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Essays on Ethnicity and Economic Choices

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by

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The dissertation of Yi Zhan is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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Chair

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DEDICATION

In memory of my mother, who loved me with her whole heart and taught me to stand on my own feet.

EPIGRAPH

The world is a fine place, and worth fighting for it.
—Ernest Hemingway

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ABSTRACT OF THE DISSERTATION

Essays on Ethnicity and Economic Choices

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Professor Julie Cullen, Chair

This dissertation addresses three broad economic choices within the field of labor economics and public economics: the choice of educational attainment, occupational choice, and household's residential location choice. The dissertation particularly focuses on the behaviors of immigrants and their decedents in the United States so as to understand the ethnic disparities in these economics outcomes as well as the policy implications.

The first two chapters are both related to the cultural identity of immigrants. The first chapter, "Scholarly Culture and Educational Attainment," examines second-generation immigrants in the United States who face the same market conditions and institutions but have inherited different cultural preferences for education. Using average educational attainment among the adult population in the

second generation's country of origin as the cultural proxy, I find a significant positive association between scholarly culture and the second generation's educational attainment conditional on family resources.

The second chapter, "Money v.s. Prestige: Cultural Attitudes and Occupational Choices," studies the role that cultural norms play in occupational selection. I analyze the occupational choices of highly educated native-born American males and link their choices to relative preferences for pecuniary rewards vs. social prestige in their ancestral countries, as reported in the World Values Survey. These preferences help to explain the occupational choices of native-born Americans when their opportunities and advantages are taken into account. Moreover, a greater proportion of the population from the same ancestry in the residential area magnifies the effects of cultural attitudes, suggesting ethnic enclave is a mechanism for cultural transmission and preservation for migrants.

The third chapter, "Schools and Neighborhoods: Residential Location Choice of Immigrant Parents in Los Angeles Metropolitan Area," studies how immigrant parents value school quality for their offspring in the Los Angeles Metropolitan Area. The parental valuation of education is identified through the differential effects of school quality on the residential location choices of households with and without children. The results suggest that immigrant parents value school quality positively, and the weight assigned to school quality varies by income, education, and race/ethnicity. Low-income immigrants value school quality significantly more than low-income natives. Higher potential returns to education for their children and selective migration may explain why immigrant parents emphasize school quality in choosing where to live.

Chapter 1

Scholarly Culture and Educational Attainment

Abstract

This paper investigates the relationship between ancestral scholarly culture and educational attainment by examining second-generation immigrants in the United States. The cultural value placed on education is proxied by average educational attainment among the adult population in the second generation's country of ancestry. The cultural proxy shows significant correlation with the second generation's educational attainment: given the same family background, market and institutions, higher cultural values on education predicts more years of schooling of the second generation, and this correlation is stronger among males than females. The paper also finds a weaker correlation between paternal scholarly culture and offspring's educational attainment when the mother is from another culture. Maternal scholarly culture is verified to be important, whereas the relevance of paternal culture is more salient than that of maternal culture, especially among the second-generation males.

1.1 Introduction

There are large differences in economic outcomes across socioeconomic classes, ethnic groups, countries and regions. In analyzing these differences, economists tend to focus on the role of resources and institutions, but generally overlook the role of preferences and values. Recently, though, a growing empirical literature has emerged in an attempt to understand the quantitative importance of *culture* - the systematic variation in attitudes, beliefs, preferences and values across ethnic groups - in economic activities. While others have examined the link between culture and other fundamental outcomes,[1] I study the relationship between scholarly culture and educational attainment.

Differences in educational attainment and achievement across racial boundaries have long been observed. Most existing economics literature attempts to explain the group disparity in educational outcomes based on differential parental human capital and access to resources. For example, Card et al. (2000) demonstrate intergenerational links between the socioeconomic status of immigrant fathers and the educational attainment of their native-born sons and daughters in the United States; Borjas (1995b) suggests the average skills of the ethnic group in the parents' generation matter through residential segregation. However, a large proportion of group differences in education remains unexplained. For instance, Bauer and Riphahn (2007) show substantial heterogeneity in intergenerational transmission of educational attainment across population groups by studying the natives and second-generation immigrants in Switzerland, and find only a small share of this heterogeneity is explained by the predictions of economic theory.

One possibility is that cross-ancestry variation is partly attributable to the values towards education that parents inherit and transmit to their children. A number of sociological and anthropological studies on racial and ethnic stratification in education address the importance of differences in expectations, aspirations, preferences and beliefs across ethnic groups. Fejgin (1995) suggests parents' and s-

[1] A number of outcomes have been studied, such as country growth rates (Barro and McCleary, 2003), performance of institutions (Tabellini, 2010; Klasing, 2008), women's fertility and labor participation rates (Fernandez, 2007; Fernandez and Fogli, 2009) and economic exchange among European countries (Guiso et al., 2009).

tudents' attitudes and actions related to schoolwork mediate the effects of parental education and income. To explain the exceptional academic performance of Asian Americans, Schneider and Lee (1990) argue that Asian students feel a greater family responsibility to succeed in school; and Sue and Okazaki (2009) indicate that Asians are more likely than Whites to believe in the value of education for future socioeconomic mobility. But so far, there is little supporting quantitative analysis.

Consequently, I test whether variation in the set of preferences and beliefs towards education, i.e. *scholarly culture* or *educational culture*, can help to explain variation in educational attainment. Given it is hard to identify exogenous changes in cultural attitudes, I use the United States as a lab to study the role of values inherited from various countries of origin. I examine migrants, who face the economic and political environment in the host country, but have carried elements of their ancestral culture with them when emigrating from their respective source countries. This strategy is also utilized by studies on cultural roots of other economic outcomes, such as interpersonal trust (Algan and Cahuc, 2007), living arrangement (Giuliano, 2007), and women's labor supply (Fernandez, 2007; Fernandez and Fogli, 2009). Nevertheless, the educational outcomes of first-generation immigrants may be affected by shocks brought by migration and differing combinations of foreign and domestic human capital. Also, immigrants are highly self-selected.

Hence, this paper focuses on the educational attainment of second-generation immigrants in the United States. A second-generation immigrant is someone who was born and raised in the U.S. but either one or both parents were born outside the U.S. These individuals face the same markets and institutions but differ in their cultural heritage. Although the selectivity of immigrants has a profound influence on their offspring, cross-ethnicity comparisons of second-generation individuals with similar parental and family background mitigates this problem. Yet the strength of ancestral cultural effects on economic outcomes is to some extent diluted among the second generation as cultural transmission is now mostly intergenerational rather than from the whole society.

Another challenge in studying culture is how to measure culture quantitatively. In this paper, I exploit the average educational attainment in the second

generations' national origins as a proxy for the cultural values placed on education.[2] To isolate the priority given to education conditional on resources, I control for per capita GDP when using the cultural proxy. A nation's average educational attainment depends on not only economic and institutional factors but also the beliefs and values towards education. If people believe in the importance of schooling, they would pursue more education in general. The origin country's economy and institutions have no direct impact on the second generation in the U.S., whereas the origin human capital may affect the second generation via their immigrant parents. The educational attainment of immigrants is not necessarily correlated with the average educational attainment in their source countries as immigrants are selected in various ways.[3] If the origin's average educational attainment has any explanatory power for the educational attainment of the second generation from different ancestries but whose parental human capital and family background are the same, it is more likely through the channel of cultural preference transmission. Accordingly, I control for observable parental and family characteristics, including parental educational attainment, income, English ability, age at migration and number of children.

The regression results indicate that discrepancy in educational attainment across ancestries can in part be explained by scholarly cultural differences. *Ceteris paribus*, second-generation immigrants originating from nations where education is highly valued tend to undergo more years of schooling. A one standard deviation increase in the average educational attainment in the country of origin is associated with 0.25 more years of schooling among second-generation immigrants, which represents about 26% of the variation in educational attainment across national

[2]As is standard in ethnic studies (e.g. Borjas, 1995 and Fernandez and Fogli, 2009), the national origin of a second-generation immigrant is determined by the father's birthplace (unless only the mother is foreign-born, in which case it is determined by the mother's birthplace). In the primary analysis, I constrain the sample to individuals with foreign-born fathers. Indeed, the estimates would not be affected if I run the same regressions on a sample including second-generation individuals whose father is native-born and his/her national origin is hereby assigned by the mother's birthplace.

[3]The correlation between the average educational attainment of immigrants who might be parents of respective cohorts of the second-generation individuals in my sample and the average educational attainment in the origin country during the birth periods of those cohorts is about 0.07.

origins. The results are robust to modifications in the sample criteria, controls for additional origin country characteristics that may affect the immigration patterns, and using alternative academic quality measures as educational cultural proxies. In addition, by disaggregating the sample by gender, I show that the scholarly cultural proxy is more correlated with the years of education of males than females, whereas the educational gender inequality in the origin country relatively diminishes among the second-generation immigrants in the U.S.

Furthermore, this paper delves into the nature of intergenerational transmission of educational cultural values in more details. A weaker correlation between paternal scholarly culture and one's educational attainment is found if the father and the mother are from different nations, compared to those whose parents have the same origin. This brings additional evidence to bear on the hypothesis that cultural values, rather than some omitted variable which is unrelated to culture but related to the origin country human capital or other country-specific features, accounts for the positive correlation between second generation's educational attainment and the attainment measure in the country of ancestry.

By examining the second generation from families of one native-born parent and one foreign-born parent, I verify that maternal scholarly culture is also important in predicting the second generation's education. Comparison between second-generation individuals with a foreign father and native mother and those with a foreign mother and native father suggests that paternal scholarly culture is more closely related to the second generation's educational attainment. The difference between the relevance of paternal and maternal educational culture is more substantial among second-generation males.

The remainder of this chapter is organized as follows. Section 1.2 introduces the empirical strategy; Section 1.3 describes and summarizes the data; Section 1.4 presents the estimation results; Section 1.5 discusses the robustness of previous results; Section 1.6 further explores the mechanism of intergenerational cultural transmission; and Section 1.7 concludes.

1.2 Empirical Framework

My hypothesis is that among individuals originating from different ancestries, those from a culture which values education highly tend to have more educational attainment given the same market and institutional environment as well as similar family resources. Suppose that educational attainment is related to other factors in the following manner:

$$y_{ijt} = \beta_1' X_i + c_t + \beta_2' P_{1i} + \beta_3' P_{2i} + \lambda z_{jt} + \beta_4' O_{jt} + \varepsilon_{ijt}. \tag{1.1}$$

y_{ijt} is the educational attainment of individual i from ancestry j of birth cohort t. X_i is a vector of individual demographic characteristics, including age, gender, disability status, and state of residence. c_t represents a fixed effect for birth cohort t, as different cohorts may be subjected to different economic and political phases which have affected their education. P_{1i} denotes parental educational attainment and β_2' hereby suggests the degree of intergenerational human capital transmission. P_{2i} includes other parental and family background which may also influence transmission of human capital, such as household income, parenting style and family composition. z_{jt} is the educational cultural proxy - average educational attainment in nation j during the birth period of cohort t. One may argue that the cultural measure - average educational attainment of the period when the parents of a certain cohort of second-generation immigrants were raised and brought up in their origin countries, which is probably one or two decades before the birth period of the cohort, would best reflect the ethnic preferences and beliefs transmitted to that cohort. Yet one may also argue that the educational attainment of the counterparts of the second generation in their countries of origin will best reflect the values that parents and society transmitted, since this reflects cultural exposure of this cohort (Fernandez and Fogli, 2009). Given data availability, which I will discuss in the next section, I match the cultural proxy data to the birth cohorts in my sample based on the second argument. Accordingly, λ measures the relationship between the educational attainment of second-generation Americans and the average educational attainment of their peers in the countries of origin, which represents the scholarly cultural impacts on the second generation. Since a

nation's overall educational level is largely affected by its economy and policies, I control for the per capita GDP of each nation during period t in O_{jt} in the baseline model to more convincingly isolate the emphasis on education.

1.3 Data

1.3.1 Sample Selection

The main dataset employed in this paper is the pooled 1994 - 2009 March Current Population Surveys (CPS). Since 1994, the March CPS has explicitly asked about the birthplace of each individual and his/her parents. The CPS also records information on education and work for each individual who is 15 or older. I focus on males and females aged 30 - 54 with both of their parents' information available,[4] and use the father's birthplace to assign a country-of-ancestry to the second-generation immigrants. Individuals within this age range have probably completed their education and differential mortality is unlikely to be a problem. I exclude individuals from nations with less than 10 observations or geographical areas which cannot be identified.[5] Based on the above criteria, there are 18,979 individuals from 66 countries and territories in the sample.[6] More than half of them originate from Western Europe and North America. Those from Eastern Europe, East Asia, Central and South America also comprise a sizable proportion.

Further, I construct 6 cohorts among the sample by individual's birth year: 1940 - 49, 1950 - 59, 1960 - 64, 1965 - 69, 1970 - 74 and 1975 - 79. The summary statistics of the whole sample and the educational attainment[7] for each cohort are presented in Table 1.1. About one third of the individuals were born between 1950 and 1959. Despite the unbalanced size of each birth cohort, the cohort average educational attainment and standard deviation are similar with no significant trend observed for cohorts 2 - 6.

[4] 0.52% of the CPS sample aged 30 - 54 have at least one parent's information missing.

[5] Some interviewees report their parents' birthplace as "Asia, not specified", "Caribbean", "Pacific Islands" and etc. These answers are considered as unidentifiable national origins.

[6] The list of nations is presented in Appendix A.1.

[7] Since the CPS collects educational attainment in categories, I have mapped it into years of schooling according to Park (1996) and take the midpoint of each interval.

1.3.2 Parental and Family background

Parental and family background is crucial in children's educational achievement and attainment (Solon, 1992; Acemoglu and Pischke, 2001). As the CPS does not collect information other than birthplaces of the interviewees' parents, I follow Card et al. (2000) and rely on group mean levels estimated from the immigrant population in the Integrated Public Use Microsample Series (IPUMS) version of 1930 - 1990 Census Data.[8] The censuses have surveyed 1,537,543 immigrants from 273 countries and territories (including U.S. outlying islands) and record factors which may affect children's education in detail, including their educational attainment, age at immigration,[9] occupational income scores,[10] whether English is spoken at home and number of children.

The data matching proceeds as follows. First, father's birthplace is used to determine a second-generation individual's national origin. Second, groups of "parents" are formed among the first-generation immigrants in the census data given the 6 birth cohorts of the second generation: for each birth cohort, the potential group of parents are immigrants of the same national origin who migrated to the United States before the midpoint of the cohort's birth period and were in the age range of 20 - 40 over this period. To avoid the potential problems of incomplete education and differential mortality, I constrain the sample to individuals aged 15 - 60 as of the survey year. Third, mean levels of various family characteristics adjusted for age and gender are estimated by group of "parents".[11] The summary

[8] Seven censuses are used: 1930 1% Sample, 1940 1% Sample, 1950 1% Sample, 1960 1% Sample, 1970 1% Form 2 Metro, 1980 5% Sample and 1990 5% Sample.

[9] Age at immigration reflects immigrants' acquisition of differing compositions of foreign and domestic human capital, which may not be comparable (Friedberg, 2000). It also indicates immigrants' level of assimilation to the U.S. society, as individuals who migrated at an early age are presumably better assimilated.

[10] Although household income is available in census data, the level reported is for the survey period but not necessarily the period when children are brought up by the interviewees. As income is relatively volatile but occupation is more stable, I use occupational income score, which is a constructed variable that assigns a value representing the median total income (in hundreds of 1950 dollars) of all persons with that particular occupation in 1950, instead of household income.

[11] The estimated group mean level is obtained by regressing the variable of interest on age, female, a year-of-survey dummy and a full set of national origin dummies. The estimated group mean level for a certain national origin is the predicted value for a 40-year-old male immigrant surveyed in 1980 from that nation.

statistics of the parental characteristics are also displayed in Table 1.1.

There is definitely some slippage in this grouping estimation method as not all immigrants matched to a birth cohort have offspring that appear in the second generation sample. This method also overlooks the characteristics of foreign as well as native-born mothers whose birthplaces are different from their husbands'. Yet studies suggest that in an interethnic marriage or marriage between a U.S. citizen and an immigrant, spouses are more likely to have similar levels of education than immigrant couples of the same origin (Jasso et al., 2005; Furtado and Theodoropoulos, 2008). Hence, the group mean levels should reflect the parental and family characteristics of the second generation from such families.

1.3.3 Cultural Proxy

The traditional approach is to use country dummies rather than quantitative measures as indicators for ethnic culture. This approach has the benefit of not requiring the relationship between cultural measures and economic outcomes to be of a certain functional form (Fernandez and Fogli, 2009). However, country fixed effects reflect not only cultural differences but also other cross-country variation, such as immigrants' self-selectivity.

Hence I use the average educational attainment in the ancestral countries of the second generation in the U.S. as the educational cultural measure, controlling for contemporaneous per capita GDP. The data for national average educational attainment of the adult population over age 25 are from the Barro-Lee Dataset which covers 142 nations every 5 years from 1950 to 2000. I utilize the 1950, 1960, 1965, 1970, 1975, 1980 data to match each cohort respectively. The historical per capita GDP data are collected from two sources: the Statistics on World Population, GDP and Per Capita GDP by Angus Maddison; and International Macroeconomic Dataset of USDA (United States Department of Agriculture) Economic Research Service. Real GDP per capita is adjusted for purchasing power parity and expressed in 1990 International Geary-Khamis dollars.[12]

[12]The Geary-Khamis dollar is a hypothetical unit of currency that has the same purchasing power that the U.S. dollar had in the United States at a given point in time (1990). It was proposed by Roy C. Geary in 1958 and developed by Salem Hanna Khamis in 1970 - 1972.

Table 1.2 reports the summary statistics for average educational attainment and per capita GDP. Both variables show a noticeable increasing trend. The standard deviation of per capita GDP also increases, indicating a growing dispersion of living standards across countries over time. Yet the standard deviation of average educational attainment remains relatively stable. Figure 1 depicts the relationship between average educational attainment in 1960 and 1980. Due to missing data in the earlier year, 56 out of 66 nations are included and the correlation between the two years' data is 0.96. This high correlation verifies consistent cross-country variation over the 20 years.

Moreover, to probe the gender difference in the relationship between ancestral scholarly culture and the educational attainment of the second-generation immigrants in the U.S., I calculate the ratio of female to male educational attainment by years and countries from the Barro-Lee Dataset as a measure for educational gender inequality. The summary statistics are also displayed in Table 1.2. In general, females acquire 77% the years of education of males. This ratio between genders is quite stable over time.

1.4 Scholarly Culture and Educational Attainment

1.4.1 Estimation Results

Table 1.3 presents estimation results based on Equation 1.1. The dependent variable is the second generation's years of schooling. The baseline model in column 1 includes only the individual characteristics and parental characteristics, controlling for birth cohort, state of residence and year of survey.

As shown, the educational attainment of persons 30 - 54 years old is not age-dependent, implying the majority in the sample have completed their education. Disabled individuals tend to have approximately 2.3 years of schooling less than the non-disabled. Parents' educational level has a substantial positive effect on the second-generation immigrants, with a correlation between 0.2 and 0.3. The

parental income score, an indicator for family income, is also positively correlated with individual's educational attainment, but it is not significant. The number of children in the family is negatively correlated with one's education, perhaps indicating less resources available per child. These estimates are in conformity with the theory of intergenerational human capital transmission.

Figure 2 depicts the ancestral mean educational attainment of second generation against the mean residual under the specification in column 1.[13] While residuals are expected to be the same across origins theoretically, Figure 2 shows that the mean residual and mean educational attainment are positively correlated. Among the sample, second-generation Taiwanese acquire the most years of schooling on average, and also show a high mean residual in educational attainment. Second-generation Mexicans appear to have the lowest educational attainment, but their mean residual is higher than many other origins.[14] This leads to the question whether the cross-origin heterogeneity in the emphasis on the role of education could explain cross-origin heterogeneity in the second generation's educational attainment.

The average educational attainment of the ancestral country is introduced to the model in column 2, conditional on per capita GDP. When included, the average educational attainment is economically and statistically significant in predicting second-generation immigrants' educational attainment. Individuals from a culture where education is highly valued are likely to obtain more years of schooling. A one standard deviation increase in the average educational attainment in the country of origin is associated with an increase of 0.25 years of schooling among the second generation, which accounts for about 26% of the variation across ancestries. This indicates that besides direct parental human capital transmission, inherited cultural attitudes towards education are also positively correlated with individual's accumulation of human capital. In other words, it is possible that children coming from disadvantaged human capital family background may perform

[13]The standard deviation of mean educational attainment by ancestry among the second generation is 0.97.

[14]This is consistent with the opinion of Kao and Thompson (2003) and some other sociology studies that Mexicans share some commonalities with Asian Americans, such as familism, or the valuation of close ties to family members, which are associated with higher academic performance.

better when their parents transmit positive cultural attitude toward school and learning.

To address the concern that fertility and the fraction of adult population may lead to a contamination between income and education and thereby make the cultural proxy malfunction, I also test replacing per capita GDP with GDP per equivalent adult[15] and reproducing the estimates in Table 1.3. The estimation results are not affected.[16]

1.4.2 Gender Differences in Cultural Transmission

This section further explores the relevance between the ancestral educational culture and the second generation in the United States by gender. To understand whether the gender disparities in educational attainment in the origin countries persist in the U.S., I add a measure for gender inequality - the ratio of female to male educational attainment in the country of ancestry to the right hand side.

Table 1.4 reports the regression results on males and females respectively. Columns 1 and 3 replicate the regression in column 2 Table 1.3 on the two subgroups, and columns 2 and 4 include the origin gender inequality measure in addition. The average educational attainment in the origin country is positively correlated with the second generation's educational attainment for both males and females. The estimates are statistically significant for males whether origin gender inequality is controlled for or not. According to column 1, a one standard deviation increase in the average educational attainment in the ancestry country predicts an increase of 0.27 years of education among the second-generation males. However, compared to the male population, the correlation between the scholarly cultural proxy and the educational attainment of second-generation females is less salient, and is not statistically significant in column 3.

Noticeably, the magnitude and statistical significance of the coefficient on

[15]Data of GDP per equivalent adult are obtained from Penn World Table 7.0. GDP per equivalent adult is adjusted for purchasing power parity and measured in the 2005 international dollar.

[16]I also test replacing the per capita GDP with GDP per equivalent adult in all the following regressions. Estimation results are very similar and available upon request.

the cultural proxy increase for both genders when the ratio of female to male educational attainment in the ancestry country is added to the control set. This may suggest that the values toward education differ by gender in the second generations' national origins. The second-generation individuals are more likely to be affected by these gender-specific preferences. On the other hand, the gender inequality measure does not show any significant explanatory power for either group, which may imply that the educational gender inequality in the country of origin is relatively reduced among the second generation in the U.S.

1.5 Robustness

In this section, I explore modifying the benchmark regressions in Table 1.3 in various ways to investigate whether the significant positive relationship between scholarly culture and second generation's educational attainment is robust.

1.5.1 Sample of National Origins

The number of observations by origins is rather unbalanced. Over one third of the sample originates from Western European countries, such as Germany. Those from Mexico and Canada make up almost 30%. It is possible that the results are driven by the countries with a large number of observations.

Another concern is that a nation is too large of a unit to categorize culture. In many countries, especially those covering large geographic areas like Russia and China, there dwell many ethnic minority groups. Some ethnic groups follow distinct traditions and can even speak different languages. In addition, Russia and China have had a centrally-planned economy for a long period, so their average educational attainment may be a distorted measure for scholarly cultural values. Some other countries, such as Canada, Australia and Ireland, have a large proportion of immigrants. The offspring of immigrants who were born in these countries may not have fully assimilated to the host country's culture prior to later migrating to the United States.

Therefore, I explore excluding the nations in the sample one by one. The

results are reassuring: the estimated coefficients on average educational attainment are basically close to the previous point estimate, in the range of .056 to .126. They are all significant at the 10% level, while over 80% of the estimates are significant at the 5% level.

1.5.2 Selectivity Among Immigrant Parents

A main concern is that immigrants are self-selected, resulting in unobserved parental characteristics that might be correlated with the cultural proxy and affect the second generation's educational level.

Studies show that immigration is larger, *ceteris paribus*, when the source country and the destination country are geographically adjacent or the language and culture in the destination country is familiar (Lewer and Van den Berg, 2008). For example, even if an Asian immigrant and a Canadian immigrant have the same level of education and earnings, the Asian who faces a longer traveling distance, a greater language barrier and larger cultural shocks must be more motivated to migrate to the United States. Also, Borjas (1987) suggests that the quality of immigrants in the United States is attributable to variations in political and economic conditions in their countries of origin at the time of migration.

Given the selection among immigrants, It is possible that some of their unobserved characteristics vary by origin in a systematic fashion due to selection. If these characteristics influence second generation's education and correlate with the cultural proxy, the previous regressions might produce biased estimates. Therefore, in this section, I control for additional origin country characteristics that may relate to common economic incentives and barriers to migration, including distance to the United States,[17] whether English is an official language in that nation,[18] whether the country was democratic, whether it was in a war,[19] and its per capita

[17]Distance to U.S. is calculated as the number of air kilometers between country's largest city and the nearest U.S. gateway (Los Angeles, Miami, or New York). Source: *www.timeanddate.com*

[18]Source: *en.wikipedia.org/wiki/List_of_official_languages*.

[19]The (binary) democracy and war data are obtained from the Wejnert's Nations, Development, and Democracy Dataset from ICPSR. For each birth cohort, these characteristics are measured over a time period covering the cohort's birth period and 20 years prior, which is presumably the period when their parents came to the U.S.

GDP. Columns 1 - 3 of Table 1.5 present the results when the same individual and parental characteristics in Table 1.3 and the additional origin country characteristics are included in the control set. The cultural proxy shows significant explanatory power under all specifications.

To more convincingly rules out the possibility that the educational cultural proxy captures some other country-specific effects, columns 4 and 5 replicate the regressions in columns 1 and 3 respectively while adding the set of origin dummies. Compared to the estimates in columns 1 and 3, both columns 4 and 5 show similar point estimates on the educational cultural proxy. However, the standard errors increase dramatically, presumably resulting from lack of cross-time variation in the origin countries' average educational attainment.

1.5.3 Alternative Cultural Proxies

In this section, I explore using alternative cultural proxies instead of the average educational attainment of national origins. Since educational attainment might convey more information than preference for education, I utilize academic quality measures which are more directly linked to input and output to education in the second generation's ancestral countries as proxies.

The first quality measure is the secondary school pupil-teacher ratio, a commonly used input to education.[20] If a nation highlights education, it devotes a larger proportion of resources to education-related facilities and activities and thus enhances school quality. The second measure is the international exam score, a typically used educational outcome.[21] When education is emphasized, schools, parents and students themselves put forth more effort and hereby enjoy better educational achievements. I continue to control for per capita GDP to isolate the priority assigned to education given resources available.

An issue is that the available educational quality data are quite recent.

[20]The secondary school pupil-teacher ratio data are obtained from UNESCO Institute for Statistics, which cover over 200 countries and territories for 1999 - 2008.

[21]The international exam scores are from Trends in International Mathematics and Science Study (TIMSS) conducted in 1995, 1999, 2003 and 2007 respectively in 54 nations and Progress in International Reading Literacy Study (PIRLS) conducted in 2001 and 2006 in 43 nations.

The periods covered have no overlap with either the periods when the immigrant parents were young and back in their home countries or the birth periods of the second generation in my sample. Nevertheless, the set of educational preferences and values is an equilibrium of social norms and hereby relatively persistent over time. Therefore, the recent measures may continue to have explanatory power for the values inherited by earlier birth cohorts.

The summary statistics of these measures are presented in Table 1.6 Panel A.[22] Panel B analyzes the correlation among the measures of academic quality and attainment. The correlation has an absolute value in the range of 0.5 - 0.9.[23] The high correlations may rule out the possibility that class size is low because students are positively selected and fewer students enroll in secondary school, or test scores are high by the same logic (Hanushek and Woessmann, 2010). Thus the two academic quality measures are not biased due to selected populations.

Table 1.7 reports the regression results when the two alternative cultural proxies are used. The estimates for each are significant at the 1% level. Both proxies indicate that second-generation individuals originating from a nation with better academic quality, or where education is higher valued, are likely to obtain more years of schooling. A one standard deviation decrease in the pupil-teacher ratio is associated with an increase of 0.29 years of schooling, which is about 30% of the variation across ancestries; and one standard deviation increase in the international exam score is associated with an increase of 0.52 years of schooling, which is about 57% of the variation across ancestries.

[22] I calculate the time-invariant pupil-teacher ratio and per capita GDP by regressing the annual data from 1999 - 2008 on year and a full set of national origin dummies and predicting the variable of interest for each nation in 1999. The proxy based on the international exam score is calculated via the method proposed by Hanushek and Kimko (2000), which relies on the strong assumption that the mean world school performance is constant over time and that the countries taking the tests are a random draw from the world distribution. I normalize each exam series to have a mean of 500, and then regress the normalized exam scores on year conducted, a subject dummy (mathematics, science or reading literacy) and a full set of national origin dummies. The time-invariant value for a certain national origin is the predicted mathematics score for that nation in 1995.

[23] The correlations among the three measures weighted by the CPS final person weights show a similar pattern to Table 1.6 Panel B with a lower absolute value between each pair.

1.6 Mechanism of Cultural Transmission

This section studies the mechanism of intergenerational cultural transmission. For immigrants, intergenerational transmission, rather than the influence of the whole society, is the key channel of their ethnic cultural transmission and preservation.

I investigate this issue from two perspectives. First, I evaluate the correlation between paternal scholarly culture and the second generation's education for intermarried parents from different nations relative to co-ethnic parents from the same nation. Second, I attempt to compare the relation between paternal scholarly culture and educational attainment with that between maternal scholarly culture and educational attainment.

1.6.1 Interethnic v.s. Co-ethnic Marriage

To examine second-generation immigrants whose parents are intermarried between ethnic groups and compare them with those whose parents are intramarried, I categorize the sample into three groups based on their parents' nativity: foreign parents from the same nation, foreign parents from different nations, and foreign father married to native mother. As stated above, I use the father's birthplace as the second-generation individual's national origin.

Table 1.8 presents summary statistics for the three groups. About 45% of the sample are categorized into the first group with parents of the same foreign origin; 8.6% are in the second group with foreign-born parents of different origins; and the remaining belong to the third group who have a foreign father and native mother. Compared to the other two groups, the second group covers a smaller number of nations. The CPS does not provide the ancestry of U.S.-born mothers. The information on interviewees' race shows only 134 out of 8,737 individuals in the third group are of two or more races. This is in accordance with the view of Qian (2001) that intermarriage between immigrants and natives of the same race, to a lesser extent same national origin, is much greater than intermarriage between races because of fewer barriers in language, cultural values and residential

segregation.

Table 1.9 reports the regression results when group differences are taken into account. Both columns control for the same individual and parental characteristics as Table 1.3. Column 1 assumes that scholarly culture affects educational attainment equally across groups; and column 2 does not impose this restriction. No significant differences in educational attainment across groups are shown in column 1. When the cultural proxies are allowed to have group-specific effects in column 2, the net cultural effect on individuals in the latter two groups is the sum of the main effect of the cultural proxy and the interaction of the cultural proxy with a group indicator.

For the second-generation immigrants whose parents are from different origins, the interaction of the educational cultural proxy and the group indicator shows the opposite effect from the main cultural effect, implying less importance of paternal culture in a multiethnic family. It turns out that the hypothesis that paternal scholarly culture has no influence on second generation's years of schooling cannot be rejected. One possible explanation is that interethnically married couples tend to have educational similarities other than cultural similarities (Furtado and Theodoropoulos, 2008), and thus the educational culture of either side does not matter much. For the second-generation immigrants with a foreign father and native mother, the sign on the interaction term is also of the opposite sign of the main cultural affect. Both results indicate a weaker correlation between paternal scholarly culture and children's educational attainment when the mother is less linked to her husband's cultural background, though the difference in paternal cultural influence between the first group and the third group it's not statistically significant.

In considering the above results, three caveats are in order. First, as interethnic and interracial marriages are more likely to occur among the educated (Qian and Lichter, 2007), the group mean level of parental socioeconomic status is a downward biased proxy for the second-generation individuals with parents from different foreign origins. Second, in a multicultural family, the mother can be from a culture valuing education higher or lower than the father's culture. However, the

group with parents from different origins is too small to yield reliable estimates when both sides' cultural proxies are included. Third, there may exist some unobservable differences among the parents of the three groups.[24] It is likely that interethnic couples are less closely attached to their own culture themselves. An immigrant who marries a native-born American potentially has a stronger incentive to assimilate to the U.S. society than average (Qian, 2001).

1.6.2 Father's or Mother's Culture

To investigate the role of paternal and maternal scholarly culture in children's educational outcomes, I focus on the second-generation immigrants who have one foreign parent and one native parent. The national origin is assigned by the birthplace of the foreign-born parent. As before, I eliminate those from nations with less than 10 observations or unidentifiable geographical areas. There are 19,015 individuals originating from 65 nations in this sample. 1.5% of this sample population report themselves as multiracial.[25] Table 1.10 summarizes the characteristics for the two groups: one with a foreign father and native mother and the other with a foreign mother and native father. The latter group is larger and slightly younger than the former one, with more males and less disabled. No significant difference in average years of schooling is observed.

As mentioned earlier, intermarriages between native-born Americans and immigrants are more likely to be co-racial/co-ethnic. There is no evidence that the immigrants who are married to native-born Americans of the same race differ from other immigrants in socioeconomic status (Qian, 2001). Statistics also suggest spouses usually have similar educational attainment in such marriages (Jasso et al., 2005). As a result, the group mean level of the foreign parent's character-

[24] To address the concern that the parents of the three groups differ per se, I implemented a propensity-score weighting method. A second-generation individual's propensity to be in each group is derived through a multinomial logit model based on the same set of individual and parental characteristics, birth cohort and year of survey included in Table 1.3. The results of regressions in Table 1.9 using the weight adjusted by the estimated propensity score (Imbens, 2000) are unaffected.

[25] I explored adding a dummy for being multiracial to the control set in all the regressions. No significant differences between multiracial individuals and those of a single race are found under any model specifications.

istics is unlikely to be a biased proxy for second generation's parental and family background.[26] Nevertheless, the native-born parent is presumably less influenced by the spouse's ethnic culture whether they are from the same ancestry or not.

Table 1.11 presents the regression results. The model setup is similar to Equation 1.1 with additional controls for those with a foreign mother and native father.[27] Column 1 assumes that paternal and maternal scholarly cultural values relate to an individual's educational attainment equally; and column 2 allows for different correlations.

When assuming paternal and maternal scholarly culture correlate with individuals' educational attainment identically, the average educational attainment is statistically significant at the 1% level. Despite the sample change, the coefficient magnitude and sampling error resemble the estimates in Table 1.3.

When allowing paternal and maternal educational culture to influence the second generation differently, the maternal scholarly cultural effect, the sum of the main effect of the cultural proxy and the interaction of the cultural proxy and the indicator for foreign mother, is significant at the 10% level. This implies mother's educational cultural values also have a substantial influence on children's human capital accumulation. The interaction shows a significant opposite effect from the main cultural effect, suggesting the scholarly culture of mother tends to be less correlated with the offspring's education than that of father.

Moreover, to investigate the patterns of paternal and maternal cultural transmission in more details, I run regressions using the specification in column 2 Table 1.11 by gender. The results are displayed in Table 1.12. The female to male educational attainment ratio in the origin country is added in columns 2 and 4.

The estimates offer interesting insight into the role of gender in intergenerational cultural transmission. The main effect of the scholarly cultural proxy is positive and significant for both genders, inferring that the paternal education-

[26]For the second generation with a foreign mother and native father, their mean group levels of parental and family characteristics are matched by their mothers' birthplace.

[27]Similar to the previous section, I have used a probit model to estimate a second-generation individual's propensity score to have a foreign mother and native father based on the individual and parental characteristics. When the weight is adjusted by the propensity score (Hirano et al., 2003), regression results are similar.

al culture plays an important part in predicting the educational attainment of both second-generation males and females. Similar to the results in Table 1.4, the correlation between paternal cultural proxy and second generations' educational attainment is stronger among males than females. The maternal scholarly culture appears less correlated with second-generation individuals' education for both genders as the estimate on the interaction between the cultural proxy and the indicator for foreign mother is negative under all specifications. The difference between paternal culture and maternal culture is statistically significant for males, but not for females. Surprisingly, the maternal culture shows significant correlation with the educational attainment of the second-generation males, but is not significantly related to the educational attainment of females.

In conclusion, gender plays some role in the intergenerational transmission of scholarly cultural values. If foreign fathers and mothers are identically affected by the educational culture in their home countries, the following inferences may be drawn: first, the transmission of cultural preferences is slightly paternal dominant; second, the educational cultural transmission to the second generation in the U.S. is more toward sons than daughters. It is also possible that immigrant women conform to the scholarly cultural traditions in the home country less which results in the weaker correlation between the educational culture of mothers and the educational attainment of the second generation.

1.7 Conclusion

This paper finds that scholarly culture matters to individual's human capital accumulation. I study the relationship between ancestral scholarly culture and educational attainment of second-generation immigrants in the United States aged 30 - 54. I assign the father's birthplace as the second generation's national origin and use average educational attainment in the country of origin as the proxy for cultural values placed on education.

Average educational attainment in their country of ancestry is economically and statistically significant in predicting second generations' years of education

when their individual and parental characteristics are controlled for. This indicates that individuals from a culture where education is highly valued are likely to have more education in face of the same family resources, market and institutional environment. These estimates are robust to altering the sample of nations, adding source country characteristics, and using academic quality measures as alternative cultural proxies.

I also investigate the gender difference in the relevance between the ancestral educational culture and the educational attainment of the second generation. The scholarly cultural proxy has significant explanatory power for the educational level of both genders, whereas the correlation is stronger among males. The regression results also suggest that the educational gender inequality in the origin countries is relatively reduced among the second-generation immigrants in the U.S.

It should be noted that the scholarly cultural proxies employed in this paper, namely, the average years of education and two other academic quality measures in the ancestral country of second generation reflect not only beliefs and values toward education. One may argue that the story is more about the transmission of origin human capital rather than identifying the additional effect of cultural preferences. Nevertheless, the transmission of origin human capital is mainly through parental human capital transmission. Comparing second-generation individuals with similar parental and family background would largely disentangle the cultural and human capital channels. To further tackle this problem, I have explored using the data from the General Social Survey (GSS), which surveys the Americans' opinions on various issues annually since 1972, to capture the cross-ancestry heterogeneity in educational culture. In the GSS, one educational preference related question is "*Is having a good education yourself important?*" The average rating by ancestry appears a straightforward measurement of cultural attitudes, and it is positively correlated with second-generation individuals' educational attainment controlling for their individual and parental characteristics. But the correlation is insignificant, perhaps due to lack of variation in cross-ancestry evaluation, as this question was only asked in 1987 and about 1,000 individuals[28] from 21 national origins were

[28]Both immigrants and native-born Americans were included.

questioned.[29]

Furthermore, I examine intergenerational cultural transmission, which is regarded as the most important channel for cultural transmission for immigrants. I compare second-generation immigrants whose parents are intermarried between ethnic groups with those from co-ethnic families. Results suggest that the paternal scholarly cultural influence is diluted if the mother is from a different culture. This finding might bring additional evidence that it is educational culture, rather than some other omitted factor, that positively affects individual's educational attainment.

By focusing on individuals with one foreign-born parent and one native-born parent, I verify that mother's scholarly culture is also correlated with children's education. The scholarly cultural influence from foreign mothers is less substantial than that from foreign fathers. The difference in the relevance to the offspring's educational attainment between paternal and maternal cultures is significant among second-generation males.

[29]Another problem with the evaluation from GSS data is that these attitudes and second generation's educational attainment were probably endogenously determined as GSS surveys were conducted within the United States.

1.8 Tables and Figures

Table 1.1: Summary Statistics on 2nd Generation

	No. of Obs.	Mean	Std. Dev.
Individual Characteristics			
Gender (Female = 1)	18,979	.499	.500
Age	18,979	40.2	7.05
Disability (= 1)	18,979	.022	.146
Years of Schooling	18,979	14.1	2.84
Cohort 1 (1940 - 49)	1,225	13.2	3.18
2 (1950 - 59)	6,834	14.0	2.92
3 (1960 - 64)	3,944	14.1	2.63
4 (1965 - 69)	3,338	14.2	2.85
5 (1970 - 74)	2,477	14.2	2.78
6 (1975 - 79)	1,161	14.2	2.75
Parental Characteristics			
Educational Attainment	18,979	11.4	2.47
Age at Immigration	18,979	15.6	4.09
Occupational Income Score	18,979	27.4	3.25
Prob. of Speaking English	18,979	.308	.278
No. of Children	18,979	1.97	.346

NOTE: Mean and standard deviation are weighted by the CPS final person weight.

Table 1.2: Summary Statistics of Cultural Proxy

Cohort	Year	No. of Obs.	Avg Educ. Attainment	Per Capita GDP/1000	F/M Educ. Attainment
1	1950	20	3.33 (2.13)	2.80 (2.05)	.763 (.220)
2	1960	59	4.48 (2.48)	4.29 (2.77)	.781 (.241)
3	1965	60	4.55 (2.40)	4.94 (3.33)	.763 (.221)
4	1970	61	5.09 (2.55)	5.86 (3.91)	.775 (.201)
5	1975	65	5.24 (2.54)	6.44 (4.32)	.768 (.209)
6	1980	63	5.72 (2.55)	7.19 (4.75)	.787 (.205)
Overall		328	4.93 (2.54)	5.59 (3.98)	.774 (.214)

NOTE: Data are obtained from Barro-Lee Dataset, Statistics on World Population, GDP and Per Capita GDP by Angus Maddison and International Macroeconomic Dataset of USDA. Means with standard deviations in parentheses are reported.

Table 1.3: Educational Attainment of 2nd Generation

	(1)	(2)
Individual Characteristics		
Gender (Female = 1)	-.054 (.060)	-.058 (.059)
Age	.012 (.043)	.015 (.043)
Age^2/100	-.028 (.053)	-.032 (.052)
Disability (= 1)	-2.31*** (.113)	-2.31*** (.110)
Parental Characteristics		
Parental Educ. Attainment	.273*** (.060)	.242*** (.061)
Age at Immigration	-.018 (.032)	-.013 (.035)
Occupational Income Score	.050 (.046)	.046 (.042)
Prob. of Speaking English	-.099 (.241)	-.160 (.215)
No. of Children	-.614*** (.226)	-.667** (.259)
Cultural Proxy		
Avg Educ. Attainment		.097** (.047)
Per Capita GDP/1000		-.041 (.032)
No. of Origins		66
No. of Obs.		18,979
R^2	.153	.155

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regression is weighted by the CPS final person weight. The dependent variable is individual's educational attainment. Robust standard errors in parentheses account for clustering at country-of-ancestry level. Both specifications include cohort effects, survey year effects, state of residence effects and a constant.

Table 1.4: Gender Differences in Educational Value Transmission

	Male		Female	
	(1)	(2)	(3)	(4)
Parental Educ. Attainment	.216***	.219***	.261***	.260***
	(.058)	(.057)	(.093)	(.091)
Avg Educ. Attainment	.111**	.148***	.087	.108*
	(.044)	(.050)	(.060)	(.050)
Per Capita GDP/1000	-.039	-.040	-.043	-.044
	(.031)	(.031)	(.038)	(.038)
Origin F/M Educ. Attainment		-.897		-.512
		(.579)		(.651)
No. of Origins		66		66
No. of Obs.		9,252		9,727
R^2	.148	.148	.179	.179

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regression is weighted by the CPS final person weight. The dependent variable is individual's educational attainment. Robust standard errors in parentheses account for clustering at country-of-ancestry level. All specifications include the same set of individual and parental characteristics as Table 1.3 and a constant.

Table 1.5: Selectivity among Immigrant Parents

	(1)	(2)	(3)	(4)	(5)
Parental Educ. Attainment	.248***	.216***	.211***	.182	.201
	(.061)	(.054)	(.061)	(.141)	(.147)
Cultural Proxy					
Avg Educ. Attainment	.101**	.088*	.083**	.085	.084
	(.048)	(.045)	(.041)	(.117)	(.108)
Per Capita GDP/1000	-.044	-.046*	.022	-.026	.031
	(.032)	(.028)	(.109)	(.042)	(.100)
Other Origin Characteristics					
Distance/1000		.064***	.059***		
		(.018)	(.017)		
1(English Official)		-.319	-.297		
		(.213)	(.215)		
Democracy_{-20}			.131		.277
			(.195)		(.283)
$\text{State of War}_{-20}$			1.62***		.002
			(.428)		(.981)
$\text{Per Capita GDP}_{-20}/1000$			-.083		-.094
			(.112)		(.103)
Origin Fixed Effects				Yes	Yes
No. of Origins					62
No. of Obs.					18,862
R^2	.154	.157	.158	.171	.171

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regression is weighted by the CPS final person weight. The dependent variable is individual educational attainment. Robust standard errors in parentheses account for clustering at country level. All specifications include the same set of individual and parental characteristics as Table 1.3 and a constant.

Table 1.6: Summary Statistics of Educational Quality Measures

PANEL A: Summary Statistics			
Variables	No. of Origins	Mean	Std. Dev.
Pupil-Teacher Ratio (PT)	58	17.5	7.33
International Exam Score (ES)	36	489	65.0
Avg Per Capital GDP/1000	66	8.95	4.17

PANEL B: Correlation				
Variables	PT	ES	EA_{00}	EA_{60}
Pupil-Teacher Ratio (PT)	1.00			
International Exam Score (ES)	-.699	1.00		
Avg Educ. Attainment 2000 (EA_{00})	-.520	.628	1.00	
Avg Educ. Attainment 1960 (EA_{60})	-.525	.519	.860	1.00

Table 1.7: Alternative Cultural Proxies

	(1)	(2)	(3)	(4)
Cultural Proxies				
Pupil-teacher Ratio		-.039*** (.011)		
International Exam Score				.008** (.002)
Avg Per Capita GDP/1000		-.007 (.024)		-.061 (.042)
No. of Origins		58		39
No. of Obs.		18,570		11,921
R^2	.151	.154	.050	.057

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regression is weighted by the CPS final person weight. The dependent variable is individual's educational attainment. Robust standard errors in parentheses account for clustering at country-of-ancestry level. All specifications include the same set of individual and parental characteristics as Table 1.3 and a constant.

Table 1.8: Summary Statistics on 2nd Generation by Parental Nativities

	Foreign Parents from		Foreign Father
	Same Origin	Diff. Origins	Native Mother
Individual Characteristics			
No. of Obs.	8,602	1,640	8,737
Gender (Female = 1)	.487 (.500)	.495 (.500)	.513 (.500)
Age	39.0 (6.81)	39.7 (7.04)	41.8 (7.03)
Disability (= 1)	.016 (.125)	.020 (.139)	.029 (.167)
Years of Schooling	13.9 (2.99)	14.6 (2.64)	14.1 (2.99)
Cultural Proxy			
Avg Educ. Attainment	4.95 (2.44)	5.05 (2.38)	4.97 (2.56)
No. of Origins	65	59	66

NOTE: Sample includes second-generation individuals with both parents' birthplaces identifiable, and excludes those from a nation with less than 10 observations. The mean of each variable is reported, with the standard deviation in parentheses. Individual characteristics are weighted by the CPS final person weight; cultural proxies are not weighted.

Table 1.9: Interethnically v.s. Co-ethnically Married Parents

	(1)	(2)
Foreign Parents Diff. Origins (= 1)	.104	.916**
	(.177)	(.458)
Foreign Father Native Mother (= 1)	.139	.378
	(.152)	(.363)
Avg Educ. Attainment (EA)	.099**	.137**
	(.048)	(.061)
4. EA × Foreign Parents Diff. Origins		-.150**
		(.070)
5. EA × Foreign Father Native Mother		-.050
		(.055)
Per Capita GDP/1000	-.043	-.043
	(.033)	(.032)
Intercept	11.2***	10.9***
	(2.03)	(2.07)
F (H_o: EA + EA × Foreign Parents Diff. Origins = 0)		0.04
F (H_o: EA + EA × Foreign Father Native Mother = 0)		2.94*
No. of Origins		66
No. of Obs.		18,979
R^2	.155	.156

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regression is weighted by the CPS final person weight. The dependent variable is individual's educational attainment. Robust standard errors in parentheses account for clustering at country-of-ancestry level. Both specifications include the same set of individual and parental characteristics as Table 1.3 and a constant.

Table 1.10: Summary Statistics on 2nd Generation with One Native Parent

	Foreign Father Native Mother	Foreign Mother Native Father
Individual Characteristics		
No. of Obs.	8,728	10,287
Gender (Female = 1)	.512	.500
	(.500)	(.500)
Age	41.8	41.0
	(7.03)	(6.76)
Disability (= 1)	.029	.017
	(.168)	(.164)
Years of Schooling	14.1	14.2
	(2.58)	(2.58)
Cultural Proxy		
Avg Educ. Attainment	5.03	5.16
	(2.58)	(2.51)
No. of Origins	64	65

NOTE: Sample includes second-generation individuals with both parents' birthplaces identifiable. National origin is assigned by the foreign-born parent's birthplace. The mean of each variable is reported, with the standard deviation in parentheses. Individual characteristics are weighted by the CPS final person weight; cultural proxies are not weighted.

Table 1.11: Father's v.s. Mother's Scholarly Culture

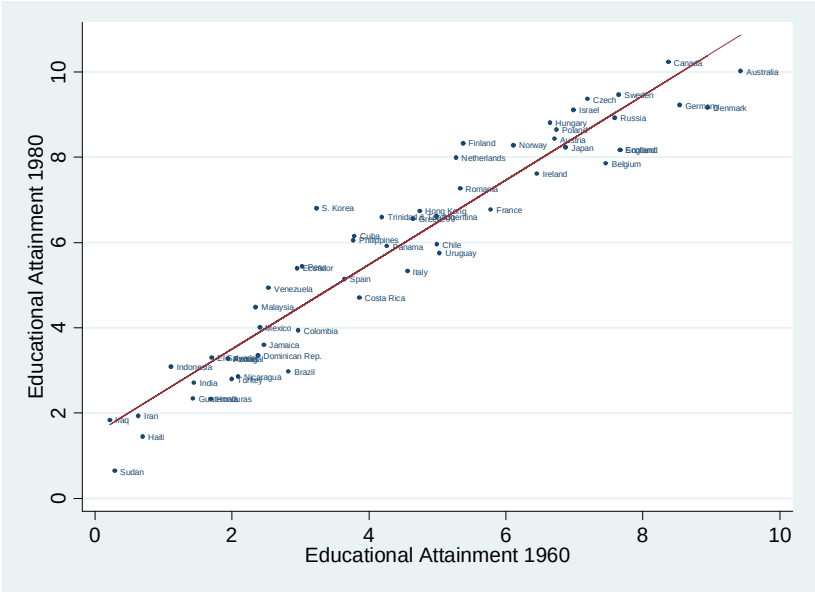
	(1)	(2)
Foreign Mother Native Father (= 1)	-.019	.383**
	(.106)	(.177)
Avg Educ. Attainment (EA)	.126***	.160***
	(.045)	(.048)
EA × Foreign Mother Native Father		-.070*
		(.039)
Per Capita GDP/1000	-.049*	-.046
	(.029)	(.029)
Intercept	13.0***	12.6***
	(1.92)	(2.05)
F (H_o: EA + EA × Foreign Mother Native Father = 0)		3.17*
No. of Origins		65
No. of Obs.		19,015
R^2	.103	.104

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regression is weighted by the CPS final person weight. The dependent variable is individual's educational attainment. Robust standard errors in parentheses account for clustering at country-of-ancestry level. Both specifications include the same set of individual and parental characteristics as Table 1.3 and a constant.

Table 1.12: Father's v.s. Mother's Scholarly Culture: Gender Difference

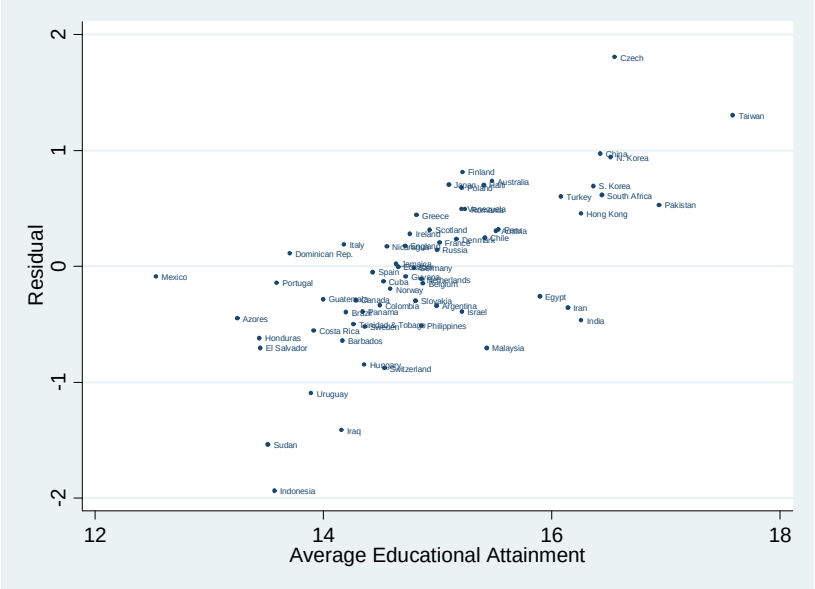
	Male		Female	
	(1)	(2)	(3)	(4)
Foreign Mother Native Father (= 1)	.472***	.470***	.346	.333
	(.160)	(.160)	(.300)	(.177)
Avg Educ. Attainment (EA)	.206***	.204***	.121**	.108*
	(.046)	(.054)	(.058)	(.060)
EA × Foreign Mother Native Father	-.085**	-.085**	-.063	-.061
	(.034)	(.034)	(.055)	(.055)
Per Capita GDP/1000	-.069**	-.069**	-.024	-.025
	(.031)	(.031)	(.033)	(.032)
Origin F/M Educational Attainment		.065		.456
		(.541)		(.518)
Intercept	14.9***	14.8***	10.9***	10.4***
	(2.46)	(2.63)	(2.78)	(2.89)
F (H_o: EA + EA × Foreign Mother Native Father = 0)	5.70**	4.56**	1.07	0.66
No. of Origins		64		65
No. of Obs.		9,185		9,830
R^2	.109	.109	.115	.115.

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regression is weighted by the CPS final person weight. The dependent variable is individual's educational attainment. Robust standard errors in parentheses account for clustering at country-of-ancestry level. All specifications include the same set of individual and parental characteristics as Table 1.3 and a constant.



NOTE: 56 nations are included. Correlation = .96. OLS regression line slope = .99

Figure 1.1: Educational Attainment among Adult Population 1960 v.s. 1980



NOTE: Ancestral means of both variables are weighted by the CPS final person weight.

Figure 1.2: Educational Attainment v.s. Residual by National Origin

Chapter 2

Money v.s. Prestige: Cultural Attitudes and Occupational Choices

Abstract

This paper studies the occupational choices of highly educated native-born American males and links their choices to cultural attitudes towards pecuniary rewards and social prestige in their ancestral countries. These cultural attitudes were reported in the World Values Survey, which surveyed individuals' opinions on a series of subjects in various societies. The empirical analysis verifies that both income and prestige are positively valued in occupational selection. The cultural attitudes play a significant role in these choices when other factors that may be correlated with one's opportunity and advantage are controlled for: a stronger cultural demand for pecuniary rewards leads individuals to choose more lucrative jobs; and a stronger demand for social prestige leads them to choose more prestigious jobs. The paper further explores neighborhood effects on cultural transmission and finds a positive relationship between the proportion of the population from the same ancestry in the residential area and the effects of cultural attitudes on occupational selection.

2.1 Introduction

Occupational choices largely determine the nature of training that an individual undertakes, his/her labor market history, life time welfare and social status. The overall career patterns also influence economic development through industrial structure as entrepreneurship and technical progress facilitate economic growth. So it is important to understand how individual preferences over job characteristics affect occupational choices and how these preferences are different across individuals and ethnicities. For policy purposes, it is necessary to establish whether differences in occupational selection and career development across racial and ethnic boundaries are due to unequal opportunities.

In studying occupational choices and career oriented college major choices, the majority of works (Boskin, 1974; Siow, 1984; Rothstein and Rouse, 2007; Arcidiacono et al., Forthcoming) emphasize the role of economic aspirations. These studies verify that occupational choices are sensitive to discounted potential lifetime earnings. Non-economic factors can also be essential but have generally been ignored in the existing literature. An occupation affects self-esteem as well as the respect received from others, and hereby influences the well-being of individuals without altering their consumption of material goods (Corneo and Jeanne, 2010). Besides a number of theoretical studies on social esteem, there are only a few papers that address the importance of prestige in occupational selection from an empirical approach. For example, Dolton et al. (1989) demonstrate that expected social status plays a significant role in occupational choices of college graduates in the U.K., and Humlum et al. (Forthcoming) find that social identity is pivotal to planned educational level and field among Danish youth. Compared to previous empirical works, this paper analyzed a much bigger and more diverse sample and a broader spectrum of occupations. This paper also contributes to a recent strand of literature that studies the impact of culture on various economic outcomes in a quantitative fashion by extending the literature to cultural effects on occupational choices, one of the most fundamental activities in an individual's economic life.

Racial and ethnic groups in the United States exhibit diverse patterns in career development (Osipow and Littlejohn, 1995). There are several reasons for the

group differences. First, religion and ideologies may respect some occupations but despise others, or value certain occupation related factors more than others. For instance, in Confucianism, the predominant ideology in East Asia, technical jobs are praised but farmers and salesmen are less appreciated. The career aspirations of Asian Americans have been stereotyped correspondingly (Leong and Serafica, 1995). Second, the historical industrial mix may favor certain occupations. Botticini and Eckstein (2005) explain that almost all Jews entered urban jobs during the establishment of the Muslim Empire despite no restrictions prohibiting them from remaining engaged in agriculture, and this occupational selection remained a distinctive mark throughout history. Third, the labor market networks within an ethnic group persist across generations. Munshi and Wilson (2008) verify the link between ethnic (migrant) labor market networks in the American Midwest when it was first being settled, and the local identity that emerged endogenously to maintain the integrity of these networks today. Fourth, intergenerational transmission of human capital and values also plays a critical role. Parents pass down skill sets and knowledge to their offspring, and children are more likely to work in the same occupations as their parents. They also socialize their offspring by raising them to have the same value system which converge to a stable distribution of cultural traits (Bisin and Verdier, 2000a, 2001). The above mechanisms gradually form individuals' preferences that vary across ethnicities systematically, and these preferences in part drive career choices (Arcidiacono, 2004).

Differing preferences can partly be reflected in views over various occupational attributes. When examining the economic prospects of occupations, Boskin (1974) shows that the relative weights placed on potential incomes, training costs, and forgone earnings due to unemployment vary by race and gender, and the apparent differences shed light on their choices of education and occupation. In this paper, I focus on two important occupational attributes: income and social prestige, which are also considered as key measurements for one's social position. I examine whether ethnic cultural attitudes toward pecuniary rewards versus social prestige play an important role in individuals' occupational choices. In every society, there emerges a consensus associated with differential value placed on in-

come and prestige in determining social position (Arts and Vermunt, 1989). The values are shaped in past by cultural beliefs and ideologies. For example, capitalism advocates effort and opportunity, and influences people to develop their own enterprises and engage in trade and the accumulation of wealth. People in capitalistic societies may have established higher preferences toward pecuniary rewards accordingly. On contrary, most religions value self control and restraint so that people may place higher value on social prestige in more religious countries.

Because attitudes toward occupational attributes are endogenous to individual and aggregate labor market outcomes, policies, and institutions, I study native-born Americans and relate their occupational choices to cultural attitudes of the "cousins" in their countries of ancestry. This methodology is utilized by Giuliano (2007), Fernandez and Fogli (2009), and Giavazzi et al. (2009) to study the cultural roots of family living arrangements, fertility, and female labor supply. My sample is composed of prime-age males from 44 different ancestries who obtained a bachelor's degree or above from the 2000 census data. Data on ancestral attitudes toward pecuniary rewards and social prestige are collected from the World Values Survey (WVS). The cultural values placed on occupational income and respect are proxied by the proportion of males who consider earnings as the most important and the proportion who consider respect as an important factor in a job in native-born Americans' countries of origin.

Occupational selection is modeled as a conditional logit discrete choice problem where the individual is assumed to choose the occupation that yields the highest utility based on the occupational attributes as well as the cultural attitudes. 13 categories of occupations are considered and the main arguments studied are occupational earnings and prestige. Factors related to opportunity or advantage, such as demographic characteristics and parental socioeconomic characteristics, are included as controls to isolate the cultural effects. As the information of parents is not available in the census data, I rely on the cohort by ancestry group mean levels instead (Card et al., 2000). To eliminate the possibility that the cultural measures capture other country-specific effects, I also test sensitivity to including a series of other origin characteristics into my control set.

Estimates from the conditional logit model suggest that social prestige, like earnings, plays a statistically significant role in occupational choices. Increasing the social prestige by one standard deviation, *ceteris paribus*, increases the average probability of selecting a certain occupation by around 10%. Cultural attitudes reinforce these positive effects: a stronger cultural demand for earnings predicts a higher propensity to pursue a lucrative job; and a stronger demand for prestige predicts a higher propensity to choose an esteemed job. These results are robust to alternative model specifications that address the potential problems related to sample selection due to restricting to college graduates, violation of the independence of irrelevant alternatives assumption, sample of national origins, and over-aggregated occupational categorization.

One main concern is that the cultural attitude measures might pick up the effects of correlated human capital transmission. As group mean levels may underestimate the parental characteristics of the highly educated sample, it is possible that unobserved human capital accounts for the positive estimates on cultural measures. Hence, I utilize a smaller sample from the General Social Survey (GSS) which records parental educational attainment, household income, and other family background. To more precisely disentangle the channel of culture from human capital, I add controls for father's occupation. Despite the small sample size, the estimate on prestige demand stays economically and statistically significant.

Moreover, to address concerns that ancestry is self-reported and the influence of inherited cultural values may vary across different waves of migration, I examine second-generation immigrants specifically using the Current Population Survey (CPS) data. The CPS data produce similar results to those obtained from the census sample. But the hypothesis that cultural attitudes play a stronger role in occupational selection among the second generation than higher generations cannot be verified.

Lastly, I study neighborhood effects on cultural transmission. The results show that the ethnic composition of the residential area matters to the strength of cultural transmission. The impact of cultural attitudes on occupational selection is greater for individuals who live in a neighborhood with a higher proportion of the

population from the same ancestry. This finding may bring additional evidence to bear on the hypothesis that it is culture, rather than some country-specific effect relevant to unobserved opportunity or advantage, that is responsible for the positive correlation between the cultural proxies and the occupational choices of native-born Americans.

The remainder of this chapter is organized as follows. Section 2.2 introduces the empirical model; Section 2.3 describes and summarizes the data employed; Section 2.4 discusses the cultural attitude measures; Section 2.5 presents and discusses the empirical results; Section 2.6 examines whether unobserved human capital may be responsible for the results; Section 2.7 studies the cultural influence among the second generation; Section 2.8 further probes the neighborhood effect in cultural transmission; and Section 2.9 concludes and discusses the results.

2.2 Empirical Model

The stable sets of preferences, or cultural values, toward occupations can be reflected in the attitudes toward occupational characteristics. It is possible that the distributions of occupational income and prestige in the United States differ from those in their origin countries and native-born Americans thereby view certain occupations differently from their ancestors. However, the preferences concerning occupation related factors, such as wealth and reputation, may persist across generations independently from valuation of a specific occupation's social standing.

I study the occupational choices of native-born males as follows. Suppose each individual selects his occupation from W mutually exclusive alternatives in a manner that yields the highest utility. The utility of individual i from ancestry j who works in occupation w, where $w = 1, 2, ..., W$, can be written as

$$U_{ijw} = V\left(Y_w, X_i, Z_j\right) + \xi_{ijw}.$$

Y_w measures the attributes of occupation w that influence the individual's expectations of future consumption, social status, career development and lifestyle. These attributes include income, social prestige, training costs, and working hours. A

model like this allows individuals to balance among the economic and non-economic aspects of a job so as to maximize his utility. X_i is a vector of observed individual characteristics that may affect occupational selection, such as age, working disability, and English ability. As local labor market conditions are also important determinants of labor market outcomes, the region of residence or relevant location characteristics may also be included in X_i. Z_j denotes cultural preferences toward pecuniary rewards and social prestige in ancestry j. On the one hand, one may argue that cultural values during the period when the ancestors of the native-born Americans were brought up and educated in their home countries before migration would best reflect the inherited culture of the native-born Americans. On the other hand, one may also argue that the values of the counterparts of the native-born Americans, their "cousins" in the countries of ancestry, better capture cultural exposure and evolution (Fernandez and Fogli, 2009). Since culture is an equilibrium of social norms and evolves slowly (Bisin and Verdier, 2000a, 2001), the distinction is less important. Data limitations discussed below do not allow me to identify the period when the ancestors of the native-born Americans migrated to the United States, so I use relatively current measurements of Z_j to proxy for the culture that affects my sample. $V(Y_w, X_i, Z_j)$ can be interpreted as individual i's valuation of occupation w. The error term ξ_{ijw} represents unobservable tastes.

The probability that individual i chooses occupation w is

$$p_{ijw} = \Pr\left(U_{ijw} \geqslant U_{ijk}\right), \forall k = 1, 2, ..., W. \tag{2.1}$$

The error term ξ_{ijw} is assumed to be independent across occupations for each individual, that is, the likelihood that a particular occupation is chosen over another is independent of other alternatives. If these error terms follow a standard Type I extreme value distribution,[1] the probability that individual i chooses occupation w can be derived to be:

$$p_{ijw} = \frac{\exp\left(V_{ijw}\right)}{\sum_{k=1}^{W} \exp\left(V_{ijk}\right)}, \tag{2.2}$$

where $V_{ijk} = V\left(Y_k, X_i, Z_j\right)$.

[1]The density function is $f(e) = \exp\left[-e^{-\exp(-e)}\right]$.

In a conditional logit model, main effects for characteristics such as cultural attitude measures and individual characteristics that do not vary across occupations are not estimable. However, differential effects can be captured by interacting these variables with occupational attributes.[2] That is, such factors are assumed to affect occupational selection through their influence on the valuation of occupational attributes.

A linear formulation of V_{ijk} is

$$V_{ijk} = \eta_0 + \eta_1' Y_k + \phi' Y_k \otimes Z_j + \eta_2' Y_k \otimes X_i + e_{ijk}.^{3} \tag{2.3}$$

e_{ijk} includes factors that are related to occupational choices but unobserved by the econometrician, and η and ϕ are unknown parameters. The influence of cultural attitudes on the propensity to select an occupation given certain attributes is reflected by ϕ. A positive sign on ϕ indicates that individuals whose culture emphasizes earnings and respect are more likely to choose a highly remunerative and esteemed job.

A main concern is that if e_{ijk} is correlated with cultural attitude measure Z_j, ϕ captures origin effects other than culture. To address this concern, I write the e_{ijk} as

$$e_{ijk} = \varepsilon_{ik} + a_{jk},$$

where ε_{ik} stands for individual i's unobserved idiosyncratic opportunity and advantage in occupational selection, and a_{jk} represents the unobserved difference in endowment across ancestries.

The selection among the first-generation immigrants and intergenerational human capital transmission are the main reasons for the potential cross-origin discrepancy in ε_{ik}. To mitigate this problem, I compare individuals with parents of similar socioeconomic status. The effect of ethnic network is also important to intergenerational human capital transmission as the ethnic human capital embodied may facilitate individuals in finding employment. Accordingly, ε_{ik} may be written

[2]Variables that affect occupational choices but do not vary across occupations may also enter the regression by interacting them with a set of occupation dummies. I use the interaction of individual characteristics and occupational attributes for computational advantage.

[3]$\otimes$ denotes the Kronecker product.

as

$$\varepsilon_{ik} = \lambda_1' Y_k \otimes P_i + \lambda_2' l_{ijk} + \widehat{\varepsilon}_{ik}, \tag{2.4}$$

where P_i denotes family characteristics such as parental educational attainment, household income, and number of siblings, and l_{ijk} is the proportion of the parental generation working in each occupation. Controls for parental occupations may be added to Equation 2.4 to account for transmission of occupation-specific human capital besides the transmission of general human capital.[4] Once the impacts of parents and parental generation are isolated, the chance that $\widehat{\varepsilon}_{ik}$ is correlated with country of ancestry is relatively low.

The most effective way to remove the effects of unobserved ancestry-specific non-cultural endowment a_{jk} is to control for ancestry fixed effects in addition to the measurements for cultural attitudes. However, cross-time variation in cultural attitudes could hardly be identified in the data employed. Hence, controlling for ancestry fixed effects is not feasible. Instead, I assume a_{jk} is a linear function of a series of economic, political, and other structural characteristics of the ancestral country j:

$$a_{jk} = \gamma' Y_k \otimes A_j + \widehat{a}_{jk}. \tag{2.5}$$

A_j includes all the possible industrial and institutional factors that may influence people's demands for pecuniary rewards and social prestige which may also affect the selectivity among immigrants. These factors include source country's economy, politics, educational quality and the geographic distance to the host country (Betts and Lofstrom, 2000; Borjas, 1987; Lewer and Van den Berg, 2008). By controlling for the origin characteristics that matter to migration, the native-born males' cross-ancestry variation in unobserved human capital which is not captured by their parental characteristics is further taken into account.

Therefore, Equation 2.3 is rewritten as

$$V_{ijk} = \eta_0 + \eta_1' Y_k + \phi' Y_k \otimes Z_j + \eta_2' Y_k \otimes X_i + \lambda_1' Y_k \otimes P_i + \lambda_2' l_{ijk} + \gamma' Y_k \otimes A_j + \widehat{e}_{ijk} \tag{2.6}$$

[4]Given the data availability in the General Social Survey (GSS), I can control for the father's occupation but not the mother's. A dummy variable indicating the father's job is added to the estimation equation.

where $\widehat{e}_{ijk} = \widehat{\varepsilon}_{ik} + \widehat{a}_{jk}$. The coefficients can be estimated via a maximum likelihood procedure.

It is worth mentioning that variation in parental characteristics may partly result from cultural differences. Similarly, the ethnic network is not only important in transmitting ethnic human capital, but also essential for the transmission and preservation of cultural values. Therefore, controlling for both the parental characteristics and the ethnic network likely underestimates the cultural influence on native-born males.

Last but not least, although the independence assumption required to derive Equation 3.3 is computationally advantageous, it is inappropriate when occupations are similar so that their unobservable characteristics may cause the error terms ξ_{ijw} to be correlated. Individuals may respond differently among similar choices. As in standard consumer theory, one would expect greater effects on closer substitutes. Therefore, as a robustness check, I estimate a nested logit model (McFadden, 1981; Hausman and McFadden, 1984) which selectively relaxes the independence assumption. Rather than regarding all the occupations as elements of a single choice set, the nested logit model assumes that choice proceeds through a set of "nested" similar alternatives.

2.3 Data

2.3.1 Sample Selection

The main dataset I use is the 5% Integrated Public Use Microsample Series (IPUMS) version of the 2000 census. I focus on native-born American males aged 35 - 54 who have a bachelor's degree or above and and I assign the first-reported ancestry as the national origin. I exclude individuals who live in group quarters (e.g., prisons and other group living arrangements such as rooming houses and military barracks). Individuals in this age range have largely completed their education, and differential mortality is unlikely to be a problem. Compared to females, the male population is less affected by the sample selection due to decisions about whether or not to participate in the labor force. Following Dolton et al.

(1989) and Arcidiacono (2004), I constrain the sample to the highly educated to reduce problems associated with unobservable ability differences. At the same time, the highly educated have greater opportunity to choose a job that gives them higher utility as occupations are generally accessible to college graduates. Due to computational constraints of discrete choice models, for those ancestries with more than 1,500 observations, I randomly select around 1,500 individuals for each ancestry. A total of 44 national origins are included,[5] and Table 2.1 reports the number of observations from each origin.

In addition to ancestry, the census data provide information on an individual's birth place, educational attainment, employment and occupation, as well as other basic demographic characteristics such as age, gender, working disability, and geographic location. Since no information concerning respondents' parents is collected, I do not know if native-born Americans in my sample are second-generation immigrants[6] or higher generations. According to statistics from the 2000 Current Population Survey (CPS) where second-generation immigrants can be identified, about 10% of the census sample are second generation.[7] This indicates that the unobserved discrepancies in non-cultural endowment across origins among first-generation immigrants are less likely to be a problem in my sample. Yet, ancestral cultural effects might be diluted among the higher generations in the United States as cultural transmission is more intergenerational rather than from the whole society.

Table 3.1 column 1 reports summary statistics for the individual characteristics.[8] The sample has an average age of 45. 5.3% of them report that they suffer from certain disability which prevents them from working. As these people were all born in the United States, only 0.4% cannot speak English. They have

[5]Only countries of ancestries which are covered by the World Values Survey and European Values Survey are included.

[6]A second-generation immigrant is someone who was born and raised in the U.S. but either one or both parents were born outside the U.S.

[7]Both surveys study a sample which represents the whole population in the United States as the year of survey.

[8]The conditional logit model cannot incorporate sampling weights. I compared the summary statistics with and without weights: the mean and standard deviation are very similar for all variables reported in Table 3.1.

17 years of schooling[9] on average. To control for location effects, I use the four general geographic regions (northeast, midwest, south, west) and a measure for urbanization of the Public Use Microdata Area (PUMA)[10] that each individual resides in instead. Since human capital transmission may play an important role in occupational selection, I follow Card et al. (2000) and rely on group mean levels of parental characteristics estimated from earlier censuses.[11]

I also employ an alternative dataset, the General Social Survey (GSS) to better investigate the impact of cultural attitudes versus intergenerational transmission of human capital on occupational choices. The GSS is an opinion survey conducted annually in the United States since 1972 by the National Opinion Research Center. The interviewees are asked about their demographic background, political and social attitudes, and labor market outcomes. In addition to providing data on occupation and ethnic origins of a respondent, the GSS also documents information on a series of parental and family characteristics such as both parents' educational attainment and occupations, household income when the respondent was 16, and number of siblings.

I exploit the observations in the GSS surveys from 1972 to 2008. Because the number of individuals surveyed by the GSS is small, I expand the age range to include all native-born males aged 30 - 59 with a bachelor's degree or above. Table 3.1 column 2 presents the summary statistics for the GSS sample. The full sample includes 566 observations from 18 origins,[12] 5% of which are second-generation immigrants. Despite the small sample size, the representation of origins in the GSS resembles that in the census sample. Also, the two samples have similar average age and years of schooling.[13]

[9]Since the 2000 census collects educational attainment in categories, I have mapped it into years of schooling according to Park (1996) and take the midpoint of each interval.

[10]The Public Use Microdata Area (PUMA) is the smallest geographic unit recorded in the IPUMS version of census data. A PUMA generally follows county or city boundaries and consists of 100,000+ residents.

[11]More details about the group mean method are revealed in Appendix B.1.1.

[12]Origins included are: Canada, China, Finland, Germany, Hungary, India, Japan, Lithuania, Mexico, Norway, Philippines, Poland, Puerto Rico, Romania, Russia, Spain, Sweden, and Switzerland. These countries of ancestry basically represent the origins with relatively large number of observations in the 2000 census sample.

[13]Years of education of the respondents and their parents is top-coded at 20 in the GSS, which makes it not perfectly comparable to the years of education in the census.

In considering the census and the GSS data, two caveats are in order. First, the two samples self-report their ancestries. It is possible that people with stronger cultural attachment are more likely to report an ancestry. If it is the case, the estimated effects of ancestral attitudes on occupational choices would be biased upward. Second, both samples lack information as to when each individual's ancestors migrated to the U.S. If culture changes over time, the current attitude measures would mismeasure the inherited cultural preferences of the native-born Americans.

Accordingly, I use a third dataset, the pooled 1994 - 2006 Current Population Surveys (CPS) which record the native country of the respondents' parents. I examine the occupational choices of second-generation immigrants, and use father's source country (or mother's source country if only the mother is foreign-born) to assign the national origin of the second generation. Compared to the other two samples, the period when parents of the second generation migrated to the U.S. is relatively recent and has a much smaller window. However, the systematic variation in human capital and motivation among the first-generation immigrants may have a stronger impact on the occupational choices of the second generation.

Based on the same sample criteria for the census sample and focusing on the second generation solely, the CPS sample includes 7,515 individuals from 39 national origins.[14] The summary statistics of the sample is shown in Table 3.1 column 3. The second generation sample has a similar average educational level, but a significantly lower fraction of disabled relative to the census sample. They are more likely to cluster in the coastal areas relative to higher generations. As the CPS does not include any parental characteristics other than their native countries, I use group mean characteristics of immigrants to proxy for family background as I do for the census sample.

[14]Compared to the census sample, 11 origins are not covered in the CPS sample (Albania, Belarus, Bulgaria, Estonia, Macedonia, Philippines, Serbia, Slovakia, Slovenia, Taiwan, and Venezuela), and 6 additional origins are included (Australia, Guatemala, Indonesia, New Zealand, South Africa, and South Korea).

2.3.2 Occupations

The occupation reported in the census is the one from which the respondent earns the most money or the one at which he spends the most time. Unemployed persons or those out of labor force for less than 5 years were to give their most recent occupation.[15] There are 383 occupations in total (1990 census categorization), excluding armed services. The highly educated engage in all 383 occupations.

For the discrete choice analysis, I aggregate the 383 detailed occupations into 13 broad categories based on the census occupation grouping and the required training. The 13 categories are: (1) executives and managers such as legislators, financial managers, and mail superintendents; (2) management related occupations such as accountants, underwriters, and personnel specialists; (3) professional specialty occupations such as engineers, doctors, and social scientists; (4) teachers and social workers such as secondary school teachers and clergy; (5) writers, artists, entertainers, and athletes; (6) technicians such as practical nurses, computer programmers, and legal assistants; (7) sales occupations such as advertising agents, auctioneers, and salesmen; (8) clerical occupations such as attendants, bank tellers, and cashiers; (9) service occupations such as bartenders, cooks, and doorkeepers; (10) farming, forestry, and fishing occupations; (10) craftsmen such as bakers, carpenters, and plumbers; (12) operators and fabricators such as bus drivers, power station operators, and sawyers; and (13) laborers such as construction laborers and stevedores.

Although the aggregation of occupations results in a loss of heterogeneity in attributes across occupations, it reduces the problem associated with barriers to enter for certain jobs. That is to say, if an individual is not capable of getting his ideal job, he could choose something similar from the same occupation category as a substitute. Moreover, as each occupation category covers a number of industries, occupational choice sets are less likely to be constrained by the local industrial structure or labor market conditions. Hence the highly educated individuals will basically face the same set of choices.

The census includes a prestige measure for detailed occupations. The pres-

[15] In the census sample, about 3% are out of labor force, and about 1% are unemployed.

tige score is based on prestige assessments assigned by Nakato and Treas, using data from the 1989 General Social Survey which was conducted in the United States and asked respondents to evaluate occupations' social standing. An individual's rational expectation about an occupation may be best described by the actual attributes of the occupation at the time he chose the job. Unfortunately, the time when the respondents started their current jobs is not available in the dataset. In accordance with the timing of the prestige scores, I construct other measures for the 383 occupations using the 1990 census data. The occupational income score assigns each occupation a value representing the median total income (in hundreds of 1950 U.S. dollars) of the highly educated with that particular occupation.[16] Similarly, the training cost is evaluated by the median educational attainment among all the college graduates who work in a certain occupation. The number of working hours is measured by the median working hours of those with a bachelor's degree engaged in that job. Because the census occupational codes include executive and managerial jobs as a separate category where promotion to these positions largely depends on performance and experience, I also calculate the median years of working experience among the highly educated individuals with each occupation.[17] The universal occupational measures for each category are the means of these measures for the detailed jobs which fall into that category weighted by the number of college graduates working in each detailed job.

Table 2.3 Panel A presents the five occupational attributes of the 13 categories. The professional specialty occupations are related to the highest occupational income and highest prestige. Executive and managerial jobs come second in income, and teachers and social workers come second in prestige. Service workers have the lowest potential income, and laborers have the lowest prestige. Panel B displays the correlations among the five attributes. Pecuniary rewards and required education appear to be highly correlated with occupational prestige. The

[16]The census provides the occupational income score which assigns each occupation a value representing the median total income (in hundreds of 1950 U.S. dollars) of all individuals with that particular occupation. Because I focus on the highly educated individuals, I modify the score to be the median total income score among all college graduates with each occupation.

[17]For each individual, work experience is calculated as: years of experience = age - years of education - 6.

high correlations mirror the prevalent notion that people evaluate the social status of occupations partly based on their potential earnings and training costs. Other factors, such as the contribution to the community, also determine the general opinion about occupational esteem.

One concern is that occupational attributes may change over time due to economic and institutional shocks as well as the increasingly diverse population in the United States that brings changes to the labor market. The measurements obtained from the 1990 census likely differ from those when individuals chose their current occupations. To provide a sense whether these attributes are relatively steady, I calculate the median income, educational attainment, working hours, and years of experience for each occupation from the 1980 and 2000 census, aggregate them into categories and compare them with the values from the 1990 census. The correlation between years is over 0.9 for all five attributes, implying these occupational measures are quite stable over time.

Table 2.4 column 1 displays the fraction of individuals working in each category of occupations in the census sample. More than 20% of the sample work as executives and managers or work in professional specialty occupations. Management related workers, teachers and social workers, and sales workers also compose a sizable proportion.

Figure 2.1 depicts the average occupational income versus prestige for each ancestry on the basis of the income and prestige scores reported in Table 2.3. Venezuelans engage in the occupations with lowest occupational income and prestige on average; and Iranians work in most lucrative and most prestigious jobs. I also show the positions of the 13 occupation categories in the figure. Given the large fraction of individuals working in managerial and professional jobs which are linked with relative high income and high prestige, the origin averages appear to cluster in the right-upper corner. The cross-ancestry standard deviation is 4.0 in the average occupational income, accounting for 26% of the standard deviation in the income score across occupations; and 2.7 in the average occupational prestige, accounting for 23% of the cross-occupation standard deviation in the prestige score.

As showed in Table 2.4, the composition of individuals working in each occupation of the GSS sample and the CPS sample is fairly similar to that of the census sample.

2.4 Cultural Attitudes

2.4.1 Measurements of Attitudes

The cultural attitude measures are obtained from the World Values Survey (WVS), which aims at investigating values and cultural changes in societies all over the world. Five waves of surveys were conducted from 1981 - 2008 in 87 nations. These surveys ask about opinions on various subjects such as family, religion, and government. Although values and attitudes may evolve gradually over time, they are likely to contain a country-specific time invariant component.

Two survey questions have direct relevance to occupational choices. The first is "*Which would seem to you, personally, most important if you were looking for a job?*" The respondents are asked to pick one of five factors: (1) *A good income so that you do not have any worries about money*; (2) *A safe job with no risk of closing down or unemployment*; (3) *Working with people you like*; (4) *Doing an important job that gives you a feeling of accomplishment*; and (5) *Do something for the community.* The second question is "*What factors are important in a job?*" The respondents are given a list of factors, such as a good pay, low pressure, a job respected by people, good hours, an interesting job, a job that meets one's ability, etc. The respondents are supposed to choose all the factors that they feel are important.

I focus on the attitudes toward two attributes of occupations: pecuniary rewards and social prestige. I use the proportion of males who choose good income as most important from each country as the proxy for ancestral pecuniary demand; and use the proportion who mention that respect is important for each country as the proxy for ancestral prestige demand.

2.4.2 Correlates of Attitudes

An individual's view of occupational attributes in job selection is endogenous to his/her ideological and religious beliefs, educational level, labor market history and other demographic characteristics. At the same time, career related attitudes are also determined by a country's economic, political and institutional environment, past and present (Giavazzi et al., 2009). It is likely that the average attitudes toward income and prestige in an origin country represent more than the nation's cultural preferences. Some country-specific variation which is irrelevant to culture but affects the advantage and opportunity of native-born Americans through their effects on migration to the U.S. may also be captured by the attitude measures.

To explore the potential correlates of attitudes toward income and prestige, I examine males aged 20 - 60 surveyed in the WVS from countries identifiable in the 2000 census. The individual characteristics take into account respondents' age, educational attainment, marital status, number of children, religion and the wave of survey. The contemporary country characteristics, measuring a country's economy, industrial structure, politics and academic quality, include per capita GDP, percentage of labor force in agriculture, gross domestic savings rate, democracy status, state of war, occupancy by foreign states, and secondary school pupil-teacher ratio.[18] A country's economic and institutional factors influence the selection among the first-generation immigrants to the United States (Borjas, 1987; Betts and Lofstrom, 2000), and may thereby lead to different non-cultural endowment of the native-born American across ancestries. Hence it is essential to control for these origin characteristics in order to isolate the effects of cultural preferences in occupational choices from human capital transmission.

Table 2.5 presents the regression results. College graduates are used as the baseline. Whether an individual considers income as the most important factor when searching for jobs is significantly correlated with one's educational level and marital status. Both the less educated and the married show a stronger aspira-

[18]Details about the individual and country-related characteristics of the WVS sample are described in Appendix B.1.2.

tion for earnings. Religious individuals appear to value income less. Moreover, individual pecuniary demand depends heavily on a country's economic conditions. Individuals from a nation where resources are relatively scarce tend to desire money more, while a higher proportion of labor force in agriculture predicts a lower pecuniary demand. Politics also explain some variation: the democratic status of one's country is negatively correlated with his pecuniary demand.

College graduates show a greater desire for social prestige than individuals with less education, though the differences are not significant under all specifications. Religion appears to be a key channel for the values placed on social esteem to transmit. A religious person is five percentage points more likely to consider prestige important in an occupation. A country's wealth and industrial mix are also correlated significantly with the desire for prestige: higher per capita GDP predicts a stronger demand for social prestige; and a higher proportion of the labor force in agriculture is related to higher values placed on social prestige in occupations.

Noticeably, the aggregated country characteristics explain a sizable proportion of variation in both pecuniary and prestige demands. Hence, the attitude measures may reflect cross-origin discrepancies other than culture. However, it is more likely to be through the channel of cultural and ideological transmission if the attitudes in their ancestral countries have explanatory power for the behaviors of native-born Americans. The immigrants carry the social norms embodied in the attitudes toward occupational attributes when migrating and later transmit them to their descendents in the United States. The economic and political characteristics of origins have no direct impacts on native-born Americans, even though they might affect the selection among first-generation immigrants and thereby be correlated with the opportunity or advantage of native-born Americans through human capital transmission. To eliminate the possibility that it is the unobserved human capital that accounts for the correlation between the ancestral attitudes and the occupational choices of native-born males, I control for the economic and institutional factors of origin countries together with distance to the United States which is related to motivations or barriers to migration among the first-generation

immigrants (Lewer and Van den Berg, 2008) to more precisely isolate the cultural effects in the following analysis.[19]

In case the WVS sample composition differs across countries,[20] I adjust the proportion of males who regard pecuniary rewards or social prestige as (the most) important in occupational choices by their individual characteristics, including age, marital status, number of children, educational attainment and wave of survey,[21] as these factors manifest some correlation with attitudes toward income and prestige. I do not adjust for individuals' religious status as religions help develop the values and preferences, and could be regarded as part of culture. Table 2.6 presents the summary statistics on the adjusted proportions. On average, about 30% of males regard pecuniary earnings as the most important factor in an occupation; and 56% of males think it is important to have a respectable job.

Figure 2.2 plots the pecuniary demands versus the prestige demand using both the aggregated data and the residuals from regressing these aggregated data on country-specific characteristics in Table 2.5. The pattern of the aggregated data implies that a nation's demand for pecuniary rewards is not necessarily correlated with its demand for social prestige. When adjusted by the countries' contemporary economic, political, and educational conditions, the attitudes converge somewhat.

Figure 2.3 depicts the average occupational income score against pecuniary demand and the average occupational prestige score against prestige demand of native-born Americans by national origins. Both attitudes show positive correlation with the corresponding group mean occupational attributes. Specifically, the pecuniary demand explains about 11% of the cross-ancestry heterogeneity in occu-

[19]Distance to the U.S. is calculated as the number of air kilometers between a country's largest city and the nearest U.S. gateway (Los Angeles, Miami, or New York). Source: *www.timeanddate.com*

[20]Unfortunately, different waves of WVS surveyed different sets of countries, which makes it difficult to test time consistency in attitudes based on the survey data.

[21]I regress the variable of interest on age, educational attainment, marital status, number of children, wave of survey, and a full set of national origin dummies. The adjusted proportion for a certain national origin is the predicted probability that a single 40-year-old male in the fifth wave of the survey (2002 - 2005) from that nation who has a bachelor's degree but no children views pecuniary rewards or social prestige (the most) important. The predicted values are insensitive to whether interviewees' educational attainment, marital status and number of children which might be endogenous to attitudes toward work and occupations, are included in the control set or not.

pational income, and the prestige demand explains about 5% of the heterogeneity in occupational prestige.[22]

2.5 Empirical Results

2.5.1 Weights Placed on Occupational Attributes

I begin by investigating the role that occupational attributes play in occupational selection. Table 2.7 presents the estimated relative weights placed on occupational attributes. All the five attributes are normalized to have a mean 0 and standard deviation 1 across occupations.

The first two columns are estimated via a conditional logit model. Estimates under both specifications verify that individuals place a significant and positive value on social prestige whether other attributes are controlled for or not. Consistent with the findings by Boskin (1974), potential income is positively viewed, but training cost is negatively valued. The negative coefficient on work hours suggests that individuals tend to avoid jobs requiring long hours of working. Since the magnitudes of the estimates are not readily interpretable, I calculate the change in the predicted probability of selecting each job category, if, *ceteris paribus,* the normalized prestige score increases by 1 based on the estimates in column 2. The simulated data suggest that a one standard deviation increase in the prestige score leads the probability that a certain occupation category gets chosen to grow by 0.6 percentage points on average, representing an 8.6% change.

I also estimate the relative weights placed on occupational attributes using a nested logit model to address the suspect assumption of independence of irrelative alternatives (IIA) (McFadden, 1981; Hausman and McFadden, 1984). The 13 categories of occupations are divided into two groups: (1) managerial and professional jobs and (2) non-professional jobs as presented in Table 2.3. The former group is associated with higher income, better reputation, and more years of required trainings in general. Individual characteristics are assumed to affect the propensity that individuals sort into different groups of occupations. That is

[22]More details are discussed in Appendix B.1.3.

to say, these characteristics enter the regressions by interacting with the group dummy for managerial and professional jobs, having the non-professional group as baseline.

The results from the nested logit model are presented in columns 3 and 4. Despite different magnitudes, the estimates on all five job attributes have the same sign as those obtained from the conditional logit model, which suggests that violation of the IIA assumption is unlikely to be an important problem. The positive coefficient on occupational prestige score indicates that individuals value social status positively when selecting an occupation category from a nest of similar alternatives. A one standard deviation increase in the prestige score results in an average increase of 8.7 percentage points in the odds of choosing a certain occupation category, accounting for a 113% change.

2.5.2 The Role of Cultural Attitudes

This section explores the link between cultural attitudes and occupational selection in various specifications using the conditional logit model. The measures of cultural attitudes are introduced to the model by interacting them with corresponding occupational attributes. That is, I include the interaction between cultural pecuniary demand and income score as well as that between cultural prestige demand and prestige score. Both cultural attitudes are normalized to have a mean 0 and standard deviation 1 across ancestries.[23]

Table 2.8 displays the estimates using different model specifications. Column 1 includes only the five occupational measures and the interactions between cultural attitudes and corresponding occupational attributes. Individual characteristics, parental characteristics, proportion of parental generation working in each category of occupations and other origin characteristics are added to the regressions in columns 2 - 5. Individual, parental and origin characteristics are interacted with the five occupational attributes.

All the interactions between cultural attitudes and corresponding occupa-

[23]The normalized occupational attributes and cultural attitude measures are used in all regressions for ease of interpretation.

tional attributes demonstrate positive correlation with occupational choices. This implies that a higher demand for pecuniary rewards amplifies the odds of choosing a more lucrative job, and a higher demand for social prestige amplifies the odds of choosing a more esteemed job. The estimates on pecuniary demand are significant in columns 1 to 4. But when other origin characteristics are added to the control set in column 5, the estimate is no longer significant which may be a result of the high correlation between the demand for earnings and the economic environment in the ancestral countries. The estimates on prestige demand are significant under all specifications except column 4 when the measure of ethnic network is introduced. This might indicate that the ethnic network plays an important part in transmitting cultural values on social prestige.

As including the parental characteristics, ethnic network, and origin characteristics may underestimate the effects of culture, I consider the specification in column 2 where only individual characteristics are controlled for as the most preferred for the census sample. According to the estimates presented in column 2, if the normalized pecuniary demand changes from 0 to 1, the probability that one chooses professional specialty jobs, which are generally linked with high income and social status, grows by 1.3 percentage points on average, representing a 5.4% change; and the probability to work as a laborer, which is generally related with low income and social status, drops by 0.1 percentage points, representing a 8.2% change. If the normalized prestige demand moves from 0 to 1, the probability of choosing professional specialty jobs grows by 1.0 percentage points on average, representing a 4.0% change; and the probability to work as a laborer decreases by 0.1 percentage points, representing a 6.9% change.

To rule out the possibility that the estimates on the interactions between cultural attitudes and corresponding occupational attributes are biased by omitted variables, I test including the interactions of income score by prestige demand and prestige score by pecuniary demand in addition. The current estimates are not affected, while the estimates on the additional interactions are not statistically significant. I also estimate a parsimonious model specification that only takes potential income and social esteem of occupations into consideration. The current

estimates are insensitive to whether the other three occupational attributes are controlled for or not.

2.5.3 Simultaneous Choice of Education and Occupation

Training costs vary across occupations. Less educated people are more likely to work in low income jobs when the return to education is positive. Also, as the social standing that an occupation conveys somewhat depends on its earnings and required training, occupations with lower prestige are more likely to be taken up by the less educated. One concern is that discrepancy in educational attainment across ethnicities might be driven by cultural attitudes toward occupational attributes. If so, restricting the sample to the highly educated is problematic. To tackle potential sample selection biases, I implement the Heckman selection model (Heckman, 1979) in this section.

I begin by exploring the relationship between cultural attitudes toward occupational attributes and the propensity to complete college via a linear probability model. Observed individual characteristics and parental characteristics are controlled for.[24] I also control for the scholarly cultural values to disentangle the influence of cultural preferences toward education from those to income or prestige. The scholarly cultural values are proxied by ancestral countries' secondary pupil-teacher ratio conditional on per capita GDP.[25] When education is culturally favored, it is likely that individuals undertake higher education because they believe in the value of education per se rather than meet the training requirements of the occupations they pursue.

Table 2.9 reports the regression results on the sample of native-born males aged 35 - 54 with all levels of education from the 2000 census. Both the cultural

[24]In virtue of the computational advantage of linear models, I do not trim the sample for ancestries with more than 1,500 observations for regressions in this section. Also, I incorporate the analytical weights from the 2000 census in the linear regressions. I include age, disability, birth cohort, proportion of urban population in the residing PUMA, group mean levels of parental educational attainment, household income, and number of siblings. To more precisely eliminate the differed effects of local labor market, I replace the region of residence with the state of residence in the linear models.

[25]Given same level of per capita GDP, nations which value education higher devote more resources to schools and hereby lead to lower pupil-teacher ratios (Zhan, 2011).

demand for pecuniary reward and demand for social prestige show a significantly positive relationship to acquiring a bachelor's degree when educational values are not controlled for: a one standard deviation increase in the pecuniary demand is associated with an increase of 4.9 percentage points in the odds of getting a bachelor's degree; and a one standard deviation increase in the prestige demand is associated with an increase of 3.4 percentage points in the odds of getting a bachelor's degree. However, when the proxy for educational cultural value is introduced to the regression, neither the pecuniary demand nor the prestige demand shows any significant effect.

Since it is hard to apply the Heckman procedure to discrete choice models, I use a reduced form model predicting the characteristics of the chosen occupation. The main purpose is to verify the connection between the attribute of interest (i.e., potential income or social prestige) of the chosen occupation and the cultural attitude toward that attribute (i.e., pecuniary demand or prestige demand). I include the controls for individual characteristics and parental characteristics in the conditional logit model to separate the effects of opportunity or advantage. Moreover, the selection into the highly educated group is assumed to rely on the ancestral scholarly cultural values as well as one's individual and parental characteristics.[26]

Table 2.10 presents the estimation results. The dependent variable is occupational income for first three columns and is occupational prestige for the latter three. Columns 1, 2, 4, and 5 are estimated by the OLS and the other two are estimated via the Heckman procedure. These results verify the positive association between the income/prestige of the chosen occupation and the relevant cultural attitude. I control for other occupational attributes in columns 2 and 4 to make the reduced form model more comparable to the conditional logit model.[27] However, the estimates on the cultural attitudes are no longer significant when other attributes are included, presumably due to the high correlation among the occu-

[26]I include only secondary school pupil-teacher ratio but not per capita GDP which is highly correlated with pecuniary demand.

[27]When the dependent variable is potential income, other attributes include occupational prestige, training costs, work hours, and years of experience. When the dependent variable is social prestige, other attributes include potential income, training costs, work hours, and years of experience.

pational attributes. The results from the OLS and the Heckman selection model have very similar magnitude and statistical significance regarding both income and prestige. This may infer that the selection biases caused by sample restriction to the highly educated would not severely affect the estimated cultural effects in occupational selection using discrete choice models.

2.5.4 Robustness Check

I explore modifying the benchmark regressions in Table 2.8 in various ways to test whether the significant correlation between cultural attitudes and occupational choices is robust. First, to address the concern that the independence of irrelevant alternatives assumption might be violated, I implement the nested logit model which selectively relaxes this assumption. I assume that individual, parental, and other origin characteristics affect the propensity for individuals to sort into the nest of professional jobs or the nest of non-professional jobs. Cultural attitudes are assumed to affect individual's occupational choices within each nest. Second, to address the concern whether the results are driven by origins with a large number of observations or groups such as Canadians and Germans which have weaker ties to their ancestral country, I estimate the baseline specification in column 2 Table 2.8 by dropping ancestries one by one. Third, in case the previous occupational categorization is too aggregated to reflect difference across occupations or the diverse career patterns across ancestries, I also test expanding the set of occupations. All robustness checks produce reassuring results.[28]

2.6 Unobserved Human Capital

It is not uncommon that individuals take up similar occupations as their parents. One possible reason is that individuals are likely to acquire similar sets of knowledge and skills as their parents. Such occupation-specific human capital is not well reflected by the observed formal educational attainment, but may have

[28]More technical details are presented in Appendix B.2.

an unobserved component that depends on the human capital of an individual's parents.

Since the census does not contain information regarding interviewees' parents, I use the group mean levels to proxy for the parental background of the individuals in my sample. Though these proxies may well capture the variation in human capital and family features across ethnic groups, they may underestimate the actual parental socioeconomic status of the highly-educated sample in light of positive intergenerational human capital transmission.

This section employs an alternative dataset, the General Social Survey (GSS), to investigate the impact of cultural attitudes versus intergenerational human capital transmission on occupational choices. This dataset has more detailed documentation of family background of the respondents. I would ideally control for the same set of individual and parental characteristics in studying the cultural impacts. However, because the variables the GSS records are slightly different from those in the census, I make the following modifications: first, the ability to speak English is no longer in the control set; second, I add interactions between occupational attributes and indicators for birth cohort as the GSS dataset covers a much longer period than the 2000 census data;[29] third, I control for a measure of metropolitan size instead of the urban proportion of the population in the residential area;[30] fourth, I include both father's and mother's years of education, and household income when the respondent was 16;[31] last, with parents' occupations available, I control for the occupation of the respondents' father to better separate cultural transmission from the intergenerational transmission of occupation-specific human capital.[32]

[29]I adjust the categorization of birth cohorts given the longer birth period of the GSS sample. The sample is divided into 6 birth cohorts: 1920 - 29, 1930 - 39, 1940 - 49, 1950 - 59, 1960 - 69 and 1970 - 79.

[30]The metropolitan size is recorded in categories. I hereby include the interaction terms between a set of size dummies and occupational attributes.

[31]As household income is recorded in categories, I include the interaction terms between a set of income dummies and occupational attributes.

[32]I only control for father's occupation mainly because the majority of the GSS sample have the information concerning their mother's occupation missing. Besides, father's occupation may have a stronger impact on males' career choice than mother's due to fathers' role model figure and the gender difference in occupational selection.

Table 2.11 replicates the model specifications in Table 2.8 incorporating these modifications. Same as the previous results, the estimates on the interactions are all positive. The magnitudes of these estimates are generally greater than those obtained from the census sample. Their standard errors are also larger, probably because of the much smaller sample size. The coefficients on the prestige demand stay statistically significant under all specifications but those on the pecuniary demand do not.

Both parents' educational attainment, household income at an early age, and number of siblings are included in columns 3 - 5. A dummy variable indicating father's occupation is also added, and displays a significant positive correlation with the one's own occupation. According to the estimates in column 3, the change in the propensity to choose a professional specialty job resulting from a one standard deviation increase from the mean in the prestige demand is approximately the same in scope as the change resulting from a standard deviation increase from the mean in father's education, and 18% of the difference in the predicted odds between those with a father who also engages in a professional specialty occupation and those without. The effect of mother's education is much smaller. These numbers may imply that cultural values play an economically important role in occupational choices relative to intergenerational transmission of human capital. The effect of prestige demand remains significant when ethnic network and some other origin characteristics are added to the control set in columns 4 and 5.

In addition, I have tested replacing the actual parental and family characteristics with the cohort by ancestry group mean levels in the regressions in columns 3 - 5.[33] The estimates yielded when using the aggregated measures are very similar to those presented in Table 2.11.

[33]The cohort by ancestry group mean levels are calculated from the 1940 - 1990 census data. As before, three characteristics are examined: parental educational attainment, household income, and number of siblings. I use the cohort by ancestry aggregated values to replace individuals' actual father's and mother's education, household income at age of 16, and number of siblings.

2.7 Second-generation Immigrants

The previous sections rely on the assumption that cultural attitudes in the ancestral countries of native-born Americans have evolved slowly. Unfortunately, given the limitation of the WVS data which the occupation-related cultural attitude measures are attained from, the time consistence in these attitudes cannot be well verified. Accordingly, I study the second-generation immigrants in the CPS data. Compared to the census sample and the GSS sample, the period when the parents of the second generation migrated to the U.S. is more recent and has a much smaller window. Therefore, the relatively current measures of preferences toward income/social prestige from the WVS data may more precisely describe the cultural attitudes of second generation than individuals whose families have lived in the U.S. for several generations. Also, examining the second generation whose national origin is determined by their father's (or mother's if the father is native-born) birthplace addresses the potential problem related to using self-reported ancestry to assign national origin.

I make a few modifications to the model specifications that I run on the census data: first, I do not control for the English ability of the second generation as it is not available in the CPS; second, I add the interactions between occupational attributes and birth cohort dummies[34] into the control set due to the longer period covered by the pooled CPS dataset; third, instead of the measure for urbanization of specific residential locations, I use a binary indicator for living in an metropolitan.

The regression results are presented in Table 2.12. The estimates on cultural attitudes are all positive when involved in the regression by interacting with corresponding occupational attribute. In the first two columns where I do not control for characteristics other than occupational attributes and cultural attitudes or I control for only the individual characteristics, the cultural attitude toward income shows an economically and statistically significant effect on occupational choices. However, the coefficient on the prestige interaction term is smaller and

[34]The CPS sample is divided into five birth cohorts: 1930 - 39, 1940 - 49, 1950 - 59, 1960 - 69, and 1970 - 79.

insignificant. When the parental characteristics and the ethnic network are introduced to the regression, both the magnitude and significance level of the estimate on the pecuniary demand drop, while the estimated effect of the prestige demand increases and becomes more significant. The effects of both cultural attitudes are significant when the origin characteristics are controlled for in addition.

One possible culprit for this pattern is the self-selection among the first-generation immigrants. Because immigrants migrate for higher economic returns in the destination countries (Borjas, 1987; McKenzie and Rapoport, 2010), they are likely to value income more than average in their origin country and go for more profitable jobs. As a result of intergenerational transmission of human capital and preferences, the second generation may also appear to place a higher value on pecuniary reward. Therefore, the estimates from the specification in column 3 may have more credits than those in the first two columns, as the problem related to selection among immigrants is largely reduced when the parental socioeconomic characteristics are controlled for. Controlling for the ethnic network and origin characteristics which potentially influence migration further rules out the probability that it is the differed human capital and motivation across immigrant groups that account for the positive relations between cultural attitudes and occupational selection of the second generation.

Compared to the results from the census sample, the coefficients on pecuniary demand are slightly bigger than those estimated from the census data in the specifications without parental or origin characteristics. When controlling for parental and/or origin characteristics, the effect of the cultural pecuniary demand becomes very close in scope between the two samples, whereas the effect of attitude toward prestige appears to be larger among the second generation. Yet it is hard to conclude that the cultural effect is stronger among the second generation than the higher generations.

2.8 Ethnic Density

Ethnic communities are essential in transmitting and preserving a set of beliefs and values, independently of the human capital embodied in an individual's ethnic network (Bisin and Verdier, 2000b). On the one hand, it is possible that individuals who are closer related to their ancestral culture are more likely to cluster in neighborhoods with more people from the same ancestry. On the other hand, neighborhoods and communities may facilitate maintaining the ancestral culture by providing role models and diffusing specific beliefs how individuals should act (Fernandez and Fogli, 2009). Individuals living in ethnically dense areas face higher costs for deviating from ethnic norms.

Accordingly, this section explores the role of neighborhood ethnic composition in cultural transmission. The hypothesis is that the higher the proportion of an ethnic group in a neighborhood, the larger the effect of the cultural attitudes on occupational selection. This effect is different from the ethnic externality proposed by Borjas (1995b) that verifies the connection between the skills of parental generation within an ethnic group and one's own accumulation of human capital. Rather, the neighborhood effect examined here is that the greater presence of an ethnic group in a community assists cultural transmission and preservation.

Following Borjas (1995b), I estimate the ethnic density by calculating the proportion of the respondents' neighborhood, including both immigrants and native-born Americans that are of the same ancestry for respondents in the 2000 census. The smallest geographic unit recorded in the IPUMS version of census data is the Public Use Microdata Area (PUMA). A PUMA consists of 100,000+ residents, which to a more or less degree characterizes the neighborhood that respondents frequently interact with. Table 2.1 presents the mean ethnic density by country of origin. The summary statistics suggest that the proportion of individuals from the same ancestry varies dramatically across origins. Mexicans, Germans, and Japanese live in ethnically dense neighborhoods (respectively, 37%, 32% and 12%), whereas Taiwanese, Estonians, and Belarusians live in neighborhoods with low ethnic density (respectively, 0.03%, 0.05% and 0.07%). It is worth mentioning that the ethnic density depends both on the extent to which individuals of a certain

ethnic group cluster into the same neighborhood and on the size of the population of the ethnic group. The correlation between the number of observations of each ancestry and the mean ethnic density is around 0.6, showing that both elements may play a part. Nevertheless, it does not matter which variable is the source of ethnic density from the perspective of cultural transmission (Fernandez and Fogli, 2009).

To investigate the effect of neighborhood ethnic composition, I rank the ethnic density "low", "medium", "high" by the lower and upper quartiles of its distribution and divide the sample into three groups based on the ranks.[35] To avoid comparison across ancestries, I constrain the sample to countries of origin which have observations in all three groups, and there are 28 origins involved. Table 2.13 presents the summary statistics on individuals in the three groups. In spite of rather unbalanced group size, there are no significant differences in the demographic characteristics. Yet some geographic disparities are displayed across groups. The proportion of parental generation working in the same occupation is higher for those living in ethnically denser neighborhood, which may suggest the positive association between ethnic density and the influence of ethnic network in occupational choice.

Table 2.14 displays the regression results using the baseline specification in column 2 in Table 2.8 on all individuals from the 28 ancestries and the three groups, respectively. For both pecuniary demand and prestige demand, the magnitude of the estimates on the interaction terms is larger for individuals residing in ethnically denser neighborhoods. The cultural influences appear negative and insignificant for the group with low ethnic density. The effects of cultural attitudes among the high ethnic density group are around three times as large as the effects among the medium ethnic density group.

In summary, the effect of cultural attitudes on native-born males' occupa-

[35] An alternative way to investigate the neighborhood effects is to include the ethnic density in the regression, fully exploiting the fact that it is a continuous variable. However, variables which do not vary across occupations can only be controlled for by interacting with occupational attributes in a conditional logit model. Therefore, the ethnic density should interact with occupational attributes, the income-culture interaction and the prestige-culture interaction in the regression. The three-way interaction terms could be rather difficult to to interpret.

tional selection is larger for individuals living in neighborhoods with higher ethnic density. This may indicate that the extent of residential segregation is an important channel in transmitting and preserving cultural preferences and values. This also suggests that cultural preferences, rather than some unobserved origin-specific effects, are more likely to account for the correlation between attitudes toward occupational attributes and job selection.

2.9 Conclusion and Discussion

This paper sheds light on the factors important to individuals' occupational choices, namely, pecuniary rewards and social prestige. The paper further investigates the relationship between the cultural attitudes toward these factors and occupational selection of highly educated native-born American males.

Analysis using discrete choice models verifies that individuals care not only about potential earnings but also about the social esteem attached to an occupation. Both attributes are positively valued in occupational selection, suggesting individuals pursue more lucrative and prestigious jobs. These findings support the arguments of Dolton et al. (1989), Humlum et al. (Forthcoming), and Corneo and Jeanne (2010). Compared to the earlier empirical studies on occupational choices and career oriented college major choices that elicit the importance of non-economic factors, this paper examines a much larger and more diverse cross-section sample and a much wider range of occupations. The paper provides additional empirical evidence to the theoretical literature which emphasizes the role of social prestige (Fershtman and Weiss, 1993; Corneo and Jeanne, 2010).

This paper extends the recently emerging empirical literature of the impact of culture on various economic outcomes to individual occupational choices. The paper analyzes the part of cultural preferences in occupational selection by relating how the native-born males value income and esteem in occupations to the cultural attitudes toward pecuniary rewards and social prestige in their countries of origin. The cultural attitudes are measured by the proportion of males who consider income as the most important and the proportion who view respect as an

important factor in occupations in the ancestral country, respectively. Estimates from the conditional logit model indicate that cultural attitudes show statistical and economic importance in occupational choices. Specifically, a stronger cultural demand for pecuniary rewards encourages the native-born individuals to select occupations with better earnings; and a stronger demand for social prestige leads the individuals to go for occupations of higher social status. The results are robust to alternative estimation procedures, dataset, sample criteria, and occupational categorization.

The finding that cultural attitudes have a stronger impact on occupational selection among individuals who reside in ethnically denser neighborhoods provides evidence that it is culture rather than human capital transmission or some other omitted non-cultural origin-specific characteristics that are responsible for the positive correlation between cultural attitudes and occupational selection patterns.

However, when considering the above results, two caveats may be in order. First, this paper only takes into account one important non-economic factor of occupations, the social prestige. Admittedly, there are many more to consider about. However, most non-economic aspects, such as interests match or sense of achievement which play an essential part in occupational selection are rather hard to measure quantitatively. Second, individuals may face different choice set for various reasons. To mitigate this problem, I have restricted the sample to the highly educated, aggregated detailed occupations to broad categories so as to balance the choice sets for different individual qualifications and areas of residence, and controlled for region fixed effects and location characteristics that may affect local labor market. Concerning the simultaneity of supply and demand side of labor force in determining the composition of occupations, it is less of a problem in this case as my sample only makes up for less than 10% of the prime-age native-born male population. Nevertheless, I observe very few individual characteristics and there might be much heterogeneity in ability even among college graduates. The concern that unobserved qualification or ability is related to barriers to enter for certain occupations can hardly be addressed based on the current datasets employed.

2.10 Tables and Figures

Table 2.1: Summary Statistics by Origin

Origin	Obs.	Ethnic Den.	Origin	Obs.	Ethnic Den.
Albania†	43	.249	Macedonia	29	.145
Argentina†	18	.845	Mexico⋆	1,472	37.2
Armenia†	405	.724	Morocco	10	.079
Belarus	22	.071	Nicaragua†	25	1.83
Brazil†	14	.783	Norway⋆†	1,510	8.48
Bulgaria	14	.079	Peru	24	.840
Canada⋆	1,480	6.92	Philippines†	387	8.14
Chile†	15	.241	Poland⋆	1,473	8.27
China†	1,396	6.36	Puerto Rico†	716	8.06
Colombia†	42	4.79	Romania†	266	.417
Czech†	1,163	1.61	Russia⋆†	1,464	4.25
Dominican Rep.†	30	5.28	Serbia†	85	.292
Estonia	30	.045	Slovakia†	877	2.19
Egypt	16	.281	Slovenia†	262	1.59
Finland†	618	3.50	Spain†	107	.723
Germany⋆	1,529	31.9	Sweden⋆†	1,536	3.28
Hungary†	1,236	1.34	Switzerland†	819	.785
India	83	2.11	Taiwan	2	.026
Iran†	42	2.25	Turkey	57	.274
Japan⋆†	1,510	11.8	Ukraine†	1,042	.915
Latvia	135	.151	Venezuela†	14	1.02
Lithuania†	951	.742	Vietnam	7	2.28

NOTE: Number of observations and mean ethnic density of each ancestry are reported. ⋆ denotes ancestries originally involve more than 1,500 observations and have been trimmed to about 1,500 observations. Ethnic densities are reported in percentage points. The reported means are weighted by the number of observations from each ancestry. † denotes origins involved in the empirical analysis of neighborhood effects.

Table 2.2: Summary Statistics of Individual and Parental Characteristics

Variables	Census	GSS	CPS
Age	44.7 (5.65)	42.2 (8.07)	44.6 (5.94)
Disability (= 1)	.053 (.224)	.005 (.073)	.003 (.052)
Speaking English (= 1)	.995 (.070)	_	_
Years of Schooling	17.1 (1.59)	17.2 (1.44)	17.2 (1.67)
Northeast Region (= 1)	.203 (.403)	.236 (.425)	.335 (.472)
Midwest Region (= 1)	.348 (.477)	.234 (.423)	.175 (.380)
South Region (= 1)	.214 (.410)	.209 (.407)	.185 (.389)
West Region (= 1)	.235 (.424)	.321 (.467)	.305 (.460)
% Urban Population	84.3 (21.8)	_	_
Metropolitan Size	_	4.20 (2.45)	_
Metropolitan (=1)	_	_	.813 (.390)
Parental Education	13.2 (1.35)	_	12.8 (1.88)
Father's Education	_	12.7 (4.05)	_
Mother's Education	_	12.3 (2.98)	_
Household Income	70.3 (6.70)	_	64.2 (8.54)
Household Income at 16	_	3.12 (.844)	_
No. of Siblings	3.69 (.425)	2.63 (2.18)	3.21 (.570)
Same Occupation as Father	_	.184 (.388)	_
Ethnic Network (%)	7.62 (4.89)	7.25 (4.81)	8.06 (5.84)
No. of Obs.	22,976	566	7,515
No. of Origins	44	18	39

NOTE: Reported are the means of variables with standard deviations in parentheses. In the GSS data, years of education for both the respondents and their parents are top-coded 20. Household income of the respondent at the age of 16 is recorded qualitatively: 1 Far below average; 2 Below average; 3 Average; 4 Above average; 5 Far above average. Metropolitan Size is recorded as: 1 Large city; 2 Median city; 3 Suburb, large city; 4 Suburb, median city; 5 Unincorporated area, large city; 6 Unincorporated area, median city; 7 Small city; 8 Town; 9 Small Area; 10 Open County.

Table 2.3: Occupational Attributes Summary

PANEL A: Summary on Occupational Attributes					
Occupation	Income	Prestige	Educ.	Hours	Exper.
Managerial and Professional					
Executives and Managers	82.4	56.0	16.2	44.2	17.0
Management Related	61.0	57.6	16.0	40.0	12.6
Professional Specialty	91.1	72.0	17.8	42.1	13.5
Teachers/Social Workers	47.5	62.2	16.2	40.3	16.8
Writers/Artists/Athletes	43.1	52.7	16.0	43.1	13.1
Technicians	54.5	55.5	16.1	39.9	10.9
Non-professional					
Sales Workers	58.6	40.9	16.0	41.4	14.2
Clerical	34.6	41.5	16.0	39.4	12.8
Service Workers	32.3	37.4	16.1	37.8	11.9
Farmers	34.6	35.6	16.0	45.5	15.8
Craftsmen	56.9	44.2	16.0	41.4	15.5
Operators/Fabricator	38.0	33.1	16.0	40.2	14.4
Laborers	27.7	27.8	16.0	40.0	12.1
Mean	50.9	47.4	16.2	40.1	13.9
Std. Dev.	19.3	12.9	.487	2.06	1.92

PANEL B: Correlation among Occupational Attributes

	Income	Prestige	Educ.	Hours	Exper.
Income	1.00				
Prestige	.782	1.00			
Education	.671	.634	1.00		
Work Hours	.417	.104	.202	1.00	
Experience	.281	.144	.011	.674	1.00

NOTE: The means of the occupational attributes are weighted by the number of college graduates working in each detailed job.

Table 2.4: Proportion of Individuals Working in Each Occupation

	Percent		
Occupation	Census	GSS	CPS
Executives and Managers	20.6	21.6	22.4
Management Related	8.63	5.30	7.23
Professional Specialty	24.1	31.3	26.9
Teachers/Social Workers	9.66	11.5	8.6
Writers/Artists/Athletes	2.94	3.00	3.19
Technicians	5.27	4.95	3.91
Sales Workers	11.3	9.89	12.4
Clerical	5.57	3.71	4.14
Service Workers	3.83	1.77	3.47
Farmers	1.46	0.53	0.71
Craftsmen	4.25	4.59	4.07
Operators/Fabricator	1.85	1.59	2.28
Laborers	0.57	0.35	0.68

Table 2.5: Correlates of Cultural Attitudes

	Pecuniary Demand			Prestige Demand		
	(1)	(2)	(3)	(4)	(5)	(6)
Age	-.002***	-.001	-.001***	-.002***	.000	.000
	(.001)	(.000)	(.000)	(.001)	(.001)	(.001)
H.S. Dropout (= 1)	.078***	.078***	.085***	.020	-.000	-.019
	(.017)	(.014)	(.012)	(.035)	(.029)	(.029)
H.S. Grad (= 1)	.075***	.069***	.058***	-.034*	-.012	-.028
	(.010)	(.010)	(.009)	(.020)	(.021)	(.018)
Some College (= 1)	-.002	-.001	.010	-.013	-.023*	-.018
	(.015)	(.013)	(.013)	(.018)	(.013)	(.013)
Married (= 1)	.037***	.041***	.034***	.014	-.001	-.009
	(.011)	(.009)	(.010)	(.020)	(.017)	(.016)
No. of Children	-.001	-.006*	-.002	.020***	.006	.006
	(.004)	(.003)	(.002)	(.004)	(.004)	(.004)
Religious (= 1)	-.009	-.045***	-.030**	.077***	.048**	.049***
	(.015)	(.013)	(.013)	(.023)	(.020)	(.018)
Per Capita GDP/1000		-.020***	-.015***		-.009*	-.015***
		(.004)	(.003)		(.006)	(.005)
% Labor Force in Agri.		-.383***	-.336***		.392**	.619***
		(.103)	(.111)		(.168)	(.221)
Savings Rate		-.006	-.210		-.491*	-.405
		(.176)	(.019)		(.275)	(.317)
Democracy			-.164**			.039
			(.063)			(.086)
State of War			-.276			.462
			(.270)			(.587)
Foreign State Occupancy			.078			.002
			(.090)			(.128)
Pupil-teacher Ratio			-.000			-.004
			(.002)			(.003)
No. of Countries	44	41	39	44	41	39
No. of Obs.	42,275	39,113	37,084	35,419	33,206	30,490
R-square	.007	.041	.049	.036	.102	.089

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. The dependent variable is a binary indicator for regarding pecuniary rewards as the most important in an occupation for columns 1 - 3, and a binary indicator for regarding social prestige as important for columns 4 - 6. Robust standard errors in parentheses account for clustering at country level. All specifications include a constant.

Table 2.6: Summary Statistics of Cultural Attitudes

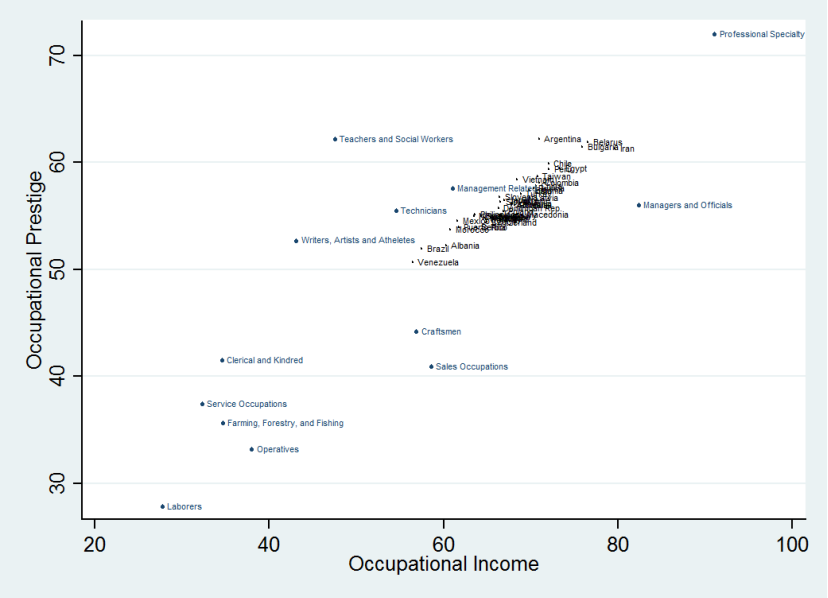
Cultural Attitudes	Origin	Mean	Std. Dev.	Min	Max
Pecuniary Demand	44	.315	.143	.094	.581
Prestige Demand	44	.542	.195	.187	.955

NOTE: The cultural attitudes are adjusted by age, marital status, number of children, educational attainment, and wave of survey.

Table 2.7: Valuation of Occupational Attributes

	Occupational Choice			
	Cond. Logit		Nested Logit	
	(1)	(2)	(3)	(4)
Income Score (IS)	.628***	.871***	.421***	1.01***
	(.040)	(.054)	(.089)	(.141)
Prestige Score (PS)	.131***	.089***	.143***	1.01***
	(.033)	(.023)	(.031)	(.206)
Education Required		-.065***		-.449***
		(.012)		(.085)
Hours of Working		-.336***		-.327***
		(.057)		(.087)
Years of Experience		.257***		.205***
		(.037)		(.048)
Dissimilarity Parameter				
Managerial and Professional			.746	.945
			(.122)	(.126)
Non-professional			.520	1.58
			(.095)	(.269)
No. of Origins	44	44	44	44
Log-likelihood/1000	-51.9	-51.5	-51.8	-51.2

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model. The dependent variable is an indicator for choice among the 13 occupation categories. Robust standard errors in parentheses account for clustering at origin level.



NOTE: Averages are from the untrimmed sample, adjusted by individual characteristics.

Figure 2.1: Average Occupational Prestige v.s Income

Table 2.8: Cultural Attitudes and Occupational Choices

	Occupational Choice				
	(1)	(2)	(3)	(4)	(5)
Income Score (IS)	.879*** (.048)	.246 (.202)	-1.07* (.587)	-1.68** (.705)	-1.44* (.740)
Prestige Score (PS)	.116*** (.027)	.097 (.178)	.459 (.597)	2.27*** (.789)	2.31*** (.751)
Education Required	-.067*** (.012)	.051 (.100)	.135 (.381)	-.447 (.372)	-.813*** (.433)
Hours of Working	-.367*** (.057)	.260 (.182)	-.881 (.824)	.480 (1.07)	.619 (1.24)
Years of Experience	.257*** (.037)	-.131 (.134)	.565 (.489)	.104 (.556)	-.117 (.807)
IS × Pecuniary Demand	.044*** (.016)	.042*** (.016)	.032*** (.010)	.033*** (.010)	.021 (.022)
PS × Prestige Demand	.042** (.020)	.032* (.018)	.036** (.016)	.022 (.014)	.050*** (.016)
Ethnic Network				3.56*** (.889)	3.87*** (.868)
Individual Char.	No	Yes	Yes	Yes	Yes
Parental Char	No	No	Yes	Yes	Yes
Origin Char.	No	No	No	No	Yes
No. of Origins	44	44	44	44	39
Log-likelihood/1000	-51.4	-51.0	-50.8	-50.7	-46.7
Increase from 0 to 1	Professional			Laborers	
Pecuniary Demand	1.30 [5.35%]			-.120 [8.16%]	
Prestige Demand	1.00 [4.02%]			-.098 [6.87%]	

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model. The dependent variable is an indicator for choice among the 13 occupation categories. Robust standard errors in parentheses account for clustering at origin level. Individual, parental, and origin characteristics are interacted with occupational attributes. The changes in odds of choosing certain occupation are calculated from estimates in column 2 and reported in percentage points, with percentage changes reported in brackets.

Table 2.9: Cultural Attitudes and Educational Attainment

	Bachelor Degree or Above				
	(1)	(2)	(3)	(4)	(5)
Pecuniary Demand	.049*** (.013)		.039 (.026)		
Prestige Demand		.034** (.016)		.003 (.025)	
Pupil-teacher Ratio			-.006*** (.002)	-.007** (.003)	-.007** (.003)
Per Capita GDP/1000			-.001 (.002)	-.003 (.002)	-.003** (.001)
No. of Origins					39
No. of Obs.					265,392
R-square	.085	.083	.086	.085	.085

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated OLS and weighted by the census person weight. The dependent variable is an individual's attainment of a bachelor's degree. Robust standard errors in parentheses account for clustering at origin level. All specifications include age, disability, birth cohort, state of residence, percent urban population of residential location, parental education, household income, no. of siblings, and a constant.

Table 2.10: Cultural Attitudes on Occupational Choices: Reduced Form Model

	Income Score			Prestige Score		
	(1)	(2)	(3)	(4)	(5)	(6)
Pecuniary Demand	.023***	.002	.021**			
	(.008)	(.002)	(.009)			
Prestige Demand				.034***	-.003	.034***
				(.011)	(.004)	(.011)
Other Occupational Char.	No	Yes	No	No	Yes	No
Selection						
Pupil-teacher Ratio			-.024*			-.025*
			(.013)			(.013)
No. of Origins						39
No. of Obs.						80,222
No. of Uncensored Obs.						265,392
R-square	.017	.898		.012	.791	

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. The dependent variable is occupational income score in columns 1 - 3, and occupational prestige score in columns 4 - 6. Columns 1 - 2, 4 - 5 are estimated by OLS, and columns 3 and 6 are estimated by MLE using the Heckman selection model. Regressions are weighted by the census person weight. Robust standard errors in parentheses account for clustering at origin level. All specifications include individual characteristics, parental characteristics, and a constant.

NOTE: The upper figure depicts the original demands and the lower depicts the residuals.

Figure 2.2: Pecuniary Demand v.s. Prestige Demand

Table 2.11: Cultural Attitudes and Occupational Choices: the GSS Data

	Occupational Choice				
	(1)	(2)	(3)	(4)	(5)
Income Score (IS)	1.02***	-.277	.494	.447	-6.39
	(.089)	(1.18)	(1.50)	(1.51)	(6.65)
Prestige Score (PS)	.333***	3.85***	4.05***	4.18***	1.50
	(.104)	(.794)	(1.11)	(1.13)	(3.13)
Education Required	-.004	-1.06**	-1.54**	-1.56***	1.92
	(.039)	(.444)	(.475)	(.466)	(1.63)
Hours of Working	-.505***	-.112	-.860	-.867	.783
	(.064)	(1.21)	(1.36)	(1.35)	(6.87)
Years of Experience	.447***	.624	.877	.858	1.86
	(.068)	(.771)	(.841)	(.830)	(2.83)
IS × Pecuniary Demand	.062	.052	.040	.033	.268**
	(.068)	(.064)	(.064)	(.056)	(.116)
PS × Prestige Demand	.109***	.099**	.104**	.106**	.424***
	(.053)	(.047)	(.045)	(.043)	(.124)
Father's Occupation			.555***	.549***	.567***
			(.078)	(.078)	(.090)
Ethnic Network				1.09	-.420
				(1.69)	(1.97)
Individual Char.	No	Yes	Yes	Yes	Yes
Parental Char.	No	No	Yes	Yes	Yes
Origin Char.	No	No	No	No	Yes
No. of Origins	18	18	18	18	16
Log-likelihood/1000	-1.08	-1.02	-.097	-.097	-.093
Increase from 0 to 1	Professional			Laborers	
Pecuniary Demand	1.69 [5.39%]			-.095 [11.2%]	
Prestige Demand	3.27 [9.59%]			-.157 [21.9%]	

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model. The dependent variable is an indicator for choice among the 13 occupation categories. Robust standard errors in parentheses account for clustering at origin level. Individual, parental, and origin characteristics are interacted with occupational attributes. The changes in odds of choosing certain occupation are calculated from estimates in column 2 and reported in percentage points, with percentage changes reported in brackets.

Table 2.12: Cultural Attitudes and Occupational Choices: Second Generation

	Occupational Choice				
	(1)	(2)	(3)	(4)	(5)
Income Score (IS)	1.19***	1.96***	2.30*	2.19	2.93
	(.043)	(.587)	(1.32)	(1.37)	(2.04)
Prestige Score (PS)	-.105***	-.168	-.416	-.215	.561
	(.036)	(.467)	(.797)	(.979)	(1.12)
Education Required	-.019	-.096	-.213	-.196	-.473
	(.014)	(.166)	(.535)	(.519)	(.612)
Hours of Working	-.591***	-1.43***	-2.67**	-2.55**	-3.10*
	(.054)	(.503)	(1.23)	(1.29)	(1.90)
Years of Experience	.380***	.158	.628	.585	.801
	(.053)	(.285)	(.713)	(.725)	(1.11)
IS × Pecuniary Demand	.056**	.050*	.033*	.032	.087**
	(.029)	(.029)	(.020)	(.020)	(.043)
PS × Prestige Demand	.022	.023	.059**	.055**	.092**
	(.035)	(.035)	(.024)	(.026)	(.041)
Ethnic Network				.433	.433
				(.820)	(.820)
Individual Char.	No	Yes	Yes	Yes	Yes
Parental Char.	No	No	Yes	Yes	Yes
Origin Char.	No	No	No	No	Yes
No. of Origins	39	39	39	39	35
Log-likelihood/1000	-16.2	-16.1	-1.60	-1.60	-1.47
Increase from 0 to 1	Professional			Laborers	
Pecuniary Demand	1.60 [5.78%]			-.127 [10.2%]	
Prestige Demand	.752 [2.74%]			-.063 [4.96%]	

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model. The dependent variable is an indicator for choice among the 13 occupation categories. Robust standard errors in parentheses account for clustering at origin level. Individual, parental, and origin characteristics are interacted with occupational attributes. The changes in odds of choosing certain occupation are calculated from estimates in column 2 and reported in percentage points, with percentage changes reported in brackets.

Table 2.13: Summary Statistics on Different Ethnic Density Groups

	Ethnic Density		
	Low	Medium	High
Age	45.4 (5.71)	45.0 (5.65)	45.0 (5.63)
Disability (= 1)	.049 (.216)	.056 (.230)	.051 (.219)
Speaking English (= 1)	1 (0)	.995 (.071)	.996 (.064)
Years of Schooling	17.3 (1.60)	17.3 (1.64)	17.1 (1.60)
Northeast Region (= 1)	.167 (.374)	.234 (.423)	.237 (.426)
Midwest Region (= 1)	.192 (.394)	.211 (.408)	.251 (.433)
South Region (= 1)	.355 (.479)	.279 (.448)	.124 (.329)
West Region (= 1)	.286 (.452)	.277 (.447)	.387 (.487)
% Urban Population	78.7 (24.2)	84.3 (21.9)	86.1 (21.3)
Parental Education	13.6 (.658)	13.5 (.750)	13.5 (.926)
Household Income	72.2 (5.64)	71.8 (5.52)	71.7 (6.46)
No. of Siblings	3.43 (.321)	3.54 (.284)	3.64 (.310)
Ethnic Network (%)	7.62 (4.71)	7.47 (4.69)	8.08 (4.88)
Ethnic Density (%)	.056 (.020)	.454 (.219)	6.74 (9.15)
No. of Obs.	448	6,004	10,141
No. of Origins	28	28	28

NOTE: The mean of each variable is reported, with the standard deviation in parentheses.

Table 2.14: Cultural Attitudes and Occupational Choices: Ethnic Density

	Ethnic Density			
	All	Low	Medium	High
Income Score (IS)	.353*	1.00	.205	.363
	(.187)	(1.56)	(.383)	(.247)
Prestige Score (PS)	-.042	-1.77*	.190	-.095
	(.232)	(.957)	(.397)	(.295)
Education Required	.007	.459	-.140	.061
	(.120)	(.695)	(.131)	(.152)
Hours of Working	.289	-.193	.550	.170
	(.236)	(.962)	(.373)	(.258)
Years of Experience	-.235	-.036	-.454	-.099
	(.185)	(.637)	(.305)	(.186)
IS × Pecuniary Demand	.038**	-.017	.022**	.054*
	(.016)	(.032)	(.011)	(.032)
PS × Prestige Demand	.051**	-.002	.019	.057*
	(.022)	(.052)	(.023)	(.034)
No. of Origins	28	28	28	28
Log-likelihood/1000	-36.6	-.957	-13.2	-22.4

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model. The dependent variable is an indicator for choice among the 13 occupation categories. Robust standard errors in parentheses account for clustering at origin level. Individual characteristics enter the regressions by interacting with occupational attributes.

NOTE: OLS regression line slope is 7.4 in the upper figure; and is 2.1 in the lower figure.

Figure 2.3: Cultural Attitudes v.s. Occupational Income and Prestige

Chapter 3

School and Neighborhood: Residential Location Choice of Immigrant Parents in the Los Angeles Metropolitan Area

Abstract

This paper studies how immigrant parents value education for their children in the United States. Parent valuation of education is examined through the differential effects of school quality on the residential location choices of households with and without children. The analysis relies on data from the 2000 Census and focuses on the Los Angeles Metropolitan Area. The results suggest that immigrant parents place a positive weight on school quality when choosing residences, with immigrants in the lowest income quintile valuing schools significantly higher than their native counterparts. The paper further explores variation across immigrants to get at the potential economic mechanisms for differential valuation of school quality. Differential selective migration and potential returns to education for the children of immigrants may explain variation in the emphasis immigrant parents place on school quality in residential location choices.

3.1 Introduction

Economic migrants are individuals who have emigrated from one region to another primarily because of their own economic opportunities. One of the standard propositions in the migration literature is that economic migrants are favorably self-selected for labor market success (Chiswick, 1978; Borjas, 1987; Chiswick, 2000).

However, besides pursuing higher income themselves, some economic migrants may also migrate for better opportunities of their offspring. When examining the labor market performance of second-generation immigrants[1], earlier literature finds that the second generation experiences high educational attainment and labor market achievement in the receiving economies whereas substantial heterogeneity exists by parental region of origin (Chiswick, 1988; Boyd and Grieco, 1998; Chiswick and DebBurman, 2004). Most studies link education and earning advantages as well as cross-origin discrepancies among the second generation to intergenerational transmission of human capital (Card et al., 2000; Bauer and Riphahn, 2007). Very few papers look at the human capital investment by immigrant parents for their children. If immigrants migrate partly for the economic well-being of their decedents, they might emphasize children's education more and be more willing to invest in school than the stayers if resources allow.

Correspondingly, this paper investigates how immigrants value education for their children and the economic mechanism for differential evaluation of school. The value placed on education is assessed through households' residential location choices. Parents have long exercised choice of their children's schools through residential location choices in what is often referred to as Tiebout sorting.[2] About half of the parents in the 1993 National Household Education Survey reported that the schools their children would attend influenced their decision of where to live (McArthur et al., 1995). The close link between school quality and residential

[1] A second-generation immigrant is someone who was born and raised in the destination but either one or both parents were foreign born.

[2] Tiebout (1956) suggests that competition among local jurisdictions would lead to the efficient provision of a series of local public goods, and individuals reveal their preferences by voting with their feet.

location has been verified by a number of studies (Barrow, 2002; Clapp et al., 2008; Hasting and Weinstein, 2008).

This paper explores where immigrants choose to live within the Los Angeles Metropolitan Area and how location characteristics, including school quality, neighborhood sociodemographics, house features, and other local amenities affect their decisions. The analysis compares immigrant choices to those of native-born Americans, and also examines decisions cross immigrants by parent characteristics. The main dataset employed is the 2000 Census. The 1999 Academic Performance Index (API)[3] is used to measure public school quality.

Residential location choice is modeled as a conditional logit model, which enables the researcher to examine immigrant household preferences over a broad range of housing and neighborhood characteristics and how these preferences vary by household characteristics. Since the unobserved characteristics of jurisdictions may be correlated with local school quality, I follow the identification strategy of Barrow (2002) and compare the role of public schools in the location choices of households with and without children, reasoning that unobservable non-school attributes affect both types similarly, while households with children care more about public schools. Specifically, an interaction term between the API and an indicator for having a child under 18 years of age is included in the model to capture the differential effects of school quality on the residential location choices of the two types of households. Moreover, since immigrants and natives may have distinct views on non-school attributes, I contrast the parent-non-parent difference among the two groups to infer the relative value placed on education by immigrants and natives.

Regression results suggest that school quality is positively and significantly related to location choices of immigrant households with children. The estimated effect of school quality on residential locations increases with household income and householder's education, and it also varies by race. These results are robust to addressing the omission of private school choices, differential preferences toward non-school amenities, unobserved constraints on choice sets, and hetero-

[3]API scores are produced by the California Department of Education to evaluate school accountability and the API Reports are publicly available to parents and guardians.

geneity in mobility. Relative to their native counterparts, the weight allocated to school quality by immigrant parents is in general of similar magnitude. Yet low-income immigrant households value school significantly more than low-income native households.

Furthermore, to understand the underlying mechanisms that drive any differential emphasis on school quality, I compare the behaviors of immigrant parents. First, the number of children seems to be positively associated with the weight assigned to school quality by immigrant parents, yet the positive effect is not evident for all subgroups. Second, more favorable self-selection among immigrants by origin could be another source of heterogeneity in weights. I employ five measures for selective migration: distance from country of origin to the U.S., whether English is an official language in home country, fraction of refugees by origin, origin country income inequality, and origin per capita GDP. Motivation appears to play a positive role in how immigrant parents value schools. That is, immigrants who have traveled longer distances from non-English-speaking countries tend to value education more for their offspring. Economic immigrants show a stronger aspiration for better schools for their children than refugees. Last but not least, potential returns to education may also explain the value immigrant parents place on school quality. When allowing the weight assigned to school quality to vary by country of origin, the origin-specific returns to education in the U.S. show a positive relationship with the probability that immigrant parents select areas with better public schools. The effect of returns to education is the most significant among Hispanic immigrants.

The remainder of the chapter is organized as follows: section 3.2 presents the empirical model and the identification strategy; section 3.3 describes the data used to estimate the model; section 3.4 examines the weight placed on school quality by immigrants; section 3.5 compares immigrants and natives; section 3.6 further explores the economic mechanism for immigrants to value school for their children; and section 3.7 concludes the paper and discusses the policy implications.

3.2 A Model of Residential Choice

3.2.1 Conditional Logit Model

The residential location decision of each household is modeled as a discrete choice of a single residence. The conceptual experiment motivating this analysis considers a household moving into the Los Angeles Metropolitan Area and deciding where to live. The household may compare house features, local amenities, and community demographics, and select the location that best matches its ideal.

Because households who have lived at the same location for years may have a disincentive to move and their residential location may not well reflect their current demand for public education and other local amenities, I examine the location choices of households that recently moved from outside the Los Angeles Metropolitan Area to the current location. Given the high cost of moving, movers from out of the area are more likely to undergo some exogenous move-inducing shocks, such as job relocation, and re-sort when they move to the area.

More formally, I assess households' residential location choices using the conditional logit model introduced by McFadden (1974). Suppose that each household selects its residential location from N mutually exclusive alternatives to maximize its utility. The indirect utility function of household h that resides in location j is of the form:

$$U_{hj} = V_{hj} + \varepsilon_{hj}, \tag{3.1}$$

where V_{hj} stands for the component of indirect utility of household h that depends on the location characteristics observed by the household, such as characteristics of houses (e.g., size, age, and type), public goods (e.g., public school quality, crime rate and number of metro stations), neighborhood sociodemographics (e.g., ethnic composition, age structure, fraction of immigrants, and socioeconomic status), as well as housing price that accounts for the cost to live in location j. ε_{hj} represents household h's unobservable tastes in choosing where to live.

The probability that household h selects location j is

$$p_{hj} = \Pr\left(U_{hj} \geqslant U_{hk}\right), \forall k = 1, 2, ..., N. \tag{3.2}$$

Assuming that the error term ε_{hj} is independently and identically distributed with a standard Type I extreme value distribution[4] across alternatives, the probability that household h chooses location j can be derived as:

$$p_{hj} = \frac{\exp(V_{hj})}{\sum_{n=1}^{N} \exp(V_{hn})}. \tag{3.3}$$

Furthermore, I assume that the observed component V_{hj} can be approximated by a linear function of choice-specific attributes:

$$V_{hj} = \beta_h Y_j. \tag{3.4}$$

Y_j denotes location characteristics, and β_h is the set of household-specific parameters. As different types of households may demand different bundles of public goods, β_h may be formulated as

$$\beta_h = \beta_0 + \sum_{r=1}^{R} \beta_r X_{hr}. \tag{3.5}$$

$X_{hr}, r = 1, 2, ..., R$ represents the characteristics of household h that do no vary across communities, such as household income, householder's education, and family composition.[5] That is, household characteristics are assumed to affect residential location choices through their influence on households' valuation of location attributes.

3.2.2 Identification Strategy

I first examine how immigrant households value school quality in residential location choices. One major problem arising is that local school quality is potentially correlated with unobserved location characteristics. If this is the case, the coefficient on school quality may capture the effects of some non-education factors.

[4]The density function is $f(e) = \exp\left[-e^{-\exp(-e)}\right]$.

[5]The household characteristics are included in the regression by interacting them with location characteristics. In a conditional logit model, variables such as household characteristics that do not vary across alternatives would be automatically dropped in the regression if included directly. However, their effects can be controlled for by interacting these variables with the characteristics of the alternatives.

To address this problem, I compare the residential location choices of immigrant households with and without children following the identification strategy exploited by Barrow (2002). Having school-aged children in a household indicates a direct demand for schooling services, whereas households without children only indirectly benefit from public schools in the neighborhood. At the same time, location attributes other than schools may affect the two types of households similarly. Therefore, the differential effect that school quality has on the residential location choices of households with and without children potentially identifies the value parents place on school quality.

Accordingly, I rewrite equation 3.4 as

$$V_{hj} = \alpha_{1h} S_j + \alpha_2 S_j \cdot chd_h + \beta_h Z_j + \gamma_h e_j, \tag{3.6}$$

where S_j measures the school quality of location j, and chd_h is a binary indicator taking on value of one if household h has children under 18 years of age and zero if not. So the weight placed on school quality by households without children is α_{1h}, and that by households with children is $\alpha_{1h} + \alpha_2$. Z_j stands for attributes of location j which are observed by both households and econometricians, and e_j stands for the location attributes that are only observed by households but not observed by econometricians. The household-specific parameters are assumed to take the form of a linear function of household characteristics as Equation 3.5, whereas the measure for having children under 18 in the household is excluded from the set of household characteristics $X_{hr}, r = 1, 2, ..., R$.

The estimate of α_{1h} is biased if the unobserved neighborhood characteristics included in e_j are correlated with school quality S_j. But α_2 will be consistent as long as any unobservable attributes are equally valued by households with and without children.[6] In particular, if households without children put no value on school quality per se, the estimated coefficient on the interaction term between school quality and presence of children provides an unbiased estimate of the true

[6] A short proof is as follows. Suppose e_j is a function of S_j. For simplicity, they are assumed to be linearly related, i.e., $e_j = f(S_j) = cS_j + u_j$, where c is a constant, and u_j is an error term that is uncorrelated with school quality. Equation 3.6 could be rearranged as $V_{hj} = \alpha_{1h} S_j + \alpha_2 S_j \cdot chd_h + \beta_h Z_j + \gamma_h \cdot cS_j + \gamma_h u_j = (\alpha_{1h} + \gamma_h \cdot c) S_j + \alpha_2 S_j \cdot chd_h + \beta_h Z_j + \gamma_h u_j$. So the estimated main effect of school quality may be biased, but the estimate on the interaction between school quality and having children in the household is not.

valuation of school quality by households with children. The estimate of the direct effect of school quality only captures the effects of unobserved amenities that are correlated with school quality.

To further assure that the two types of households have similar tastes for other non-school location attributes, I use the method of propensity score to trim the sample. The propensity score for having children under 18 is estimated from a series of observable household sociodemographic characteristics and householder individual characteristics that may be correlated with demand for local public goods and residential location choices. Compared to restricting the sample by a certain household characteristic, such as age, the method of propensity score takes more household characteristics into consideration and balances their effects.

The propensity score is estimated using a probit model:

$$\Pr\left(chd_h = 1\right) = \Phi\left(\lambda X_h + \epsilon_h\right). \tag{3.7}$$

X_h represents the characteristics of household h, such as household income, linguistic isolation, family size, cross-state mover status, race, and the householder's age, gender, educational attainment, and marital status. ϵ_h denotes the unobserved characteristics that are relevant to having children. I eliminate the observations with a predicted propensity score lower than the 10th percentile or higher than the 90th percentile, and conduct the analysis on the remaining sample of more comparable households with and without children.

3.2.3 Immigrants v.s. Natives

I then move to the comparison between immigrant and native households. To examine how immigrants value school quality in selecting residential locations relative to natives, one possible approach is to contrast the differential effect of school quality on immigrant and native parents. The estimated immigrant-native difference among parents is unbiased as long as both groups value other location characteristics similarly. However, in reality, immigrant and native households exhibit quite distinct preferences in choosing where to live. For example, because of language difficulties and cultural shocks, new immigrants are more likely to

cluster with immigrant households from the same origin.

Therefore, I rely on a difference-in-differences method and compare the parent-non-parent difference in the weight assigned to school quality among immigrant households to that among native households. For identification, I assume that households with and without children value non-school neighborhood attributes the same within each group, and both immigrant and native households without children have similar preferences toward school quality in location choices.

Accordingly, I amend the model laid out above as following:

$$\begin{aligned} V_{hj} &= \alpha_{1h}^{N} S_j \cdot ntv_h + \alpha_2^{N} S_j \cdot chd_h \cdot ntv_h + \beta_h^{N} Z_j \cdot ntv_h \\ &\quad + \alpha_{1h}^{I} S_j \cdot img_h + \alpha_2^{I} S_j \cdot chd_h \cdot img_h + \beta_h^{I} Z_j \cdot img_h + \gamma_h e_j, \end{aligned} \tag{3.8}$$

where ntv_h is a binary indicator which is one if household h is native and zero if household h is immigrant, and img_h is a binary indicator which is one if household h is immigrant and zero otherwise. That is, I estimate native- and immigrant-specific sets of weights assigned to location characteristics. α_{1h}^{N} and α_{1h}^{I} pick up the effects of unobserved location characteristics that are correlated with local school quality on native and immigrant households respectively. The immigrant-native difference in value placed on school quality is $\alpha_2^{I} - \alpha_2^{N}$.

A concern with the above approach is that immigrant and native households may not face the same choice set of residential locations. It is likely that the some immigrant households are much constrained by linguistic isolation and lack of access to public goods. If so, the estimates may reflect the differences between the de facto choice set for these immigrants and the choice set for natives rather than true preferences.

In order to make the choice sets of the two groups more comparable, I again employ the propensity score method, and estimate the propensity score for being an immigrant household from observable household and householder characteristics using a probit model:

$$\Pr\left(img_h = 1\right) = \Phi\left(\lambda X_h + u_h\right). \tag{3.9}$$

X_h represents household characteristics. u_h is the unobserved characteristics related to being an immigrant. I drop observations with estimated propensities below

0.1 and above 0.9 as before.

In addition, to balance the preferences toward nonschool location characteristics of households with and without children, I further estimate the propensity for having children under 18 among the trimmed sample of immigrant and native households and trim the sample using this propensity score in the same manner discussed in the previous section. .

3.2.4 Potential Mechanisms

To better understand the impacts of immigration on provision of public education in host societies, it is essential to know the economic mechanisms explaining why immigrant parents value school quality for their children. There are three hypotheses that I test: first, households with more children place a higher weight on school quality; second, the weight assigned to school quality is associated with a selection model of migration; last, parents are more willing to invest in children's schooling if the future returns are high.

After establishing patterns using the estimation strategy in the previous sections, I conduct supplementary analysis to test the above hypotheses for immigrants with children only. More specifically, the linear indirect utility of household h for the conditional logit model is formulated as follows:

$$V_{hjc} = \alpha_{1h} S_j + \varphi S_j \cdot A_{hc} + \beta_h Z_j + \gamma_h e_j. \tag{3.10}$$

V_{hjc} is the utility of immigrant household h from country c living in area j that depends on observed location attributes. A_{hc} is a measure based on the hypothesis tested, namely, number of children in the first case, origin country characteristics relevant to selective migration in the second case, and returns to education in the last case. The definitions of other notations are the same as before.

Specifically, measures of self-selection may include costs of migration and the income distribution in the origin country relative to the U.S. Earlier studies show that immigration is larger, *ceteris paribus*, when the source country and the destination country are geographically adjacent or the language and culture in the destination country is familiar (Lewer and Van den Berg, 2008). So larger obstacles

to migration, such as longer traveling distance and more language difficulties, may indicate a stronger aspiration for migration. It is possible that more motivated immigrants desire the economic success of their offspring more. Also, if it is the favorable self-selection that drives immigrant parents to emphasize school quality more, the story may not hold for those who migrated to the U.S. as refugees (Cortes, 2004). Moreover, the classical literature of migration (Chiswick, 1978; Borjas, 1987) argues that self-selection among immigrants depends on the income distribution in their home countries relative to the United States or other destinations. That is, less dispersed income in the origin predicts that individuals at the right tail of home country income distribution migrate to the U.S., and vice versa.

The economic incentive among immigrant parents is reflected by φ. Since the school quality S_j may be correlated with unobserved location characteristics e_j, it is likely that the main effect of school quality on residential location choices α_{1h} is biased. However, similar to the logic mentioned earlier, φ captures the variation related to school quality in location choices across households or across origins, and is thereby more likely to be unbiased.

3.3 Data

3.3.1 Main Samples

The main dataset employed in this paper is the 5% Integrated Public Use Microsample Series (IPUMS) version of the 2000 Census. In the public use Census data, household location is identified at the Public Use Microdata Area (PUMA) level. I examine the households in the Los Angeles Metropolitan Area. This area covers two counties - Los Angeles County and Orange County, and is divided into 84 PUMAs. I further restrict my sample to households that earn a positive income and have moved to their current location, from outside of the Los Angeles Metropolitan Area, within the past five years.

I study the population in the Los Angeles Metropolitan Area specifically for three reasons. First, unlike many other states, school spending is not directly related to local property taxes in California. The State Supreme Court's decision

in the case *Serrano v. Priest (1971)* mitigates the problem of controlling for the effective tax rate as it relates to school expenditure across regions. In this case, spending on public education in a district is less endogenous to the composition of the households. Second, the smallest geographic area in the public version of the Census is the PUMA which generally follows county or city boundaries and consists of 100,000+ residents. Since the Los Angeles Metropolitan Area is densely populated, all the PUMAs in this area are geographically small so that the choice of residing in a certain PUMA is less constrained by the location of employment. Third, the Los Angeles Metropolitan Area has a diverse population with a high proportion of immigrants and high discrepancy in school quality across districts.

The above criteria was met by 11,796 immigrant households and 14,970 native households in the 2000 Census. Summary statistics of household characteristics of the entire immigrant population in the Los Angeles Metropolitan Area and the immigrant movers are reported in the first two columns in Table 3.1. Relative to the whole population, the movers are younger, slightly better educated with smaller family size but lower household income. The reported adjusted household income is the total household income divided by the family equivalent scale (Citro and Michael, 1995). The racial composition of the movers is similar to that of the whole population: more than half of the immigrant households are Hispanic, and Asians make up the second largest immigrant group. About 27% of the movers have children under 18 in the household.

For the main analysis on immigrant households solely, I restrict the sample of immigrant movers by the propensity score to have children so that the preferences toward location characteristics other than school quality are more likely to be equal. Table 3.2 shows the estimates from the regression of having children on observed household characteristics and Figure 3.1 depicts the distributions of the propensity score for households with and without children respectively. Among all the variables, the marital status of householder appears to be the strongest indicator for having children. Family size and the number of families in the household also explain a sizable proportion of variation in having children.[7] Column 3 in

[7]Marital status, family size, and number of families in household may explain the spike in the propensity score distributions among households without children. When excluding the three

Table 3.1 reports the summary statistics for the sample of immigrant households trimmed by the propensity score. The trimmed sample accounts for approximately 80% of immigrant movers and 12% of all immigrant households. The trimmed sample has lower average income and smaller family size, but resembles the untrimmed sample in other respects.

Table 3.3 presents the summary statistics for the combined sample of both native and immigrant households. Compared to natives, immigrants have lower income, lower education, more children, and larger families in general. They are also more likely to be linguistically isolated. The racial composition of the two groups is rather different: among the native-born, the majority is White, whereas Blacks and Hispanics comprise sizable proportions; yet more than half of the immigrants are Hispanic, and Asians make up the second largest immigrant group.

For the purpose of analysis, I trim the combined sample of movers by the propensity score for being immigrant and the propensity score for having children under 18 in the household sequentially. The last two columns in Table 3.3 report the summary statistics for the trimmed sample. This sample accounts for approximately 9% of all households in the area. After trimming, the immigrant households become more similar to the natives in many characteristics, such as proportion of female householders, number of children, school attendance status, family size, number of families in a household, and so forth. A number of immigrant households that are isolated linguistically are eliminated. The racial composition of the two groups are also more balanced.

3.3.2 School Quality

The school quality measure employed is the 1999 Academic Performance Index (API) of public schools from the California Department of Education. The API Report is part of California's Accountability Progress Reporting which starts in 1999. The report measures the academic success of California's nearly 10,000 public schools in over 1,000 school districts and local educational agencies. A school's API is a number that ranges from 200 to 1,000 and is calculated from the

variables from the regression, the distribution is much smoother and more bell-shaped.

results for each school's students on statewide tests. The API Reports are publicly available to parents and guardians as indicators of school performance.

I employ the APIs of high schools as a measure for local school quality. Since the number of high schools in each school district is much smaller than the number of elementary or middle schools, using high school quality largely mitigates problems related to discrepancies of school quality within a district. Also, since school quality is highly correlated across levels,[8] high school quality well represents the school quality of all grade levels in an area.

Admittedly, some households in my sample moved to their current location prior to 1999. When they evaluated location attributes and made a decision about where to live, school quality may have been different from that measured by the 1999 APIs. Nevertheless, school quality is likely to be relatively stable over a five-year period.[9] As earlier data are not collected, the APIs in 1999 are the best available indicator for school quality when households chose their current locations.

According to the data obtained from the California Department of Education, there are 233 public high schools in 67 school districts in the Los Angeles Metropolitan Area. However, the PUMAs defined in the public use Census data do not tend to line up with school district or attendance zone boundaries. It is possible that several small school districts are contained in one PUMA, while a large school district like the Los Angeles Unified School District consists of several PUMAs.

The aggregation of the individual school API to the PUMA level proceeds as follows. First, except for the Los Angeles Unified School District, the mean API of each school district weighted by school enrollments is calculated. Second, I average the district mean APIs to the PUMA level weighted by the population in the intersections of each PUMA and overlapping school districts. Third, lacking data

[8]For the Los Angeles Metropolitan Area, the correlation between the district mean APIs (weighted by student enrollments) of elementary schools and those of high schools is .94, and the correlation between the district mean APIs (weighted by student enrollments) of middle schools and those of high schools is .95.

[9]As the APIs prior to 1999 are not available, I compare the district average APIs in the Los Angeles Metropolitan Area in the subsequent five years. The correlation between the district mean APIs (weighted by student enrollment) in 1999 and those in 2004 is over .95, indicating that school quality is quite stable over time.

for attendance zone for each school, I simply calculate the mean API weighted by school enrollment for every PUMA within the Los Angeles Unified School District. Table 3.4 reports the summary statistics for PUMA mean APIs.

3.3.3 Housing Prices

The Census has collected an array of measures related to housing: a binary variable whether the unit is owned or rented, the corresponding rent or owner-reported value, property tax payment, number of rooms, number of bedrooms, type of structure, the age of the building, and etc. Because house values are self-reported, it is difficult to ascertain whether these prices represent the current market value of the property, especially if the owner purchased the house many years earlier. A second deficiency of the house values reported in the Census is that they are top-coded at $500,000. In the Los Angeles Metropolitan Area, it is not uncommon that this top-code is binding. Therefore, I employ the reported monthly rent instead. Presumably, rents are subject to less misreporting than house values, even though renters who have occupied a unit for a long time may receive some sort of tenure discount (Bayer et al., 2007).

In order to obtain a more accurate measure for market rent that is comparable across PUMAs, I first run a hedonic price regression on all the households with cash rent in the Los Angeles Metropolitan Area in the 2000 Census. Specifically, I regress the reported gross rent on the tenure of the current renter, a full set of PUMA dummy variables, and a series of house characteristics, including number of rooms, number of bedrooms, number of units in the structure, whether there is a kitchen, and the age of the building. I utilize the estimated PUMA fixed effect as a measure for overall housing price of each PUMA.

There may be two empirical issues related to the housing price measure to address. First, the housing price measure derived from reported rents may suffer from the problem of endogeneity. An analogous problem is commonly discussed in the empirical industrial organization literature in which market shares and prices are simultaneously determined while consumer level data is often unavailable (Berry, 1994). Relative to a market-level analysis, the use of household

level data reduces the simultaneity problem (Barrow, 2002). Also, as my sample accounts for only 5% of all the households dwelling in the Los Angeles Metropolitan Area, it is likely that the sample is not representative of net market demand shifts. Second, housing price not only accounts for the cost to live in a certain neighborhood, it also capitalizes the value of local amenities to the marginal homebuyer. This may lead to a positively biased estimate of price and complicates the interpretation of the coefficient on school quality, since the difference in the value across marginal residents should already be reflected in the price. Yet in both cases, the approach of netting out the weights estimated for households without children mitigates the problem, and the interaction between school quality and having children under 18 may not be biased. The question studied is thereby interpreted as, given the price a household has to pay to live in a community, whether households with children sort to expensive communities where the public bundle is skewed toward good schools.

3.3.4 Neighborhood Characteristics

The data for neighborhood characteristics, including sociodemographic characteristics, house characteristics and local amenities are from various sources.

The sociodemographic characteristics of each PUMA, including the racial distribution, age structure, percentage of immigrants, percentage of urban areas, percentage of unemployed, and median household income, are extracted via the Missouri Census Data Center's Dexter Data Extractor. Some other characteristics which are not covered by Dexter Data Extractor, such as average years of education, fraction of private school enrollments among households with children, percentage of owned houses, density, and total number of house units are directly calculated from the 2000 Census. Similarly, the PUMA average house characteristics, including the age of the building and the number of bedrooms are also calculated from the 2000 Census data.

The conventional monocentric urban model assumes all employment is located at the center of a circular city encompassed by a suburban ring (Straszheim, 1987). Previous literature on residential location choices usually uses the distance

to the city center, or the Central Business District (CBD), to proxy for access to employment. However, with the decline of central cities and the growth of suburbs, more than one CBD has emerged in populous metropolitan areas like Los Angeles. Hence, I measure the job access of different PUMAs using the average commute time to work among all employed individuals in each PUMA.

The data of crime rates for Los Angeles County and Orange County are from the Criminal Justice Statistics Center Databases of California. Other local amenities data, including parks, metro stations, hospitals, and colleges are derived from the Geographic Information System documents provided by the Cal-Atlas Geospatial Clearinghouse.

The summary statistics for the neighborhood characteristics are also reported in Table 3.4.

3.3.5 Origin Characteristics

To study the relationship between selective migration and how immigrant parents value education for their children, I employ five relevant origin characteristics, namely, distance to the United States, whether English is an official language, fraction of refugees, income inequality relative to the U.S., and per capita GDP.

I utilize the distance to the U.S. from the source country[10] and whether English is an official language in the national origin[11] to proxy for the unobserved motivation, or common barriers to migration for immigrants.

Since the Census does not collect information about immigration status, I employ a measure for the fraction of refugees among migrants from each national origin instead so as to incorporate the distinction between refugees and economic immigrants. The data of refugees and asylums granted lawful permanent residents are from the 2000 Yearbook of Immigration Statistics provided by the U.S. Department of Homeland Security[12].

[10]Distance to U.S. is calculated as the number of air kilometers between home country's largest city and the nearest U.S. gateway (Los Angeles, Miami, or New York). The data are from *www.timeanddate.com.*

[11]The information about nations' official languages is from *en.wikipedia.org/wiki/List_of_official_languages.*

[12]Data source: *www.dhs.gov*

Moreover, I calculate the ratio of occupational income at the 90th percentile to the 10th percentile in each country as a measure for income inequality. The ratios are obtained from the Occupational Wages around the World (OWW) Database by Freeman and Oostendorp. The dataset collects occupational wages for 161 occupations in 171 countries and regions from 1983 to 2008. To capture the persistent dispersion by nation relative to the U.S., I estimate the country fixed effects from a regression of the ratio on a specification that includes year effects[13]. I also include the origin country GDP per capita so as to control for the mean of the income distribution of each country. The GDP data are from the Statistics on World Population, GDP and Per Capita GDP by Maddison.

Table 3.5 Panel A presents the summary statistics for the five source country characteristics. Only origins from which there are more than five observations in the trimmed sample of immigrants in Table 3.1 are reported. Figure 3.2 depicts the measure for home country income inequality relative to the U.S. The reference lines divide the figure into regions.[14] In general, the income distribution is more homogeneous in the Western Hemisphere countries, such as Canada, Australia, and Western European countries. All Latin American origins included in the sample have greater income inequality than the U.S. The majority of countries in Eastern Europe, Asia, Middle East, and Africa have more income disparity than the U.S. with a few exceptions, such as Slovakia and Turkey.

3.3.6 Returns to Education

Higher potential returns to education for children may inspire immigrant parents to invest more in their children's schooling. Because one's return to education is endogenous to the quality of the school he or she attends (Card and Krueger, 1992, 1996), I use the returns to education among the parental generation, i.e. first-generation immigrants and link these to how immigrant households value

[13]I first calculate the ratio of the 90th percentile to the 10th percentile occupational income by year and country. Then I regress the year by country data on a set of country dummies and year dummies, using the U.S. and year 1990 as the omitted country and year.

[14]The estimated 90 to 10 percentile occupational income for the U.S. in 1990 is 1.91. The regions from left to right are: North America, Latin America, Europe, Asia, Middle East and Africa, and Oceania.

schools when choosing residences. It is possible that immigrant parents' perceptions of potential future earnings of their children come from their own experiences in the labor market.

The data on returns to education by origins are from Bratsberg and Terrell (2002). Bratsberg and Terrell (2002) estimate the returns to education for immigrant males from 67 source countries in 1980 and 1990 respectively using these two years of Census data. I use the estimated 1990 returns to education of immigrant males as a proxy for the returns to education for the immigrant households in my sample. Admittedly, a sizable fraction of immigrant households migrated to the U.S. after 1990. Yet the correlation between the point estimates in 1980 and 1990 is over 0.9. The high correlation may suggest that the cross-origin disparity is quite stable over time notwithstanding the overall increase in the level of returns to education for immigrants in the U.S. from 1980 to 1990.

It is worth mentioning that variation in returns to education among first-generation immigrants in the U.S. could partly result from self-selection of immigrants. Table 3.5 Panel B displays the relationship between returns to education and the five measures for selective migration I employ. Distance from the source country to the U.S. is positively correlated with the returns to education, indicating more motivated immigrants tend to have better achievement in the U.S. labor market. Per capita GDP is positively and significantly correlated with returns to education, which may suggest that migrants from high-income countries are more likely to have earning advantages. The five selection measures together explain about 68% of the cross-origin variation in the returns to education among first-generation immigrants. Some other factors, such as origin-specific attitudes toward education and the demand side of the U.S. labor market, may also be a determinant. Therefore, when studying the role of returns to education in how parents value school quality, I test controlling for origin country characteristics that may affect selective migration.

3.4 Immigrant Values on School Quality

3.4.1 The Role of School Quality

Table 3.6 presents the results for different specifications of the conditional logit model. The dependent variable is an indicator for residential location choice among 84 PUMAs.

The first regression includes only school quality as measured by the API score, the interaction term between the API and the child indicator, adjusted rent as the proxy for the cost of living in a given location, and the number of house units in each PUMA to account for size differences across areas. Estimates from this parsimonious specification imply that immigrant households tend to locate in neighborhoods with higher housing prices whereas households with children tend to reside in areas with better public schools than those without children. As discussed above, it is possible that both rent and API are correlated with other location attributes. In particular, the positive estimate on rent is not expected if this measure isolates a price per housing unit of a given neighborhood quality.

Therefore, the second regression takes more location attributes into account, including neighborhood sociodemographics, average house characteristics, and local amenities. When other location characteristics are considered, the magnitude of the coefficient on API drops dramatically. Compared to those without children, immigrant parents place significantly higher weight on school quality, controlling for other neighborhood characteristics.

To rule out the possibility that the API-child interaction picks up differences in preferences toward non-school characteristics between households with and without children, column 3 includes the interactions between all location attributes and the child indicator. The estimated main effects of location characteristics resemble those in column 2, and the interaction effect of the API on households with children remains positive and significant. This supports the validity of the assumption for identification that households with and without children view unobserved non-school attributes similarly.

Moreover, the income of a household is directly linked to its budget con-

straint in residential location choices. Householder's education may not only serve as a proxy for lifetime earnings, but also capture the taste for education of parents. Thus the fourth column assumes that the set of weights assigned to location characteristics vary by household income and householder's educational attainment. I add a series of interactions between these two household characteristics[15] and the location characteristics, including the API score, to the regression. When the effects of household income and education are adjusted for, the interaction effect of the API on households with children increases slightly and stays significant. For completeness, column 5 tests including a series of interactions between location characteristics and the child indicator when also adjusting for effects of household income and householder's education. The estimate on the API-child interaction stays positive and significant.

To quantify the implications for choice of residence (Ai and Norton, 2003), I calculate the average change in the difference in the probability of living in each one of the 84 PUMAs between immigrant households with and without children if the API of the PUMA in question increases by one standard deviation. I set both the household income and educational attainment to the sample means. According to the estimates in the full model specification in column 4, a one standard deviation increase of the API in a certain PUMA raises the probability that immigrant households with children select that PUMA relative to immigrant households without children by .25 percentage points on average, which is a 21% change.

3.4.2 Different Effects by Socioeconomic Status

A selection model of migration (Chiswick, 1978; Borjas, 1987) may imply that household income or householder's education is not predictive of the underlying value placed on education by immigrants. Regardless of income and education, those who migrate are the ones highly motivated for labor market success. How-

[15]The household income employed here is the income adjusted by household size. Both household income and householder's educational attainment are normalized to have mean of 0 and standard deviation of 1 when interacting with location characteristics from now on. Hence, the estimated main effects of location attributes represent the weights assigned by an immigrant household with mean income and mean education.

ever, both household income and householder's education play an important role in residential location choices. They may also lead to heterogeneity in the parent-non-parent difference in the weight assigned to school quality. Therefore, I test the effect of school quality on location choices by households' socioeconomic status in this section.

First, I split the trimmed sample into five household income quintile[16] groups and run separate regressions using the full specification presented in Table 3.6 on each group. Table 3.7 reports the results. The base effect of the API score does not show a clear pattern across quintiles. The API-child interaction exhibits a monotonic relationship with income: the importance of school quality grows as household income grows. The interaction effect of the API on households with children is positive and significant in all cases. Admittedly, the difference in value placed on school quality across income quintiles is more likely to reflect the de facto choice sets of immigrant households of different income levels.

Second, I examine how the value placed on school quality varies by the educational level of the householder, namely, whether he or she is a high school dropout, high school graduate, attended some college, college graduate, or post-graduate. To isolate the effect of education from that of income constraints, I include an additional three-way interaction of the API, the child indicator, and the normalized adjusted household income. The weights allocated to other location characteristics are assumed to vary only by household income within each educational level. Table 3.7 displays the regression results by education. Consistent with the findings of Barrow (2002) and Bayer et al. (2007), the magnitude of the parent-non-parent difference in value on school quality is positively associated with educational attainment of householders. In particular, the estimate on the API-child interaction is only significant for householders who have at least attended college.

[16]The income quintiles are formed among all the households in the Los Angeles Metropolitan Area based on the household income adjusted by family equivalent scale. The cutoffs would be same in all the analysis related to income quintiles in this paper.

3.4.3 Different Effects by Race

Due to differential human capital, access to resources, as well as social norms (Borjas, 1995b; Card et al., 2000; Zhan, 2011), education and academic outcomes vary substantially across racial groups. When studying White and Black households separately, Barrow (2002) finds that the weight allocated to school quality when choosing a residential area differs systematically between the two groups. Therefore, this section compares the value put on school quality by race. I examine four major racial groups residing in the Los Angeles Metropolitan Area: Whites, Blacks, Asians, and Hispanics.

In case the cross-racial difference in values on school quality is primarily driven by the disparity in income or education across racial groups, I add two three-way interactions: one of the API, child indicator, and adjusted household income, and the other of the API, child indicator, and householder's educational attainment. Hence the main effect of the API-child interaction suggests the additional weight assigned to school quality by households with children compared to households without children when both have mean income and mean education attainment. Also, relative to the full model specification presented in Table 3.6, I only control for the fraction of the same race in each PUMA.[17] The estimates are reported in Table 3.7.

When other location characteristics and the effects of household income and educational attainment are taken into account, the four racial groups display different preferences toward school quality. Except Black immigrants, parents of all races assign a positive and significant weight to school quality: White immigrant parents value school quality the highest; Asians rank the second; and Hispanics value school quality the least. The negative and insignificant estimate on the API-child interaction among Blacks appears to be the result of their small sample size as the standard errors are much larger than for other groups.

[17]Controlling for the proportions of all four racial groups in each PUMA would result in problems related to imperfect multicollinearity.

3.4.4 Robustness

I explore modifying the benchmark regressions in Table 3.6 in various ways to test whether the finding that immigrant parents value education is robust.

First, to address the concern that the private school options may partly break the link between residential location and school to attend, I test including the percentage of households who send children to private schools in each PUMA as a proxy for households' propensity to choose private schools over public schools; second, to further assure that immigrant households with and without children have homogenous preferences toward non-school location attributes, I test restricting the sample to households with householders aged 35 to 54; third, in case the choice sets of certain immigrant groups are mischaracterized, I test focusing on naturalized immigrant households who resemble natives more and are probably better informed in residential selection; last, to address the potential differences in mobility among households that result from Proposition 13 in California, I test examining out-of-state movers only. All robustness checks produce reassuring results. More details are provided in Appendix C.1.

3.5 Immigrant v.s. Native Value on School Quality

Table 3.8 reports the weight assigned to school quality by immigrant households versus native households as a whole and by income quintiles. Since immigrant households generally have lower household income than natives, it is important to compare the location choices of the two groups when they face the same budget constraints.

Overall, the parent-non-parent difference is of similar magnitude among immigrants and natives. For both groups, the weight put on school quality is monotonically associated with household income. However, the estimate on the API-child interaction may be hard to interpret explicitly for low-income households since it may reflect the constrained de facto choice sets. Except the lowest income

quintile, immigrant and native parents with similar income level basically assign similar weight to school. Yet among the households in the lowest income quintile, immigrant parents emphasize school quality significantly more than native parents.

I also explore disaggregating the sample by householder's education and race. However, no significant difference between immigrants and natives of these subgroups are found.

3.6 Mechanisms for Differential Values on School Quality

This section investigates the potential economic mechanisms that drive differential evaluation of education among immigrant parents. Three aspects are examined: number of children in the household, selective migration, and future returns to education. All the analysis is conducted on immigrant households with children under 18 only.

3.6.1 Number of Children

A possible determinant for differential values on school quality among parents is the number of children. Given the price a household has to pay to live in a neighborhood, a larger number of children in a household might indicate that moving to a location with good public schools is more cost-efficient as they would consume more education services. On the other hand, larger family size results in less resources available per child. If the number of children affects residential choices through income constraints, households with more children may be less able to afford to live in good school districts as housing price and school quality are usually positively correlated.

In this section, I investigate whether the number of children can in part explain the values placed on school quality by immigrant parents. I focus on households with children in the trimmed sample only and replace the API-child interaction in the full model specification in Table 3.6 with an interaction term

between the API score and the number of children under 18 in the household. That is, I assume that the value on school quality embodied in residential location choices is linearly related to the number of children.

Table 3.9 reports the regression results. The marginal effect reported is the average increase in the odds of choosing choose a PUMA with schools achieving among the top 10% in the Los Angeles Metropolitan Area if the number of children increases from the mean to one standard deviation higher. Other household characteristics are assumed to take the mean values of the trimmed sample to calculate the simulated marginal effects. Because the number of children is closely linked with a household's budget constraint, I examine the relationship between weight on school and number of children by income quintiles. Also, to rule out the probability that the differential evaluation of school quality is mainly driven by the heterogeneity in the social norms on fertility rate, I disaggregate the sample by race.

According to Table 3.9, the estimate on the interaction between the API and number of children is positive in most cases. However, it is only statistically significant among immigrant households in the median quintile and the White immigrants. It is possible that the higher demand for schooling service resulted from more children in the household lead parents to emphasize school quality more when choosing where to live. However, the offset influence of tighter budget constraints leaves the net effect of the number of children ambiguous.

3.6.2 Selective Migration

In this section, I test the hypothesis that varying motivation and quality among immigrants matters for how immigrant parents value education for their children. The effects of the selection among immigrants are estimated using Equation 3.10. That is, I interact the five selection measures listed in Table 3.5 with the API score, and evaluate their effects through their influence on how households value school quality.

Table 3.10 displays the regression results. All the location attributes are controlled for. The weights placed on these attributes are allowed to vary by

household income and householder's education so that the measures for selective migration are unlikely to pick up the effects of household income or education.[18] The first specification only investigates the effects of distance to the U.S. and whether English is an official language in the origin country. I include the fraction of refugees in the second specification, and the income inequality measure and per capita GDP in the third specification.

The distance between the source country and the U.S. is positively associated with the propensity that households choose to live in areas with good public schools, while English being an official language is negatively related to the odds of living in areas of high school quality. The finding supports the argument by Chiswick and DebBurman (2004) that immigrants from non-English speaking countries manifest a higher demand for investment in education so as to increase the transferability of origin country skills. The proportion of refugees is negatively correlated with the API score, presumably as a result of different intentions for migration. The coefficient on the interaction between the API and the income inequality measure is also negative but insignificant, whereas the one on the interaction between the API and GDP per capita is positive and significant.

In addition, I estimate the effect of selective migration among all immigrant households with children under 18 using a two-step model (Card and Krueger, 1992). The first step is to estimate the origin-specific value on school quality by interacting the API-child interaction with a set of origin dummies from all immigrant households involved in earlier analysis.[19] In the second step, I regress the estimated origin-specific API-child interaction effect on the five measures by weighted least squares, employing the inverse of the sample variance of the origin-specific parent-non-parent difference, estimated in the first step, as the weight. Although the two-step regression model does not compare to the one-step regression perfectly for a non-linear model like the conditional logit model, it helps illustrate the diversity in the value placed on school quality by origins and enables verifica-

[18] As predicted by the literature, the origin-specific income inequality measure is negatively correlated with both household income and householders' educational attainment. However, both correlations are low and around 0.1.

[19] I use the full model specification in Table 3.7 to estimate the origin-specific weight placed on school quality.

tion of the approximate extent to which selective migration captures an important component of the country effects. The coefficients estimated by a two-step model have analogous magnitude to those estimated by a conditional logit model. The R-square suggests that the five variables together explain approximately 20% of the variation in the value put on school quality among immigrants across origins. Thus selective migration may partly explain the emphasis immigrants place on school quality in the U.S.

In case the measures for selective migration mainly capture the different preferences toward education across racial groups, I also examine the relationship between selection among immigrants and values on school by race using the third specification in Table 3.10. The estimates from three racial groups, namely, Whites, Asians and Hispanics,[20] are presented in Table 3.11. For all three groups, the measures relevant to selection among immigrants are jointly significant. The estimates on the interactions between the API and distance to the U.S., the API and English being an official language, and the API and the share of refugees basically have the same sign as the those obtained from the whole sample of immigrant households with children. Yet not all of them are statistically significant.

However, unlike the results from the immigrant parents as a whole, income dispersion in home country is positively and significantly correlated with the API score of the residential area of Asians. This may indicate that Asian immigrant parents of relative low quality value school more. Given the distribution of origin income inequality displayed in Figure 3.2, the result may help explain why low-income immigrant households allocate a significantly higher weight to school quality than their native counterparts. This may also imply that children of Asian immigrants with disadvantaged family background are more likely to succeed in labor markets because their parents appear more willing to invest in their education.

[20]There are only 21 Black immigrant households with children in the sample whose origin-specific measure data are available. Hence I do not include them in the by race analysis in this section and next section.

3.6.3 Returns to Education

The effect of returns to education on the value placed on school quality in location choices by immigrant parents is also estimated by Equation 3.10. Table 3.12 displays the regression results for the link between the returns to education and the value placed on school. Column 1 only includes the interaction between the API and returns to education, and column 2 controls for additional origin characteristics as the returns to education among immigrants are in part determined by their self-selection.

The estimated coefficient on the interaction between the API and returns to education is positive and significant when only the returns to education are considered. Based on the estimates in column 1, if the returns to education increase by one standard deviation from the mean, the average propensity for immigrant parents to choose a PUMA with top 10% API score in the Los Angeles Metropolitan Area would increase by about 0.7 percentage points, accounting for a 27% change. When other origin characteristics are introduced to the model, both the magnitude and the standard error of the estimate on the API and returns to education increase, and the estimate is no longer statistically significant.

Similar to the previous section, I test the relationship between returns to education and weight put on school by race. The regression results are presented in Table 3.13. For both White and Asian immigrants, the estimated effect of the interaction between the API and returns to education is positive but insignificant. Compared to the whole group of immigrant parents, the much larger standard errors may indicate that the variation in returns to education within these two groups is relatively small. However, returns to education shows a strong positive association with value placed on school quality by Hispanic immigrants. The effects of returns to education is statistically significant no matter other origin characteristics are controlled for or not.

I also utilize a two-step regression model to test the effect of returns to education on values placed on school quality. Different from before, in the second step, I regress the estimated origin-specific API-child interaction effect on the returns to education. Figure 3.3 depicts the estimated origin-specific weights on school

quality against the immigrants' returns to education as well as the regression line obtained in the second step. The slope of the regression line is 132. The R-square for the second step is .10, indicating about 10% of the heterogeneity in the weights placed on school quality across origins is explained by returns to education. If other origin characteristics are also controlled for in the second step, the coefficient on returns to education is 188 and significant at the 5% level. All the six variables together explain more than 24% of the variation in weight on school. Hence it may be concluded that returns to education partly influence how households value school quality, and parents are more willing to invest on education if the potential payoff for their children is higher in the future.

3.7 Conclusion and Discussion

This paper studies whether and why immigrants value school for their children in host countries. The values placed on school quality are assessed through households' residential location choices.

The empirical analysis suggests that immigrant parents exercise school choice through the choice of residential locations in the United States. When allowing for income heterogeneity in the weights assigned to school quality, the importance of schools increases as household income or householder's education increases. Households also exhibit substantial discrepancies in the value put on school across racial groups. Among the four major racial groups studied, White immigrant parents place the highest weight on school quality, Asians the second, Hispanics the third, and Blacks the lowest.

I further explore the potential reasons why immigrants are willing to invest on school for their offspring in the United States. Immigrant parents with children who migrated to the U.S. from a far away or a non-English speaking country tend to select areas with better schools. Compared to refugees, economic immigrants generally show a stronger preference to good school districts. Using the home country income inequality as a predictor for the quality of migrants and controlling for observed household income and education, Asian immigrants of lower quality

appear to value school for their children more. Furthermore, the expected returns to education may be responsible for the economic incentive to invest in children's education. When allowing the value placed on school quality in location choices to vary by country of origin, the origin-specific returns to education show a positive relationship with the probability that immigrant households with children lives in areas where school quality is high. The measures for selective migration and that for returns to education explain 20% and 10% of the cross-origin variation in weights put on education respectively.

The paper has a number of policy implications for immigration and public education. First, the Immigration and Nationality Act of 1965 which proposed a preference system on immigrants' skills and family relationships has resulted in a remarkable increase in the number of immigrants from Asia and Latin America to the U.S. Despite the overall declining entry earnings of the immigrants subject to the 1965 Amendments (Borjas, 1987, 1995a; Jasso et al., 2000), the paper verifies a close link between favorable self-selection and aspirations for human capital investment in their offspring among the new immigrants,[21] especially the Asians and Hispanics. At the same time, given the criteria for migration implemented since 1965, a sizable proportion of current immigrants to the U.S. have matched or even surpassed the majority of natives in socioeconomic status soon after arrival (Yu, 2003). These immigrants are apparently more capable of investing in schooling for their children. Therefore, the change in the immigration policy may lead to an increasing demand for educational quality in the U.S. Relevant questions that arise may include whether the inflow of immigrants who place a high value on school increases the provision level (quality) of public schooling services or causes it to deteriorate by lowering public expenditure per student.

Second, the paper provides additional evidence on immigrant human capital investment (Chiswick, 1978; Duleep and Regets, 1999). The relationship between motivation for migration and value placed on school quality by immigrant parents may help explain the higher achievements in education and in the labor market of

[21]Only 2% of the immigrant households in the sample analyzed in this paper migrated to the U.S. prior to 1965. The majority of the immigrant sample entered the U.S. subject to the Immigration and Nationality Act of 1965.

second-generation immigrants (Chiswick, 1988; Boyd and Grieco, 1998; Chiswick and DebBurman, 2004), as well as the dynamics in the labor market of immigrant receiving societies. Due to the increasing importance of immigrants and their descendants in the U.S. workforce and the critical role of education in labor market success, it is necessary to understand the educational and earning advantages of the second generation and relate them to the immigration regulations. Because of the substantial racial and ethnic earning disparities, it would be appropriate to enact certain education policies to facilitate human capital investment of immigrant parents of disadvantaged backgrounds so as to narrow the educational and occupational gaps across racial and ethnic boundaries.

Third, the findings in this paper shed light on the effects of school quality on the residential sorting of immigrants. Relative to earlier studies on location choices of immigrants that are mostly conducted at a broader level (Jaeger, 2004; Chiswick and Miller, 2004), such as region or metropolitan, this paper provides insights into immigrants' choices of communities within a metropolitan area. Estimates of a wider range of underlying preference parameters help understand how immigrant households sort in the local housing market, which in turn determines the pattern of residential segregation and the matching of households to schools. Residential sorting not only affects the spatial assimilation of immigrants themselves, but also influences the dynamics in ethnic enclaves, the local labor market, and public good provision in the destination economies. The change in the sociodemographics of neighborhoods and the body of students in local schools as well as the matching of immigrant households to local public schools are closely related to the impact of immigration on public education.

Finally, in addition to the predominant understanding of the ethnic clustering of immigrants, the paper finds that similar to the natives, immigrant parents care about public school quality in residential location choices. From a policy perspective, the result may imply that the provision of public goods, specifically, public schooling services, could be used as a tool by the government to regulate the residential sorting of immigrants and influence their spatial assimilation. Since immigrants are in general less likely to choose private schools than natives, they

are more likely to benefit from public education reforms. In particular, providing more educational options for children of immigrants may reduce both residential and school segregation and improve the overall welfare of immigrant households as well as other groups.

3.8 Tables and Figures

Table 3.1: Summary Statistics on the Census Sample

	Immigrant Households		
Variables	All	Mover	Trim.
Household Income ($1000)	51.8 (59.3)	43.6 (54.8)	42.8 (49.3)
Adjusted Household Income ($1000)	68.9 (99.5)	68.6 (104)	61.7 (68.7)
Householder's Age	38.6 (11.6)	32.9 (10.6)	32.7 (10.4)
Female Householder (=1)	.326 (.469)	.305 (.461)	.324 (.468)
Householder's Education	11.0 (4.90)	11.6 (4.98)	11.7 (4.91)
Number of Children	1.11 (1.36)	.571 (1.03)	.469 (.881)
School Attendance (=1)	.102 (.303)	.143 (.350)	.148 (.355)
Linguistic Isolation (=1)	.336 (.472)	.432 (.495)	.432 (.495)
Family Size	3.65 (2.30)	3.10 (2.34)	3.05 (2.19)
No. of Families	1.47 (.962)	1.76 (1.25)	1.61 (1.02)
Children under 18 (=1)	.381 (.486)	.266 (.442)	.257 (.437)
No. of Children under 18	1.09 (1.33)	.755 (1.14)	.657 (1.04)
Private School (=1)	.065 (.246)	.058 (.235)	.057 (.231)
Home Ownership (=1)	.294 (.456)	.221 (.415)	.216 (.412)
White (=1)	.129 (.335)	.152 (.359)	.155 (.362)
Black (=1)	.013 (.115)	.019 (.135)	.020 (.139)
Asian (=1)	.237 (.425)	.288 (.453)	.293 (.455)
Hispanic (=1)	.612 (.487)	.528 (.499)	.519 (.500)
Move Within State (=1)	.023 (.148)	.154 (.361)	.143 (.350)
No. of Obs.	80,732	11,796	9,436

NOTE: Reported are the means of variables with standard deviations in parentheses among different groups. The first column is for all immigrant households in the Los Angeles Metropolitan Area; second column is for immigrant households that moved to the area within the past 5 years; and the last column is for the movers adjusted for the propensity scores for having children under 18. Adjusted household income is total household income divided by family equivalent scale.

Table 3.2: Propensity to Have Children Under 18 in the Household

	1(child<18)	
Variables	(1)	(2)
Adjusted Household Income	-.005***	-.004***
	(.000)	(.000)
Householder's Age	.027***	.013***
	(.001)	(.002)
Female Householder (=1)	-.122***	.206***
	(.029)	(.034)
Householder's Education	.034***	.033***
	(.004)	(.004)
School Attendance (=1)	-.480***	-.334***
	(.042)	(.046)
Linguistic Isolation (=1)	-.111***	-.092***
	(.029)	(.032)
Marital Status (=1)		1.19***
		(.032)
Family Size		.149***
		(.007)
No. of Families in Household		-.194***
		(.020)
Home Ownership (=1)	.011	-.210***
	(.032)	(.037)
White (=1)	.049	.007
	(.113)	(.129)
Black (=1)	.056	.162
	(.142)	(.160)
Asian (=1)	.123	.007
	(.110)	(.126)
Hispanic (=1)	-.039	-.062
	(.110)	(.127)
Employed (=1)	-.001	.025
	(.033)	(.037)
Moved within State (=1)	.162***	.190***
	(.039)	(.044)
No. of Obs.	11,796	11,796
Log-likelihood/1000	-6.24	-4.84

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated using a probit model. The dependent variable is an indicator for having children under 18. The sample of immigrant households who migrated from outside the Los Angeles Metropolitan Area to the current location in the past five years are examined.

Table 3.3: Summary Statistics on Natives vs. Immigrants

	Native			Immig.
Variables	All	Mover	Trim.	Trim.
Household Income ($1000)	72.9	57.3	55.9	43.2
	(76.2)	(65.7)	(63.3)	(54.7)
Adjusted Household Income ($1000)	131	124	107	66.7
	(146)	(141)	(88.8)	(72.0)
Householder's Age	41.4	33.6	34.1	32.6
	(13.2)	(10.9)	(11.3)	(10.5)
Female Householder (=1)	.480	.420	.435	.358
	(.495)	(.494)	(.496)	(.479)
Householder's Education	14.0	14.5	14.5	12.5
	(2.67)	(2.59)	(2.53)	(4.55)
Number of Children	.650	.383	.326	.419
	(1.03)	(.850)	(.695)	(.788)
School Attendance (=1)	.114	.174	.151	.153
	(.318)	(.379)	(.358)	(.360)
Linguistic Isolation (=1)	.011	.010	.011	.282
	(.104)	(.101)	(.103)	(.450)
Family Size	2.40	1.88	1.87	2.61
	(1.57)	(1.38)	(1.17)	(1.76)
No. of Families	1.32	1.56	1.48	1.56
	(.675)	(.860)	(.761)	(.915)
Children under 18 (=1)	.311	.200	.199	.249
	(.463)	(.400)	(.299)	(.432)
No. of Children under 18	.586	.391	.329	.546
	(1.00)	(.859)	(.710)	(.920)
Private School (=1)	.089	.085	.077	.060
	(.285)	(.280)	(.267)	(.237)
Home Ownership (=1)	.448	.286	.276	.229
	(.497)	(.452)	(.447)	(.420)
White (=1)	.647	.728	.700	.196
	(.478)	(.445)	(.459)	(.397)
Black (=1)	.116	.082	.082	.023
	(.320)	(.274)	(.275)	(.151)
Asian (=1)	.036	.042	.048	.274
	(.186)	(.200)	(.214)	(.446)
Hispanic (=1)	.184	.116	.132	.489
	(.387)	(.320)	(.338)	(.500)
Move Within State (=1)	.054	.395	.272	.178
	(.226)	(.489)	(.445)	(.382)
No. of Obs.	109,794	14,970	10,267	6,833

NOTE: Reported are the means of variables with standard deviations in parentheses among different groups. The first column is for all immigrant households in the Los Angeles Metropolitan Area; second column is for immigrant households that moved to the area within the past 5 years; and the last column is for the movers adjusted for the propensity scores for having children under 18. Adjusted household income is total household income divided by family equivalent scale.

Table 3.4: Summary Statistics of Neighborhood Characteristics

Variables	Mean	Std. Dev.	Min	Max
API	588	102	400	803
Housing Price ($)	682	145	402	1093
% White	34.6	23.8	.600	82.3
% Black	8.09	11.5	.400	55.4
% Asian	12.3	10.7	.300	53.6
% Hispanic	42.2	23.4	6.30	97.0
% Urban Population	99.0	6.35	42.7	100
Density/1000,000	37.5	31.2	.361	215
% Under 18	28.0	5.68	13.4	40.4
% Over 62	11.5	3.33	5.30	20.9
% Immigrants	34.7	12.3	12.9	69.8
% Unemployed	7.88	3.24	3.20	18.2
Median Household Income ($1000)	47.2	15.0	20.0	83.4
Avg. Educational Attainment	12.0	1.63	8.27	15.3
% Private School Enrollment	16.7	7.11	4.06	49.0
% Homeownership	48.2	17.1	18.3	94.4
Avg. House Age (Years)	36.1	7.53	15.6	50.0
Avg. No. of Bedrooms	2.14	.515	.663	3.08
Crime Rate (%)	1.82	1.15	.110	5.06
Avg. Commute Time (Min.)	21.7	3.41	15.0	30.0
No. of Metro Stations	.881	1.68	0	9
No. of Parks	14.4	12.9	0	60
No. of Colleges	.786	.879	0	4
No. of Hospitals	1.30	1.36	0	6
No. of House Units/1000	2.55	.843	1.43	5.35
No. of Obs.				84

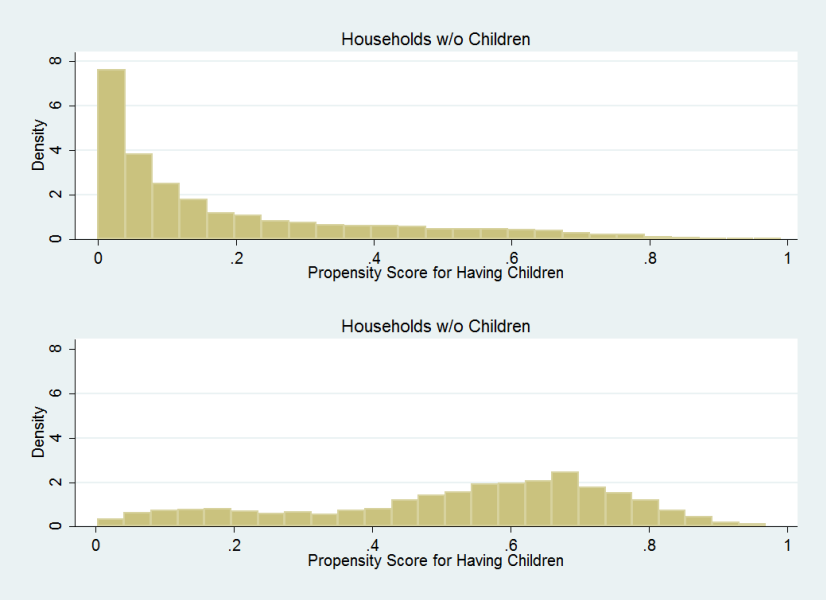


Figure 3.1: Propensity Score for Having Children Under 18 Years of Age

Table 3.5: Summary Statistics on the Origin Characteristics of Immigrants

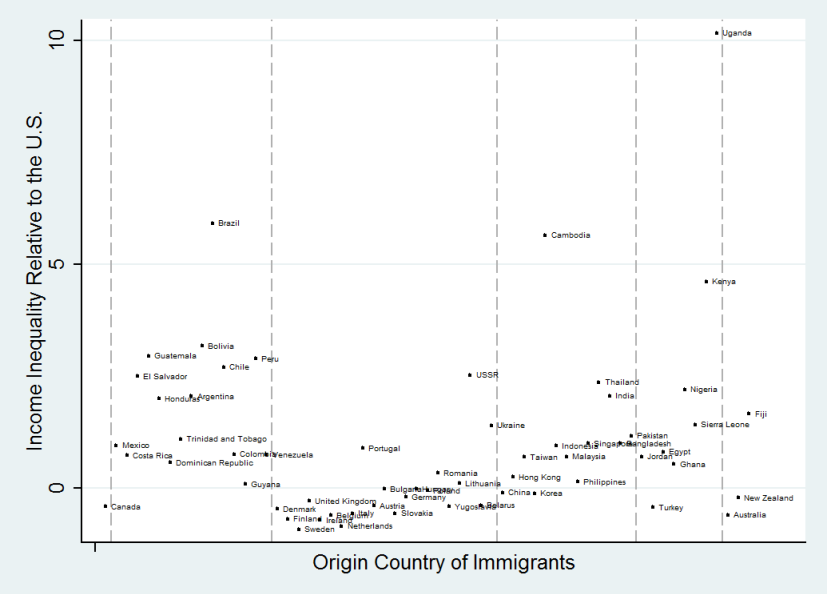
PANEL A: Summary Statistics

Variables	Origin	Mean	Std. Dev.	Min	Max
Distance to the U.S. (1000km)	82	7.64	3.94	.315	14.5
English as Official Language (= 1)	82	.256	.439	0	1
% Refugees	82	14.2	24.5	0	98.1
Income Inequality Relative to the U.S.	57	1.06	1.94	-.932	10.2
GDP Per Capita ($1000)	57	7.68	6.39	.430	19.7
Returns to Education in the U.S.	64	.048	.015	.020	.082

PANEL B: Returns to Education and Selective Migration

	Returns to Education × 1000	
Variables	(1)	(2)
Distance to the U.S.	1.30***	1.00**
	(.049)	(.382)
1(English Official)	1.92	2.82
	(5.04)	(3.38)
% Refugees	-.009	.154***
	(.063)	(.055)
Income Inequality Relative to the U.S.		.433
		(.641)
GDP Per Capita		1.92***
		(.270)
No. of Origins	64	48
R-Square	.119	.677

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions in Panel B are estimated by the OLS with robust standard errors. The dependent variable is the measure for returns to education times 1000.



NOTE: The reference lines denote different regions.

Figure 3.2: Origin Country Income Inequality Relative to the U.S

Table 3.6: Conditional Logit Model of Residential Location Choices

Variables	(1)	(2)	(3)	(4)	(5)
API/1000	-2.34***	-.227	-.099	-.187	.035
	(.174)	(.279)	(.307)	(.289)	(.315)
API/1000 × 1(child<18)	1.85***	1.63***	1.16**	1.89***	1.06*
	(.238)	(.255)	(.561)	(.261)	(.561)
Housing Price/100	.023*	.160***	.172***	.145***	.158***
	(.012)	(.028)	(.033)	(.030)	(.034)
White (=1) × % White		.027***	.027***	.024***	.024***
		(.002)	(.002)	(.002)	(.002)
Black (=1) × % Black		.044***	.044***	.044***	.044***
		(.004)	(.004)	(.004)	(.004)
Asian (=1) × % Asian		.047***	.047***	.048***	.048***
		(.002)	(.002)	(.002)	(.002)
Hispanic (=1) × % Hispanic		.028***	.028***	.017***	.017***
		(.001)	(.001)	(.001)	(.001)
Density/1000		-.175	-.087	-.563	-.488
		(.408)	(.411)	(.452)	(.454)
% Urban Population		.009***	.009**	.013***	.013***
		(.004)	(.004)	(.004)	(.004)
% Under 18		.012*	-.009	.004	-.016**
		(.007)	(.007)	(.007)	(.008)
% Over 62		-.051***	-.067***	-.070***	-.085***
		(.008)	(.009)	(.009)	(.010)
% Immigrants		.019***	.019***	.016***	.017***
		(.002)	(.002)	(.002)	(.002)
% Unemployed		-.039***	-.043***	-.087***	-.089***
		(.012)	(.013)	(.012)	(.014)
Median Household Income		-.030***	-.031***	-.046***	-.048***
		(.006)	(.007)	(.006)	(.007)
Avg. Educational Attainment		.202***	.159***	.128***	.084**
		(.030)	(.033)	(.032)	(.035)
% Homeownership		.016***	.018***	.009***	.011***
		(.003)	(.004)	(.003)	(.004)
Avg. House Age (Years)		-.000	.004	-.001	.003
		(.003)	(.004)	(.004)	(.004)
Avg. No. of Bedrooms		.571***	.722***	.554***	.703***
		(.118)	(.135)	(.122)	(.139)
Avg. Commute Time		.009**	.006	.012***	.008*
		(.004)	(.005)	(.004)	(.005)
Crime Rate (%)		-.022*	-.013	-.004	.005
		(.013)	(.015)	(.015)	(.016)
No. of Metro Stations		.015*	.019**	.023***	.027***
		(.009)	(.010)	(.010)	(.010)
No. of Parks		.002*	.001	.004***	.003*
		(.001)	(.001)	(.001)	(.002)
No. of Colleges		.032**	.039**	.028*	.036**
		(.015)	(.018)	(.016)	(.018)
No. of Hospitals		.046***	.042***	.050***	.045***
		(.010)	(.011)	(.010)	(.011)
No. of House Units/1000	.347***	.299***	.297***	.310***	.307***
	(.013)	(.020)	(.020)	(.021)	(.021)
× Income & Education	No	No	No	Yes	Yes
× 1(child<18)	N/A	No	Yes	No	Yes
No. of Obs.	9,436	9,436	9,436	9,436	9,436
Log-likelihood/1000	-41.3	-39.0	-38.9	-38.5	-38.4
Marginal Effect					
API/1000 × 1(child<18)	.194	.208	.146	.245	.135
	[16.3%]	[17.5%]	[12.3%]	[20.7%]	[11.4%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model. The dependent variable is an indicator for residential location choice among 84 PUMAs. Standard errors are reported in parentheses. The reported marginal effect is the average percentage point change in parent-non-parent difference in choosing a PUMA given a 1 S.D. increase in API of that PUMA. The percentage changes are reported in brackets.

Table 3.7: School Quality and Residential Location Choices by Groups

	API/1000	×1(child <18)	× H.H. Income	× H.H. Edu.	Obs.	Marg. Effect
Income						
Q1	2.77**	.708*			3,339	.115
	(1.25)	(.428)				[9.76%]
Q2	-.865	1.89***			2,489	.228
	(1.76)	(.532)				[19.2%]
Q3	-1.57*	2.80***			1,552	.330
	(.829)	(.653)				[27.9%]
Q4	1.16	4.99***			1,200	.854
	(2.57)	(.779)				[73.2%]
Q5	3.49	4.47***			856	.931
	(2.52)	(1.04)				[80.2%]
Education						
H.S. Dropout	1.01	.728	-.530		3,050	.100
	(.632)	(.646)	(.887)			[8.44%]
H.S. Grad.	-.606	.655	-.043		2,344	.076
	(.591)	(.584)	(.781)			[6.43%]
Some College	.776	1.95***	1.40		1,232	.277
	(.732)	(.727)	(1.11)			[23.5%]
Bachelor	-.203	2.35***	2.28***		1,737	.309
	(.665)	(.612)	(.599)			[26.2%]
Postgrad.	-1.00	4.04***	.564		1,073	.534
	(.908)	(.787)	(.659)			[45.4%]
Race						
White	-2.72**	4.16***	.633	-.843	1,461	.466
	(1.24)	(.939)	(.638)	(1.05)		[39.6%]
Black	.545	-2.79	6.74*	7.18	185	-.304
	(.284)	(2.97)	(3.62)	(4.73)		[26.0%]
Asian	-.097	1.87***	1.32***	.819	2,764	.243
	(.633)	(.605)	(.502)	(.679)		[20.5%]
Hispanic	-.112	.968**	.216	.276	4,899	.120
	(.503)	(.484)	(.632)	(.435)		[10.2%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions by income quintiles are estimated using the full model specification in column 4 Table 3.6. A three way interaction term of the API, child indicator, and adjusted income is added in the estimations by education; and another interaction of the API, child indicator, and education is added in the estimations by race. Standard errors are reported in parentheses. The reported marginal effect is the average percentage point change in parent-non-parent difference in choosing a PUMA given a 1 S.D. increase in API of that PUMA. The percentage changes are reported in brackets.

Table 3.8: Residential Location Choices: Immigrants vs. Natives

	Immig.			Native			F(H$_o$: $\beta^{\text{Immig}}_{\text{API-Child}} > \beta^{\text{Native}}_{\text{API-Child}}$)
	API/ 1000	×1(child <18)	Marg. Effect	API/ 1000	×1(child <18)	Marg. Effect	
All	-.154	2.10***	.274	-.707**	2.67***	.341	1.89
	(.368)	(.312)	[23.2%]	(.316)	(.279)	[28.8%]	
Income							
Q1	4.30*	.807	.151	-2.30	-1.64**	-.143	7.33***
	(2.23)	(.563)	[13.0%]	(4.84)	(.706)	[12.1%]	
Q2	-6.34	2.16***	.154	5.11	2.01***	.427	0.03
	(4.83)	(.624)	[12.9%]	(5.11)	(.633)	[37.2%]	
Q3	-.125	2.80***	.379	-1.41	3.46***	.428	0.49
	(1.82)	(.745)	[32.2%]	(1.49)	(.580)	[36.2%]	
Q4	-.323	4.67***	.683	-1.58	4.97***	.654	0.08
	(1.44)	(.834)	[58.2%]	(1.06)	(.610)	[55.5%]	
Q5	1.45	3.55***	.584	-1.39	5.71***	.789	2.36
	(2.37)	(1.17)	[49.7%]	(1.44)	(.775)	[67.5%]	

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated using the full model specification in column 4 Table 3.6 on a pooled sample of immigrant and native households. Standard errors are reported in parentheses. The reported marginal effect is the average percentage point change in parent-non-parent difference in choosing a PUMA given a 1 S.D. increase in API of that PUMA. The percentage changes are reported in brackets.

Table 3.9: Value on School Quality and Number of Chidren under 18

	API/1000	× No. of Children	Obs.	Marg. Effect
All	.283	.197	2,426	.038
	(.710)	(.258)		[3.71%]
Income				
Q1	1.45	-.075	1,079	-.014
	(5.00)	(.350)		[1.33%]
Q2	-3.38	.209	561	.064
	(3.90)	(.544)		[3.61%]
Q3	-3.70*	2.15***	371	.271
	(2.32)	(.820)		[52.0%]
Q4	5.67	.113	261	.007
	(6.19)	(1.11)		[1.65%]
Q5	-5.99	.889	154	.401
	(7.44)	(1.44)		[13.0%]
Race				
White	-5.89**	1.96**	386	.200
	(2.70)	(.815)		[53.6%]
Black	-18.9*	1.64	43	.018
	(10.6)	(1.67)		[68.3%]
Asian	-.957	.644	824	.130
	(1.34)	(.515)		[11.4%]
Hispanic	1.70	-.264	1,148	-.394
	(1.36)	(.339)		[5.41%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model on the sample of immigrant parents. The dependent variable is an indicator for residential location choice among 84 PUMAs. Standard errors are reported in parentheses. The reported marginal effect is the average increase in the odds of choosing a PUMA with top 10% API if the number of children increases from the mean to 1 S.D. higher. The percentage changes are reported in brackets.

Table 3.10: Value on School Quality and Selective Migration

	Immigrant Parents		
	(1)	(2)	(3)
API/1000	-.278	-.318	-2.89**
	(.717)	(.735)	(1.31)
× Distance	.204**	.283**	.473***
	(.081)	(.115)	(.124)
×1(Eng. Official)	-2.29	-3.01*	-4.01***
	(1.50)	(1.71)	(1.51)
× % Refugees		-.042	-.104**
		(.028)	(.053)
× Income Inequality			.411
			(.454)
× GDP Per Capita			.327***
			(.119)
× Household Income	-.290	-.313	-.442
	(.957)	(.960)	(1.36)
× Householder's Education	-.363	-.463	-.291
	(.608)	(.605)	(.880)
F-stat	6.89**	6.41*	19.6***
No. of Obs.	2,376	2,376	1,553
No. of Origins	82	82	57
Log-likelihood/1000	-9.63	-9.62	-6.25
Marginal Effect			
Distance	.187	.262	.430
	[13.2%]	[18.7%]	[32.7%]
1(Eng. Official)	.485	.619	.757
	[45.6%]	[65.0%]	[97.5%]
% Refugees		-.215	-.463
		[15.3%]	[35.1%]
Income Inequality			.176
			[13.3%]
GDP Per Capita			.491
			[37.3%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model on the sample of immigrant parents. The dependent variable is an indicator for residential location choice among 84 PUMAs. Standard errors are reported in parentheses and clustered at the origin level. The F-stat is to test the joint significance of the selection measures. The reported marginal effect for distance to the U.S., percent refugees, income inequality, or GDP per capita is the average increase in the odds of choosing a PUMA with top 10% API if the variable of interest increases from the mean to 1 S.D. higher; that for English being an official language is the average difference in the odds of choosing a PUMA with top 10% API between immigrants from non-English-speaking countries and English-speaking countries.

Table 3.11: Value on School Quality and Selective Migration by Race

	Immigrant Parents		
	White	Asian	Hisp.
API/1000	-2.18	-2.36	-5.74**
	(4.81)	(6.92)	(2.66)
× Distance	-.114	.227	1.14***
	(.464)	(.539)	(.424)
×1(Eng. Official)	-8.18***	-6.04***	-10.3**
	(2.86)	(1.58)	(5.34)
× % Refugees	-.029	-.172*	1.92
	(.045)	(.092)	(2.05)
× Income Inequality	-.372	2.67***	-1.03
	(.519)	(.859)	(.980)
× GDP Per Capita	.657**	.215*	1.14***
	(.282)	(.117)	(.330)
× Household Income	3.36	-4.88***	-1.43*
	(2.64)	(1.48)	(.614)
× Householder's Education	2.90	1.76	-.503
	(2.36)	(1.56)	(1.26)
F-stat	16.3***	18.6***	57.7***
No. of Obs.	224	428	876
No. of Origins	30	17	14
Log-likelihood/1000	-.801	-1.60	-3.58
Marginal Effect			
Distance	-.045	.171	.569
	[8.47%]	[14.6%]	[168%]
1(Eng. Official)	.645	.923	1.90
	[170%]	[179%]	[224%]
% Refugees	-.071	-.589	1.82
	[13.3%]	[51.5%]	[242%]
Income Inequality	-.074	1.23	-.321
	[10.5%]	[102%]	[18.6%]
GDP Per Capita	.615	.271	.839
	[115%]	[22.9%]	[331%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model on the sample of immigrant parents. The dependent variable is an indicator for residential location choice among 84 PUMAs. Standard errors are reported in parentheses and clustered at the origin level. The F-stat is to test the joint significance of the selection measures. The calculation of marginal effects is the same as Table 3.10.

Table 3.12: Value on School Quality and Returns to Education

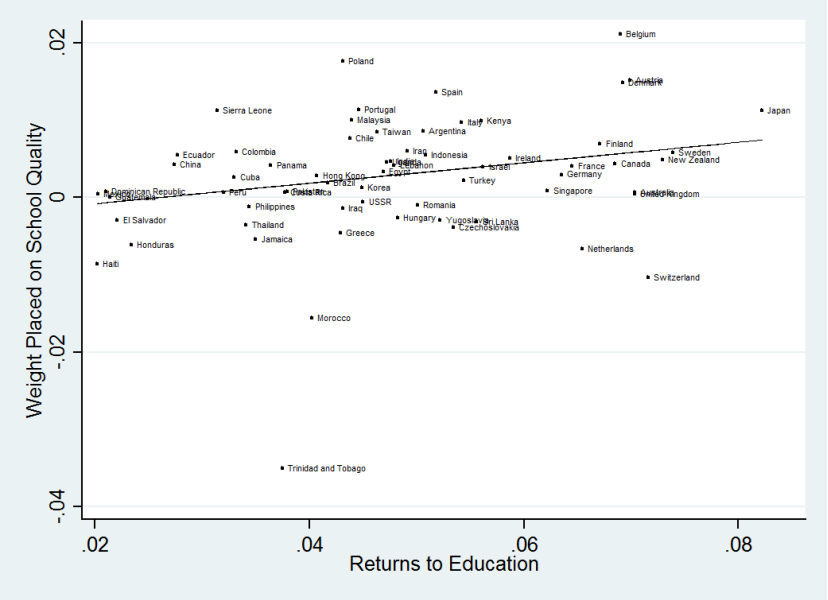
	Immigrant Parents	
	(1)	(2)
API/1000	-.662	-3.56**
	(1.01)	(.178)
× Returns to Education	57.0**	98.4
	(28.2)	(61.8)
× Household Income	-.371	-.536
	(.916)	(1.39)
× Householder's Education	-.776	-.235
	(.761)	(.825)
× Other Origin Char.	No	Yes
No. of Obs.	2,240	1,525
No. of Origins	64	48
Log-likelihood/1000	-9.08	-6.12
Marginal Effect		
Returns to Education	.228	.353
	[14.1%]	[25.8%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model on the sample of immigrant parents. The dependent variable is an indicator for residential location choice among 84 PUMAs. Standard errors are reported in parentheses and clustered at the origin level. Other location characteristics are included and interacted with household income and householder's education. The reported marginal effect of returns to education is the average change in the propensity to choose a PUMA with top 10% API if the returns to education increase from the mean to 1 S.D. higher.

Table 3.13: Value on School Quality and Returns to Education by Race

	Immigrant Parents					
	White		Asian		Hisp.	
	(1)	(2)	(3)	(4)	(5)	(6)
API/1000	-.458	-1.01	1.18	-1.44	-2.20***	-12.0**
	(2.53)	(7.50)	(1.83)	(1.10)	(.491)	(5.71)
× Returns to Education	10.5	248	63.1	38.5	172***	307*
	(35.7)	(215)	(55.0)	(197)	(24.9)	(185)
× Household Income	2.55	2.93	-1.63	-4.50***	2.49**	1.51***
	(2.27)	(2.45)	(1.31)	(1.55)	(.998)	(.583)
× Householder's Education	1.15	2.58	-1.91	2.48*	-.099	-.382
	(2.30)	(2.53)	(1.71)	(1.44)	(6.31)	(1.20)
× Other Origin Char.	No	Yes	No	Yes	No	Yes
No. of Obs.	354	215	721	422	1,131	871
No. of Origins	41	28	16	14	20	12
Log-likelihood/1000	-1.32	-.769	-2.79	-1.57	-4.69	-3.56
Marginal Effect						
Returns to Education	.029	.490	.243	.037	.809	1.61
	[2.80%]	[105%]	[15.7%]	[3.21%]	[48.0%]	[179%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model on the sample of immigrant parents. The dependent variable is an indicator for residential location choice among 84 PUMAs. Standard errors are reported in parentheses and clustered at the origin level. Other location characteristics are included and interacted with household income and householder's education. The reported marginal effect of returns to education is the average change in the propensity to choose a PUMA with top 10% API if the returns to education increase from the mean to 1 S.D. higher.



NOTE: The WLS regression line has a slope of 132 and standard error of 41.7, with R^2 being .099.

Figure 3.3: Weight Placed on School Quality v.s. Returns to Education

Appendix A

Culture and Education

A.1 National Origins

The primary sample of second-generation immigrants includes 66 countries and territories: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Azores, Romania, Spain, Sweden, Switzerland, England, Scotland, Czech, Slovakia, Russia, China, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Japan, North Korea, South Korea, Malaysia, Pakistan, Philippines, Taiwan, Turkey, Canada, Mexico, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Barbados, Cuba, Dominican Republic, Haiti, Jamaica, Trinidad & Tobago, Argentina, Brazil, Chile, Colombia, Ecuador, Guyana, Peru, Uruguay, Venezuela, Egypt, South Africa, Sudan and Australia.

Appendix B

Culture and Occupation

B.1 Data Details

B.1.1 Group Mean Levels of Parental Characteristics

Intergenerational transmission plays an essential role in individuals' human capital accumulation(Solon, 1992; Acemoglu and Pischke, 2001) that may determine one's later career choices. As the census does not collect information on interviewees' parents, I use a grouping estimation method (Card et al., 2000) and rely on group mean levels estimated from the population surveyed in the earlier censuses.[1] I utilize factors that may affect children's human capital accumulation, such as educational attainment, total income, and number of children.

The data matching is as follows. First, four cohorts are formed among the native-born individuals in my sample based on their birth years: 1946 - 50, 1951 - 55, 1956 - 60, and 1961 - 65. Second, groups of "parents" are formed given the four birth cohorts: for each cohort, the potential group of parents are those of the same national origin in the age range of 20 - 40 over the cohort's birth period. These groups include both native-born Americans and immigrants who migrated to the United States before the midpoint of a certain birth period. To avoid the potential problems of incomplete education and differential mortality, I

[1]Seven censuses are used: 1940 1% Sample, 1950 1% Sample, 1960 1% Sample, 1970 1% Metro Sample, 1980 5% Sample, and 1990 5% Sample.

constrain the parental groups to individuals aged 20 - 60 as of the survey year. Third, mean levels of parental and family characteristics adjusted for age and gender are estimated by group of "parents".[2] The summary statistics of parental characteristics matched to my sample are also reported in Table 3.1.

The parental characteristics for the CPS sample are generated in a similar manner. The sample is first divided into five birth cohorts: 1930 - 39, 1940 - 49, 1950 - 59, 1960 - 69, and 1970 - 79. Unlike the census sample, groups of "parents" for the second generation in the CPS data are formed from the first-generation immigrants in the earlier censuses by matching the national origin and cohorts.

Admittedly, there is slippage in this grouping estimation method as the "parents" matched to a birth cohort do not necessarily have children. Also, it is likely that the average parental socioeconomic characteristics of the highly educated sample are higher than the adjusted group mean levels obtained through the above approach due to positive human capital transmission (Solon, 1992). Because of the substantial difference in educational attainment and income across racial and ethnic boundaries, the parental socioeconomic characteristics may be underestimated by different degrees for different ethnic groups.

Nevertheless, the group mean levels capture the discrepancy in the human capital across ethnicities, which is an important input in the formation of one's own human capital (Borjas, 1995b) and is an indicator for the ethnic human capital that helps individuals find employment (Fernandez and Fogli, 2009). Therefore, controlling for the group mean levels of parental characteristics still in part effectively separates human capital transmission from cultural influence.

Furthermore, I calculate the proportion of individuals in the matched group of parents with each category of occupations and use these proportions to proxy for ethnic network.

[2]The estimated group mean level is obtained by regressing the variable of interest on age, female, a year-of-survey dummy, and a full set of national origin dummies. The estimated group mean level for a certain national origin is the predicted value for a 40-year-old male from that nation surveyed in 1980.

B.1.2 WVS Sample and Origin Characteristics

Table B.1 report the summary statistics of the individual and country-related characteristics of the WVS sample. 50,001 males aged 20 - 60 from 44 countries are included. About 18% of the sample are college graduates. The questions about income and respect in occupations were included in different waves of surveys respectively but both questions were asked in all the 44 societies. In general, about 35% of respondents consider income is the most important when looking for a job, and 55% regard respect as important.

The country characteristics are obtained from several data sources. Per capita GDP, percentage of labor force in agriculture, gross domestic savings rate (% of GDP), (binary indicators for) democracy, war, and occupancy by a foreign state data are obtained from the Wejnert's Nations, Development, and Democracy Dataset from ICPSR. To match the period covered by WVS, I use the data of 1976 - 2002 given there might be a lag in people's attitudes corresponding to the changes in a country's economy and politics. The secondary school pupil-teacher ratio is from UNESCO Institute for Statistics, covering a relatively current period from 1999 - 2008. For each country, I calculate the average of each factor over the given period and use them as the origin country characteristics.

B.1.3 Attitudes and Occupations

As a preliminary analysis, it is instructive to examine how much of the disparity in occupational income or prestige across native-born Americans from different origins can be explained by the cultural attitudes. The heterogeneities in occupational income and prestige in part imply the extent of ancestral distinctions in career choices, although they do not fully reflect the different occupations selected.

I put this into perspective via a simple two-step model which is also employed by Card and Krueger (1992): first, regress occupational income (prestige) score at the individual level among the highly educated native-born males[3] on a

[3]Given calculation capability, I do not randomly select 1,500 observations for the ancestries with more than 1,500 individuals. The estimates are not affected whether the sample is trimmed

full set of origin dummies; and in the second step, regress the estimated origin fixed effects on the pecuniary (prestige) demand in their ancestral countries, using the inverse of the sampling variance of origin effects obtained in the first step. Table B.2 reports the regression results. Estimates from the second step demonstrate that the attitudes toward pecuniary rewards and social prestige in the origin countries are positively and significantly correlated with the cross-ancestry gap in the corresponding perspective of the chosen occupations among the native-born Americans. Specifically, the pecuniary demand explains about 11% of the cross-ancestry heterogeneity in occupational income, and the prestige demand explains about 5% of the heterogeneity in occupational prestige.

B.2 Robustness Check

B.2.1 Independence of Irrelevant Alternatives

To address the concern about the suspect assumption of independence of irrelative alternatives (IIA), I estimate the cultural effects on occupational selection using a nested logit model.(McFadden, 1981; Hausman and McFadden, 1984) Occupations are grouped into two nests: managerial and professional jobs and non-professional jobs. Individual, parental, and other origin characteristics are assumed to affect the propensity that individuals sort into different groups of occupations. As before, the cultural attitudes are introduced to the model by interacting with corresponding occupational attributes.[4]

The nested logit model produces similar estimates as displayed in Table A3. Cultural attitudes continue to have a significant and positive influence on occupational selection. The simulated changes resulted from an increase from mean to one standard deviation higher in pecuniary demand/prestige demand are reported in Table B.3. These changes are of very similar scope as those calculated

or not.

[4]I also test incorporating the cultural attitudes into the model assuming they affect the propensity individuals sort into groups of occupations. Both attitudes show positive and significant impacts on the odds of choosing professional and managerial jobs, which are generally more profitable and prestigious.

on the basis of the estimates from the conditional logit model.

B.2.2 Sample of National Origins

The number of observations varies dramatically across national origins. One relevant concern is that individuals from certain national origins, such as Canada and Germany, may have weak ethnic identities vis-a-vis pecuniary rewards versus social prestige. Another concern is that a nation might be too large a unit to categorize culture for people from some large and/or diverse countries, such as Russia. In particular, these ancestral groups are a relatively large fraction of the sample.

To eliminate the possibility that the regression results are driven by origins with a large number of observations, I test running the regression using the baseline specification while dropping origins one by one. The summary statistics of the estimates from the 44 regressions are presented in Table B.4. The point estimate on the pecuniary demand is between .03 and .05, all significant at the 5% level. The point estimate on the prestige demand is between .02 and .04, all significant at 10% level except when excluding individuals from China, Slovenia, Hungary, or Czech.

B.2.3 Alternative Occupational Categorization

Though the aggregation of occupation partly reduces the problem of differed choice sets that individuals face and avoids similar choices for the discrete choice model, it is possible that the distinction in pecuniary rewards and social prestige across certain occupations within the same job category is overlooked if the categorization is too general. Also, over-aggregated categories would fail to reflect the diverse career patterns of different ancestries.

Hence, this section explores expanding the set of occupations. I divide the occupations within the each category into a few groups based on their income score, prestige score, and training costs. According, there are 25 new occupation categories: (1) general executives and managers such as legislators, chief executives,

and public administrators; (2) managers of service organizations such as mail superintendents and funeral directors; (3) management related occupations such as accountants, underwriters, and personnel specialists; (4) architects and engineers; (5) mathematical and social scientists; (6) natural scientists and professors; (7) doctors and lawyers; (8) health assessors, teachers and librarians such as registered nurses, therapists and secondary school teachers; (9) social workers such as recreation workers, clergy and religious workers; (10) writers, artists, entertainers, and athletes; (11) engineering and science technicians such as electrical technicians, cartographers and airplane pilots; (12) health and legal technicians such as practical nurses, dental hygienists and paralegals; (13) sales representatives such as insurance agents, advertising agents and sales engineers; (14) sales clerks such as cashiers, retail sales clerks and street vendors; (15) office clerks and health service workers such as secretaries, interviewers and dental assistants; (16) administrative support workers such as office supervisors, computer operators and expediting clerks; (17) protective service workers such as fire fighters, police and sheriffs; (18) household and other service workers such as housekeepers, cooks and janitors; (19) farming, forestry, and fishing occupations; (20) mechanics and system operators such as automobile mechanics, aircraft mechanics and power plant operators; (21) repairers and precision workers such as office machine repairer and miners; (22) construction trades and craftsmen such as concrete and cement workers, engravers and bakers; (23) heavy machinery operators such as ship crews, locomotive operators and crane operators; (24) small machine operators and drivers such as printing machine operators, sawyers and bus drivers; and (25) laborers such as construction laborers and stevedores.

Figure B.1 shows the income scores versus prestige scores for the 25 detailed categories. Among all the categories, doctors and lawyers have the highest occupational income, whereas natural scientists and professors are the most prestigious. Health and legal technicians, writers, artists and athletes and social workers have relatively high social status even though their pecuniary rewards are relatively low. Managers of service organizations, sales representatives and mechanics and system operators receive relative high wages but have relatively low social esteem.

Household and other service workers as well as laborers have very low monetary income and low social prestige. Table B.5 presents the fractions of the sample in each occupation category. The group of managers and executives is the largest. Individuals working in management related occupations, architects and engineers, doctors and lawyers and health assessors, teachers and librarians also make sizable proportions.

Table B.6 reproduces the estimates using the model specifications in Table 2.8 on the detailed occupational categorization. The occupational attributes are normalized across the new occupational categories. By interacting with corresponding occupational attribute, both pecuniary demand and prestige demand show positive and significant effects on occupational choices. Compared with estimates obtained using the 13 occupation categories previously, proportion of parental generation working in each category of occupations indicates a much stronger impact. This may suggest that these proportions more precisely capture the effects of ethnic network under a detailed occupational categorization.

B.3 Tables and Figures

Table B.1: Summary Statistics on the WVS Sample

PANEL A: Individual Characteristics					
Variables	Obs.	Mean	Std. Dev.	Min	Max
Age	50,001	37.8	11.3	20	60
High School Dropout (= 1)	50,001	.379	.485	0	1
High School Grad (= 1)	50,001	.365	.481	0	0
Some College (= 1)	50,001	.077	.267	0	1
College Graduate (= 1)	50,001	.179	.383	0	1
Married (= 1)	50,001	.706	.456	0	1
No. of Children	50,001	1.77	1.67	1	8
Religious (= 1)	50,001	.617	.486	0	1
Income Most Important (= 1)	42,275	.353	.478	0	1
Respect Important	35,419	.547	.498	0	1
PANEL B: Origin Characteristics					
Variables	Origin	Mean	Std. Dev.	Min	Max
% Religious People	39	.638	.208	.153	.912
Per Capita GDP/1000	39	7.56	5.84	1.29	26.4
% Labor Force in Agri.	39	.275	.187	.051	.731
Savings Rate	39	22.2	6.91	3.40	36.8
Democracy	39	.634	.300	0	1
State of War	39	.016	.034	0	.130
Foreign State Occupancy	39	.060	.181	0	.652
Pupil-teacher Ratio	39	16.8	7.17	8.50	37.3
Distance to the US/1000	39	6.73	2.94	.315	13.1

Table B.2: Cultural Attitudes and Attributes of Chosen Occupations

	Income Score	Prestige Score
First Step		
F (H_o: All Origin Effects are Same)	15.8***	302***
No. of Origins	44	44
No. of Obs.	81,901	81,901
R-square	.917	.957
Second Step		
Pecuniary Demand	7.41*** (1.96)	
Prestige Demand		2.06** (.927)
No. of Obs./Origins	44	44
R-square	.114	.045

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. The dependent variable in the first step is an individual's occupational income score and occupational prestige score respectively. First step regressions are weighted by the census person weight, and second step weighted by the inverse of the sampling variance of origin effects obtained in the first step. Robust standard errors are reported in parentheses.

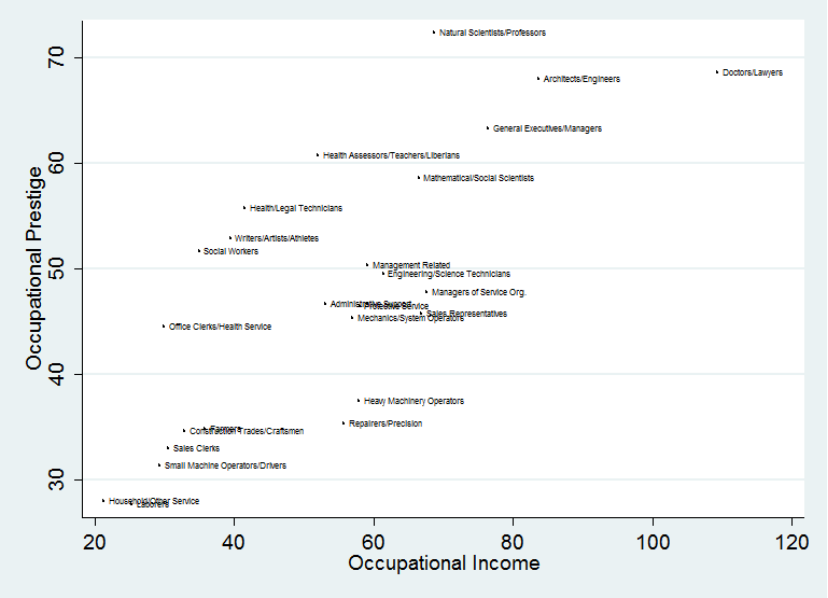


Figure B.1: Occupational Prestige v.s Income for Detailed Categorization

Table B.3: Cultural Attitudes on Occupational Choices: Nested Logit Model

	Occupational Choice			
	(1)	(2)	(3)	(4)
Income Score (IS)	.600*** (.159)	.366* (.225)	.447* (.253)	.818*** (.306)
Prestige Score (PS)	.615*** (.134)	.380 (.242)	.571* (.311)	1.07*** (.417)
Education Required	-.266*** (.063)	-.163 (.104)	-.234* (.130)	-.431** (.171)
Hours of Working	-.193** (.081)	-.118 (.081)	-.120 (.089)	-.204* (.120)
Years of Experience	.121** (.048)	.074 (.052)	.051 (.048)	.083 (.072)
IS × Pecuniary Demand	.026* (.014)	.015 (.011)	.016 (.013)	.023 (.016)
PS × Prestige Demand	.033** (.014)	.025* (.014)	.026** (.011)	.065*** (.019)
Ethnic Network			1.89** (.891)	3.65*** (1.06)
Parental Char.	No	Yes	Yes	Yes
Origin Char.	No	No	No	Yes
Dissimilarity Parameter				
Managerial and Professional	.560 (.138)	.341 (.213)	.469 (.256)	.871 (.303)
Non-professional	.932 (.239)	.570 (.364)	.772 (.442)	1.40 (.560)
No. of Origins	44	40	40	35
Log-likelihood/1000	-51.2	-51.0	-51.0	-47.0
Increase from 0 to 1	Professional		Laborers	
Pecuniary Demand	1.38 [6.19%]		-.085 [5.73%]	
Prestige Demand	1.54 [6.16%]		-.095 [7.33%]	

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the nested logit model. The dependent variable is an indicator for occupational choice among the 13 categories. Robust standard errors in parentheses account for clustering at origin level. Individual, parental, and origin characteristics are assumed to affect one's propensity to choose the group of occupations. Individual characteristics are controlled for under all specifications. The changes in odds of choosing certain occupation are calculated from estimates in column 1 and reported in percentage points, with percentage changes reported in brackets.

Table B.4: Summary Statistics for Estimates on Cultural Attitudes

Estimates	Obs.	Mean	Std. Dev.	Min	Max
IS × Pecuniary Demand					
Coefficient	44	.042	.003	.030	.048
Std. Error	44	.016	.001	.012	.018
t Statistics	44	2.61	.095	2.36	2.92
PS × Prestige Demand					
Coefficient	44	.032	.003	.021	.041
Std. Error	44	.018	.001	.014	.020
t Statistics	44	1.80	.149	1.45	2.28

Table B.5: Proportion in Each Detailed Occupation Category

Occupation	Percent	Occupation	Percent
General Executives/Managers	16.0	Sales Representatives	9.46
Managers of Service Org.	4.67	Sales Clerks	3.54
Management Related	8.63	Office Clerks/Health Service	1.92
Architects/Engineers	9.38	Administrative Support	2.43
Mathematical/Social Scientists	1.22	Protective Service	2.23
Professors/Natural Scientists	3.42	Household/Other Service	1.10
Doctors/Lawyers	9.78	Farmers	1.46
Health Assessors, etc.	7.59	Mechanics/Sys. Operators	2.69
Social Workers	2.34	Repairers/Precision Workers	0.56
Writers/Artists/Athletes	2.94	Construction Trades	0.94
Engineering/Science Technicians	4.46	Heavy Machine Operators	0.48
Health/Legal Technicians	0.86	Machine Operators/Drivers	1.37
		Laborers	0.57

Table B.6: Occupational Choices: Detailed Categorization

	Occupational Choice				
	(1)	(2)	(3)	(4)	(5)
Income Score (IS)	.490***	.212	-1.10**	-2.13***	-.943
	(.031)	(.130)	(.538)	(.444)	(.643)
Prestige Score (PS)	.386***	.164	.691*	4.00***	3.17***
	(.029)	(.105)	(.409)	(.563)	(.644)
Education Required	-.216***	-.432***	-.530**	-1.27***	-1.43***
	(.014)	(.050)	(.247)	(.231)	(.297)
Hours of Working	.055**	.495***	.568	2.64***	1.37*
	(.026)	(.104)	(.555)	(.475)	(.752)
Years of Experience	.147***	-.333***	-.476*	-.732***	-.422
	(.027)	(.068)	(.282)	(.267)	(.532)
IS × Pecuniary Demand	.051***	.047***	.027***	.021**	.011
	(.017)	(.016)	(.009)	(.008)	(.017)
PS × Prestige Demand	.048**	.037**	.037**	.029**	.051***
	(.019)	(.017)	(.016)	(.012)	(.016)
Ethnic Network				8.57***	9.62***
				(1.23)	(.965)
Individual Char.	No	Yes	Yes	Yes	Yes
Parental Char.	No	No	Yes	Yes	Yes
Origin Char.	No	No	No	No	Yes
No. of Origins	44	44	44	44	39
Log-likelihood/1000	-68.0	-67.4	-67.2	-66.4	-61.2
Increase from 0 to 1	Doctors/Lawyers			Laborers	
Pecuniary Demand	1.24 [14.2%]			-.094 [9.56%]	
Prestige Demand	.526 [5.90%]			-.075 [7.97%]	

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model. The dependent variable is an indicator for choice among the 25 occupation categories. Robust standard errors in parentheses account for clustering at origin level. Individual, parental, and origin characteristics are interacted with occupational attributes. The changes in odds of choosing certain occupation are calculated from estimates in column 2 and reported in percentage points, with percentage changes reported in brackets.

Appendix C

School and Neighborhood

C.1 Robustness Checks

C.1.1 Choice of Private Schools

In considering the above results, one concern is whether the value placed on school quality is affected by the omission of private school choices. Private schools serve as a substitute for public schools to households with children, and partly break the strict link between school choice and residential location (Hanushek et al., 2011). It is possible that parents who have sent or plan to send their children to private schools would value public school quality less when deciding where to live.

Therefore, I re-estimate the conditional logit regressions in the previous sections by including the fraction of private school enrollment among households with children in each PUMA and an interaction between this fraction and the child indicator. Since limited information on private schools in the Los Angeles Metropolitan Area, such as their quality and locations, is publicly available, it is hard to incorporate private school choices directly into the analysis. I use the percentage of households who send children to private schools as a proxy for the propensity that households living in a certain area choose private schools over public schools. The correlation between the API and the fraction of households who choose private school is 0.6, so that private schools tend to be located in areas

with good public schools.

Table C.1 column 1 reports the regression result when private school choices are taken into account. Compared to the estimates in Table 3.6, the coefficient on the API-child interaction term increases by around 25%, suggesting the availability of private school options may mitigate the importance of public school quality in residential choices.

C.1.2 Prime-Aged Householders

The preferences toward location attributes, especially local amenities may be associated with the age of householders. For instance, seniors may have a greater demand for medical care. Yet trimming by the propensity to have children under 18 may not perfectly balance the sample so that households with and without children would have similar views about non-school location characteristics. Accordingly, I restrict the sample to households with householders aged 30 to 54. This age group is likely to have children, and their preferences toward location attributes other than public schooling are more likely to be homogenous.

Table C.1 column 2 presents the estimates for households with prime-aged householders only. The estimated interaction effect of school quality on households with children is slightly larger than the one estimated using households of the whole age range, and stays statistically significant.

C.1.3 Naturalized Citizens

Another concern is whether the choice sets of immigrant households have been mischaracterized. Because the Census surveys all the foreign-born individuals in the United States, illegal immigrants and temporary migrants are also included. Due to their immigration status, illegal immigrants have limited access to certain public goods. Temporary migrants, such as those on a student visa, are very likely to relocate back to their home countries after a certain period. Borjas and Bratsberg (1996) find that about one-quarter of the foreign-born population in the U.S. emigrated after 10 years, and argue that return migration may have been

planned as part of an optimal life-cycle residential location sequence. A foreseeable tendency to move would alter the calculus in residential location decisions.

Therefore, as a robustness check, I focus solely on naturalized immigrant households in this section. These people may be more comparable to natives and are less likely to leave the country (Hook and Zhang, 2011). They may also be better informed in their selection of residential locations. There are 1,571 households with householders being naturalized citizens, making up about 17% of the trimmed sample of immigrants. On average, these households are wealthier and better educated than other immigrant households, whereas the fraction of households with children is slightly higher. As reported in Table C.1 column 3, the interaction effect of school quality on naturalized citizens with children is noticeably larger than for other immigrant households in the sample.

C.1.4 Out-of-state Movers

The lock-in effect of Proposition 13 in California results in differential incentives to relocate among households who moved within California and those who moved across states.[1] At the same time, out-of-state movers are more likely to undergo a move-inducing shock (Thomas, 2011). Thus, this section examines out-of-state movers who are less likely to have been subject to Proposition 13 lock-in. This group composes about 85% of the trimmed sample, and about 80% of them were abroad one year ago.

Estimates from the out-of-state movers are reported in Table C.1 column 4 and resemble those obtained from the sample including within-state movers.

[1]California's Proposition 13, passed in 1978, mandates a property tax rate of one percent and limits its growth rate. At the same time, housing prices have increased dramatically in California. Accordingly, households who have owned a house in California for many years have a disincentive to move because of the higher property tax on the new home's assessed market value they have to pay.

C.2 Table

Table C.1: School Quality and Residential Location Choices: Robustness Checks

	Private Schl. Choice	Prime Aged	Naturalized Citizen	Out-State Mover
API/1000	.019	-.361	-.675	.039
	(.300)	(.346)	(.829)	(.310)
API/1000 × 1(child<18)	2.39***	2.11***	2.67***	1.80***
	(.294)	(.291)	(.641)	(.283)
% Private	.023***			
	(.005)			
% Private × 1(child<18)	-.015***			
	(.004)			
No. of Obs.	9,436	6,769	1,574	8,086
Log-likelihood/1000	-38.5	-27.5	-6.39	-32.8
Marginal Effect				
API/1000 × 1(child<18)	.324	.272	.342	.236
	[27.3%]	[22.9%]	[28.9%]	[20.0%]

NOTE: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions are estimated by the conditional logit model using the specification in column 4 Table 3.6. Column 1 controls for the fraction of households who send children to private schools in each PUMA and an interaction between this fraction and a child indicator additionally. The reported marginal effect is the average percentage point change in parent-non-parent difference in choosing a PUMA given a 1 S.D. increase in API of that PUMA. The percentage changes are reported in brackets.

Bibliography

Acemoglu, Daron and Jorn-Steffen Pischke, "Changes in the wage structure, family income, and children's education," *European Economic Review*, May 2001, *45* (4-6), 890–904.

Ai, Chunrong and Edward C. Norton, "Interaction Terms in Logit and Probit Models," *Economic Letters*, January 2003, *80*, 123 – 129.

Algan, Yann and Pierre Cahuc, "Social Attitudes and Economic Development: An Epidemiological Approach," IZA Discussion Paper 2935, Institute for the Study of Labor, Bonn, Germany May 2007.

Arcidiacono, Peter, "Ability Sorting and the Returns to College Majors," *Journal of Econometrics*, July-August 2004, *121* (1-2), 343–375.

_ , V. Joseph Hotz, and Songman Kang, "Modelling College Major Choices using Elicited Measures of Expectations and Counterfactuals," *Journal of Econometrics*, Forthcoming.

Arts, Wil and Riel Vermunt, "New directions in social stratification and income distribution: Introduction," *Social Justice Research*, 1989, *3* (3), 181–186.

Barro, Robert J. and Rachel M. McCleary, "Religion and Economic Growth across Countries," *American Sociological Review*, October 2003, *68*, 760–781.

Barrow, Lisa, "School Choice through Relocation: Evidence from the Washington, D.C. Area," *Journal of Public Economics*, 2002, *86* (2), 155–189.

Bauer, Philipp and Regina T. Riphahn, "Heterogeneity in the Intergenerational Transmission of Educational Attainment: Evidence from Switzerland on Natives and Second-generation Immigrants," *Journal of Population Economics*, February 2007, *20* (1), 121–148.

Bayer, Patrick, Fernando V. Ferreira, and Robert McMilian, "A Unified Framework for Measuring Preferences across Schools and Neighborhoods," *Journal of Political Economy*, 2007, *115* (4), 588–638.

Berry, Steven T., "Estimating Discrete-Choice Models of Product Differentiation," *RAND Journal of Economics*, 1994, *25* (2), 242–262.

Betts, Julian R. and Magnus Lofstrom, "The Educational Attainment of Immigrants: Trends and Implications," in George J. Borjas, ed., *Issues in the Economics of Immigration*, University of Chicago Press for National Bureau of Economic Research, 2000.

Bisin, Alberto and Thierry Verdier, "Beyond the Melting Pot: Cultural Transmission, Marriage, and the Evolution of Ethnic and Religious Traits," *The Quarterly Journal of Economics*, August 2000, *115* (3), 955–988.

_ **and** _ , "A model of cultural transmission, voting and political ideology," *European Journal of Political Economy*, March 2000, *16* (1), 5–29.

_ **and** _ , "The Economics of Cultural Transmission and the Dynamics of Preferences," *Journal of Economic Theory*, April 2001, *97* (2), 298–319.

Borjas, George J., "Self-Selection and the Earnings of Immigrants," *The American Economic Review*, September 1987, *77* (4), 531–553.

_ , "Assimilation and Changes in Cohort Quality Revisited: What Happened to Immigrant Earnings in the 1980s?," *Journal of Labor Economics*, April 1995, *13* (2), 201–245.

_ , "Ethnicity, Neighborhoods, and Human-Capital Externalities," *The American Economic Review*, 1995, *85* (3), 365–390.

_ **and Bernt Bratsberg**, "Who Leaves? The Outmigration of the Foreign-Born," *The Review of Economics and Statistics*, February 1996, *78* (1), 165–176.

Boskin, Michael J., "A Conditional Logit Model of Occupational Choice," *The Journal of Political Economy*, March - April 1974, *82* (2), 389–398.

Botticini, Maristella and Zvi Eckstein, "Jewish Occupational Selection: Education, Restrictions, or Minorities?," *The Journal of Economic History*, December 2005, *65* (4), 922–948.

Boyd, Monica and Elizabeth M. Grieco, "Triumphant Transitions: Socioeconomic Achievements of the Second Generation in Canada," *International Migration Review*, Winter 1998, *32* (4), 853–876.

Bratsberg, Bernt and Dek Terrell, "School Quality and Returns to Education of U.S. Immigrants," *Economic Inquiry*, April 2002, *40* (2), 177–198.

Card, David and Alan B. Krueger, "Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States," *The Journal of Political Economy*, February 1992, *100* (1), 1–40.

_ **and** _ , "Labor Market Effects of School Quality: Theory and Evidence," NBER Working Paper 5450, National Bureau of Economic Research February 1996.

_ **, John DiNardo, and Eugena Estes**, "The More Things Change: Immigrants and the Children of Immigrants in the 1940s, the 1970s and the 1990sUniversity of Chicago Press for National Bureau of Economic Research," in George J. Borjas, ed., *Issues in the Economics of Immigration*, University of Chicago Press for National Bureau of Economic Research, 2000.

Chiswick, Barry R., "The Effect of Americanization on the Earnings of Foreign-born Men," *Journal of Political Economy*, October 1978, *86* (5), 897–921.

_ , "Differences in Education and Earnings Across Racial and Ethnic Groups: Tastes, Discrimination, and Investments in Child Quality," *The Quarterly Journal of Economics*, August 1988, *103* (3), 571–597.

_ , "Are Immigrants Favorably Self-Selected? An Economic Analysis," in Caroline D. Brattell and James F. Hollifield, eds., *Migration Theory: Talking Across the Disciplines*, New York: Routledge, March 2000, chapter 3, pp. 61–76.

_ **and Noyna DebBurman**, "Educational Attainment: Analysis by Immigrant Generation," *Economics of Education Review*, August 2004, *23* (4), 361–379.

_ **and Paul W. Miller**, "Where Immigrants Settle in the United States," IZA Discussion Paper 1231, Institute for the Study of Labor, Bonn, Germany August 2004.

Citro, Constance F. and Robert T. Michael, *Measuring Poverty: A New Approach*, Washington, D.C.: National Academy Press, 1995.

Clapp, John M., Anupam Nanda, and Stephen L. Ross, "Which Schoo Attributes Matter? The Influence of School District Performance and Demographic Composition on Property Values," *Journal of Urban Economics*, 2008, *63*, 451–466.

Corneo, Giacomo and Olivier Jeanne, "Symbolic Values, Occupational Choice, and Economic Development," *European Economic Review*, February 2010, *54* (2), 237–251.

Cortes, Kalena E., "Are Refugees Different from Economic Immigrants? Some Empirical Evidence on the Heterogeneity of Immigrant Groups in the United States," *The Review of Economics and Statistics*, May 2004, *86* (2), 465–480.

Dolton, Peter J., Gerald Henry Makepeace, and Wilbert van der Klaauw, "Occupational Choice and Earnings Determinantion: The Role of Sample Selection and Non-pecuniary Factors," *Oxford Economic Paper*, 1989, *41*, 573–594.

Duleep, Harriet Orcutt and Mark C. Regets, "Immigrants and Human-Capital Investment," *The American Economic Review*, May 1999, *89* (2), 186–191.

Fejgin, Naomi, "Factors Contributing to the Academic Excellence of American Jewish and Asian Students," *Sociology of Education*, January 1995, *68* (1), 18–30.

Fernandez, Raquel, "Women, Work, and Culture," *Journal of the European Economic Association*, May 2007, *5* (2-3), 305–332.

_ **and Alessandra Fogli**, "Culture: An Empirical Investigation of Beliefs, Work, and Fertility," *American Economic Journal: Macroeconomics*, January 2009, *1* (1), 146–177.

Fershtman, Chaim and Yoram Weiss, "Social Status, Culture and Economic Performance," *The Economic Journal*, July 1993, *103* (419), 946–959.

Friedberg, Rachel M, "You Can't Take It with You? Immigrant Assimilation and the Portability of Human Capital," *Journal of Labor Economics*, April 2000, *18* (2), 221–251.

Furtado, Delia and Nikolaos Theodoropoulos, "Interethnic Marriage: A Choice between Ethnic and Educational Similarities," IZA Discussion Paper 3448, Institute for the Study of Labor, Bonn, Germany April 2008.

Giavazzi, Francesco, Fabio Schiantarelli, and Michel Serafinelli, "Culture, Policies and Labor Market Outcomes," NBER Working Paper 15417, National Bureau of Economic Research October 2009.

Giuliano, Paola, "Living Arrangements in Western Europe: Does Cultural Origin Matter?," *Journal of the European Economic Association*, September 2007, *5* (5), 927–952.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, "Cultural Biases in Economic Exchange," *The Quarterly Journal of Economics*, August 2009, *124* (3), 1095–1130.

Hanushek, Eric A. and Dennis D. Kimko, "Schooling, Labor-Force Quality, and the Growth of Nations," *American Economic Review*, December 2000, *90* (5), 1184–1208.

_ **and Ludger Woessmann**, "Sample Selectivity and the Validity of International Student Achievement Tests in Economic Research," NBER Working Paper 15867, National Bureau of Economic Research April 2010.

_ , **Sinan Sarpca, and Kuzey Yilmaz**, "Private Schools and Residential Choices: Accessibility, Mobility, and Welfare," *The B.E. Journal of Economic Analysis & Policy*, 2011, *11* (1 Contributions), 1–32.

Hasting, Justine S. and Jeffrey M. Weinstein, "Information, School Choice, and Academic Achievement: Evidence from Two Experiments," *The Quarterly Journal of Economics*, 2008, *123* (4), 1373–1414.

Hausman, Jerry A. and Daniel L. McFadden, "Specification Tests for the Multinomial Logit Model," *Econometrica*, September 1984, *52* (5), 1219–1240.

Heckman, James J., "Sample Selection Bias as a Specification Error," *Econometrica*, January 1979, *47* (1), 153–161.

Hirano, Keisuke, Guido W. Imbens, and Geert Ridder, "Efficient Estimation of Average Treatment Effects Using the Estimated Propensity Score," *Econometrica*, July 2003, *71* (4), 1161–1189.

Hook, Jennifer Van and Weiwei Zhang, "Who Stays? Who Goes? Selective Emigration Among the Foreign-Born," *Population Research and Policy Review*, February 2011, *30* (1), 1–24.

Humlum, Maria Knoth, Kristin J. Kleinjans, and Helena Skyt Neilsen, "An Economic Analysis of Identity and Career Choice," *Economic Inquiry*, Forthcoming.

Imbens, Guido W., "The Role of the Propensity Score in Estimating Dose-Response Functions," *Biometrika*, September 2000, *87* (3), 706–710.

Jaeger, David A., "Local Labor Markets, Admission Categories, and Immigratn Location Choice," in "IZA Annual Migration Meeting" Institude for the Study of Labor 2004.

Jasso, Guillermina, Douglas S. Massey, Mark R. Rosenzweig, and James P. Smith, "The U.S. New Immigrant Survey: Overview and Preliminary Results Based on the New-Immigrant Cohorts of 1996 and 2003," in B. Morgan and B. Nicholson, eds., *Immigration Research and Statistics Service Workshop on Longitudinal Surveys and Cross-Cultural Survey Design: Workshop Proceedings*, London, UK: Crown Publishing 2005, pp. 29–46.

_ , **Mark Rosenzweig, and James P. Smith**, "The Changing Skill of New Immigrants to the United States: Recent Trends and Their Determinants," in George J. Borjas, ed., *Issues in the Economics of Immigration*, Chicago: University of Chicago Press, 2000.

Kao, Grace and Jennifer S. Thompson, "Racial and Ethnic Stratification in Educational Achievement and Attainment," *Annual Review of Sociology*, June 2003, *29*, 417–442.

Klasing, Mariko J., "Culturally Risk Averse? A Model of Economic Growth with Endogenous Culture," University of St. Gallen, Department of Economics Discussion Paper 2008-3, University of St. Gallen, Department of Economics November 2008.

Leong, Frederick T.L. and Felicisima C. Serafica, "Career development of Asian Americans : A Research Area in Need of a Good Theory," in Frederick T.L. Leong, ed., *Career Development and Vocational Behavior of Racial and Ethnic Minorities*, Erlbaum: Hillsdale, NJ, 1995, pp. 67–102.

Lewer, Joshua J. and Hendrik Van den Berg, "A Gravity Model of Immigration," *Economics Letters*, April 2008, *99* (1), 164–167.

McArthur, Edith, Kelly W. Colopy, and Beth Schlaline, "Use of School Choice," in "Education Policy Issues: Statistical Perspectives" National Center for Education Statistics 1995.

McFadden, Daniel L., "Conditional Logit Analysis of Qualitative Choice Behavior," in Paul Zarembka, ed., *Frontiers in Econometrics*, Academic Press: New York, 1974, pp. 105–142.

_ , "Econometric Models of Probabilistic Choice," in Charles F. Manski and Daniel L. McFadden, eds., *Structural Analysis of Discrete Data with Econometirc Applications*, MIT Press: Cambridge, MA, 1981, pp. 2–50.

McKenzie, David and Hillel Rapoport, "Self-Selection Patterns in Mexico-U.S. Migration: the Role of Migration Networks," *The Review of Economics and Statistics*, November 2010, *92* (4), 811–821.

Munshi, Kaivan D. and Nicholas L. Wilson, "Identity, Parochial Institutions, and Occupational Choice: Linking the Past to the Present in the American Midwest," NBER Working Paper 13717, National Bureau of Economic Research January 2008.

Osipow, Samuel H. and Eugia M. Littlejohn, "Toward a Multicultural Theory of Career Development: Prospects and Dilemmas," in Frederick T.L. Leong, ed., *Career Development and Vocational Behavior of Racial and Ethnic Minorities*, Erlbaum: Hillsdale, NJ, 1995, pp. 251–261.

Park, Jin Heum, "Measuring Education over Time: A Comparison of Old and New Measures of Eduction from the Current Population Survey," *Economics Letters*, March 1996, *50* (3), 425–428.

Qian, Zhenchao, "Measuring Marital Assimilation: Intermarriage among Natives and Immigrants," *Social Science Research*, 2001, *30*, 289–312.

_ **and Daniel T. Lichter**, "Social Boundaries and Marital Assimilation: Interpreting Trends in Racial and Ethnic Intermarriage," *American Sociological Review*, February 2007, *72* (1), 68–94.

Rothstein, Jesse and Cecilia E. Rouse, "Constrained After College: Student Loans and Early Career Occupational Choices," NBER Working Paper 13117, National Bureau of Economic Research May 2007.

Schneider, Barbara and Yongsook Lee, "A Model for Academic Success: The School and Home Environment of East Asian Students," *Anthropology & Education Quarterly*, December 1990, *21* (4), 358–377.

Siow, Aloysius, "Occupational Choice under Uncertainty," *Econometrica*, May 1984, *52* (3), 631–645.

Solon, Gary, "Intergenerational Income Mobility in the United States," *The American Economic Review*, June 1992, *82* (3), 393–408.

Straszheim, Mahlon R., "The Theory of Urban Residential Location," in J. Vernon Henderson and Jacques-Francois Thisse, eds., *Handbook of Regional and Urban Economics*, New York: Elsevier, 1987.

Sue, Stanley and Sumie Okazaki, "Asian-American Educational Achievements: A Phenomenon in Search of An Explanation," *Asian American Journal of Psychology*, August 2009, *S* (1), 44–45.

Tabellini, Guido, "Culture and Institutions: Economic Development in the Regions of Europe," *Journal of the European Economic Association*, May 2010, *8* (4), 677–716.

Thomas, Jaime, "Neighborhood Demographics, School Effectiveness, and Residential Location Choice." PhD dissertation, University of California, San Diego 2011.

Tiebout, Charles M., "A Pure Theory of Local Expenditures," *The Journal of Political Economy*, 1956, *64* (5), 416–424.

Yu, Zhou, "Immigration and Sprawl: Race/Ethnicity, Immigrant Status, and Residential Mobility in Household Location Choice," Working Paper 2003-1010, USC Lusk Center 2003.

Zhan, Yi, "The Effects of Scholarly Culture on Educational Attainment," Working Paper, University of California, San Diego, Department of Economics Feburary 2011.