%	41	65%	77	46%	44	75%	79	46%	354	39%
45 to 64	194	44%	11	17%	58	35%	7	12%	67	39%	337	37%
65 or older	100	23%	3	5%	28	17%	1	2%	26	15%	158	17%
Total	441		63		168		59		173		904	

χ^2 =.000

Table 40. Age of respondent (ACS Data)

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
18 to 24	4,880	10%	66	12%	49	4%	80	9%	32	3%	5,107	10%
25 to 44	14,746	30%	315	59%	370	34%	627	72%	380	41%	16,438	31%
45 to 64	18,817	38%	115	22%	516	47%	130	15%	394	43%	19,972	38%
65 or older	11,230	23%	35	7%	168	15%	31	4%	110	12%	11,574	22%
Total	49,673		531		1,103		868		916		53,091	

Recent immigrants are more likely to rent than to own their homes (Table 41). Indian immigrants in the US for more than ten years are very likely to own their homes (86

percent), slightly more than US-born respondents (81 percent), although this higher rate of ownership could be simply a function of age because longer-tenure immigrants are older. Only 41 percent of recent Indian immigrants own their homes. About 30 percent of Latin American immigrants living in the US for more than ten years own their homes, while only 6 percent of Latin American immigrants in the US for less than 10 years own.

Table 41. Housing tenure

	US-BORN		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		INDIAN < 10 YRS		INDIAN >= 10 YRS		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Own	356	81%	4	6%	51	30%	24	41%	148	86%	583	65%
Rent	81	18%	59	94%	117	70%	33	57%	24	14%	314	35%
Occupy without payment of rent	2	0%	0	0%	0	0%	1	2%	1	1%	4	0%
Total	439	100%	63	100%	168	100%	58	100%	173	100%	901	100%

X^2=.000

US-born respondents have been living in their current residence for nearly 15 years on average (Figure 51). Of the immigrants in the US for 10 years or more, Indian immigrants have been in their current home for about 10 years, while Latin American immigrants have been in their current home for about 8 years. On average, recent Indian immigrants have lived in their current residence since 2006 while recent Latin American immigrants have lived in their current home since 2007.
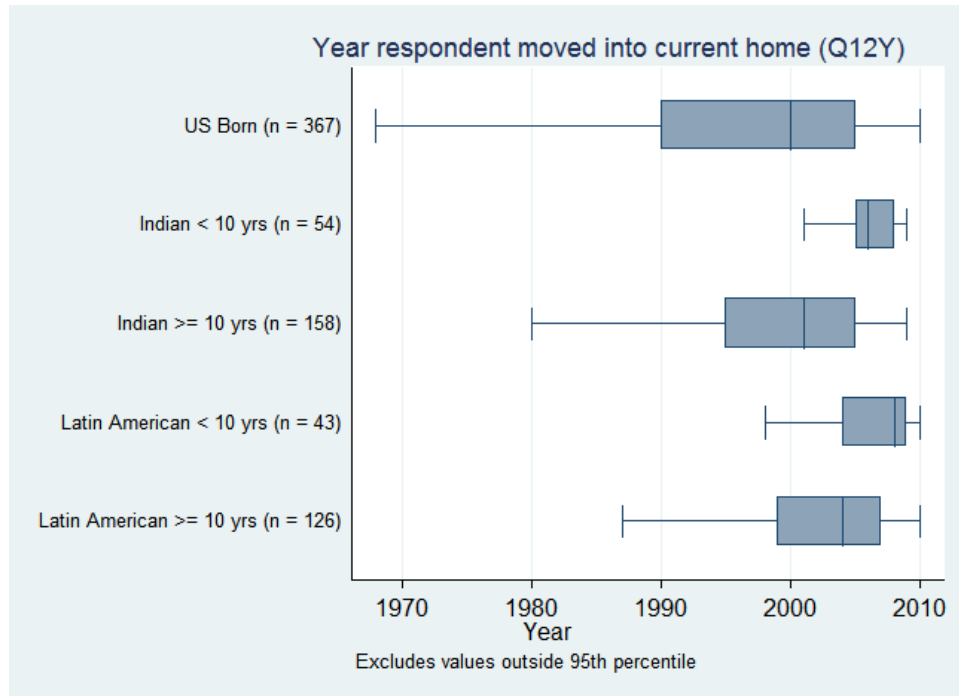
Figure 51. Year moved into current home (Q12y)

Regression analysis: Mode choice for grocery trips

In this section we focus on grocery trips, as these are the single most common non-work trip by purpose and the reporting and compliance by respondents in our sample is highest for this trip. We only have mode choice data for people who made at least one trip to a grocery or food store in the month prior to the day on which they were surveyed.

Non-work travel makes up about four-fifths of all travel and while it is not a dominant part of transit ridership it remains an important factor in people's decision to own and use autos. Auto ownership in turn affects the likelihood of using transit. So analyzing non-work travel in some detail is worthwhile, particularly since non-work travel data are unavailable from conventional data sources.

The main purpose in carrying out additional analysis on the non-work mode choice data is to determine whether demographic and spatial variation are the reasons why the Latin American sample has significantly higher use of transit and walking for non-work trips than the Indian and US-born samples.

Of the 909 respondents, 836 (92 percent) reported at least one grocery trip. There was a significant drop-off in people reporting the mode of their penultimate and antepenultimate trips, down to 719 (79 percent) for the second-most-recent trip and then 598 (66 percent) for the third-most-recent trip. In working with the survey data to conduct a successful regression, we had to remove a number of variables denoting

113

missing values for the independent variables of interest (e.g., people who did not report their age, their home type or their because of perfect prediction; this reduced the sample size about five percent.

We also could not separately estimate the use of taxis and other private vehicles for hire for grocery shopping, which comprise a fairly substantial 1.4 percent of all grocery trips reported. While taxis and other paid private vehicles were a fairly common choice among recent Latin American immigrants and longer-term Latin American immigrants (8.4 percent and 4.7 percent respectively), this choice was almost non-existent for US-born respondents (one out of 1,056 trips) and non-existent for the Indian immigrant subgroup (zero out of 594 trips). See below for a breakdown of grocery mode by subgroup for all trips. These trips have to be removed from the analysis for the technical reason that they are almost perfectly predicted by Latin American status.

Table 42. Grocery trips by mode (including taxi)

	US-BORN		INDIAN < 10 YRS		INDIAN >= 10 YRS		LATIN AMERICAN < 10 YRS		LATIN AMERICAN >= 10 YRS		TOTAL	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Auto	1,008	95%	150	97%	426	97%	59	45%	261	73%	1,904	89%
Transit	14	1%	1	1%	3	1%	16	12%	20	6%	54	3%
Taxi, etc.	1	0%	0	0%	0	0%	11	8%	17	5%	29	1%
Walk/bike	33	3%	3	2%	11	3%	45	34%	62	17%	154	7%
Total	1,056	100%	154	100%	440	100%	131	100%	360	100%	2,141	100%

Table 43 below shows the variables used in the grocery trip mode choice model. These variables have been described in previous sections but are displayed again here for convenience and in order to provide descriptions to go with variables names and to help interpret the regression tables that follow.

Table 43. Descriptive statistics for variables used in grocery mode analysis

Variable	Description	N	Mean	St. Dev.	Min.	Max.
indian_recent	Binary for Indian immigrants who arrived between 2000 and 2010	2,550	0.07	0.25	0	1
indian_older	Binary for Indian immigrants who arrived before 2000	2,550	0.19	0.39	0	1
hisp_older	Binary for Hispanic immigrants who arrived between 2000 and 2010	2,550	0.06	0.24	0	1
hisp_older	Binary for Hispanic immigrants who arrived before 2000	2,550	0.18	0.39	0	1
age	Age	2,561	47.55	15.61	18	97
age2	Age squared	2,561	2,504.71	1,597.83	324	9,409.00
female	Binary for gender (1 if female, 0 if male)	2,561	0.52	0.50	0	1
educ_lesshs	Binary for Less than high school graduate	2,561	0.10	0.30	0	1
educ_coll_less4	Binary for some college (less than 4-year degree or a 2-year degree)	2,561	0.17	0.37	0	1
educ_coll4	Binary for Four-year college degree (e.g., BA/BS)	2,561	0.25	0.43	0	1
educ_grad	Binary for Some graduate work or graduate degree	2,561	0.29	0.45	0	1
income_imp	Household income (Some values imputed)	2,561	78.58	70.52	0	300
income2	Income squared	2,561	11,144.81	17,814.26	0	90,000.00
income_missing	Binary flag for missing (1 if missing, 0 otherwise)	2,561	0.08	0.27	0	1
hhsize	Household size (missing data is recoded to 1)	2,561	3.27	1.60	1	10
kids_ind	Binary for children in the household	2,561	0.47	0.50	0	1
worker	Binary for work during the previous week	2,561	0.61	0.49	0	1
renthome	Binary for renting home	2,561	0.35	0.48	0	1
townhouse	Binary for single-family attached house	2,561	0.18	0.38	0	1
apartment	Binary for apartment	2,561	0.22	0.41	0	1
distrail_home	Network distance from home to nearest rail transit station	2,444	4.01	5.70	0.07	37.91
railhmi_home	Binary for rail station within 1/2 mile of home	2,444	0.06	0.24	0	1

Table 44 and Table 45 show the results of a multinomial logit mode choice model, similar methodologically to the work presented in the "Secondary Data analysis" section earlier, for the commute trip. (There are two tables presenting coefficients estimated

from one model; the results are presented in two tables for space reasons.) The difference using the survey data for grocery trip mode choice is twofold: first, the sample size is smaller, yielding higher error in estimates, and lower levels of statistical significance; and second, people report up to three grocery trips so there are multiple choices per person to model. The fact that there are multiple trips per person requires a correction to allow correlation of standard errors among trip choices for each individual.

We ran a series of six models with three sets of variables. The first set of variables is dummy variables indicating whether the individual was born in India or in a Latin American country, and whether they arrived within the last ten years or longer ago.

"Relative risk ratios" (RRRs), or odds multipliers, are presented, and the base category is auto (drive alone or carpool) (Table 44). The numbers presented in the table are multipliers of the odds of taking transit over the auto, associated with a one-unit change in the variable. "Binary" variables (otherwise called dummy or indicator variables) are interpreted as the difference in odds in comparison to the omitted group. For example, in Model 1 of Table 44, the odds of a Indian-born recent migrant choosing to take transit (bus or rail) to go grocery shopping are estimated at 62 percent of the odds of a US-born person choosing transit--that is, Indian-born respondents are 38 percent less likely to take transit for grocery shopping. These estimates change for different models. Generally, the more variables are present in the model, the more reliable the estimate.

Models 1, 2 and 3 in Table 44 and Table 45 show the apparent separate effects of immigration variables, demographic variables, and spatial variables (transit access and development density) on grocery mode choice. Models 4, 5 and 6 show what happens to those apparent effects when the variables are included together in a more completely statistically controlled model. In a nutshell, the results are that immigrant status loses its statistical significance (denoted by the asterisks), although it remains large in size for recent Latin American immigrants, when accounting for demographic variables. Accounting for transit and density does not change the estimates of immigrant status very much, but interestingly, it seems to increase rather than decrease their effects for recent Indian and Latin American immigrants. This can be interpreted to mean that residential location choices are actually to some extent decreasing the likelihood of recent immigrants to use transit for grocery trips. Distance to rail is the only spatial variable that is statistically significant. (In a model not shown here, we reduced the number of spatial variables to account for collinearity between them, and the results were the same in significance and largely the same in magnitude.)

Table 44. Grocery trip mode choice: Relative risk ratios for transit vs auto

	Model 1: Immigration Variables	Model 2: Other Demographic and Housing Variables	Model 3: Transit and Density Variables	Model 4: Variables from Models 1, 2	Model 5: Variables from Models 1, 3	Model 6: All Variables
Transit						
indian_recent	0.62			0.95	0.62	1.27
indian_older	0.66			1.38	0.65	1.13
hisp_recent	19.49 ***			3.18	16.37 ***	3.49
hisp_older	7.19 ***			1.69	3.75	1.31
age		1.04		1.04		1.03
age2		0.9996		0.9997		0.9999
female		1.64		1.58		1.74
educ_lesshs		1.17		1.13		0.94
educ_coll_less4		0.41		0.44		0.33
educ_coll4		0.61		0.71		0.68
educ_grad		0.000001 ***		0.0000002 ***		0.0000004 ***
income_imp		0.96 *		0.97		0.96 *
income2		1.0001 *		1.0001 *		1.0002 **
income_missing		0.40		0.56		0.35
hhsize		1.47 *		1.39 *		1.51 *
kids_ind		0.65		0.63		0.69
worker		0.52		0.46		0.42
renthome		3.65		2.94		3.30
townhouse		3.32		3.15		1.59
apartment		3.16		3.28		1.64
distrail_home			0.90		0.90 *	0.87 ***
railhmi_home			3.58		2.99	2.39
rail1mi_home			0.66		0.54	0.56
distCBD_home			1.03		1.03	1.02
bstops_home			1.14		1.11	1.04
popdens_home			1.05 *		1.03	1.03
empdens_home			0.91		0.87	0.85
N	2,017	2,022	1,919	2,017	1,914	1,914

Exponentiated coefficients (incidence risk ratios)
* p<0.05, ** p<0.01, ***p<0.001

Table 45. Grocery trip mode choice: Relative risk ratios for walk/bike vs auto

	Model 1: Immigration Variables	Model 2: Other Demographic and Housing Variables	Model 3: Transit and Density Variables	Model 4: Variables from Models 1, 2	Model 5: Variables from Models 1, 3	Model 6: All Variables
Walk_bike						
indian_recent	0.62			0.34	0.84	0.54
indian_older	0.81			1.24	1.06	1.36
hisp_recent	20.49 ***			3.43 *	16.48 ***	3.17 *
hisp_older	7.19 ***			2.01	3.64 ***	1.23
age		0.94		0.93		0.92
age2		1.0006		1.0008		1.0009
female		0.84		0.80		0.73
educ_lesshs		1.42		1.44		1.38
educ_coll_less4		0.77		0.88		0.69
educ_coll4		0.70		0.92		0.89
educ_grad		0.21 *		0.32		0.28
income_imp		0.98 *		0.99		0.98
income2		1.00		1.00		1.00
income_missing		0.33		0.57		0.24
hhsize		1.30 **		1.23 *		1.32 **
kids_ind		0.85		0.75		0.76
worker		1.42		1.27		1.17
renthome		4.55 ***		3.63 **		3.28 **
townhouse		2.63 **		2.50 *		1.53
apartment		2.13		2.36		1.71
distrail_home			1.00		0.97	0.95
railhmi_home			2.31		1.82	1.26
rail1mi_home			1.76		1.39	1.41
distCBD_home			1.02		1.01	1.01
bstops_home			1.12 *		1.10	1.08
popdens_home			1.05 **		1.03	1.02
empdens_home			1.01		1.01	0.99
N	2,017	2,022	1,919	2,017	1,914	1,914

Exponentiated coefficients ("relative risk ratios," i.e., odds multipliers in comparison to auto choice)
* p<0.05, ** p<0.01, ***p<0.001

The non-work trip models presented above suggest that recent Latin American status is certainly correlated with distinct tendencies to use non-auto modes for non-work trips that are not explained by other characteristics like income. This could be due to a lower rate of documentation, resulting in the inability to legally drive. While just 25 percent of recent Latin American immigrant respondents hold a license, this is partly a product of lacking adequate income to afford a car.

Changes over time in neighborhood choice and workplace choice

Changes in commute mode choice for immigrants and US-born persons who work now and who have held a previous job in the US, a group representing about two-thirds of our respondent pool, are shown in Figure 52. Driving or carpooling increased over time for all groups, though far more for Latin American immigrants than other groups. The other significant increases included a 7 percent increase in the use of bus or van for Latin American immigrants in the US for less than 10 years and a 14 percent increase in rail transit for Indian immigrants in the US for less than 10 years. The Indian-born result suggests that there is a prioritization of residential location over time to seek rail-served areas, consistent with Figure 53, below. The most significant decreases were walking for all groups, biking for Latin American immigrants, and rail transit for all groups except recent Indian immigrants.
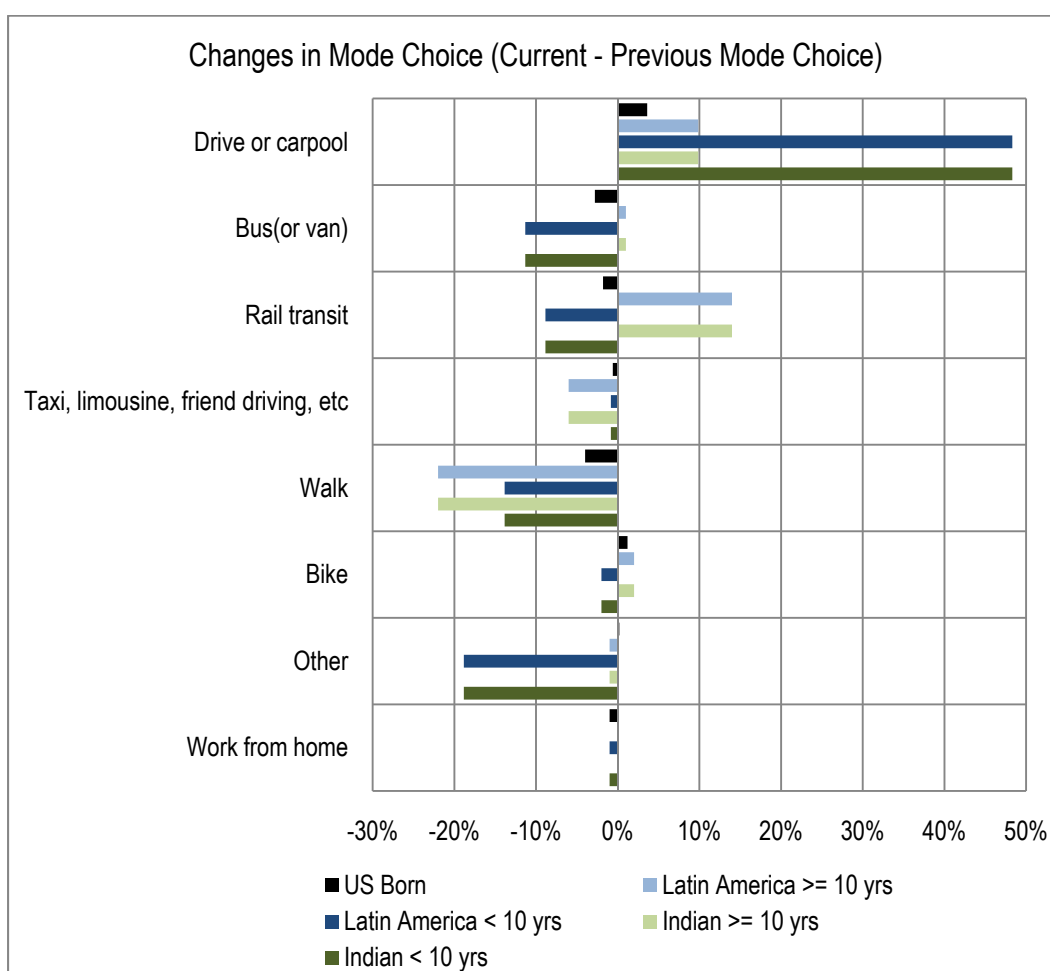
Figure 52. Changes in work mode over time.

We also compared how criteria for choosing a neighborhood appear to have changed over time, comparing all criteria mentioned by respondents (not just the "most important" criterion). Residential choice factors change over time for immigrants and for

US-born persons. Over time, both immigrants and US-born persons are more likely to choose a location because it is close to schools for children and less likely to choose a location because it is near family or friends or near people from the same country of birth (Figure 53). Interestingly, living near a bus or train was more important for all groups, except Latin American immigrants in the US for less than 10 years who, as we have described previously, work in jobs that are not on average well served by rail or near NJ TRANSIT bus stops. Living near work became less important in the more recent neighborhood choice for US-born and Latin-American born respondents, while being slightly more important for Indian immigrants.
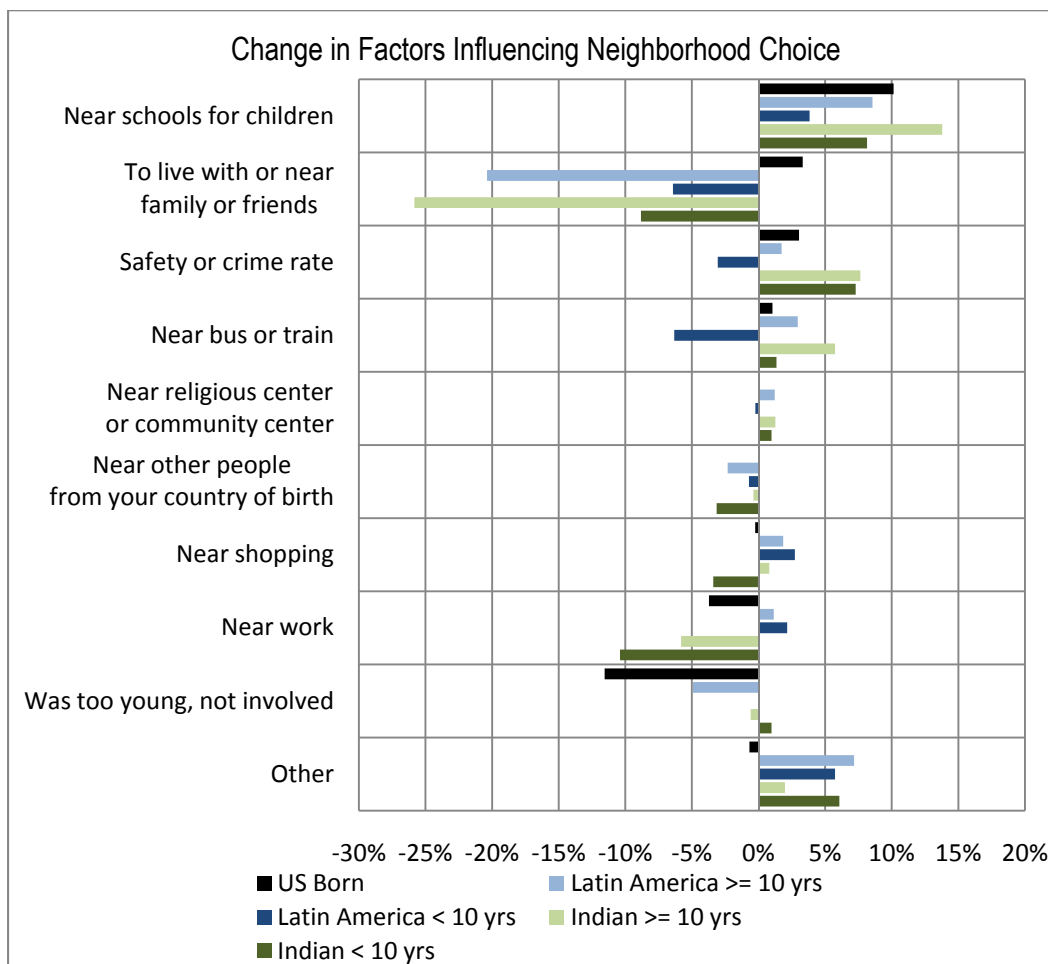
Figure 53. Changes in factors influencing choice of town or neighborhood

Finally, we compare the changes in the factors cited by immigrants in finding a job (Figure 54, below). For all immigrants, family and friends were less important in finding the current job compared with the previous job, while coworkers or professional networks were more important. For Indian immigrants employment agencies and job centers were more important over time but less so for Latin American immigrants.

120

Advertisements were more important over time to all groups except recent Latin American immigrants.
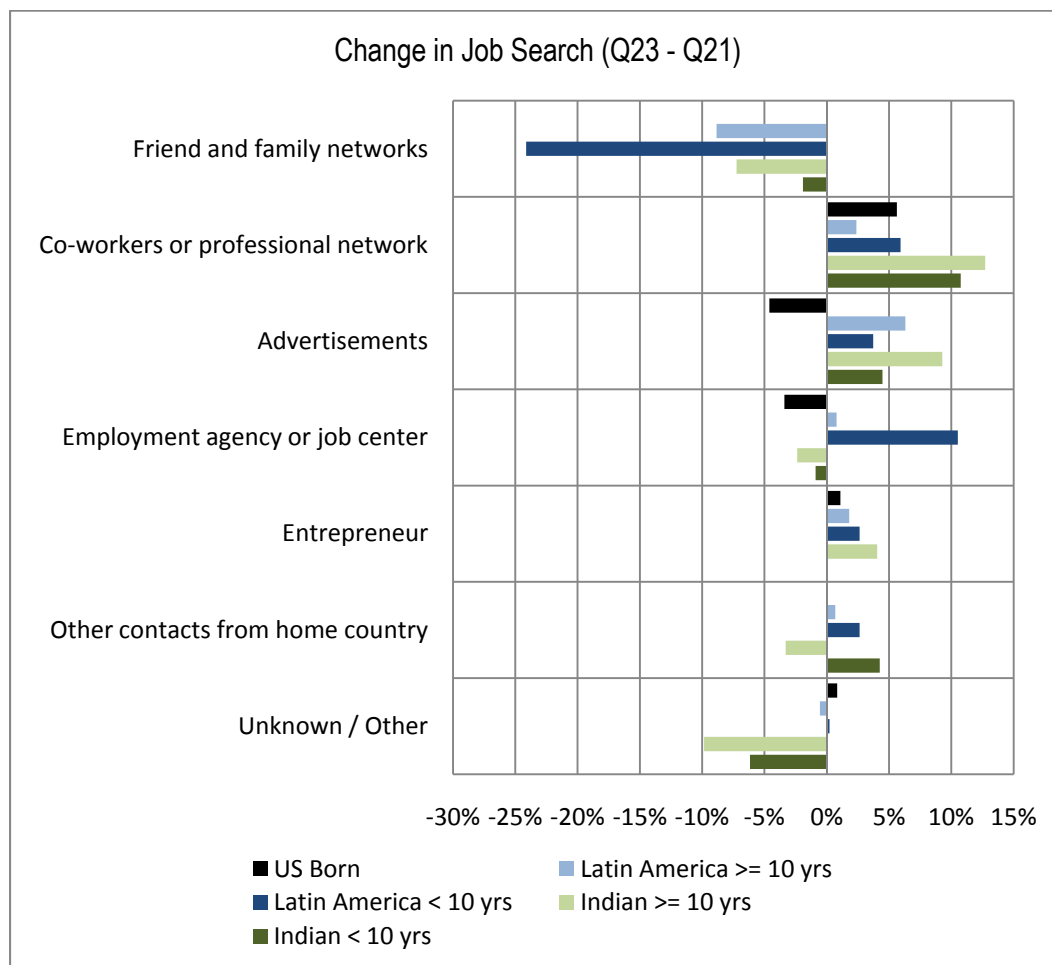
Figure 54. Changes in factors affecting job search over time

CONCLUSIONS AND POLICY IMPLICATIONS

A major goal of this study was to explain differences in travel patterns between immigrants and the US-born in New Jersey. This goal was accomplished by investigating whether demographic and spatial characteristics like income, household size, occupation, transit access, and development density are associated with higher transit use and lower auto use. These differences could help provide an explanation for changes in the travel behavior of immigrants. Demographic changes are not within the control of NJ TRANSIT, but spatial characteristics such as transit access and development density could be influenced by policy.

Employment density, population density, and transit access explained a great deal of variance in commuting patterns between immigrants and the US-born in New Jersey, particularly when measured at the workplace end of the trip. Occupational characteristics were also influential. While rail commuting is primarily a function of these spatial, occupational and demographic characteristics, bus commuting is not so well explained by spatial characteristics, even when accounting for citizenship status. Regardless of status, Latin American immigrants have a particularly strong tendency to commute via bus.

The pattern is slightly different for non-work travel, for which we relied primarily on our household survey since the Census does not collect non-work travel data. Non-work trips were carried out almost solely via auto for US-born and Indian-born populations. For Latin-American-born residents, there was a high share of transit use particularly among recent immigrants. It appeared that only rail access was correlated with grocery trip mode choice while other spatial characteristics were not. Because rail carries very few people on grocery trips, rail access was probably a proxy for other transit and land use service characteristics that were poorly measured in our dataset.

Our controlled analysis of non-work travel was limited to grocery trips, the most common non-work trip purpose. Demographic characteristics, particularly income and household size, played a strong role in predicting grocery trips on transit. After controlling for these factors, there were a number of persistent effects of immigrant status, particularly for recent Latin American immigrants. In fact, when controlling for demographic and spatial characteristics in our model of grocery trips, we actually found a strengthening of the apparent effects of Indian-born status on the propensity to use transit to pick up groceries. This implies that low home transit accessibility and higher incomes were the main reasons for lower transit use on grocery trips by Indian-born residents.

The focus groups were helpful in suggesting reasons for the persistent explanatory effect of immigrant status on their likelihood of using transit. These reasons were more material than cultural. Immigrants were less likely to drive because driving conditions are different here than in their home countries; weather, right-hand side driving, and other factors make immigrants initially uncomfortable driving. Transit systems may also

122

be better near immigrant homes and workplaces in New Jersey than in the country and city of origin. The need to send remittances home may also delay the ownership and use of autos. Some of these reasons for initially higher transit use suggested the potential to capture and retain foreign-born riders under the right conditions.

We did not find evidence of a cultural preference for transit in this study. If anything, immigrants in our focus groups were not satisfied with the frequency and quality of service, particularly bus service, and many of them in all country subgroups stated that they drove frequently, even more frequently, in their countries of origin. Other factors such as citizenship status and licensing were very influential, but they did not provide the complete explanation.

Nontraditional transit modes were important and apparently becoming more so, particularly among Latin American immigrants. Taxi and private ride services made up about 8 percent of grocery trips for Latin American immigrants that have been in the US for less than 10 years and almost 5 percent for longer-term Latin American immigrants. On the commuting side, employer-provided vans and private shared transit services may account for the bulk of all of what was called "transit" commuting (in Census reports) by recent Latin American immigrants. Latin American immigrants may comprise a greater share of the population in future years. While our sample of recent immigrants in the household survey was small, and our focus groups are similarly difficult to generalize with certainty to the population as a whole, there was evidence that numerous alternative forms of transportation were being actively sought out by this group and that conventional transit services were falling behind.

For all groups except recently arrived Latin American immigrants, the importance of living near a rail station or bus stop appeared to be increasing over time, although our small sample size on these questions makes this conclusion tentative. This may be a function of increasing congestion or of the importance of transit-served employment. Determining whether there was evidence for either explanation was beyond the immediate scope of this study, but it is an interesting follow up question for research.

This study suggests that the reliance on immigrants for transit ridership could result in a decline in ridership if immigration is not sustained, because of the falloff in transit use among immigrants. Immigrants more quickly move homes and alter their travel patterns than US-born residents. While Indian immigrants reported seeking transit access at higher rates over time when choosing where to live, Latin American immigrants do not, and Latin Americans are likely to make up a higher share of immigrants over time if current trends continue. Further reason for concern is our finding that recent immigrants may be acquiring cars and getting licensed more quickly than immigrants in previous years.

Policy implications

The transit agency's bottom line of maintaining sufficient ridership to justify transit services is a concern. Another concern is the larger environmental sustainability agenda that is promoted by the increased use of alternative travel modes. Are there policies that might assist towards both of these goals? We suggest some possibilities below on the basis of the study findings.

1. **Pursue land use regulatory policies to allow significant densification of both jobs and housing near rail stops and in other places with high transit accessibility**. This would likely allow for higher use of transit for commuting over time, and possibly also affect non-work travel for Latin American immigrants. Among the Indian population, income, job type, and density of locations of jobs and housing seem to matter most in predicting their transit use. This subgroup also has larger households, reports being highly focused on education for children, tends to own their housing, and has high income. From the NJ TRANSIT policy viewpoint this suggests the need to include larger units in the mix of transit-proximate housing. However, at this time most successful transit-oriented development efforts in New Jersey tend to consist of smaller rental and owned units that are not suitable for larger families.

2. **Address problems with forced use of employer vanpools**. Our focus groups revealed a subset of primarily recent Latin American immigrants who are required to pay for employer-provided vans to get to work. These appear to be workplaces that are in sparsely settled areas or in warehouse districts not well served by transit. Focus group participants reported that employers force some workers to pay for transportation the cost of which is deducted from their paychecks regardless of whether they choose to travel to work by some other means. The NJ Department of Labor (DOL) should be encouraged to ascertain the legality and extent of these practices. Working with information provided by the DOL, NJ TRANSIT could possibly provide better transit options to these employment locations, many of which are concentrated in areas with significant lower-wage warehouse work such as the area surrounding NJ Turnpike Exit 8A.

3. **Encourage or subsidize employer-provided vanpools that are optional for workers**. Lower-income Latin American immigrants have workplaces generally poorly served by transit. NJ TRANSIT currently provides a monthly subsidy of $300 to $500 for new vanpools serving New Jersey employers, for which it receives Federal Transit Administration credit for fixed guideway passenger miles. This type of program could be expanded at reasonable cost, working with Transportation Management Associations and counties.

4. **Consider working more closely with private transit providers**, such as the Spanish Transportation bus company. If the NJ TRANSIT network can be more closely and explicitly integrated with non-NJ TRANSIT services, NJ TRANSIT

124

ridership is likely to benefit in the long run as Latin American immigrants make up a greater share of the state's population and as these privately provided services become more established and widespread.

5. NJ TRANSIT could also **provide a greater focus on outreach**, especially for non-traditional transit and with Latin American born riders. Latin-American-born riders report continuing language barriers, although these have been reduced over time as a critical mass of Spanish speaking users has come to live in the state. Nevertheless, increased use of surveys and rider information in Spanish would clearly help in some areas of the state, particularly because Latin American immigrants are more widely dispersed than other groups and are more linguistically isolated. More general efforts to retain riders may also prove fruitful. NJ TRANSIT used to offer a package of materials to new home buyers including brochures on NJ TRANSIT service, schedules, and free transit tickets.

Retaining immigrant ridership is a significant challenge. Transit access at work and home are not highly correlated with other factors that in subsequent moves of immigrants become more important, such as the quality of children's schools and low crime in the neighborhood. Transit policy is intimately tied to other policy arenas far beyond its purview.

In July 2009, Daniel Chatman joined the faculty of Department of City and Regional Planning at the University of California, Berkeley.

REFERENCES

(1) A. Singer, "The rise of new immigrant gateways," The Brookings Institution, Washington DC, February 2004. 2004.

(2) C. Hawley, "Economy forcing many Mexicans to leave United States," *USA Today,* Dec. 12, 2008.

(3) M. C. Waters and T. R. Jimenez, "Assessing immigrant assimilation: New empirical and theoretical challenge," *Annual Review of Sociology,* vol. 31, pp. 20-105, 2005.

(4) I. Light and E. von Scheven, "Mexican migration networks in the United States, 1980-2000," *International Migration Review,* vol. 42, pp. 24-704, 2008.

(5) S. Wu, "Estimates of Foreign-born Population in New Jersey: 2000," No Date.

(6) B. D. Taylor and C. N. Y. Fink, "The Factors Influencing Transit Ridership: A Review and Analysis of the Ridership Literature," 2003.

(7) S. E. Polzin and X. Chu, "NHTS early findings on public transportation travel trends," Federal Highway Administration, Washington DC, 2003.

(8) C. Purvis, "Commuting patterns of immigrants," U.S. Department of Transportation, Federal Highway Administration, Bureau of Transportation Statistics, Federal Transit Administration, Washington DC, 2003.

(9) S. E. Polzin, X. Chu and J. R. Rey, "Mobility and mode choice of people of color for non-work travel," Center for Urban Transportation Research, University of South Florida.

(10) E. Blumenberg and L. Song, "Travel behavior of immigrants in california: Trends and policy implications," in *Transportation Research Board 87th Annual Meeting,* Washington DC, pp. 18, 2008.

(11) D. Myers, "Changes over time in transportation mode for journey to work: Effects of aging and immigration," in *Decennial Census Data for Transportation Planning: Case Studies and Strategies for 2000,* Location: Irvine, California, pp. 84-99. 1996.

(12) J. Casas, C. Arce and C. Frye, "Latino immigration and its impact on future travel behavior," in *National Household Travel Survey Conference: Understanding our Nation's Travel,* Washington, DC, 2004.

(13) G. Tal and S. L. Handy, "Travel behavior of immigrants: An analysis of the 2001 National Household Transportation Survey," *Transport Policy,* vol. 17, pp. 9, 2010.

(14) E. Blumenberg and A. E. Evans, "Growing the immigrant transit market: Public transit use and california immigrants," in *Transportation Research Board 86th Annual Meeting,* Washington, DC, pp. 19 2007.

(15) S. Rosenbloom, "Transit markets of the future: The challenge of change," National Academy Press, Washington, D.C., Tech. Rep. TCRP Report #28, January 15, 1998. 1998.

(16) A. Heisz and G. Schellenberg, "Public Transit Use Among Immigrants," *Canadian Journal of Urban Research,* vol. 13, pp. 170-191, 2004.

(17) G. Giuliano, "Travel, location and race/ethnicity," *Transportation Research A,* vol. 37, pp. 351-372, 2003.

(18) J. D. Beckman and K. G. Goulias, "Immigration, residential location, car ownership, and commuting behavior: a multivariate latent class analysis from California," *Transportation,* vol. 35, pp. 16-655, 2008.

(19) N. McGuckin and N. Srinivasan, "National summary, journey to work trends in the united states and its major metropolitan areas 1960 – 2000," US Department of Transportation, Federal Highway Administration, Tech. Rep. FHWA -EP-03-058, 2003., 2003.

(20) K. Lovejoy and S. L. Handy, "Transportation experiences of mexican immigrants in california: Results from focus group interviews," University of California, Davis, Davis, CA, Tech. Rep. UCD-ITS-RR-07-32, June 22, 2007.

(21) M. Smart, "U.S. Immigrants and Bicycling: Two-Wheeled in Autopia," *Transport Policy,* vol. 17, pp. 153-159, 2010.

(22) H. Contrino, "Travel characteristics of new immigrants," *NHTS Brief,* August, 2006.

(23) J. Bowles and T. Colton, "A world of opportunity," The Center for an Urban Future, New York, February 2007. 2007.

(24) R. Hernández-León, *Metropolitan Migrants: The Migration of Urban Mexicans to the United States.* Berkeley and Los Angeles: University of California Press, 2008.

(25) N. Klein, "Emergent curbside intercity bus industry: Chinatown and beyond," in *Transportation Research Board 88th Annual Meeting,* Washington DC, 2009.

(26) D. A. Michaels, "Más transit - Jitneys attracting riders, rivals on Paterson-to-N.Y. commute," *The Bergen Record,* May 23, 2007.

(27) R. Cervero, *Paratransit in America: Redefining Mass Transportation.* Westport, Connecticut: Praeger, 1997.

(28) N. S. Garnett, "The road from welfare to work: informal transportation and the urban poor," *Harvard Journal on Legislation,* vol. 38, pp. 173-229, 2001.

(29) G. Gilbert, T. J. Cook, A. Nalevank and L. Everett-Lee, "TCRP report 75 - private for-hire vehicle industry's role in public transit," Transportation Research Board, Washington DC, 2002.

(30) A. Valenzuela Jr, L. Schweitzer and A. Robles, "*Camionetas*: Informal Travel Among Immigrants," *Transportation Research A,* vol. 39, pp. 895-911, 2005.

(31) R. Liu and H. L. Schachter, "Mobility Information Needs of Immigrants with Limited English Proficiency (LEP) in New Jersey," *Journal of Immigrant & Refugee Studies,* vol. 5, pp. 89-108, 2007.

(32) M. Donahue and C. J. Rodier, "Transportation barriers and travel mode preferences of Mexican immigrants in California," in *Transportation Research Board 87th Annual Meeting,* Washington DC, pp. 10, 2008.

(33) D. Massey, "Ethnic Residential Segregation: A Theoretical Synthesis and Empirical Review," *Sociology and Social Research,* vol. 69, pp. 315-350, 1985.

(34) R. D. Alba and J. R. Logan, "Variations on Two Themes: Racial and Ethnic Patterns in the Attainment of Suburban Residence," *Demography,* vol. 28, pp. 431-453, August 1991.

(35) J. P. Allen and E. Turner, "Spatial patterns of immigrant assimilation," *Professional Geographer,* vol. 48, pp. 140-156, May, 1996.

(36) R. D. Alba, J. R. Logan, B. J. Stults, G. Marzan and W. Zhang, "Immigrant Groups in the Suburbs: A Reexamination of Suburbanization and Spatial Assimilation," *American Sociological Review,* vol. 64, pp. 446-460, June, 1999.

(37) N. S. Garnett, "Suburbs as Exit, Suburbs as Entrance," *Michigan Law Review,* vol. 107, 2007.

(38) W. Li, "Anatomy of a New Ethnic Settlement: The Chinese *Ethnoburb* in Los Angeles," *Urban Studies,* vol. 35, pp. 479-501, 1998.

(39) I. Light, "Immigrant place entrepreneurs in Los Angeles, 1970-1999," *International Journal of Urban and Regional Research,* vol. 26, pp. 13-215, 2002.

(40) P. Krugman, *Geography and Trade.* Cambridge MA: MIT Press, 1991.

(41) D. G. Chatman, "Deconstructing development density: Quality, quantity and price effects on household non-work travel," *Transportation Research Part A: Policy and Practice,* vol. 42, pp. 22-1008, 2008.

(42) V. Parks, *The Geography of Immigrant Labor Markets: Space, Networks, and Gender.* New York: LFB Scholarly Publishing, 2005.

(43) E. Blumenberg and M. Smart, "Measuring the effects of ethnic neighborhoods on commute mode: Implications for immigrants and mode choice modeling," in *55th Annual North American Meetings of the Regional Science Association International,* Brooklyn, NY, 2008.

(44) A. Markusen, "Fuzzy Concepts, Scanty Evidence, Policy Distance: The Case for Rigour and Policy Relevance in Critical Regional Studies," *Regional Studies,* vol. 37, pp. 701-717, 2003.

(45) L. Wang and L. Lo, "Immigrant grocery-shopping behavior: ethnic identity versus accessibility," *Environment and Planning A,* vol. 39, pp. 684-699, 2007.

(46) S. A. Bohon, K. Stamps and J. H. Atiles, "Transportation and Migrant Adjustment in Georgia," *Population Research and Policy Review,* vol. 27, pp. 273-291, June, 2008.

(47) C. Menjívar, *Fragmented Ties: Salvadoran Immigrant Networks in America.* Berkeley, California: University of California Press, 2000.

(48) R. Waldinger and M. I. Lichter, *How the Other Half Works: Immigrants and the Scoial Organization of Labor.* Berkeley and Los Angeles, California: University of California Press, 2003.

(49) A. D. Bernhardt , S. McGrath, J. DeFilippis and Brennan Center for Justice., *Unregulated Work in the Global City : Employment and Labor Law Violations in New York City.* New York: Brennan Center for Justice at New York University School of Law, 2007.

(50) S. Sassen, "New York City's informal economy," in *Institute for Social Science Research Volume IV. 1988-89 - Conference on Comparative Ethnicity,* 1988.

(51) D. Myers, *Immigrants and Boomers : Forging a New Social Contract for the Future of America.* New York: Russell Sage Foundation, 2007.

(52) J. S. Passel, D. Cohn and Pew Research Center., "U.S. population projections 2005-2050," 2008.

(53) Pew Hispanic Center, "Modes of entry for the unauthorized migrant population`," Pew Hispanic Center, Washington, DC, May 22, 2006.

(54) R. L. Clark and W. N. Zimmerman, "Undocumented immigrants in new jersey: Numbers, impacts and policies," in *Keys to Successful Immigration: Implications of the New Jersey Experience,* T. J. Espenshade, Ed. Washington, D.C.: Urban Institute Press, 1997.

(55) United States. General Accounting Office., "Undocumented aliens questions persist about their impact on hospitals' uncompensated care costs: report to congressional requesters." 2004.

(56) J. S. Passel, "Estimates of the size and characteristics of the undocumented population," Pew Hispanic Center, Washington, DC, March 21, 2005.

(57) S. A. Camarota, "Immigrants in the united states, 2007: A profile of America's foreign-born population," Center for Immigration Studies., Washington, DC, November, 2007.

(58) A. Portes and R. G. Rumbaut, *Immigrant America : A Portrait.* Berkeley: University of California Press, 1996.

(59) S. Wilkinson, "Focus Group Methodology: A Review," *International Journal of Social Research Methodology,* vol. 1, pp. 181-203, 1998.

(60) A. E. Goldman, "The Group Depth Interview," *The Journal of Marketing,* vol. 26, pp. 61-68, 1962.

Appendix A. Spatial Concentration of Select Foreign-Born Populations
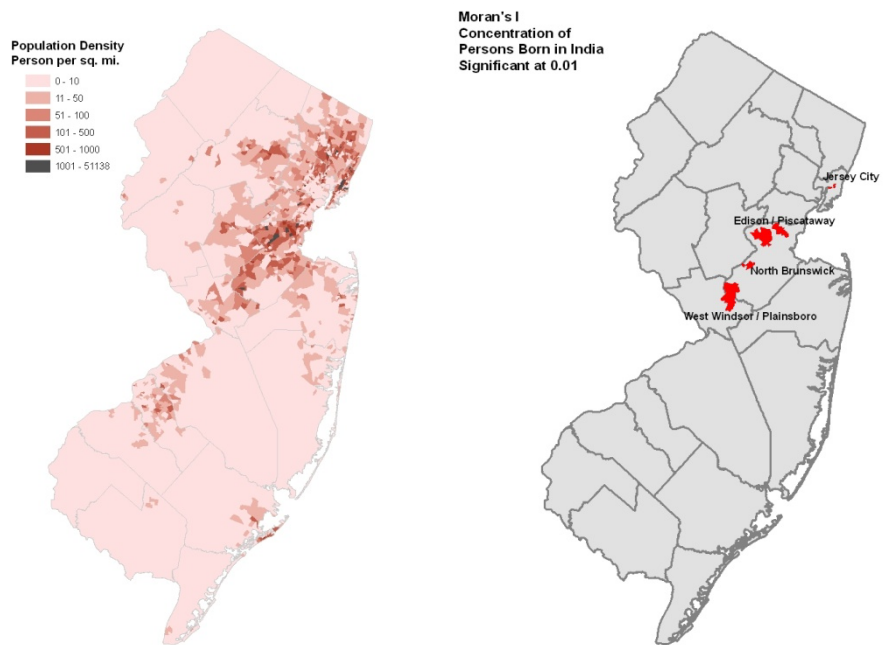
Figure 1. Foreign-Born Persons from India
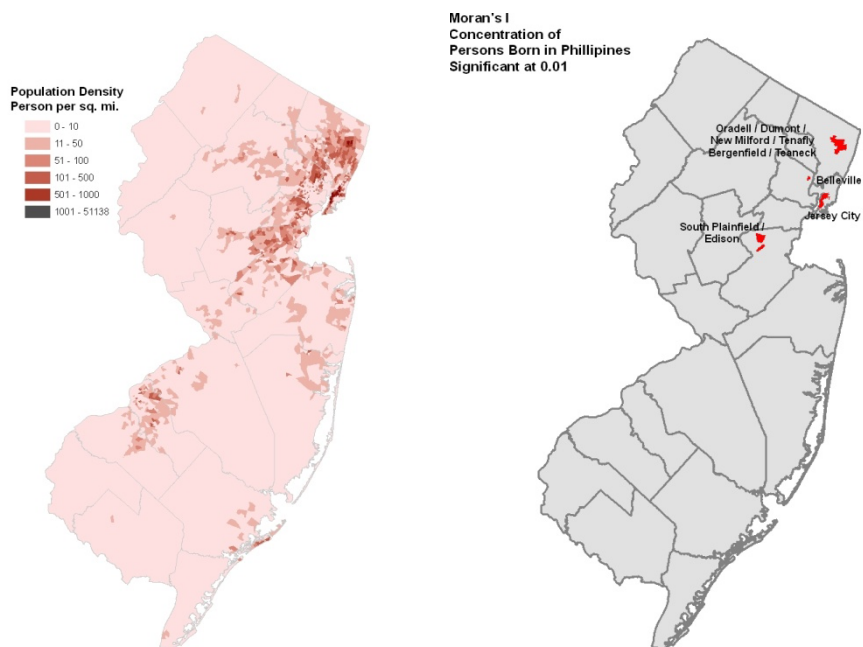
Figure 2. Foreign-Born Persons from the Philippines
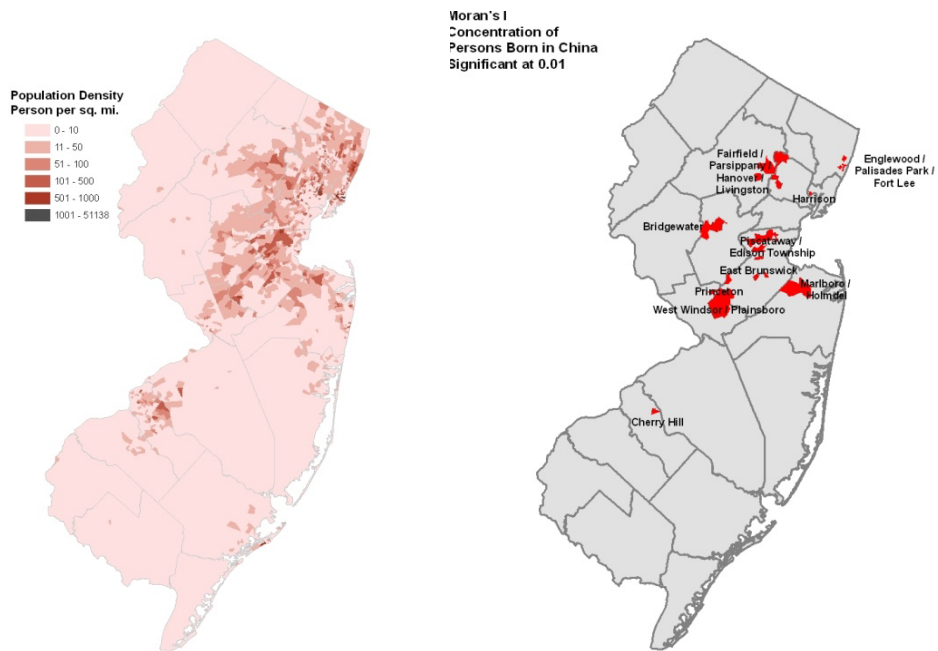
Figure 3. Foreign-Born Persons from China
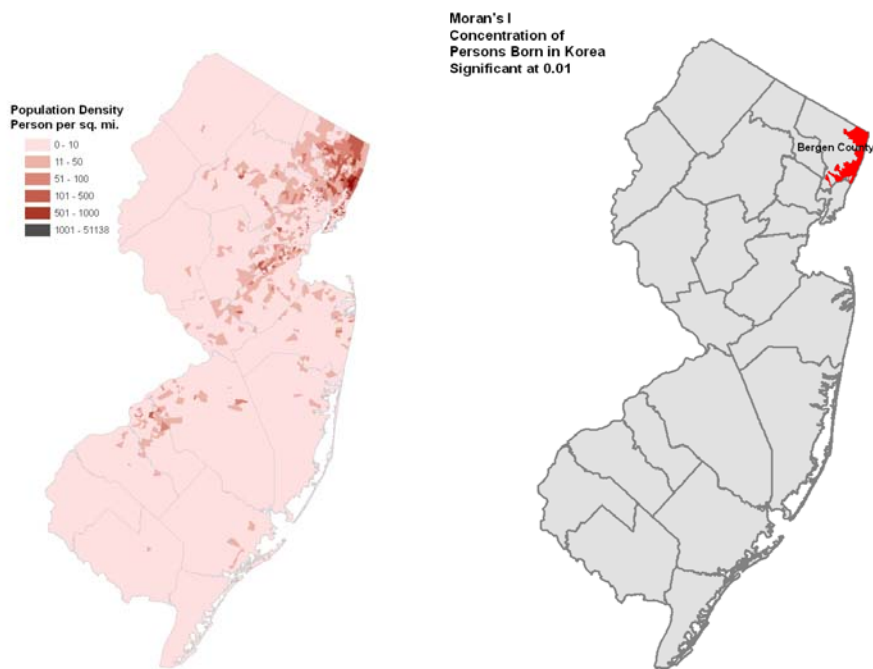
Figure 4. Foreign-Born Persons from Korea
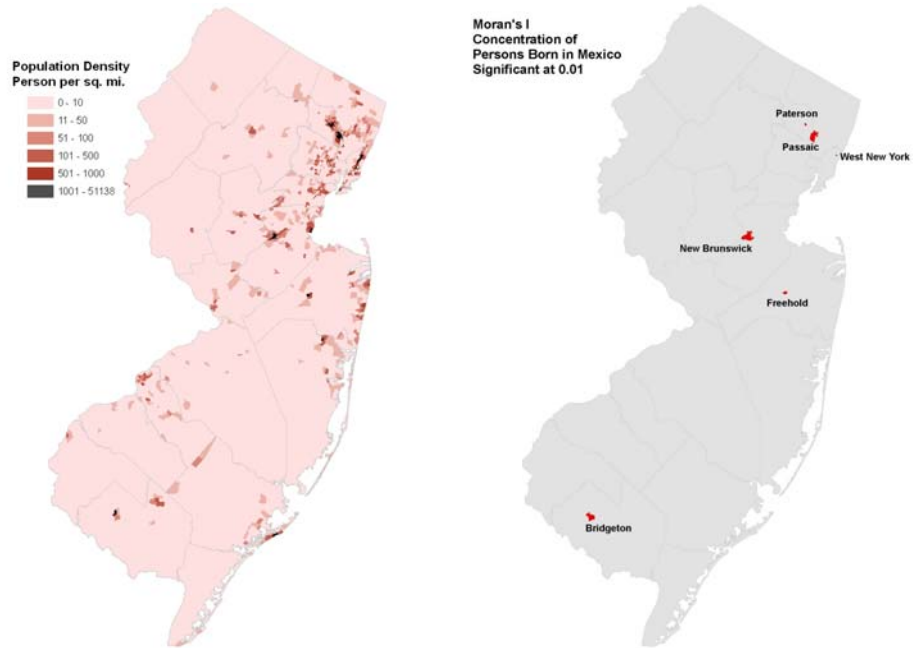
Figure 5. Foreign-Born Persons from Mexico
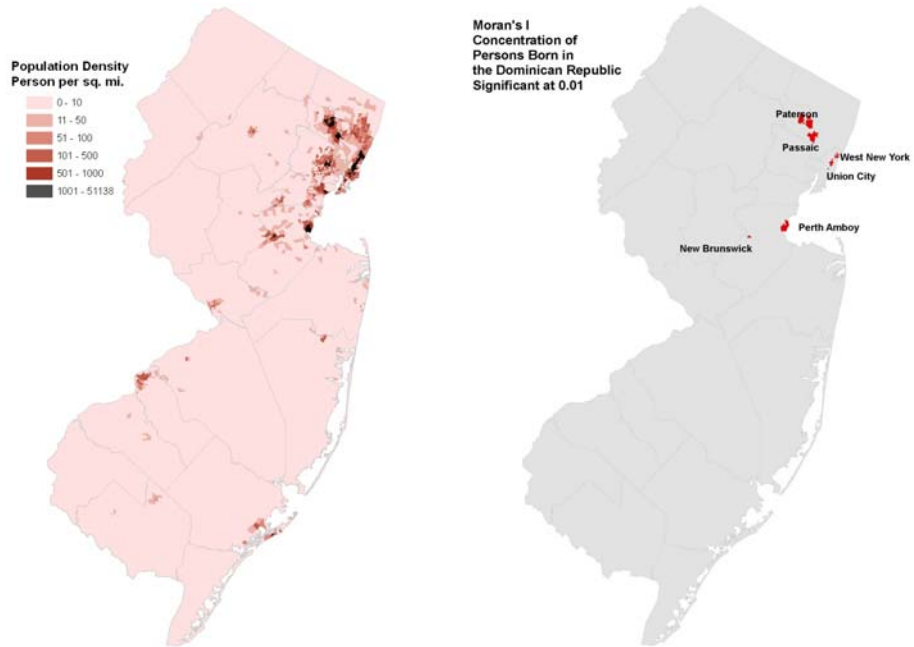
Figure 6. Foreign-Born Persons from the Dominican Republic
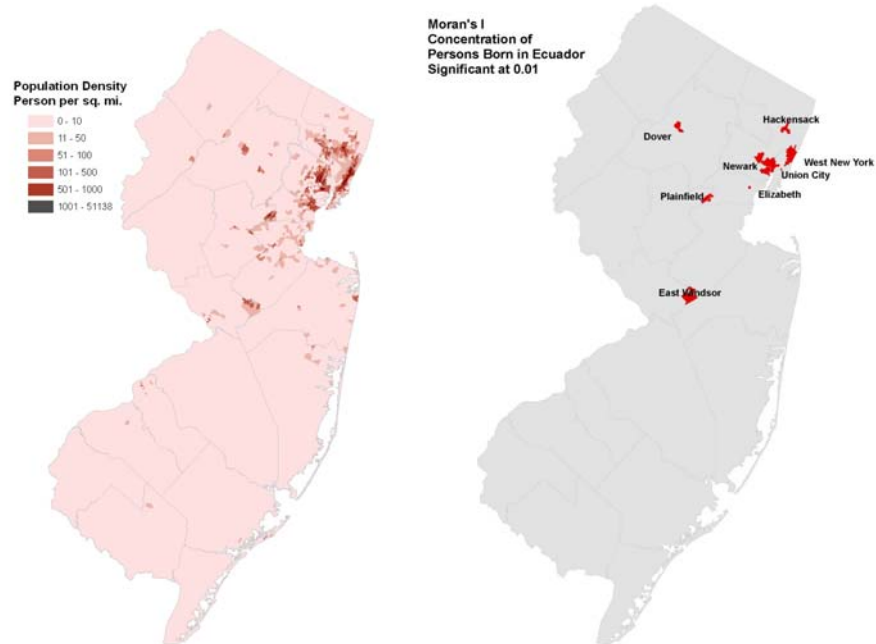
Figure 7. Foreign-Born Persons from Ecuador
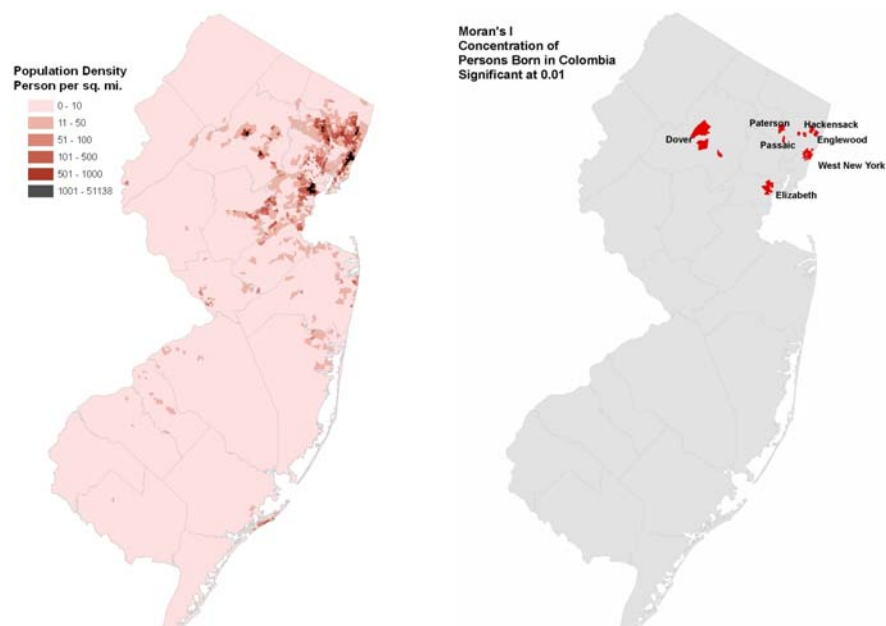
Figure 8. Foreign-Born Persons from Colombia

APPENDIX B. FOCUS GROUP DOCUMENTS

Consent Form to Participate in a Research Study

Audiotape Addendum to Consent Form

Pre-Focus Group Questionnaire

Focus Group Topic Guide (example)

CONSENT FORM TO PARTICIPATE IN A RESEARCH STUDY

Title of Study: The Impact of Demographic Changes on Transit Patterns in New Jersey

Principal Investigator: Dan Chatman, Ph.D.
Research Director
Alan M. Voorhees Transportation Center
Rutgers, The State University of New Jersey
33 Livingston Avenue
New Brunswick, New Jersey 08901
732-932-3822 ext. 724

Sponsor of Study: NJ Department of Transportation

INTRODUCTION

You are invited to participate in this focus group as part of a research study being conducted by the Alan M. Voorhees Transportation Center at Rutgers University. Before you agree to participate in this study, you should know enough about it to make an informed decision to participate. If you have any questions, please feel free to ask the investigator.

ABOUT THE STUDY

The purpose of this study is to better understand how foreign-born residents of New Jersey decide where to live, where they find jobs, and how the places where they live and work affect how they travel every day. The study will also specifically investigate public transportation use. As member of the Filipino community, we would like to hear your thoughts on how you travel and the reasons why you have chosen to live where you do.

Your participation in this focus group will take about 90 minutes. Your participation is completely voluntary; however, your opinions are highly valued and will be a critical part of our success. You may choose not to answer any questions you are not comfortable answering and; if at any time during our conversation you wish to stop participating, you are completely free to do so.

There are no foreseeable risks to participating in this focus group. Your participation is anonymous. Anonymous means that we will not record your name, address, phone number, date of birth, etc. and your comments will not be directly associated with your participation. The research team, research sponsor and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated.

Thank you for your participation today.

Participant's Initials: _____ Date: _____

AUDIOTAPE ADDENDUM TO CONSENT FORM

You have already agreed to participate in a research study entitled: The Impact of Demographic Changes on Transit Patterns in New Jersey conducted by Dr. Daniel Chatman. We are asking for your permission to allow us to record audio as part of that research study.

The recording(s) will be used for transcriptions after the focus group is done, so that researchers will be able to analyze what is being said by you and other participants. The recording(s) will include the mention of only your first name. No other identifier will be in on the audio recording. The recording(s) will be stored in a locked file cabinet with no link to subjects' identity, and will be destroyed three years after completion of the study procedures.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Participant's Initials: _____   **Date:** _____

Principal Investigator Signature: _____ **Date:** _____

If you have any questions about your rights as a research subject, you may contact the Sponsored Programs Administrator at:

<div align="center">

Rutgers University Institutional Review Board
for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 732-932-0150 ext. 2104
Email: humansubjects@orsp.rutgers.edu

</div>

PRE-FOCUS GROUP QUESTIONNAIRE

Please print your first name and the first letter of your last name: _____

Town in which you live: _____ County in which you live: _____

Do you ride the train or bus at least once a month? *(Please circle one)* **Yes   No**

Do you commute to work on a train or bus? *(Please circle one)* **Yes   No**

If you commute to work on a train or bus, please answer these two questions with regard to your morning commute/ride:

    Starting station/stop of your most frequent commute or most typical train/bus ride: _____

    Ending station/stop of your most frequent commute or most train/bus transit ride: _____

These questions are confidential, and are asked solely so that we can categorize the group's discussions. We hope you will answer them all, but you may choose to leave blank any question you are uncomfortable answering.

1.   What is your age of as today's date: ___ → **2.** Please circle one: Male   Female

3.   What is the highest level of education you've completed? *(Please circle one)*

    1. Less than high school graduate
    2. High school graduate (or GED)
    3. Some college (or technical vocational school/professional business school)
    4. Two-year college degree (AA: Associate in Arts)
    5. Four-year college degree (BA or BS: Bachelor of Arts/ Science degree)
    6. Graduate work, but no advanced degree
    7. Graduate degree (Masters, PhD, Lawyer, Medical Doctor)

4.   What language is most often spoken in your household? *(Please circle one)*

    1. English
    2. Spanish
    3. Tagalog
    4. Other, specify_____

5.   Please estimate your household's total annual income for 2007. By "total," we mean adding together the annual income of everyone in your household. *(Please circle one)*

    1. Less than $25,000
    2. $25,000 to less than $50,000
    3. $50,000 to less than $100,000
    4. $100,000 or more

6.   What is your marital status? *(Please circle one)*

    1. Single - never married
    2. Married/civil union
    3. Divorced
    4. Widowed

5. Living with a partner

FOCUS GROUP TOPIC GUIDE (EXAMPLE)

Impacts of Demographic Changes on Transit Patterns
Filipino Focus Group

Assembled by the Pan American Concerned Citizens Action League (PACCAL)

Italian Cultural and Educational Center (Casa Columbo)
380 Monmouth St., Jersey City, NJ 07302

7:00 to 8:30 PM

Rutgers University

[Estimated run time = 90 minutes against 105 allotted]

I. INTRODUCTION (10 minutes)

1. Moderator introduces self and identifies Rutgers University as the research facilitators.

2. Explain what focus groups are for and how they work:

   - Groups have common denominators; focus closely on a topic.

   - We use a "Topic Guide," but it's primarily an open discussion.

   - Only one person speaks at a time. Please start your comments by saying your name first.

   - We are interested in everyone's opinion. There are no right or wrong answers.

3. Time limit: we'll be done and you'll be on your way home by 8:45 pm.

   - You'll receive the incentive when we're finished, just as you leave.

4. **<u>Our purpose tonight</u> is to hear about the travel behavior, needs and experiences of immigrants. We are designing a survey to study this issue, and this focus group will help us understand the important questions to ask.**

II. STATEMENT OF CONFIDENTIALITY (2 - 5 min)

Moderator: Before we begin, I want to make two points.

First, your participation is in this focus group is completely voluntary. Your opinions are highly valued and will be a critical part of our success. You may choose not to answer any questions that you are not comfortable answering. If at any time during our conversation you wish to stop participating, you are completely free to do so.

Second, your participation is anonymous. Anonymous means that we will not record your name, address, phone number, date of birth, etc. and your comments will not be

directly associated with your participation. The research team, research sponsor and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. There are no foreseeable risks to participating in this focus group.

III. BASIC INFO (5 min)

Tonight, we want to talk to you about transportation, how people get from place to place. We also want to hear how people decide where to live and where to work. And we would like to hear about *changes* in how people travel, where people live, and where people work the longer they live in the United States.

We would like you to talk not only about your own experiences but also about the experiences of other people you know from the Philippines.

Before we get to that, let's go around the room and % with each other some basic information.

Assistant moderator flips page on easel to show the following items pre-listed on the next page.

1. To get to know each other a little – please go around the room and tell us:
   a. Your first name or a nickname?
   b. The town or city where you live in?
   c. How many years have you lived in the US?
   d. How old were you when you immigrated to the US?

Also, please write your first name or a nickname on the tent card in front of you.

Wait until everyone has had a chance to introduce him or herself.

Now that we all know each other a little better, let's begin our discussion.

IV. RESIDENTIAL DECISION-MAKING (10 min)

1. Based on your observations and experiences, when someone from the Philippines *first* arrives in the US,
   a. How do you think people end up in a particular metropolitan area in the US to live?
   b. And how then do they choose a town or neighborhood within that area?
2. Over time, does anything change about how people choose where to live? How/why?

V. JOB DECISION-MAKING (10 min)

1. Based on your observations and experiences, when someone from the Philippines *first* arrives in the US,

5

a. How do they find their first job?

2. Over time, does anything change about how people find jobs? How/why?

VI. DAILY TRAVEL (20 min)

1. Now let's talk about transportation. Based on your observations and experiences, when someone from the Philippines *first* arrives in the US,

   a. How do they get around on a day-to-day basis? And what determines this?

2. Over time, does anything change about how people travel? How/why?

3. What are the major differences between travel in the US and travel in the Philippines or in other countries where you have lived?

4. [IF NECESSARY] Do you ever use private bus or van services owned and operated by immigrants?

   a. If so, what is different about these services as compared with public transit – in terms of where they go, how you use them, or things you like or dislike about them?

5. [IF NECESSARY] Do you give rides to other people, or get rides from others, to and from work, shopping or elsewhere, or do you know people who do this? What are good and bad things about these types of arrangements?

VII.   RESIDENCES, JOBS AND TRANSPORTATION (10 min)

We have talked about changes over time in terms of where people live, where they work, and how they get around on a daily basis. Now we would like to hear about how place of work, place of residence, and travel affect each other.

1. Thinking about your observations and experiences,

   a. How do you think the locations where Filipinos live and work affect how they travel?

   b. How do you think transportation affects the places where Filipinos might live or the jobs immigrants can get?

VIII.   ENCLAVES (5 min)

Continuing with the conversation about these related concepts, let's talk about different neighborhoods.

1. Do you know neighborhoods, towns, or other areas where large number of Filipinos live or work?

   a. How do people travel to or within these areas as opposed to traveling elsewhere?

IX. TRANSIT NEEDS (5-10 min) **[IF TIME]**

Tonight, we have primarily talked about the ways people travel. We'd like to finish by talking about any problems you and other Filipinos face traveling.

1. Based on your observations and experiences, what are some of the transportation related issues or problems that Filipinos face?

    a. Have these gotten better or worse over time?

    b. What do you think could be done to address these problems?

X. WRITTEN POST-SCRIPTS (5 min)

Assistant Moderator: Hand out one large index card to each participant.

Finally, I'd like each of you to write down three of the most important things you think that were mentioned tonight – or things we did not mention but we should have talked about.

XI. ADJOURN FOCUS GROUPS

Thank you for participating.

Your input is extremely valuable to us.

Please leave the index card at your seat, and move into the next room where we will distribute the incentives.

Again, thank you for your help.

APPENDIX C. HOUSEHOLD SURVEY QUESTIONNAIRE

The Impact of Demographic Changes on Transit Patterns in New Jersey
aka **"Transit and Immigration" or "TrImm"**
Telephone Survey: Final
Date revised: February 25, 2010 (version 4.4)

Introduction:

Hello, my name is _____, and I am calling from Rutgers University.   We're conducting an important survey to better learn how demographic changes in the population may affect the state. We want to understand how people in New Jersey travel from place to place, decide where to live, and choose where to work. The information will be used to help plan transportation services in New Jersey.

IF NECESSARY / RESPONDENT ASKS: **The study is sponsored by the New Jersey Department of Transportation in association with New Jersey Transit.**

Thank you. The interview will take about 15 minutes to complete, and we are not selling anything nor asking for money. We need your help to make this study as accurate as possible. Your participation is important for the study's validity. We do not save your name or address together with your responses, all of which are completely confidential.

We hope you will answer all of the questions. But you may decline to answer any particular question, and you may stop the interview at any time. All information you give us will be kept strictly anonymous and no individual answers will be reported. May I proceed?

POSSIBLE PROBES ETC.

(INTERVIEWER: IF RESPONDENT ASKS, SAY: **If you would like additional information on this survey, please feel free to contact Dr. Marc Weiner, the project director, at 732-932-1900, x217**).

(IF "DON'T KNOW ENOUGH": **There are no right or wrong answers. We are only interested in your opinions. They are just as important as anybody else's**.)
(IF NOT INTERESTED, DON'T WANT TO: **Please help us. We need your participation to make sure our study is accurate. We could really use your cooperation, and we are interested in what you think**.)

S1. To begin, can you please tell me how many adults, age 18 or older presently live in this household?
(ENTER NUMBER 1-8, 9=DK/Ref)

IF S1=1, skip to Q1

The following questions are for classification purposes only.

S2. FIRST GEN? (if S1>1) **Are any adult members presently living in this household born outside the United States?**
1. Yes
2. No
8. (VOL) DK/Refused

S3. SECOND GEN? (if S1>1) **Are there any adult members presently living in this household who were born in the US, but at least one parent was born outside the US?**
1. Yes
2. No
8. (VOL) DK/Refused

S4. CONTROL (S1>1) **Are there any adult members presently living in this household who were born in the US, with both parents also born in the US?**
1.   Yes
2.   No
8.   (VOL) DK/Refused

HOUSEHOLD CLASSIFICATION
HHSTRATA (MULTI PUNCH)
1.   1st Gen – S2=1
2.   2nd Gen – S3=1
3.   CONTROL – S4=1

IF S2 AND S3 AND S4=2-8 SKIP TO Q.1
IF HHSTRATA=2

S5. May I please speak to the member of the household who was born in the US and   at least one of the parents was born outside the US? (IF MORE THAN ONE PERSON, ASK FOR THE ONE WITH THE MOST RECENT BIRTHDAY)
1.   Coming to phone – SKIP TO Q1
2.   SCHEDULE CALLBACK

IF HHSTRATA=3

S6. May I please speak to the member of the household who was born in the US and both parents were born in the US? (IF MORE THAN ONE PERSON, ASK FOR THE ONE WITH THE MOST RECENT BIRTHDAY)
1.   Coming to phone – SKIP TO Q1
2.   SCHEDULE CALLBACK

IF HHSTRATA=1

S7 May I please speak to the member of the household who was born outside the US? (IF MORE THAN ONE PERSON, ASK FOR THE ONE WITH THE MOST RECENT BIRTHDAY)
1.   Coming to phone – SKIP TO Q1
2.   SCHEDULE CALLBACK

CATI: DISPLAY IF S1>1

IF NEEDED:
Hello, my name is _____, and I am calling from Rutgers University.   We're conducting an important survey to better learn how demographic changes in the population may affect the state. We want to understand how people in New Jersey travel from place to place, decide where to live, and choose where to work. The information will be used to help plan transportation services in New Jersey.

The interview will take about 15 minutes to complete, and we are not selling anything nor asking for money. We need your help to make this study as accurate as possible. Your participation is important for the study's validity. We do not save your name or address together with your responses, all of which are completely confidential.

We hope you will answer all of the questions. But you may decline to answer any particular question, and you may stop the interview at any time. All information you give us will be kept strictly anonymous and no individual answers will be reported. May I proceed?

IMMIGRATION QUESTIONS

1. To begin, where were you born?
1. In the United States
2. (H) Argentina
3. (I) Bangladesh
4.   (I) Bhutan
5. (H) Bolivia
6. (H) Chile
7. (H) Colombia
8. (H) Costa Rica
9. (H) Dominican Republic
10. (H) Ecuador
11. (H) El Salvador
12. (H) Guatemala
13. (H) Honduras
14. (I) India
15. (I) Maldives
16. (H) Mexico
17. (I) Nepal
18. (H) Nicaragua
19. (I) Pakistan
20. (H) Panama
21. (H) Paraguay
22. (H) Peru
23. (I) Sri Lanka
24. (H) Uruguay
25. (H) Venezuela
26. Other Country outside the United States – *SPECIFY name of foreign country, or Puerto Rico, Guam, etc._____*
88. (VOL) D/K
99. (VOL) Refused

2. [If Q1 = 1] **What country was your mother born in?**
1. In the United States
2. (H) Argentina
3. (I) Bangladesh
4.   (I) Bhutan
5. (H) Bolivia
6. (H) Chile
7. (H) Colombia
8. (H) Costa Rica
9. (H) Dominican Republic
10. (H) Ecuador
11. (H) El Salvador
12. (H) Guatemala
13. (H) Honduras
14. (I) India
15. (I) Maldives
16. (H) Mexico
17. (I) Nepal
18. (H) Nicaragua
19. (I) Pakistan
20. (H) Panama
21. (H) Paraguay

22. (H) Peru
23. (I) Sri Lanka
24. (H) Uruguay
25. (H) Venezuela
26. Other Country outside the United States – *SPECIFY name of foreign country, or Puerto Rico, Guam, etc._____*
88. (VOL) D/K
99. (VOL) Refused

3. [If Q2 not equal to "1"] **When did she come to the United States to stay?**
1. Enter year (RANGE 1900 – 2010) – SKIP TO Q4
8. (VOL) D/K
9. (VOL) Ref

3a. Would you say it was in…
1. 2009
2. 2008
3. 2006 to 2007
4. 2004 to 2005
5. 2003 to 2004
6. 2000 to 2002
7. 1995 to 1999
8. 1990 to 1994
9. 1985 to 1989
10. 1980 to 1984
11. 1975 to 1979
12. 1970 to 1974
13. 1965 to 1969
14. Before 1965
88. (VOL) D/K
99. (VOL) Refused

4. [If Q1 == 1] **What country was your father born in?**
1. In the United States
2. (H) Argentina
3. (I) Bangladesh
4. (I) Bhutan
5. (H) Bolivia
6. (H) Chile
7. (H) Colombia
8. (H) Costa Rica
9. (H) Dominican Republic
10. (H) Ecuador
11. (H) El Salvador
12. (H) Guatemala
13. (H) Honduras
14. (I) India
15. (I) Maldives
16. (H) Mexico
17. (I) Nepal
18. (H) Nicaragua
19. (I) Pakistan
20. (H) Panama
21. (H) Paraguay
22. (H) Peru
23. (I) Sri Lanka

24. (H) Uruguay
25. (H) Venezuela
26. Other Country outside the United States – *SPECIFY name of foreign country, or Puerto Rico, Guam, etc.*_____
88. (VOL) D/K
99. (VOL) Refused

5. [If Q4 not equal to "1"] **When did he come to the United States to stay?**
1. Enter year (RANGE 1900 – 2010) – SKIP TO Q6
8. (VOL) D/K
9. (VOL) Ref

    5a. Would you say it was in…
1. 2009
2. 2008
3. 2006 to 2007
4. 2004 to 2005
5. 2003 to 2004
6. 2000 to 2002
7. 1995 to 1999
8. 1990 to 1994
9. 1985 to 1989
10. 1980 to 1984
11. 1975 to 1979
12. 1970 to 1974
13. 1965 to 1969
14. Before 1965
88. (VOL) D/K
99. (VOL) Refused

APPLY SCREENING PROCESS BY QUOTA—set STRATUM equal to following values:
1. Born outside the United States in one of the target countries [SCREEN IN ALL]
2. Born in the U.S. and with one or both parents born outside the U.S. in one of the South Asian (Indian Sample) target countries [SCREEN IN ALL]
3. Born in the U.S. and with one or both parents born outside the U.S. in one of the Latin American (Hispanic Sample) target countries [SCREEN IN ONE OF TWO]
4. Born in the U.S. with both parents also born in the US [SCREEN IN ONE OF FOUR]
5. All Others – Screen Out, Thank and Term

6. [If STRATUM=1]: **When did you come to live in the United States?** [Set value as **IMMIGRATION_YEAR**]
1. Enter year (RANGE 1900 – 2010) – *SKIP TO Q7*
8. (VOL) D/K
9. (VOL) Ref

    6a. Would you say it was in…
1. 2009
2. 2008
3. 2006 to 2007
4. 2004 to 2005
5. 2003 to 2004
6. 2000 to 2002
7. 1995 to 1999
8. 1990 to 1994
9. 1985 to 1989
10. 1980 to 1984

11. 1975 to 1979
12. 1970 to 1974
13. 1965 to 1969
14. Before 1965
88. (VOL) D/K)
99. (VOL) Refused

7. [If STRATUM=1] **Since first moving to the US, have you moved back to your home country or another country?**
1. Yes
2. No
88. (VOL) Don't Know
99. (VOL) Refused

8. [If STRATUM=1] **How old were you when you [CATI – if Q7=1 add "first"] moved [immigrated] to the United States?**
1. _____ - save as IMMIGRATION_AGE
88. (VOL) Don't Know
99. (VOL) Refused

> **Q8A. [If STRATUM=1 & IF IMMIGRATION_AGE<18]: Did you move to the United States to live with your parents or some other adult relative, or did you come to the United States on your own?**
> 1. To live with parents or some other adult relative
> 2. On your own
> 99. (VOL) Refused

9. [IF STRATUM=1 & IMMIGRATION_AGE>=18; OR IF STRATUM=1 & IMMIGRATION_AGE<18 & Q8A=2 OR 99:] **What is the most important reason that you moved to the United States?]** [IF STRATUM=1 & IMMIGRATION_AGE<18 & Q8A=1: **What is the most important reason that you and your {parents/relatives} moved to the United States?**]
[IF STRATUM=2 OR 3: **What is the most important reason in your parents' decision to move to the United States?**]
[INTERVIEWER: IF RESP ASKS WHICH PARENT: "PLEASE ANSWER GENERALLY FOR BOTH"]

I will read some choices and please tell me the most important reason.

 [RANDOMIZE LIST]
a. To look for work or to take a job
b. To join family or relatives
c. To join friends
d. To leave the country
e. To attend school
f. For children to attend school
g. For religious freedom
h. For cultural freedom
i. OTHER (SPECIFY)_____
j. (VOL) Refused
k. (VOL) Don't know

> **9A.** [IF STRATUM=1, 2 or 3]: **Were there any other important reasons?** CODE ALL THAT APPLY [MULTIPLE CHOICES ALLOWED]
> [SAME CHOICES AS Q9 but add punch for "No other reason"]

RESIDENCE QUESTIONS

10. Now I have a few questions about your home. Do you currently live in a:
1. Single-family detached house,
2. Single-family attached house [such as a townhouse or two or three family house],
3. A building with two or more apartments or condos, or
4. A mobile home or trailer?
5. (VOL) BOAT, RV, VAN, ETC
6. (VOL) DORM ROOM, FRATERNITY OR SORORITY HOUSE
7. (VOL) Other, specify _____
8. 88. (VOL) Don't Know
9. *99.* (VOL) Refused

11. Is your home owned or rented?
1. Owned (by respondent or someone in respondent's household)
2. Rented
3. Occupied without payment of rent
4. (VOL) Other, specify _____
88. (VOL) Don't Know
99. (VOL) Refused

12. When did you move into your home? [IF STRATUM>1 ADD: Or have you lived here your whole life or since childhood?]
1. Fill in Month __ and year _____ *Enter into* **MOVE_MONTH** *and* **MOVE_YEAR**
7777. Lived at current residence all my life (or since childhood) [SKIP TO Q14]
8888. (VOL) Don't Know
9999. (VOL) Refused

12a. [IF STRATUM=1] **Did you live in the United States before you moved into your home in MOVE_YEAR?**
1. Yes
2. No – *skip to* **Q14**
3. Don't know
4. Refused

13. In what zip code did you live before you moved into your home in MOVE_YEAR?
1. ENTER zip code:_____
88. (VOL) Don't Know
99. (VOL) Refused

Q13a. What was the name of the city [or town] and state that you lived in before you moved in MOVE_YEAR?
1. Enter City, State - enter into **CITY_NAME_PREVIOUS** and **STATE_NAME_PREVIOUS**
88. (VOL) Don't Know
99. (VOL) Refused

Q13a1. What was the nearest big city to CITY_NAME?
1. Enter City - enter into **NEARCITY_PREVIOUS**
88. (VOL) Don't Know
99. (VOL) Refused

Q13b. (IF STRATUM=1) What was the name of the city [or town] and state you lived in when you first arrived in the United States? [NOTE: "CITY_NAME2" APPARENTLY WAS COLLECTED IN THE PRETEST BUT THE CATI DID NOT CARRY THE NAME FORWARD TO SUBSEQUENT QUESTION]
1. Enter City, State - enter into **CITY_NAME_FIRSTARRIVED** and **STATE_NAME_FIRSTARRIVED**
88. (VOL) Don't Know

99. (VOL) Refused

    Q13bz. (IF STRATUM=1) What was your home zip code when you first arrived in the United States?
1. Enter Zip code
88. (VOL) Don't Know
99. (VOL) Refused

    Q13c. (IF STRATUM=1) What was the nearest big city to CITY_NAME_FIRSTARRIVED?
1. Enter City - enter into **NEARCITY_FIRSTARRIVED**
88. (VOL) Don't Know
99. (VOL) Refused

14. What is the nearest big city to you where you live now?
1. Enter City - enter into **NEARCITY_NOW**
88. (VOL) Don't Know
99. (VOL) Refused

    Q14a. Think back to when you moved to your current home. How did you choose the town or neighborhood you currently live in, in the [NEARCITY_NOW] area?

    I will read some choices and please tell me the most important reason.

        [RANDOMIZE LIST, always make choice "A" first**]**
a. To live with or near family or friends
b. [IF STRATUM==1] Near other people from your country of birth (not family or friends)
c. Near work
d. Near schools for children
e. Near bus or train
f. Near shopping
g. Near religious center or community center
h. Safety or crime rate
i. OTHER (SPECIFY)_____
j. Was too young. Was not involved in the decision making process
k. (VOL) Don't Know
l. (VOL) Refused

Q14b. Were there any other important reasons? ALLOW MULTIPLE CHOICES
[REPRODUCE Q14a LIST but add punch for "No other reason", KEEP SAME ORDER AS Q14a RANDOMIZED LIST]

    Q14c. [IF STRATUM>1 OR (STRATUM=1 & IMMIGRATION_AGE<18 & 12a =1,3, or 4)] Now think back to your <u>previous</u> home in [CITY_NAME_PREVIOUS]. How did you choose the town or neighborhood you lived in then, in the [NEARCITY_PREVIOUS] area?

    I will read some choices and please tell me the most important reason.

    [USE Q14a LIST; RANDOMIZE LIST**]**

    Q14d. [IF STRATUM>1 OR (STRATUM=1 & IMMIGRATION_AGE<18)] Were there any other important reasons? CODE ALL THAT APPLY [MULTIPLE CHOICES ALLOWED]
[USE CHOICES FROM Q14a but add punch for "No other reason"]

15. [IF STRATUM=1 & IMMIGRATION_AGE≥18] Now please think back to when you first arrived in the US in [IMMIGRATION YEAR] and lived in [CITY_NAME_FIRSTARRIVED]. How did you choose the town or neighborhood you lived in then, in the [NEARCITY_FIRSTARRIVED] area?

I will read some choices and please tell me the most important reason.

[USE Q14 LIST; RANDOMIZE LIST]

    15A. [IF STRATUM=1 & IMMIGRATION_AGE≥18]: Were there any other important reasons? CODE ALL THAT APPLY [MULTIPLE CHOICES ALLOWED]
[USE CHOICES FROM Q15 but add punch for "No other reason"]

EMPLOYMENT QUESTIONS

16. During most of last week were you...?
1. Working - *SET **EMPLOYED**=1*
2. Out Sick or on Vacation, or away from your regular job - *SET **EMPLOYED**=1*
3. Looking for work – *SKIP TO Q22b*
4. A homemaker – *SKIP TO Q22b*
5. Going to school – *SKIP TO Q22b*
6. Retired – *SKIP TO Q22b*
7. Doing something else – *SKIP TO Q22b*
8. Or have you never worked? – SKIP TO Q24
    88. (VOL) D/K
    99. (VOL) Refused

17. Do you work full-time or part-time? [If asked:] **A full time job is at least 35 hours per week.**
1. Full-time
2. Part-time
3. Multiple jobs
4. Refused
5. don't know

18. DELETE

19. What is your occupation? [If needed:] **What job do you do**? ENTER VERBATIM RESPONSE. IF SELF-EMPLOYED, ASK TO DESCRIBE BUSINESS OR LINE OF WORK.

20. What is the name of your {employer/company}?
[IF NEEDED: We are not going to contact you/ there. Transportation planners are interested in workplace location because travel to work often affects other daily travel.]
1. Name of employer _____
8. (VOL) Don't know
9. (VOL) Refused

20. What is the street address of your {primary} workplace?

    20A. INTERVIEWER: COLLECT Street Number ONLY: _____
        8. Don't know
        9. Refused
    20B. INTERVIEWER: COLLECT Street Name ONLY:_____
        8. (VOL) Don't know
        9. (VOL) Refused
    20C. Would that be a street, road, avenue, or what? ENTER STREET TYPE (STREET, ROAD, AVENUE, etc.):_____
        8. (VOL) Don't know
        9. (VOL) Refused
    20D. City:_____
        8. (VOL) Don't know
        9. (VOL) Refused
    20E. State:_____
        8. (VOL) Don't know

9. (VOL) Refused
20F. Zip Code:_____
      88888. (VOL) Don't know
      99999. (VOL) Refused

[IF 20A, 20B, OR 20E=DON'T KNOW OR REFUSED: We would like to know the approximate location of your {primary} workplace. What is the name of the street or road nearest your {primary} workplace?

   20G. First Road: _____
   20H. Street Type:_____
      8. (VOL) Don't know
      9. (VOL) Refused

[IF 20A, 20B, OR 20E=DON'T KNOW OR REFUSED: What is the name of the nearest intersecting street or road?}

   20I. Second Road:_____
      8. (VOL) Don't know
      9. (VOL) Refused
   20J. Street Type:_____
      8. (VOL) Don't know
      9. (VOL) Refused

Would you please provide a landmark that is close to your {primary} workplace? This could be a well-known building, park, monument, or school.

[IF NEEDED: Transportation planners are interested in workplace location because travel to work often affects other daily travel.]

   20K. Name of Landmark:_____
      8. (VOL) Don't know
      9. (VOL) Refused

21. What was the most important factor in helping you find your current job? I will read some choices and please tell me the most important reason.
 [RANDOMIZE LIST**]**
a. Family [IF STRATUM=1: in the United States]
b. Friends [IF STRATUM=1: in the United States]
c. IF STRATUM=1: People in the United States from your home country (not friends or family)
d. IF STRATUM=1: Contacts outside the United States (friends, family, co-workers)
e. Co-workers or professional network
f. Advertisements in newspapers, on billboards, on television, on the web/internet
g. Employment agency or job center
h. OTHER (SPECIFY)_____
i. (VOL) Don't Know
j. (VOL) Refused

   Q21A. Were there any other important reasons? CODE ALL THAT APPLY [MULTIPLE
      CHOICES ALLOWED]

   [SAME CHOICES AS Q21 but add punch for "No other reason"]

22. [IF STRATUM=1 & IMMIGRATION_AGE>=18 & EMPLOYED=1] **Are you still working at the same job that you were when you arrived in the U.S. in [IMMIGRATION_YEAR]?**

1. Yes – *Skip to Q24*
2. No – ***Set IMM_WORK=1***
88. (VOL) Don't Know – SKIP TO Q24
99. (VOL) Refused – SKIP TO Q24

> Q22B. [IF STRATUM=1 & IMMIGRATION_AGE>=18 & EMPLOYED≠1]: **Were you employed for more than six consecutive months during the first two years after you arrived in the United States?**
> 1. Yes – ***Set IMM_WORK=1***
> 2. No – *Skip to Q24*
> 88. (VOL) Don't know – SKIP TO Q24
> 99. (VOL) Refused – SKIP TO Q24

> Q22C. [IF IMM_WORK=1] **What was your first job after arriving in the United States?** [If needed:] **What job did you do**? ENTER VERBATIM RESPONSE. IF SELF-EMPLOYED, ASK TO DESCRIBE BUSINESS OR LINE OF WORK.

23. [IF IMM_WORK=1] Think back to when you found your first job as _____ [INSERT RESPONSE FROM Q22C].

I will read some choices and please tell me the most important reason in helping you find that job.

[USE Q21 LIST; RANDOMIZE LIST]

> Q23B. [IF IMM_WORK=1] **Were there any other important reasons?** CODE ALL THAT APPLY [MULTIPLE CHOICES ALLOWED]
> [SAME CHOICES AS Q23 but add punch for "No other reason"]

> Q23C. [IF EMPLOYED=1 AND IF {STRATUM>1 OR (STRATUM=1 & IMMIGRATION_AGE<18)] **Have you held a job prior to your current job?**
> 1. Yes – ***set PREV_WORK=1***
> 2. No - *Skip to Q24*
> 88. (VOL) Don't Know
> 99. (VOL) Refused

> Q23D. [IF EMPLOYED≠1 AND IF {STRATUM>1 OR (STRATUM=1 & IMMIGRATION_AGE<18)] **Have you ever been employed for more than six consecutive months?**
> 1. Yes – ***set PREV_WORK=1***
> 2. No - *Skip to Q24*
> 88. (VOL) Don't Know
> 99. (VOL) Refused

> Q23E. [IF PREV_WORK=1] **What was your occupation in your previous place of work?** [If needed:] **What job did you do**? ENTER VERBATIM RESPONSE. IF SELF-EMPLOYED, ASK TO DESCRIBE BUSINESS OR LINE OF WORK.

> Q23F. [IF PREV_WORK=1] **Think back to when you found your previous job as a _____** [INSERT RESPONSE FROM Q23E]. **I will read some choices and please tell me the most important reason in helping you find that job.**

> [USE Q21 LIST; RANDOMIZE LIST]

> Q23G. [IF PREV_WORK=1] **Were there any other important reasons?** CODE ALL THAT APPLY [MULTIPLE CHOICES ALLOWED]
> [SAME CHOICES AS Q23E but add punch for "No other reason"]

11

TRAVEL QUESTIONS

24. How many cars, vans and trucks are kept at home for use by members of this household? [DO NOT READ LIST, ONLY AS NEEDED]
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6 or more
7. None
88. (VOL) Don't Know
99. (VOL) Refused

25. [If Q24=7, 88 or 99] **Do you sometimes borrow or use someone else's car?**
1. Yes
2. No
88. (VOL) Don't Know
99. (VOL) Refused

26. [If q24=1-6]: **How long has your household had a car, van or truck at home?**
1. _____[years]
88. (VOL) Don't Know
97. (VOL) As long as I can remember
99. (VOL) Refused

27. [If q24=1-6]: **Do other people, outside your family, use your car or ride in it?**
1. Yes
2. No
88. (VOL) Don't Know
99. (VOL) Refused

WORK TRAVEL QUESTIONS

28. [IF EMPLOYED = 1] How did you usually get to work [If Q16 = 1 insert "last week"]? [IF NEEDED: **If you used more than one method of transportation during the trip, what mode was used for most of the distance?**]
1. Drive — GO TO A1.
2. Bus (or van) — GO TO B1
3. Train (or light rail, trolley, subway, PATH, etc) — GO TO C1
4. Taxi, limousine, friend driving, etc — GO TO D1
5. Walk — GO TO Q30
6. Bike — GO TO Q30
7. Other (Specify) — GO TO Q30
8. (VOL) Work From Home — GO TO Q30
9. (VOL) D/K — GO TO Q30
10. (VOL) Refused — GO TO Q30

A1. How many people, including you, usually rode to work in the car, truck or van last week?
NUMBER OF PEOPLE................|___|___| (1-7, 7=7 or more, 8=DK, 9=Ref)

A2. [SKIP IF A1=1] **Were you the driver?**
1. Yes
2. No
8. (VOL) D/K
9. (VOL) Refused

A3 . [IF A2 = 2 (NO)] Do you contribute to gas, tolls or provide a payment to the driver? If so, how much do you typically pay per week for your ride to work?
1. Yes, [INSERT AMOUNT] $____, per week.
2. No
8. (VOL) D/K
9. (VOL) Refused

[SKIP TO Q30]

B1. How do you usually get to the bus or van stop or station?
1. Drive
2. NJ Transit Bus
3. Private Bus or Van (like Spanish Transportation)
4. Taxi, Limousine, friend driving, etc
5. Walk
6. Bike
7. Other, Specify _____
8. (VOL) D/K
9. (VOL) Refused

B2. DELETED

B3. When you take a bus or van, is it a
1. NJ Transit Bus
2. Other bus or van
8. (VOL) D/K
9. (VOL) Refused

B4. [if B3 = 2] Is the bus or van provided by:
1. A private transit company
2. An employment agency
3. Your employer
4. Another coworker
5. An individual
6. Other (specify)
8. (VOL) Don't Know
9. (VOL) Refused

B5. [if B4 = 1 or 2] Do you know the name of the bus or van company?
1. Yes
2. No
8. (VOL) D/K
9. (VOL) Refused

B6. [If B5 = 1] And what is the name of the bus or van company?
1. _____ Bus or Van Company
8. (VOL) D/K
9. (VOL) Refused

B7. How much does your bus or van cost per week?
1. $ _____
2. ¢ _____
8. (VOL) D/K
9. (VOL) Refused

[SKIP TO Q30]

C1. When you take the train, do you ride…?
1. A commuter train (NJ TRANSIT or PATCO or Metro-North or LIRR or SEPTA)
2. An Amtrak/inter city train
3. A subway/elevated train (include PATH or NY MTA)
4. The Light Rail (include Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
    8. (VOL) D/K
    9. (VOL) Refused

C1a.   [If =C1=1] Which train line did you ride?
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton
7. Pascack Valley
8. Atlantic City
9. PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K
99. (VOL) Refused

C1b.   [If C1=4] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other
8. (VOL) D/K
9. (VOL) Refused

C2. How do you get to the train station?
1. Drive
2. NJ Transit Bus
3. Private Bus or Van (like Spanish Transportation)
4. Taxi, Limousine, friend driving, etc
5. Walk
6. Bike
7. Other, Specify _____
8. (VOL) D/K
9. (VOL) Refused

[SKIP TO Q30]

D1. Which of the following best describes your transportation to work?
1. Taxicab
2. Jitney
3. Gypsy cab
4. Limousine
5. Friend, neighbor, acquaintance driving
6. Other(specify)
    8. (VOL) Don't Know
9. (VOL) Refused

14

D2 . How much do you pay per week for that service?
1. $ _____
2. ¢ _____
    8.   (VOL) D/K
    9.   (VOL) Refused

29. **DELETED**

30. [IF IMM_WORK=1] **Think back to the first job you had after arriving in the US, as ____** [INSERT RESPONSE FROM Q22B]**. How did you usually travel to work for that job?**
1. Drive — GO TO A1.
2. Bus (or van) — GO TO B1
3. Train (or light rail, trolley, subway, PATH, etc) — GO TO C1
4. Taxi, limousine, friend driving, etc — GO TO D1
5. Walk — GO TO Q31
6. Bike —GO TO Q31
7. Other — collect verbatim response — GO TO Q31
8. (VOL) Work From Home — GO TO Q31

    Q30A. [IF PREV_WORK=1] **Think back to the previous job you held as ___** [INSERT RESPONSE FROM Q23E]. **How did you usually travel to work for that job?**
1. Drive — GO TO A1.
2. Bus (or van) — GO TO B1
3. Train (or light rail, trolley, subway, PATH, etc) — GO TO C1
4. Taxi, limousine, friend driving, etc — GO TO D1
5. Walk — GO TO Q31
6. Bike — GO TO Q31
7. Other — collect verbatim response — GO TO Q31
8. (VOL) Work From Home — GO TO Q31

    A1. How many people, including you, usually rode to work in the car, truck or van ?
    NUMBER OF PEOPLE................|___|___| (1-7, 7=7 or more, 8=DK, 9=Ref)

    A2. [SKIP IF A1=1] Were you usually the driver?
    1. Yes
    2. No
        8.   **(VOL) D/K**
        9. (VOL) Refused

    A3 . [IF A2 = 2] During that period did you contribute to gas, tolls or provide a payment to the driver? If so, how much did you typically pay per week for your ride to work?
    1. Yes, [INSERT AMOUNT] $____, per week.
    2. No
        8.   **(VOL) D/K**
        9. (VOL) Refused

[SKIP TO Q31]

    B1. How do you usually get to the bus or van stop or station?
        1.   Drive
        2.   NJ Transit Bus
        3.   Private Bus or Van (like Spanish Transportation)
        4.   Taxi, Limousine, friend driving, etc
        5.   Walk
        6.   Bike

       7.   Other, Specify _____
       8.   (VOL) D/K
       9.   (VOL) Refused

B2. DELETED

B3. When you take a bus or van, is it a
1. NJ Transit Bus
2. Other bus or van
       8.   (VOL) D/K
       9.   (VOL) Refused

B4. [if B3 = 2] Is the bus or van provided by:
1. A private transit company
2. An employment agency
3. Your employer
4. Another coworker
5. An individual
6. Other (specify)
8. (VOL) Don't Know
9. (VOL) Refused

B5. [if B4 = 1 or 2] Do you know the name of the bus or van company?
1. Yes
2. No
       8.   (VOL) D/K
       9. (VOL) Refused

B6. [If B5 = 1] And what is the name of the bus or van company?
       1.   _____ Bus or Van Company
       8.   (VOL) D/K
       9.   (VOL) Refused

B7. How much does your bus or van cost per week?
1. $ _____
2. ¢ _____
8. (VOL) D/K
9. (VOL) Refused

[SKIP TO Q31]

C1. When you took the train, did you ride…?
1. A commuter train (NJ TRANSIT or PATCO or Metro-North or LIRR or SEPTA)
2. An Amtrak/Inter city train
3. A subway/elevated (including PATH or New York City Subway)
4. The Light Rail (including Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
       8.   (VOL) D/K
       9.   (VOL) Refused

    C1a.   **[If =C1=1] Which train line did you ride?**
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton

16

7. Pascack Valley
8. Atlantic City
9. PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K
99. (VOL) Refused

C1b.   [If C1=4] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other
8. (VOL) D/K
9. (VOL) Refused

C2. How did you get to the train station?
1. Drive
2. NJ Transit Bus
3. Private Bus or Van (like Spanish Transportation)
4. Taxi, Limousine, friend driving, etc
5. Walk
6. Bike
7. Other, Specify _____
8. (VOL) D/K
9. (VOL) Refused

[SKIP TO Q31]

D1. Which of the following best describes your transportation to work?
1. Taxicab
2. Jitney
3. Gypsy cab
4. Limousine
5. Friend, neighbor, acquaintance driving
6. Other(specify)
    8.   (VOL) Don't Know
9. (VOL) Refused

D2 . How much did you pay per week for that service?
1. $ _____
2. ¢ _____
    8.   (VOL) D/K
    9.   (VOL) Refused

NON-WORK TRAVEL

31. We're interested in finding out where you go on a daily basis and how you get there. I will ask about the last three times you traveled for three different reasons: shopping for groceries, eating out, and visiting friends and family. Please try to remember all of your trips, even short walking trips or stops made on the way to or from other places. [ENTER]

17

GROCERY SHOPPING

NW1a1. Let's begin. When was the last time you shopped for groceries or food? (DO NOT READ LIST)
1. Today
2. Yesterday
3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   *– SKIP TO NW2a1*
10. Never Do that   *– SKIP TO NW2a1*
88. (VOL) Don't Know *– SKIP TO NW2a1*
99. (VOL) Refused   *– SKIP TO NW2a1*

NW1a2. And when you went for groceries, how did you get there? (DO NOT READ LIST)

[ALLOW MULTIPLE MODES TO BE CHECKED.]
1. Car, truck, or van
2. NJ Transit bus
3. Private bus (like Spanish transportation)
4. Commuter rail (NJ Transit or PATCO or Metro-North or LIRR or SEPTA)
5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail,)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (Specify): _____
88. (VOL) Don't Know   **- GO TO NW1a3**
99. (VOL) Refused   **- GO TO NW1a3**

NW1a2a. [IF NW1a2=4] Which train line did you ride?
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton
7. Pascack Valley
8. Atlantic City
9. PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K   **- GO TO NW1a3**
99. (VOL) Refused   **- GO TO NW1a3**

NW1a2b. [IF NW1a2=5] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other

8. (VOL) D/K
9. (VOL) Refused

NW1a3. And which town and state is the grocery store located in?
1. _____ Town
2. _____ State
88. (VOL) Don't Know
99. (VOL) Refused

NW1b1. And before that trip that we were just talking about, when was the last time that you went shopping for groceries? (DO NOT READ LIST)
1. Today
2. Yesterday
3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   – *SKIP TO NW2a1*
88. (VOL) Don't Know   *-SKIP TO NW2a1*
99. (VOL) Refused   - *SKIP TO NW2a1*

NW1b2. How did you get there? (DO NOT READ LIST)
[ALLOW MULTIPLE MODES TO BE CHECKED.]
1. Car, truck, or van
2. NJ Transit bus
3. Private bus (like Spanish transportation)
4. Commuter rail (NJ Transit or PATCO or Metro-North or LIRR, or SEPTA)
5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (Specify): _____
88. (VOL) Don't Know   - *SKIP TO NW1b3*
99. (VOL) Refused   - *SKIP TO NW1b3*

NW1b2a. [IF NW1b2=4] Which train line did you ride?
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton
7. Pascack Valley
8. Atlantic City
9. PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K   - *SKIP TO NW1b3*
99. (VOL) Refused - *SKIP TO NW1b3*

NW1b2b. [IF NW1b2=5] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other
8. (VOL) D/K
9. VOL) Refused

NW1b3. Which town and state is that grocery store located in?
1. _____ Town
2. _____ State
88. (VOL) Don't Know
99. (VOL) Refused

NW1c1. And before that trip we were just talking about when was the last time that you went shopping for groceries? (DO NOT READ LIST)
1. Today
2. Yesterday
3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   *– SKIP TO NW2a1*
88. (VOL) Don't Know *– SKIP TO NW2a1*
99. (VOL) Refused   *– SKIP TO NW2a1*

NW1c2. And when you went for groceries, how did you get there? (DO NOT READ LIST) [ALLOW MULTIPLE MODES TO BE CHECKED.]
1. Car, truck, or van
2. NJ Transit bus
3. Private bus (like Spanish transportation)
4. Commuter rail (NJ Transit or PATCO or Metro-North or LIRR, or SEPTA)
5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (Specify): _____
88. (VOL) Don't Know   **- GO TO NW1c3**
99. (VOL) Refused   **- GO TO NW1c3**

NW1c2a. [IF NW1c2=4] Which train line did you ride?
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton
7. Pascack Valley
8. Atlantic City
9. PATCO

10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K   **- GO TO NW1c3**
99. (VOL) Refused **- GO TO NW1c3**

NW1c2b. [IF NW1c2=5] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other
8. (VOL) D/K
9. (VOL) Refused

NW1c3. And which town and state is that grocery store located in?
1. _____ Town
2. _____ State
88. (VOL) Don't Know
99. (VOL) Refused

MEALS, DRINK AND PREPARED FOOD

NW2a1. Now I would like to ask you about the last three times you went out to eat or drink, or to pick up a meal, a snack, coffee or a drink. Please try to remember all of your trips, even short walking trips or stops made on the way to or from other places. When was the last time you went to a restaurant, bar or café, or to pick up prepared food or drinks? (DO NOT READ LIST)

 [IF RESPONDENT ANSWERS "Never do this," SKIP TO NW3A1]
1. Today
2. Yesterday
3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   **– *SKIP TO NW3a1***
10. Never Do that   **– *SKIP TO NW3a1***
88. (VOL) Don't Know   **– *SKIP TO NW3a1***
99. (VOL) Refused   **– *SKIP TO NW3a1***

NW2a2. And how did you get there? (DO NOT READ LIST)
[ALLOW MULTIPLE MODES TO BE CHECKED.]
1. Car, truck, or van
2. NJ Transit bus
3. Private bus (like Spanish transportation)
4. Commuter rail (NJ Transit or PATCO or Metro-North or LIRR, or SEPTA)
5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (Specify): _____
88. (VOL) Don't Know   **-GO TO NW2a3**

99. (VOL) Refused   **-GO TO NW2a3**

NW2a2a. [IF NW2a2=4] Which train line did you ride?
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton
7. Pascack Valley
8. Atlantic City
9. PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K   **-GO TO NW2a3**
99. (VOL) Refused   **-GO TO NW2a3**

NW2a2b. [IF NW2a2=5] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other
8. (VOL) D/K
9. (VOL) Refused

NW2a3. And which town and state was this in?
1. _____ Town
2. _____ State
    88. (VOL) Don't Know
    99. (VOL) Refused

NW2b1. And before that last trip we were just discussing, when was the last time that you went to a restaurant, bar or café, or to pick up prepared food or drinks? (DO NOT READ LIST)
1. Today
2. Yesterday
3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   **– GO TO *NW3a1***
88. (VOL) Don't Know   **– GO TO *NW3a1***
99. (VOL) Refused   **– GO TO *NW3a1***

NW2b2. And how did you get there? (DO NOT READ LIST)
     [ALLOW MULTIPLE MODES TO BE CHECKED.]
1. Car, truck, or van
2. NJ Transit bus
3. Private bus (like Spanish transportation)
4. Commuter rail (NJ Transit or PATCO or Metro-North or LIRR, or SEPTA)
5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.

10. Motorcycle
11. Bicycle
12. Walk
13. Other (Specify) _____
88. (VOL) Don't Know **-GO TO NW2b3**
99. (VOL) Refused   **-GO TO NW2b3**

NW2b2a. [IF NW2b2=4] Which train line did you ride?
1.   Northeast Corridor
2.   North Jersey Coast
3.   Raritan Valley
4.   Morris & Essex
5.   Main/Bergen/Port Jervis
6.   Montclair-Boonton
7.   Pascack Valley
8.   Atlantic City
9.   PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K   **-GO TO NW2b3**
99. (VOL) Refused   **-GO TO NW2b3**

NW2b2b. [IF NW2b2=5] Which light rail line did you ride?
1.   Hudson-Bergen light rail
2.   River Line
3.   Newark light rail
4.   Other
8.   (VOL) D/K
9.   (VOL) Refused

NW2b3. **And which town and state was this in?**
1.   _____ Town
2.   _____ State
     88. (VOL) Don't Know
     99. (VOL) Refused

NW2c1. **And before that trip we were just talking about when was the last time that you went to a restaurant, bar or café, or to pick up prepared food or drinks? (DO NOT READ LIST)**
1.   Today
2.   Yesterday
3.   Two days ago
4.   Three days ago
5.   Four days ago
6.   5-7 days ago
7.   1 to 2 weeks ago
8.   3 to 4 weeks ago
9.   More than a month ago   *– SKIP TO NW3a1*
88. (VOL) Don't Know   *– SKIP TO NW3a1*
99. (VOL) Refused   *– SKIP TO NW3a1*

NW2c2. **And how did you get there? (DO NOT READ LIST)**
[ALLOW MULTIPLE MODES TO BE CHECKED.]
1.   Car, truck, or van
2.   NJ Transit bus
3.   Private bus (like Spanish transportation)
4.   Commuter rail (NJ Transit or PATCO or Metro-North or LIRR or SEPTA)

23

5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (specify) _____
88. (VOL) Don't Know   **- GO TO NW2c3**
99. (VOL) Refused   **- GO TO NW2c3**

NW2c2a. [IF NW2c2=4] Which train line did you ride?
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton
7. Pascack Valley
8. Atlantic City
9. PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K   **- GO TO NW2c3**
99. (VOL) Refused   **- GO TO NW2c3**

NW2c2b. [IF NW2c2=5] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other
8. (VOL) D/K
9. (VOL) Refused

NW2c3. **And which town and state is was this in?**
1. _____ Town
2. _____ State
88. (VOL) Don't Know
99. (VOL) Refused

VISITING FRIENDS OR RELATIVES

NW3a1. Finally, I'd like to ask you some questions about trips to visit family, other relatives, or friends. Please try to remember all of your trips, even short walking trips or stops made on the way to or from other places. When was the last time you went to visit family, another relative, or a friend? (DO NOT READ LIST)
1. Today
2. Yesterday
3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   *– SKIP TO Q32*

10. Never Do that   *– SKIP TO Q32*
88. (VOL) Don't Know   *– SKIP TO Q32*
99. (VOL) Refused   *– SKIP TO Q32*

NW3a2. How did you get there? (DO NOT READ LIST)
[ALLOW MULTIPLE MODES TO BE CHECKED.]
1.   Car, truck, or van
2.   NJ Transit bus
3.   Private bus (like Spanish transportation)
4.   Commuter rail (NJ Transit or PATCO or Metro-North or LIRR or SEPTA)
5.   Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
6.   Subway or Elevated train (Like PATH or New York City Subway).
7.   Other railroad
8.   Ferryboat
9.   Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (specify) _____
88. (VOL) Don't Know   **- GO TO NW3a3**
99. (VOL) Refused   **- GO TO NW3a3**

    NW3a2a. [IF NW3a2=4] Which train line did you ride?
    1.   Northeast Corridor
    2.   North Jersey Coast
    3.   Raritan Valley
    4.   Morris & Essex
    5.   Main/Bergen/Port Jervis
    6.   Montclair-Boonton
    7.   Pascack Valley
    8.   Atlantic City
    9.   PATCO
    10. SEPTA
    11. Other commuter rail line (Metro-North or LIRR)
    88. (VOL) D/K   **- GO TO NW3a3**
    99. (VOL) Refused   **- GO TO NW3a3**

    NW3a2b. [IF NW3a2=5] Which light rail line did you ride?
    1.   Hudson-Bergen light rail
    2.   River Line
    3.   Newark light rail
    4.   Other
    8.   (VOL) D/K
    9.   (VOL) Refused

NW3a3. And which town and state was this business in?
1.   _____ Town
2.   _____ State
88.   (VOL) Don't Know
99.   (VOL) Refused

NW3b1. And before that trip we were just talking about when was the last time that you went to visit family, other relatives, or friends? (DO NOT READ LIST)
1.   Today
2.   Yesterday

3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   *– SKIP TO Q32*
88. (VOL) Don't Know   *– SKIP TO Q32*
99. (VOL) Refused   *– SKIP TO Q32*

NW3b2. How did you get there? (DO NOT READ LIST)
[ALLOW MULTIPLE MODES TO BE CHECKED.]
1. Car, truck, or van
2. NJ Transit bus
3. Private bus (like Spanish transportation)
4. Commuter rail (NJ Transit or PATCO or Metro-North or LIRR, or SEPTA)
5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (specify) _____
88. (VOL) Don't Know   **- GO TO NW3b3**
99. (VOL) Refused   **- GO TO NW3b3**

    NW3b2a. [IF   NW3b2=4] Which train line did you ride?
1. Northeast Corridor
2. North Jersey Coast
3. Raritan Valley
4. Morris & Essex
5. Main/Bergen/Port Jervis
6. Montclair-Boonton
7. Pascack Valley
8. Atlantic City
9. PATCO
10. SEPTA
11. Other commuter rail line (Metro-North or LIRR)
88. (VOL) D/K   **- GO TO NW3b3**
99. (VOL) Refused   **- GO TO NW3b3**

    NW3b2b. [IF NW3b2=5] Which light rail line did you ride?
1. Hudson-Bergen light rail
2. River Line
3. Newark light rail
4. Other
8. (VOL) D/K
9. (VOL) Refused

NW3b3. And which town and state was this business in?
1. _____ Town
2. _____ State
    88. (VOL) Don't Know
    99. (VOL) Refused

NW3c1. And before that trip we were just talking about when was the last time that you went to visit family, other relatives, or friends. When did you do this? (DO NOT READ LIST)
1. Today
2. Yesterday
3. Two days ago
4. Three days ago
5. Four days ago
6. 5-7 days ago
7. 1 to 2 weeks ago
8. 3 to 4 weeks ago
9. More than a month ago   *– SKIP TO Q32*
88. (VOL) Don't Know   *- SKIP TO Q32*
99. (VOL) Refused   *- SKIP TO Q32*

NW3c2. How did you get there? (DO NOT READ LIST)
[ALLOW MULTIPLE MODES TO BE CHECKED.]
1. Car, truck, or van
2. NJ Transit bus
3. Private bus (like Spanish transportation)
4. Commuter rail (NJ Transit or PATCO or Metro-North or LIRR, or SEPTA)
5. Light rail (Hudson-Bergen Light Rail or RiverLINE Light Rail or Newark Light Rail,)
6. Subway or Elevated train (Like PATH or New York City Subway).
7. Other railroad
8. Ferryboat
9. Taxi, limousine, friend driving, etc.
10. Motorcycle
11. Bicycle
12. Walk
13. Other (specify) _____
88. (VOL) Don't Know   **- GO TO NW3c3**
99. (VOL) Refused   **- GO TO NW3c3**

> **NW3c2a. [IF NW3c2=4] Which train line did you ride?**
> 1. Northeast Corridor
> 2. North Jersey Coast
> 3. Raritan Valley
> 4. Morris & Essex
> 5. Main/Bergen/Port Jervis
> 6. Montclair-Boonton
> 7. Pascack Valley
> 8. Atlantic City
> 9. PATCO
> 10. SEPTA
> 11. Other commuter rail line (Metro-North or LIRR)
> 88. (VOL) D/K   **- GO TO NW3c3**
> 99. (VOL) Refused **- GO TO NW3c3**

> **NW3c2b. [IF NW3c2=5] Which light rail line did you ride?**
> 1. Hudson-Bergen light rail
> 2. River Line
> 3. Newark light rail
> 4. Other
> 8. (VOL) D/K
> 9. (VOL) Refused

NW3c3. And which town and state was this business in?
1. _____ Town
2. _____ State
88. (VOL) Don't Know
99. (VOL) Refused

32. Do you have a United States driver's license (such as a driver's license from New Jersey)?
1. Yes
2. No
88. (VOL) Don't Know
99. (VOL) Refused

33. [if q32 = 1 and STRATUM=1] How long after arriving in the US did you get a driver's license?
1. _____ Years
2. _____ Months
88. (VOL) Don't Know
99. (VOL) Refused

34. [IF STRATUM = 1]Do you have a driver's license from another country?
1. Yes
2. No
88. (VOL) Don't Know
99. (VOL) Refused

DEMOGRAPHICS

35. Including yourself, How many people are living or staying at this address full-time?
1. [Fill in quantity] (Range=1-10, 10=10+)
88. (VOL) Don't Know
99. (VOL) Refused

36. Please tell me your age, as of today.
1. Enter age (RANGE = 18 – 97, 97=97 or more, 98=DK, 99=Ref)

37. How many children under the age of 18 live in your household?

1. None - SKIP TO Q39
2. Number - enter into *CHILDREN_NUMBER__*
88. (VOL) Don't Know – SKIP TO Q39
99. (VOL) Refused – SKIP TO Q39

38. [If CHILDREN_NUMBER>1] **You said you have CHILDREN_NUMBER children in your household. How many fall into each of the following age categories?**
[IF CHILDREN_NUMBER=1] Is this child … (INTERVIEWER, punch 0 for no and 1 for yes)
1. Up to 2 years old _____
2. 3 to 4 _____
3. 5 to 12 _____
4. 13 to 17 _____
88. (VOL) Don't Know
99. (VOL) Refused

39. INTERVIEWER: CODE SEX BASED ON JUDGMENT:
1. Male
2. Female

40. [IF STRATUM=4] Are you of Hispanic, Latino or Spanish origin? (Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States.)
1. **No,** not of Hispanic, Latino, or Spanish origin
2. Yes, Mexican, Mexican American, Chicano
3. Yes, Puerto Rican
4. Yes, Cuban
5. Yes, another Hispanic, Latino or Spanish origin. *Print origin, for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on*
88. (VOL) Don't Know
99. (VOL) Refused

INTERVIEWER NOTE: People who identify themselves as of Hispanic or Latino origin may be of any race.

41. **Is the racial group that best describes you...** READ ENTIRE LIST. READ PARENTHETICAL ONLY IF RESPONDENT ASKS FOR CLARIFICATION. RECORD ALL THAT APPLY BUT DO NOT ALLOW "OTHER" TO BE SPECIFIED AS ANY VERSION OF HISPANIC OR LATINO ORIGIN.
1. American Indian (Native North American, Native South American, etc) or Alaska Native, **[WAS THIS CATEGORY MISSING IN PRETEST CATI?]**
2. Asian (e.g., Chinese, Filipino, Japanese, Korean, Vietnamese),
3. Black or African-American,
4. Native Hawaiian or other Pacific Islander (e.g., Samoan or Chamorro),
5. White (Caucasian, Anglo), or
6. Other-(SPECIFY) _____
88. (VOL) Don't Know
99. (VOL) Refused

42. **What is the highest level of education you've completed?**
1. Less than high school graduate
2. High school graduate (or GED)
3. Some college (or technical vocational school/professional business school)
4. Two-year college degree (AA: Associate in Arts)
5. Four-year college degree (BA or BS: Bachelor of Arts/ Science degree)
6. Graduate work, but no advanced degree
7. Graduate degree (Masters, PhD., Lawyer/J.D., Medical Doctor)
88. (VOL) Don't Know
99. (VOL) Refused

43. **Which of the following categories includes your household's total annual income for last calendar year, that is, 2009?**
1. Under $60,000 per year
2. Over $60,000 per year - *go to Q46*
88. (VOL) Don't Know
99. (VOL) Refused

45. **Please stop me when I reach the category that includes your household's total annual income in 2009.**
1. Under $10,000
2. From $10,000 to less than $20,000
3. From $20,000 to less than $30,000
4. From $30,000 to less than $40,000
5. From $40,000 to less than $50,000
6. From $50,000 to less than $60,000
88. (VOL) Don't Know
99. (VOL) Refused

46. **Please stop me when I reach the category that includes your household's total annual income in 2009.**
1. From $60,000 to less than $70,000
2. From $70,000 to less than $80,000
3. From $80,000 to less than $90,000
4. From $90,000 to less than $100,000
5. From $100,000 to less than $125,000
6. From $125,000 to less than $150,000
7. From $150,000 to less than $200,000
8. $200,000 or more
88. (VOL) Don't Know
99. (VOL) Refused

47. **Please stop me when I reach the category that includes your household's monthly rent or mortgage payment.** READ LIST UNTIL RESPONDENT STOPS YOU TO SELECT A CATEGORY.
1. Under $200
2. From $200 to under $500
3. From $500 to under $1,000
4. From $1,000 to under $1,500
5. From $1,500 to under $2,000
6. From $2,000 to under $3,000
7. Over $3,000
8. No rent or mortgage payment
88. (VOL) Don't Know
99. (VOL) Refused

48-49. DELETED
50. **We are almost done with the survey. Thanks for your patience. Last, we need to confirm your home address. This is in order to understand how home and work locations affect travel choices, so verifying this information is important. Your response is confidential, and we do not share this information with anyone and it is used to help improve transportation and transit services in New Jersey. Do you still live at ...** [READ STREET ADDRESS ONLY; DO NOT READ CITY/STATE/ZIP.]
1. Yes, still live there *- skip to Q52*
2. No, live somewhere else
3. Don't know
3. Refused

51. **Transportation planners use data from this survey to assess current travel patterns and anticipate new ones. These patterns are affected by where people choose to live. Would you please tell me the address of your home?**

    51A. INTERVIEWER: COLLECT Street Number ONLY: _____
    8. Don't know
    9. Refused

    51B. INTERVIEWER: COLLECT Street Name ONLY: _____
    8. (VOL) Don't know
    9. (VOL) Refused

    51C. Would that be a street, road, avenue, or what? ENTER STREET TYPE (STREET, ROAD, AVENUE, etc..): _____
    8. (VOL) Don't know

9. (VOL) Refused

51D. City: _____
8. (VOL) Don't know
9. (VOL) Refused

51E. State: _____
8. (VOL) Don't know
9. (VOL) Refused

51F. Zip Code: _____
88888. (VOL) Don't know
99999. (VOL) Refused

[IF Q51A, Q51B, OR Q51E==DON'T KNOW OR REFUSED] **It is important that we get at least a general location of your household. What is the name of the street or road nearest your home?**
51G. First Road: _____
8. (VOL) Don't know
9. (VOL) Refused

51h. Street Type: _____
8. (VOL) Don't know
9. (VOL) Refused

What is the name of the nearest intersecting street or road?
51i. Second Road: _____
8. (VOL) Don't know
9. (VOL) Refused

51j. Street Type: _____
8. (VOL) Don't know
9. (VOL) Refused

[IF Q51A, Q51B, OR Q51E==DON'T KNOW OR REFUSED] **And could you please provide a landmark that is close to your home? This could be a well-known building, park, monument, or school.**

51k. Name of Landmark : _____
8. (VOL) Don't know
   9. (VOL) Refused

52. **These are all of the questions that we have. Thank you for participating -- we're very grateful for your time and help.**

APPENDIX D. HOUSEHOLD SURVEY—DEMOGRAPHIC INFORMATION

The following tables are provided to supplement information presented in the body of the report.

Table 1. Reasons for immigration (Q9)

	Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Older Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%
To look for work or to take a job	31	49%	80	48%	28	47%	57	33%	196	43%
To join family or relatives	13	21%	42	25%	18	31%	50	29%	123	27%
To join friends	0	0%	3	2%	0	0%	1	1%	4	1%
To leave the country	1	2%	4	2%	0	0%	3	2%	8	2%
To attend school	4	6%	10	6%	9	15%	31	18%	54	12%
For children to attend school	4	6%	8	5%	1	2%	10	6%	23	5%
For religious freedom	1	2%	0	0%	0	0%	2	1%	3	1%
For cultural freedom	3	5%	6	4%	2	3%	6	4%	17	4%
Other (SPECIFY)	3	5%	3	2%	0	0%	5	3%	11	2%
Better life	3	5%	11	7%	1	2%	6	4%	21	5%
Total	63	100%	167	100%	59	100%	171	100%	460	100%

χ^2=.120

Table 2. Average move in year for current residence (Q12)

	N	Year	Variance
US Born	367	1996	149.973
Recent Hispanic Immigrant	43	2007	9.588
Earlier Hispanic Immigrant	126	2002	46.559
Recent Indian Immigrant	54	2006	3.930
Earlier Indian Immigrant	158	1999	65.953
Total	748	1999	109.613

Table 3. Think back to when you moved to your current home. How did you choose the town or neighborhood you currently live in? (Q14a)

	US Born		Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Earlier Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
To live with or near family or friends	110	25%	15	24%	39	24%	11	19%	24	14%	199	22%
Near other people from birth country	7	2%	4	6%	4	3%	3	5%	3	2%	21	2%
Near work	64	15%	16	26%	34	21%	19	33%	35	21%	168	19%
Near schools for children	76	17%	8	13%	31	19%	13	22%	49	29%	177	20%
Near bus or train	19	4%	6	10%	18	11%	4	7%	16	9%	63	7%
Near shopping	1	0%	3	5%	5	3%	2	3%	1	1%	12	1%
Near religious center or community center	2	0%	1	2%	2	1%	0	0%	5	3%	10	1%
Safety or crime rate	22	5%	6	10%	9	6%	3	5%	20	12%	60	7%
Other (SPECIFY)	104	24%	3	5%	16	10%	2	3%	16	9%	141	16%
Was too young. Not involved.	30	7%	0	0%	2	1%	1	2%	1	1%	34	4%
Total	435	100%	62	100%	160	100%	58	100%	170	100%	885	100%

$\chi^2 = .000$

Table 4. Now think back to your PREVIOUS home. How did you choose the town or neighborhood you lived in then? (Q14c) Now please think back to when you first arrived in the U.S. How did you choose the town or neighborhood you lived in then? (Q15)

	US Born		Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Earlier Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
To live with or near family or friends	90	21%	18	33%	72	43%	18	34%	68	46%	266	31%
Near other people from your birth country	0	0%	4	7%	4	2%	2	4%	4	3%	14	2%
Near work	80	19%	21	38%	32	19%	14	26%	23	16%	170	20%
Near schools for children	23	5%	1	2%	14	8%	4	8%	9	6%	51	6%
Near bus or train	17	4%	3	5%	11	7%	5	9%	9	6%	45	5%
Near shopping	0	0%	1	2%	2	1%	2	4%	3	2%	8	1%
Near religious center or community center	3	1%	0	0%	3	2%	0	0%	0	0%	6	1%
Safety or crime rate	9	2%	2	4%	3	2%	8	15%	8	5%	30	4%
Other (SPECIFY)	111	26%	5	9%	25	15%	0	0%	12	8%	153	18%
Was too young. Not involved.	92	22%	0	0%	2	1%	0	0%	11	7%	105	12%
Total	425	100%	55	100%	168	100%	53	100%	147	100%	848	100%

2

Table 5. How many cars, vans and trucks are kept at home for use by members of this household? (Q24)

	US Born		Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Earlier Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
None	22	5%	29	46%	40	24%	1	2%	1	1%	93	10%
1	131	30%	19	30%	53	32%	33	58%	37	22%	273	30%
2	179	41%	13	21%	55	33%	21	37%	103	60%	371	41%
3	76	17%	2	3%	15	9%	2	4%	26	15%	121	13%
4	22	5%	0	0%	4	2%	0	0%	2	1%	28	3%
5	9	2%	0	0%	0	0%	0	0%	2	1%	11	1%
6 or more	1	0%	0	0%	1	1%	0	0%	0	0%	2	0%
Total	440	100%	63	100%	168	100%	57	100%	171	100%	899	100%

X^2=.000

Table 6. Non-work mode for grocery trips (cumulative)

	US Born		Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Earlier Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Bicycle	0	0%	1	1%	0	0%	0	0%	0	0%	1	0%
Car, truck, or van	1008	95%	58	44%	256	71%	149	97%	423	96%	1894	88%
Commuter rail	0	0%	0	0%	1	0%	0	0%	0	0%	1	0%
Ferryboat	0	0%	0	0%	1	0%	0	0%	0	0%	1	0%
NJ Transit bus	10	1%	11	8%	16	4%	1	1%	0	0%	38	2%
Other (SPECIFY)	1	0%	1	1%	8	2%	1	1%	6	1%	17	1%
Other railroad	0	0%	0	0%	1	0%	0	0%	0	0%	1	0%
Private bus (like Spanish transportation)	3	0%	4	3%	1	0%	0	0%	0	0%	8	0%
Subway or Elevated train	0	0%	1	1%	0	0%	0	0%	0	0%	1	0%
Taxi, limousine, friend driving, etc.	1	0%	11	8%	17	5%	0	0%	0	0%	29	1%
Walk	33	3%	44	34%	62	17%	3	2%	11	3%	153	7%
Total	1056	100%	131	100%	363	100%	154	100%	440	100%	2144	100%

Table 7. Non-work mode for meals, drinks and prepared food (cumulative)

	US Born		Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Earlier Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Bicycle	4	0%	0	0%	1	1%	0	0%	0	0%	5	0%
Car, truck, or van	805	88%	24	65%	110	70%	82	80%	272	89%	1293	86%
Commuter rail	9	1%	0	0%	2	1%	2	2%	0	0%	13	1%
Ferryboat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
NJ Transit bus	6	1%	3	8%	2	1%	0	0%	2	1%	13	1%
Other (SPECIFY)	3	0%	1	3%	4	3%	0	0%	2	1%	10	1%
Other railroad	4	0%	0	0%	1	1%	0	0%	0	0%	5	0%
Private bus (like Spanish transportation)	1	0%	0	0%	0	0%	0	0%	0	0%	1	0%
Subway or Elevated train	1	0%	0	0%	2	1%	1	1%	3	1%	7	0%
Taxi, limousine, friend driving, etc.	14	2%	1	3%	1	1%	1	1%	0	0%	17	1%
Walk	62	7%	8	22%	34	22%	16	16%	27	9%	147	10%
Total	910	100%	37	100%	157	100%	102	100%	306	100%	1512	100%

Table 8. Non-work mode for visiting friends or relatives (cumulative)

	US Born		Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Earlier Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Bicycle	3	0%	0	0%	0	0%	0	0%	0	0%	3	0%
Car, truck, or van	673	87%	16	36%	111	76%	62	93%	251	91%	1113	85%
Commuter rail	11	1%	1	2%	0	0%	0	0%	0	0%	12	1%
Ferryboat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
NJ Transit bus	4	1%	10	23%	2	1%	1	1%	3	1%	20	2%
Other (SPECIFY)	7	1%	0	0%	4	3%	0	0%	4	1%	15	1%
Other railroad	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Private bus (like Spanish transportation)	2	0%	1	2%	0	0%	0	0%	0	0%	3	0%
Subway or Elevated train	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Taxi, limousine, friend driving, etc.	7	1%	0	0%	2	1%	0	0%	1	0%	10	1%
Walk	70	9%	16	36%	27	18%	4	6%	18	6%	135	10%
Total	777	100%	44	100%	146	100%	67	100%	277	100%	1311	100%

Table 9. Household income, survey respondents (2009 yearly income) (Q43)

	US Born		Recent Hispanic Immigrant		Earlier Hispanic Immigrant		Recent Indian Immigrant		Earlier Indian Immigrant		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Under $30,000	54	16%	35	78%	73	57%	4	11%	14	10%	180	26%
$30,000 to $60,000	60	18%	9	20%	33	26%	5	13%	19	14%	126	18%
$60,000 to $90,000	82	24%	0	0%	8	6%	11	29%	23	17%	124	18%
$90,000 to $150,000	89	26%	0	0%	9	7%	15	39%	46	33%	159	23%
More than $150,000	54	16%	1	2%	4	3%	3	8%	37	27%	99	14%
Total	339	100%	45	100%	127	100%	38	100%	139	100%	688	100%

χ^2=.000