THREE STUDIES ON THE SOCIOECONOMIC ATTAINMENT

OF U.S. IMMIGRANTS AND THEIR DESCENDANTS

A Dissertation

by

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ABSTRACT

Immigrant incorporation into U.S. society has been an important topic and has attracted

the academic attention of U.S. social scientists for decades. The current wave of immigrants

differs from the earlier waves of European immigrants in that recent immigrants are from more

diverse racial/ethnic backgrounds. The socioeconomic stratification of racial/ethnic groups in

the U.S. makes incorporation and assimilation of immigrants more complex. This dissertation

project investigates educational and wage attainments of Americans from immigrant families, as

these factors are important measures of immigration assimilation. The dissertation is divided

into three separate articles. The first article (Chapter 2) uses data from the National Longitudinal

Survey of Youth to show that children of immigrants from black, Hispanic, and Asian

backgrounds have higher educational levels compared to 3+ generation non-Hispanic white

Americans. This educational advantage is most evident at the "some college" level for second

generation blacks and Hispanics, and at the "college" level for second generation Asians. Using

the restricted-access data from the National Longitudinal Survey of Youth, the second article

(Chapter 3) indicates that intergenerational educational mobility is higher if 3+ generation

Hispanic men reside in areas with a larger Hispanic population, and if 2nd generation Hispanic

men reside in areas with a larger college-educated population, during their adolescent years. The

third study (Chapter 4) uses data from the 2010 National Survey of College Graduates to indicate

that native-born and foreign-born Hispanic women who have at least a college degree have

reached approximate wage parity with comparable native-born non-Hispanic white women. By

contrast, native-born Hispanic men face a 10% wage penalty relative to comparable native-born

non-Hispanic white men. In addition, foreign-born Hispanic men who immigrated as adults and

obtained their college degree outside of the U.S. face larger wage penalties that are augmented by a lack of citizenship. Taken together, the findings from these three studies illustrate the importance of parental human capital, ethnic capital, and immigration generation in determining the ease of assimilation of immigrants and their children, and that these effects differ depending on a person's racial/ethnic background.

DEDICATION

I dedicate this dissertation to my beloved parents and husband.

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CHAPTER I

INTRODUCTION

The 1965 Immigration and Nationality Act eliminated nationality-based quotas and thus opened the United States to a diverse group of immigrants from Latin America, Asia, and Africa. As the population of the post-1965 immigrants and their children in the U.S. has grown exponentially, interest in this population from an academic standpoint has also increased dramatically. In addition, many of the children of the current immigrant wave have matured and entered adulthood, and understanding their socioeconomic outcomes is important for both theoretical development and policy issues in several different ways (Zhou and Bankston, 2017). First, the adult children of post-1965 immigrants are coming of age in sizable numbers and will transform patterns of inequality in the near future. Issues surrounding their socioeconomic assimilation are particularly pertinent to their well-being, level of happiness, health conditions, and future generation's attainments. Second, today's immigrants are racially and ethnically diverse. For example, over 70% of second generation Americans are Asian or Hispanic, and there is also a growing proportion of black immigrants. Therefore, second generation immigrants' socioeconomic outcomes may reflect complex racial/ethnic relations in the U.S. Thirdly, America is becoming more economically bifurcated: inequality is growing, mobility is declining, and education has become all but vital to economic success (Hout 2012). This societal structural change might provide immigrants and their children with opportunities as well as challenges to assimilation.

Two major theories regarding assimilation and attainments of second generation immigrants have been established by American social scientists. Scholars who support the

straight-line assimilation theory believe that the new second generation is assimilating socioeconomically (Waters and Jimenez 2005; Alba and Nee 2009; Kasinitz et al 2009; Nee and Alba 2012). Straight-line assimilation is an extension of the traditional assimilation theory developed by the founders of the Chicago School of Sociology. Traditional assimilation theory is based on investigation of the progress and social mobility of early European immigrants and their descendants in the early 20th century. Straight-line assimilation builds on traditional assimilation theory and posits that immigrants present upward mobility (Alba and Nee 2009; Nee and Alba 2012). Thus, assimilation is viewed as a linear process for new comers. The level of assimilation increases with the duration of immigrants' residence in the hosting country. In addition, their descendants will eventually assimilate into the U.S. mainstream society, and level of assimilation increases as a function of generation.

The segmented assimilation theory emerged as a competing model for assimilation. In contrast to the straight-line assimilation theory, the segmented assimilation considers the diverse racial/ethnic composition of the new wave of immigrants and racial/ethnic stratification in the U.S. society (Portes 1997; Zhou 1997; Zhou and Portes 2012). With segmented assimilation, there are three distinct paths of assimilation: upward assimilation, downward assimilation, and upward mobility combined with biculturalism. These three different paths take into consideration of important factors, including place of origin of immigrant parents, relations between children who were born to immigrant parents, and existing racial/ethnic disparities in the U.S.

Typically, studies on assimilation are concerned with how different or similar other Americans are to immigrants and their children, and employ a variety of measurements, including socioeconomic standing, residential segregation, intermarriage, fertility, etc. (Waters

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and Jimenez 2005). The overarching goal of this three-article formatted dissertation is to investigate socioeconomic assimilation, including education and wages, of immigrants and their children. This dissertation is divided into three articles presented in Chapters 2, 3, and 4, respectively. Chapter 2 examines educational attainments among children from immigrant families while considering their parental characteristics and racial/ethnic effects. Chapter 3 investigates intergenerational educational mobility among second generation Hispanic Americans while taking into account ethnic capital effects. Chapter 4 assesses wage assimilation among college-educated Hispanic Americans while classifying Hispanic Americans into groups based on place of birth and the time when they entered the U.S. educational systems. Chapter 5 provides a conclusion and a summary of the findings. It also discusses potential future research directions as well as the theoretical and policy implications of this research.

Abundant empirical research has suggested children from immigrant families (i.e. 1.5 and 2nd generation immigrants) are especially doing well in terms of socioeconomic standing. However, some research also show that second generation immigrants of racial minority background are not doing as well due to structural obstacles. My dissertation seeks to contribute to the literature on immigration and assimilation by (1) taking into account parental human capital in explaining socioeconomic outcomes of children from immigrants; (2) considering ethnic capital and contextual environmental characteristics' effects on second generation immigrants' socioeconomic outcomes; and (3) breaking down immigrants and their descendants into immigration generation based on place of birth and time when immigrants entered the U.S. educational system. In addition, my dissertation studies have utilized existing nationally representative datasets. Specifically, Chapter 2 and Chapter 3 employ data from the National Longitudinal Survey of Youth 1997. During the latest wave, children from immigrant families

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reached around 30 years old, at which age most people have already finished education. The dataset provides valuable information on parental characteristics, environmental characteristics, and school characteristics of 1.5 and 2nd generation immigrants. Chapter 4 uses data from the 2010 National Survey of College Graduates. This datasets contains rich information on person's educational and labor market experience, allowing me to differentiate Hispanics by generational groups while taking into account the exogenous factors in predicting one's wage.

Reference

Alba, Richard, and Victor Nee. 2009. *Remaking the American Mainstream: Assimilation and Contemporary Immigration*. Harvard University Press.

Hout, Michael. 2012. "Social and Economic Returns to College Education in the United States." *Annual Review of Sociology* 38: 379-400.

Kasinitz, Philip, John H. Mollenkopf, Mary C. Waters, and Jennifer Holdaway. 2009. *Inheriting the City: The Children of Immigrants Come of Age*. Russell Sage Foundation.

Nee, Victor, and Richard Alba. 2012. "Rethinking Assimilation Theory for a New Era of Immigration." *The New Immigration*. Routledge, 49-80.

Portes, Alejandro. 1997. "Immigration Theory for a New Century: Some Problems and Opportunities." *International Migration Review*: 799-825.

Waters, Mary C., and Tomás R. Jiménez. 2005. "Assessing Immigrant Assimilation: New Empirical and Theoretical Challenges." *Annual Review Sociology* 31: 105-125.

Zhou, Min. 1997. "Segmented Assimilation: Issues, Controversies, and Recent Research on the New Second Generation." *International Migration Review*: 975-1008.

Zhou, Min, and Carl L. Bankston III. 2016. *The Rise of the New Second Generation*. John Wiley & Sons.

Zhou, Min, and Alejandro Portes. 2012. "The New Second Generation: Segmented Assimilation and Its Variants." *The New Immigration*. Routledge, 99-116.

CHAPTER II

ARE THEY ASSIMILATING?

PATTERNS OF EDUCATIONAL ATTAINMENT AMONG CHILDREN OF IMMIGRANTS

IN THE NATIONAL LONGITUDINAL SURVEY OF YOUTH 1997

Introduction

The present study examines educational attainments of adult children of immigrants with different racial/ethnic backgrounds. Today many second generation Americans are children of the racially and ethnically diverse group of immigrants who entered the country following the 1965 Immigration Act (Massey 1995). According to the Census Bureau, in 2015 around 13.5% of the population in the U.S. were foreign-born (Census Bureau 2015). Among the foreign-born population, 45% of them identified as Hispanic, 27% as Asian, and 9% as black (Current Population Survey 2015). In recent years, the number of Americans born to an immigrant parent has grown dramatically. Children of immigrants are the most racially diverse group in the U.S. and this group represents an important segment of the U.S. population (Portes and Rumbaut 2005; Portes and Fernandez-Kelly 2008). Determining the attainments of children from immigrant families is important for understanding the mechanisms of immigrant adaptation and racial/ethnic inequality in the U.S.

Children of immigrants are often regarded as "high achievers" in terms of socioeconomic attainments (Kao and Tienda 1995; Feliciano 2005). According to the U.S. Census Bureau, second generation adult Americans have higher incomes (i.e. median annual household income is $58,100), higher educational attainments (i.e. 36% of the second generation are college graduates), and lower crime rates (i.e. 23% vs. 25%), with fewer living in poverty (i.e. 11% of

the second generation live in poverty) compared to first generation or third generation Americans and beyond. In addition, dividing second generation Americans into different racial/ethnic groups shows that second generation immigrants continue to have on average higher socioeconomic statuses than third generation persons and beyond within the same racial/ethnic category (Portes and Rumbaut 2001; Hirschman 2001; Farley and Alba 2002; Kasinitz el al 2004) . This paradoxical pattern is often referred to as the "second generation advantage," "immigrant paradox," or "super-achievement" (Feliciano and Lanuza 2017). However, previous studies have argued that the second generation advantage may vary and only occur for certain racial/ethnic groups, due to racial/ethnic stratification in the U.S. (Bankson and Zhou 2002; Portes and Rumbaut 2006; Massey 2007).

Previous studies have attributed this higher-than-average achievement among children from immigrant families to self-selection among first generation immigrant parents (Jasso and Rosenzweig 1990; Massey et al 1993). First generation immigrants are often ambitious and possess a high level of human capital and high expectations for their children (Kao and Tienda 1995). In general, first generation parents may pass their high aspirations onto their children and push them to achieve greater success in school and in their careers (Ogbu 1974).

The educational attainment of second generation Americans is a timely subject (Kucera 2008). Many second generation Americans have matured, finished their education, and are about to join the labor force. Thus, this racially and ethnically diverse segment of the population is coming of age in sizable numbers and will transform patterns of inequality in the near future (Portes and Zhou 1997). More than 70% of second generation Americans are Asian or Hispanic, while there is also a growing proportion of black immigrants from Africa and the Caribbean.

Therefore, the socioeconomic outcomes of second generation immigrants may shed light on current racial/ethnic relations in the U.S. and where inequality is heading in the future.

As this diverse cohort of second generation Americans matures, the U.S. is simultaneously becoming more economically bifurcated: inequality is growing and mobility is declining. In these times, education has become all but vital for long-term well-being. Previous studies have suggested that education leads to higher personal and family income, longer life expectancy, and lower rates of divorce (Hout 2012). This societal structural change might provide children of immigrants with opportunities or challenges for adapting to U.S. society. As education proves to be a critical indicator of immigrant assimilation, the educational attainments of second generation Americans is a theoretically and politically important topic.

Numerous studies have been conducted in regards to educational development and outcomes among children of immigrants; their educational attainment during adulthood, however, has not been studied extensively. The lack of suitable datasets for studying 1.5 and 2nd generation immigrants has hindered assimilation research (Farley and Alba 2002). Although the decennial census used to include parents' place of birth, this information was excluded in 1980 due to the small number of immigrants in the U.S. Fortunately, in 1994, the Current Population Survey (CPS) added questions about parents' birth place, providing researchers with the opportunity identify children born to immigrant parents in samples (Farley and Alba 2002). However, variables indicating parental and family characteristics, as important factors for studying educational outcomes, are still excluded in the CPS datasets. Some scholars have utilized regional surveys (i.e., The Immigrant and Intergenerational Mobility in Metropolitan Los Angeles survey and Children of Immigrants Longitudinal Study), but regional surveys typically do not contain nationally representative information, and some of the ethnic groups are often

under-represented. The recent cohort of respondents to the National Longitudinal Survey of Youth 1997, however, has matured. During the latest round of the survey (2013), the youngest respondent was 28 years old. This nationally representative dataset provides the necessary information, including personal and family characteristics, for studying educational attainments among children from immigrant families.

Does the second generation advantage persist across different racial/ethnic backgrounds? To what extent do family characteristics contribute to variations in educational attainments of second generation Americans? Using data from the National Longitudinal Survey of Youth 1997, the present chapter investigates these research questions by examining the relationships between family characteristics, race/ethnicity, and educational attainments among children from immigrant families. Two measures of educational attainment are used in this study, including years of schooling at age 28 and highest educational degree obtained by the year 2013. This study seeks to provide insight in regard to assimilation among second generation Americans and educational stratification in the U.S.

Background

Educational Attainment among Children of Immigrants

Education is an important indicator of assimilation among immigrants and their descendants. Firstly, schools provide children of immigrants a place to acquire culturally significant knowledge such as American history, values, and societal norms. Secondly, schools provide children of immigrants with the opportunity to socialize with peers and to be exposed to American social customs, standards, and informal rules. Schools enhance language acquisition especially among children whose parents may not be fluent in English (Mouw and Xie 1999;

Zeng and Xie 2004; Kim and Sakamoto 2010). Previous studies have suggested that education is a primary determinant of long-term economic success and a key mechanism of social mobility (Baum and Ma 2007). Therefore, gaining an education in the destination country helps to assist children of immigrants in assimilation, while improving socioeconomic status for themselves and their descendants (Zeng and Xie 2004; Kim and Sakamoto 2010).

Previous research has consistently found that second-generation Americans have higher levels of educational attainment than natives or their parental generation immigrants. For example, Hagy and colleague report that children of immigrants have higher high school graduation rates and a higher probability of enrolling in college. In addition, children of immigrants have higher levels of educational attainment than first generation immigrants and third or beyond generation Americans. Kao and Tienda (2008) find that second-generation Americans tend to do better academically than minorities of native-born parents. In addition, second-generation youth in New York City tend to perform better in school than their peers of third-generation or beyond (Kasinitz et al 2008). Utilizing a meta-analytic approach, Duong and colleagues (2016) also report that second-generation students perform better than third-or-later-generation peers.

Previous studies have argued that second generation immigrants' high educational attainment is attributed to their parents' high human capital. For instance, the high educational achievement of children of immigrants may be attributed to them inheriting high aspirations from their foreign-born parents' coupled with U.S.-specific human capital (Kao and Tienda 1995; Grogger and Trejo 2002; Sakamoto et al 2009; Hsin and Xie 2014). Selectivity theory suggests that immigrants who come to the U.S. have certain advantages over non-migrants (Jasso and Rosenzweig 1990; Massey et al 1993). In general, first generation immigrants are more

motivated (Kao and Tienda 1995), have more socioeconomic resources (Feliciano 2005; Ichou 2014), and are physically healthier (Jass and Massey 2004) than non-migrants who remain in their home country. Some scholars have indicated that selectivity level varies among immigrants that migrate for different reasons (Chiswick 1999). For example, undocumented immigrants and refugees might not be as positively selected as immigrants who migrate for economic reasons (Borjas 1991). Other scholars, however, hold opposite views arguing that all immigrants, including undocumented immigrants or refugees, are more positively selected in terms of education and occupation than non-immigrants from the same country (Feliciano 2005). Feliciano (2005, 2008, 2017) and colleagues have examined the relative educational attainments of immigrants compared to the national level in their home country to demonstrate that immigrants from all countries have a relatively high educational level. However, the level of positive selectivity varies across immigrant groups. For example, the level of positive selectivity is fairly low among Mexican immigrants compared to Southeast Asian immigrants (Feliciano 2008).

Stemming from the selectivity theory, the immigrant optimistic theory by Kao and Tienda (1998) suggest that immigrant parents are optimistic about their children's educational prospects, which makes their children work harder to succeed academically. Some scholars attribute the success of second generation Asian Americans to "hyperselectivity" of first generation Asian immigrants (Lee and Zhou 2015). According to the hyperselectivity hypothesis, Lee and colleagues argue that Asian immigrants coming to the U.S. are an especially positively selected group and bring with them the cultural package to succeed and push their children to do well in school.

Are They Assimilating? Conventional Assimilation and Segmented Assimilation

In contemporary assimilation studies, immigrants are usually classified into three groups, including the first generation, 1.5th generation, and second generation (Rumbaut 1991; Portes and Rumbaut 2005). First generation immigrants are defined as immigrants who were born outside the U.S. and arrived here as adults. The 1.5th generation refers to those who were born in a foreign country but moved to the U.S. before the age of 15 (Rumbaut 1991). The second generation refers to those born in the U.S. to at least one foreign-born parent.

Assimilation research uses the term "straight-line" assimilation to illustrate the experience of early European immigrants. However, Alba and Nee (2009) have advocated a new classical assimilation theory, suggesting that the new wave of second generation Americans demonstrate upward mobility regardless of their minority racial/ethnic backgrounds. This new theory is optimistic in predicting that assimilation will eventually occur, as it had for the earlier waves of European immigrants (Alba and Nee 2009; Alba 2017). However, other recent studies have criticized straight-line assimilation theory, suggesting that it only applies to the previous waves of European immigrants, but not recent non-white immigrants (Portes and Zhou 1993).

The Immigration Act of 1965 brought in diverse groups of immigrants from non-European countries, including predominantly developing countries in Latin America, Asia, and Africa (Borjas 1991). The extraordinarily diverse national origins and socioeconomic statuses of second generation immigrants leads to a new theory of assimilation. Some recent research argues that the mobility of recent second generation immigrants is not high due to structural change of contemporary society (Portes and Rumbaut 2006). Gans (1992) suggests a potential downward mobility among children of contemporary immigrants. Portes and Zhou (1993), building upon Gans' suggestion, have proposed a segmented assimilation theory. They claim

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that contemporary second generation immigrants assimilate into a racially and economically stratified U.S. society. Unlike the previous waves of European immigrants who have successfully assimilated into the mainstream middle class, today's second generation follow different pathways of assimilation and incorporation (Portes and Zhou 1993; Zhou 1997; Portes and Rumbaut 2001; Portes 2007). The first pathway leads to assimilation into the white middle-class, the second pathway leads to poverty and assimilation into the underclass, and the third pathway leads to upward mobility combined with persistent biculturalism (Portes and Zhou 1993).

Segmented assimilation theory is relatively pessimistic. Consistent with prior literature on structural inequality, segmented assimilation theory suggests that racial/ethnic and social origins determine the pathway taken by second generation immigrants (Portes and Zhou 1993). Due to the fact that the U.S. is a racially stratified society, second generation Americans of different racial/ethnic backgrounds differentially benefit from "second generation optimism." In other words, some second generation groups will prosper, whereas others will form a new underclass (Portes and Zhou 1993). In terms of education, some second generation groups will succeed, while others will be disadvantaged.

Prior studies have attributed differentials in socioeconomic attainments of the second generation to race and ethnicity (Portes and Rumbaut 1996; Kao and Tienda 1995). Consistent with segmented assimilation theory, these studies suggest that parental race/ethnicity has influential effects on children's academic outcomes. For example, Hirschman (2001) has found that 2nd generation Americans of Hispanic and Caribbean origin lag behind in terms of education. Empirical research has consistently shown that educational attainments among children of contemporary immigrants vary significantly by origin country (Kasinitz et al 2008; Portes and

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Rumbaut 2001). For example, on average, Asians have higher educational attainments, whereas Hispanic children of immigrants have lower educational attainments (Feliciano 2005), compared to non-Hispanic white Americans. Second generation Mexican youths are particularly disadvantaged in education relative to other second-generation groups (Portes and Rumbaut 2001).

According to the new assimilation theory (Alba and Nee 2004) and optimistic assimilation theory (Kao and Tiend 1995), children from immigrant families are expected to at least achieve educational parity with the benchmark population (i.e., 3+ generation non-Hispanic whites) in the U.S. Some groups might even achieve higher educational attainments than the mainstream population. In contrast, segmented assimilation theory (Portes and Zhou 1993) predicts divergent pathways of educational attainment among children of immigrants based on racial/ethnic background. According to racial stratification in the U.S., second generation black and Hispanic Americans are expected to have lower educational attainments than the benchmark population, whereas second generation Americans with white or Asian backgrounds are expected to fare better educationally compared to the mainstream population. In addition, according to the immigrant selectivity theory, I expect to see parental and family characteristics would explain some of the second generation advantages, if there are any.

Data and Methods

Dataset

NLSY97 is sponsored by the U.S. Bureau of Labor Statistics. NLSY97 is an ongoing nationally representative panel study of 8,984 youth between 12 and 17 years of age when they were first interviewed in 1997. It consists of a set of comprehensive surveys providing

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information about educational and labor market activities at multiple time points. NLSY97 is

designed to document the transition from school to work, and thus it collects detailed

information about educational experiences and family background over time among young adults

(Center for Human Resource Research 1993). The sample consists of a nationally representative

sample of 6,748 youths and an over-sample of 2,236 Hispanic and non-Hispanic black youths.

In this study, we use surveys from Round 1 (1997) and Rounds 11 to 16 (2013). In Round 1

(1997), parents were asked to answer a survey documenting parental and family characteristics.

I use this information to extract parental characteristics and family structure in 1997 when the

youths were residing with their guardians. In addition, NLSY97 provides different measures of

educational attainments, including highest grade completed at age 28 and highest degree

completed in 2013. Multiple measures of educational attainment allow for a more robust

analysis.

Target Population, Variables, and Measures

The target population of this study is the respondents who have at least one parent born

abroad. Children of immigrants include both second generation (i.e. born in the U.S.) and 1.5

generation (born outside of the U.S. but migrated to the U.S. as children). Children of

immigrants are grouped into different racial/ethnic backgrounds, including non-Hispanic whites

(2nd generation whites), non-Hispanic blacks (2nd generation blacks), Hispanics (2nd generation

Hispanics), and Asians (2nd generation Asians). In addition, non-Hispanic whites of third

generation and beyond (3+ generation) are included as reference groups

Dependent Variables. The dependent variables of interest for the present study include

years of schooling at age 28 and highest degree obtained in 2013. Years of schooling at age 28 is

a continuous variable, ranging from 0 to 20. I use age 28 because most people have finished their education, including those who were working on a PhD or professional degree. I use surveys from Rounds 11 to 16 (years from 2007 to 2013) to extract years of schooling at age 28 for respondents. The variable of the highest degree obtained in 2013 is an ordinal variable that is extracted from Round 16. The variable is categorized as less than high school, high school, associate degree, bachelor's degree, and graduate degree.

    Control Variables. The control variables in the study include personal, parental, and family characteristics, as well as geographical location. These control variables may affect educational attainments. To control for personal characteristics, I use the child's gender (male =1/ female =0), age, and age squared. To control for parental human capital and family characteristics, I use parents' years of schooling, family income in 1996, family structure, mother's age when giving birth to the child, and number of siblings. These control variables indicating parental and family characteristics are extracted from the Round 1 survey answered by the parents. In the parent survey, the responding parents were asked to provide information about their years of schooling, as well as information about youth's other biological parent, and residential father/mother. If biological parent's information on education is missing, I use residential parent's years of schooling. I adjusted parental household income in 1996 based on CPI-R-U to 2010 dollars. Annual household income below $1,000 is recoded to $1,000 to avoid bias resulting from outliers. The child's living arrangement is defined as 1 if the child had lived with both biological parents and 0 otherwise. Number of siblings in the household and mother's age when she had the child are used as continuous variables. The geographical location is controlled for by creating dummy variables indicating South (yes = 1/no = 0) and metropolitan areas (yes = 1/no = 0).

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Weighting

The NLSY97 is over-sampled on black and Hispanic youths. Because over-sampling impacts population descriptors (i.e. means and medians), I adjust data by weighting to reduce the impact of each black and Hispanic respondent and remove the bias (standard errors are larger without weighting techniques). This way the analyses will yield nationally representative results. I apply custom weights that are provided through NLSY. To adjust for sample attrition, I present weighted statistics for sample characteristics, which also correspond to characteristics of the respondents from the initial survey at 1997 by age and race.

It should be noted that due to the nature of panel data, there are many missing items and responses. For example, in Round 16 (2013), 1843 interviewees were missing from the interview. In the present study, I only include respondents who answered all the surveys. For the missing dependent variables, I use listwise deletion to deal with missing values.

Most variables had either no or small numbers of missing data (1-2%). Some items, such as family income, wealth and parental education, however, have relatively high nonresponse rates. Using listwise deletion with a weighting technique might yield unrepresentative results (NLSY97, Bureau of Labor Statistics). Regarding parental education, I utilize surveys from all Rounds and link family members using family roster to identify the educational outcomes of the biological father and mother, while reducing missing responses. I then created a dummy variable for missing information on parental education.

NLSY97 employs a two-stage, stratified, random sampling procedure. First, households were sampled, and then youths within those households were sampled. Ordinary least squares analysis of such data may produce biased slopes and standard errors due to correlated error

structures. Therefore, I utilize the survey commands (svy) in STATA to account for the complex nature of the NLSY survey design.

Methods

OLS Regression Models

The educational attainment model is estimated by using variations of the following OLS regression model.

$$Y = \alpha_1 + \beta_1 x_i + \delta Z + \varepsilon_1$$

Where Y is the years of schooling by age 28, x_i is a vector representing demographic groups classified by race/ethnicity and immigration generation, and Z is a vector of observed control variables. ε_1 is the random error term.

The baseline model (Model 0) controls for personal and geographical characteristics (i.e. sex, age, age squared, south, and metropolitan area). Model 1 controls for variables indicating mother's age when child was born, number of siblings, and family structure, along with personal and geographical characteristics. Model 2 adds family income in 1996 to model 1. Model 3 adds parental educational level to Model 1. Model 4 is a full model that controls for all covariates.

Generalized Ordered Logit Model

My second statistical model employs generalized ordered logit model (GOL). Generalized ordered logit model works better for the present study since my dataset violates the ordered logit model, which requires the relationship between each pair of the outcome groups remain the same (i.e., the proportional odds assumption). The ordered logit model demands each predictor has the same effect on the odds of being at or below any category within the model.

The multinomial logit model is another commonly used alternative model that researchers employ when the ordered logit model is violated. However, the multinomial logit model is less parsimonious and more difficult to interpret. In addition, the multinomial logit model does not consider the ordering of the dependent variable (Long and Freese 2006). Given the dependent variable being ordinal in nature, the generalized ordered logit model provides a more versatile method (Fu 1998; Williams 2006, 2016). The generalized ordered logit model extends the ordered logit model by relaxing the proportional odds assumption. If the assumption is violated by a certain predictor, then its effect can be estimated freely across different categories of the dependent variable (Liu and Koirala 2012). The model can be written as

$$P(Y > j) = \frac{\exp{(\alpha_j + X_i\beta_j)}}{1 + [\exp(\alpha_j + X_i\beta_j)]}, \text{ j=1,2,….., M-1}$$

The outcome variable indicates highest educational degree obtained. It has five categories, including less than high school, high school, associate degree, bachelor's degree, and graduate degree. This model estimates the odds of being beyond a certain category relative to being at or below that category. A positive logit coefficient indicates that an individual is more likely to be in a higher category as opposed to a lower category as opposed to a lower category of the outcome variable (Fu 1998; Williams 2006).

Results

Sample Characteristics

Sample characteristics by race/ethnicity and immigration generation are reported in Table 2.1. Second generation youths of white, black, and Asian background have on average more years of schooling by age 28 compared to 3+ generation whites (14.76, 14.48, and 16.13 years of schooling by age 28, respectively vs. 13.99). The other measure of educational attainment,

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highest educational level in 2013, presents a similar pattern with years of schooling. Second generation youths of white, black, and Asian background are more likely to acquire a bachelor's degree or higher compared to 3+ generation youths from the same racial/ethnic groups (47.5%, 45%, and 66%, respectively, vs. 35%). In contrast, second generation Hispanic youths seem to be disadvantaged in both measures of educational attainments. Second generation Hispanics on average acquire 13 years of schooling, fewer than 3+ generation whites. In addition, they are less likely to obtain a college degree or higher compared to 3+ generation whites (18% vs. 35%).

The mean values of the control variables for each demographic group are consistent with previous studies and reports. For example, parents of second generation white, black, and Asian Americans demonstrate higher educational levels than parents of 3+ generation whites. Hispanic immigrant parents, on the other hand, demonstrate the lowest educational and family income levels. Second generation Hispanics also seem to have a higher number of siblings and younger mother. These factors have been reported to have negative effects on the child's educational attainments.

OLS Regression Results

Table 2.2 displays results from OLS regression models with the dependent variable being years of schooling by age 28. The reference group is the 3+ generation whites. A positive coefficient indicates an advantage of years of education, whereas a negative coefficient indicates the opposite. The coefficients of 2nd generation Asians remain significantly positive across the 5 models, indicating an advantage in educational attainments among 2nd generation Asian youths compared to 3+ generation whites (i.e. about 1.2 years). The coefficient of 2nd generation whites is significantly positive in Model 0, but the significance disappears in the remaining models.

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This suggests that the educational advantage of 2nd generation whites over 3+ generation whites can be explained by family characteristics.

The result from Model 0 suggests that 2nd generation Hispanics have 1.2 fewer years of schooling than 3+ generation whites (b=-1.1893, p<=0.001) controlling for demographic and geographical characteristics. Model 1 added mother's age, number of siblings, and family structure to Model 0. The coefficient of Hispanics in Model 1 remains the same. In Model 2, after introducing family income to Model 1, the coefficient of 2nd generation Hispanics remains significantly negative (b=-0.5092, p<=0.001), but the value increased 55% compared to the coefficient from Model 1. This suggests that family income partially explains 2nd generation Hispanics' educational disadvantage. Model 3 added parental education to Model 1. After controlling for parental education, the coefficient of 2nd generation Hispanics becomes significantly positive (b=0.5871, p<=0.001). This result indicates that 2nd generation Hispanics' educational disadvantage is explained by their parental educational level. If parental education, along with personal and geographical characteristics, is equal, 2nd generation Hispanics gain 0.6 years more education than 3+ generation whites. The advantage of education among 2nd generation Hispanics is increased to 0.8 years in the full model when all the covariates are controlled.

2nd generation blacks do not demonstrate a statistically significant coefficient in Model 0, indicating comparable years of schooling by age 28 compared to 3+ generation whites. Model 1 added family characteristics, including mother's age when she had the child, number of siblings, and family structure. The coefficient of 2nd generation blacks in Model 1 becomes significant at p<=0.1 level, indicating a slight advantage in terms of years of schooling compared to 3+ generation whites. After adding family income in Model 2, the coefficient becomes

significant at p<=0.01. This suggests that 2nd generation blacks have 0.85 more years of education than 3+ generation whites after controlling for family income, other family characteristics, as well as personal and geographical characteristics (b=0.8505, p<=0.001). However, controlling for parental educational level in Model 3 does not yield significant results for 2nd generation blacks. In the full model where all the covariates are controlled, 2nd generation blacks demonstrate 0.6 more years of education than 3+ generation whites (p<=0.05).

The directions of the coefficients of the control variables are as expected. For example, being male is negatively associated with educational attainments. Parental schooling and family income positively affect educational attainments. Mother's age when she had the child and living with both biological parents are positively associated with educational outcomes, while number of siblings is negatively associated with educational outcomes. In addition, living in a metropolitan area is positively associated with educational attainments, while living in the south has a negative effect on education.

The goodness-of-fit tests of AIC and BIC are reported in Table 2.2. The full model, Model 4, has the smallest AIC and BIC, indicating that Model 4 has the best performance with respect to how well it explains the data per parameter expended.

Generalized Ordered Logit Regression Results

Table 2.3 presents odds ratios from the generalized ordered logit regression with controls of all the covariates. The dependent variable of interest is highest educational degree obtained by the year 2013 (when all respondents in the survey were aged 30 or over). The variable contains 5 categories, including less than high school (0), high school (1), associate degree (2), bachelor's degree (3), and graduate degree (4). The reference group is 3+ generation whites. An

odds ratio that is larger than 1 indicates a positive association, whereas an odds ratio that is smaller than 1 indicates the opposite.

The odds ratios of all the demographic groups across each cut point of the dependent variable are different, indicating that the variables representing demographic groups do not meet the parallel lines assumption. Therefore, the generalized ordered logit model is more parsimonious for the current analysis. The results indicate that controlling for the covariates, being 2nd generation Asian is positively associated with the odds of being above a particular educational degree as opposed to being at or below that educational degree compared to 3+ generation whites (ORs= 24.5, 2.7, 2.2, and 3.2 for less than high school, high school, associate degree, and bachelor's degree, respectively).

Regarding 2nd generation Hispanics and blacks, results indicate that when controlling for the covariates, being 2nd generation Hispanic or black is positively associated with the odds of being above a particular educational degree as opposed to being at or below that educational degree compared to 3+ generation whites. Specifically, the odds ratios of 2nd generation Hispanics are 2.0, 1.6. and 1.3 for less than high school, high school, and associate degree, respectively. The odds ratios of 2nd generation blacks are 4.5, 1.8, and 2.2 for less than high school, high school, and associate degree, respectively. The results for 2nd generation Hispanics and blacks reveal that these groups are more likely to achieve a higher educational degree at less than high school, high school, and associate degree levels compared to 3+ generation whites. The odds ratios of 2nd generation Hispanics and blacks at the bachelor degree level are not statistically significant, revealing that there is no statistically significant difference of being above college degree as opposed to being at or below a bachelor's degree compared to 3+

generation whites.   In addition, 2nd generation whites do not have statistically significant results in Table 2.3.

Discussion and Conclusion

The findings in this chapter provide a broadly comparative yet relatively precise analysis of racial/ethnic differentials in educational attainment among second-generation Americans. Relative to the baseline reference group of 3+ whites, average educational attainment is higher for 2nd whites, 2nd blacks, and 2nd Asians but lower for 2nd Hispanics. The results indicate that the most prominent racial/ethnic differentials are for 2nd generation Hispanics (who are much lower than 3+ whites) and for 2nd Asians (who are much higher than 3+ whites).

While these bivariate racial/ethnic differentials for a recent cohort of second-generation Americans are certainly noteworthy, these results nevertheless confirm that educational attainment continues to be more substantially influenced by parental socioeconomic characteristics and family background factors (Sewell, Haller and Portes 1969; Sun 1998; Breen and Jonsson 2005) that are associated with enhancing and promoting the educational performance of children (despite some recent questioning to the contrary [Lizardo 2017]). While explained variance is not the only pertinent criterion for making empirical generalizations, we nonetheless believe that our results for the adjusted R-square's in Table 2.2 are definitely relevant and revealing (Hout and DiPrete 2006:6). Model 0 does not control for parental SES characteristics or family background factors (i.e., Model 0 only controls for race/ethnicity, gender, age, and place of origin) and its adjusted R-square in Table 2.2 is just 7%. By contrast, in Model 4 which does control for parental SES characteristics or family background factors, the adjusted R-square increases substantially to about 29%. A significant portion of the educational

attainment of second-generation Americans is therefore clearly linked to parental SES

characteristics and family background factors which vary considerably within each of the

racial/ethnic groups (as is implied by the substantial change in these two R-square values).

For example, the estimated coefficients for Model 4 in Table 2.2 indicate that growing up

with both biological parents has a quite large net effect that is equal to slightly more than 5 years

of father's schooling (i.e., .9474 versus .1783, respectively).   1 year of mother's schooling has

the effect of about 5 years of mother's age (i.e., .2162 versus .0433, respectively). Growing up

in a metropolitan area (as indicated by residence in 1997) has an effect about the same as a year

of father's schooling (i.e., .1806 versus .1783, respectively).

In the particular case of 2nd generation Hispanics, their average level of educational

attainment is much lower than 3+ whites as noted above. However, this entire deficit is

statistically explained by lower levels of parental schooling as is evident in the results in Table 3

and for Model 3 in Table 2. Rather than having a net disadvantage, those results show that 2nd

Hispanics are actually slightly advantaged in educational attainment after controlling parental

SES characteristics.

Although substantively and statistically significant, the net effect of log-family income is

perhaps not as large as one might expect at least in terms of years of schooling as the outcome of

interest after controlling for parental schooling. In Table 2.2, the coefficient for log-family

income is .4321 in Model 4. If family income doubles (i.e., for a family income change of

100%) then the natural log of 2 is .6931 which implies that expected years of schooling increases

by .2987 (i.e., .6931*.4321). In other words, the direct effect of doubling family income is only

somewhat more than 1 year of mother's schooling (i.e., .2987 versus .2162, respectively).   This

net effect is certainly noteworthy, but it does not seem large enough to warrant the portrayal of

family income as being the only important determinant (cf., Reardon 2013) or the conclusion that more subsidies for college financing will dramatically reduce racial/ethnic differentials (Cameron and Heckman 2001).

It should be noted that the measures of parental SES and family background characteristics are limited and not exhaustive, I nonetheless point out that an adjusted R-squared of 29% for Model 4 in Table 2.2 implies that 71% of the variance in years of educational attainment remains *unexplained* even after including *all* of the covariates (Hout and DiPrete 2006:6). That is, these measured parental SES characteristics and family background factors along with the demographic variables and race/ethnicity clearly do not explain most of the variation on the dependent variable. Better measures would certainly increase the adjusted R-squared to some value greater than 29%, but I believe that significant variation in educational attainment is likely to persist even if family SES were perfectly measured.

Prior research has shown, for example, that parental expectations for their children's success vary substantially, and that childrearing practices can have significant independent effects on children's academic achievement (e.g., Bowles and Gintis 1977; Lareau 2011). While much of this variation is associated with parental resources and family SES, the association is far from perfect (Lareau 1987, 2002). There is some income overlap between the different social classes such as between the working-class and the middle-class even though their parenting styles tend to differ (Coleman and Rainwater 1979). That is, social classes do vary not only in terms of income but also to some extent in terms of sub-cultural factors relating to educational attainment (Gans 1962; Lee and Zhou 2015).

In addition to social class, another source of sub-cultural variation is undoubtedly related to ethnicity in some way (Fuligni et al. 1999; Stewart et al. 1999). In particular, we interpret the

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net racial/ethnic effects in Model 4 of Table 2 as being indicative of the role that sub-cultural factors may sometimes play in educational attainment. In this regard, the estimated racial/ethnic effects for second-generation Americans in Table 2.2 remain quite large and statistically significant even after controlling for parental characteristics, family background, and other demographic factors. For example, being 2nd generation Asian has a net effect of over 6.7 years of father's schooling (i.e., 1.1988 versus .1783). A careful review of the relevant literature on this issue shows (as do the results) that this advantage cannot be fully explained by parental SES alone (Hirschman and Wong 1986; Sakamoto, Goyette and Kim 2009) and likely derives at least in significant part from sub-cultural factors associated with second-generation Asian Americans (e.g., Hirschman and Wong 1986; Goyette and Xie 1999; Asakawa and Csikszentmihalyi 2000; Hsin and Xie 2014; Tao and Hong 2014; Jiménez and Horowitz 2013; Sakamoto and Yoon 2018).

In the case of 2nd generation Hispanics, their coefficient for Model 2 in Table 2.2 remains statistically significant and quite negative after controlling for family income. As discussed earlier, this coefficient flips sign and becomes quite positive and statistically significant after controlling for parental schooling (and the adjusted R-squared value also increases more notably in Model 3). The more substantive net effect of parental schooling compared to family income probably in part reflects sub-cultural factors that are quite important for educational attainment above and beyond merely the purchasing power to buy additional educational materials.

In general, we interpret the net racial/ethnic effects in Model 4 of Table 2.2 as being consistent with "immigrant optimism" (Kao and Tienda 1995). As discussed earlier, immigrant parents are likely selective in being unusually optimistic about their children's educational prospects. This optimism when combined with higher expectations for their children's

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socioeconomic success helps to foster better academic achievement among second-generation Americans even after controlling for parental SES and resources (Kao and Tienda 1995). Thus, net of all of the control variables, Table 2 shows that 2nd generation blacks have educational attainment that is higher than 3+ generation whites by over 3 years of father's schooling (i.e., .5901 versus .1783) while 2nd generation Hispanics have educational attainment that is higher than 3+ whites by over 4 years of father's schooling (i.e., .7996 versus .1783).

These findings are inconsistent with Gans' (1992:173) pessimistic vision of downward mobility among non-white, second-generation Americans and widespread "second-generation decline…especially [for] dark-skinned ones." Indeed, a striking finding in the results in Table 2.3 and for Model 4 in Table 2.2 is that 2nd generation whites are the only group which is not statistically advantaged relative to 3+ generation whites. *Only the non-white second-generation groups benefit from "immigrant optimism" whereas the white second-generation group does not.* These results are prima facie inconsistent with the view that racial/ethnic discrimination against non-whites is the dominant factor affecting the educational attainment of second-generation Americans (cf., Gans 1992; Portes and Zhou 1993).

To conclude, the present findings have important theoretical and policy implications. In regard to social science theory on immigrant assimilation, my findings are consistent with the optimistic view of assimilation and incorporation. In the NLSY cohort, second generation Americans of all racial/ethnic backgrounds have achieved parity or outperformed the mainstream population when controlling for personal, parental, and geographical characteristics. They have achieved more than what would be predicted based solely on their parent's human capital. Future research can explore how immigrant parents nurture their children to achieve and how this influences the educational attainments of their children. Nevertheless, my study also shows

that human capital of first-generation immigrants maintains a profound effect on their children's attainments. In particular, Hispanic immigrants are disadvantaged in terms of educational attainments and this is partly attributed to the low human capital of their parents. Regarding policy implications of these findings, policymakers could focus on improving Hispanic adult immigrants' human capital by providing them opportunities of education. In addition, schools can also provide volunteer tutors to help children from immigrant families since these children might not be able to receive help from their parents.

Table 2.1. Descriptive Statistics

	3+ generation	2nd generation			
	White	White	Black	Hispanic	Asian
Dependent Variables					
A: Years of schooling by age 28	13.99	14.76	14.48	13.00	16.13
B: Highest educational degree in 2013					
Less than high school	6.69	1.35	0	14.26	0
High school graduate	49.87	41.02	48.1	57.23	24.42
Associate degree	8.26	10.09	6.29	10.41	9.40
Bachelor's degree	24.57	37.17	35.89	13.24	35.95
Postgraduate degree	10.61	10.38	9.72	4.85	30.23
(Total)	100	100	100	100	100
Demographic variables					
Male (%)	49.15	48.57	49.28	49.95	58.24
Age in 2013	31.15	31.16	31.19	31.17	31.31
Parental SES & Family Variables					
Father's Schooling (Year)	13.31	14.38	13.81	9.30	15.19
missing (%)	6.48	6.01	16.74	17.38	3.44
Mother's Schooling (Year)	13.27	13.99	13.77	9.58	13.88
missing (%)	2.56	1.19	3.47	7.17	3.38

Table 2.1 Continued

	3+ generation	2nd generation			
	White	White	Black	Hispanic	Asian
Log-family income 1996	11.03	11.19	10.62	10.26	11.25
missing (%)	21.4	16.92	38.12	28.66	13.65
Mother's age child was born	25.87	27.72	27.71	25.40	27.85
No. of siblings	1.24	1.18	1.07	1.75	1.39
Living with both parents (%)	56.42	68.78	40.78	61.49	79.77
Geographical Variables					
Metro, 1997	75.39	88.93	97.24	98.23	96.63
South, 1997	31.00	20.64	41.78	26.60	22.32
N	3,068	160	94	705	53

Table 2.2. Results from OLS Regression Models

	Model 0	Model 1	Model 2	Model 3	Model 4
Demographic Groups					
3+ generation whites	REF	REF	REF	REF	REF
2nd generation whites	0.6812**	0.3702+	0.3169	0.1350	0.1299
2nd generation blacks	0.4617	0.5343+	0.8505**	0.4248	0.5901*
2nd generation Hispanics	-1.1893***	-1.1430***	-0.5092***	0.5871***	0.7996***
2nd generation Asians	1.8698***	1.4341***	1.3782***	1.2013***	1.1988***
Demographic variables					
Male	-0.7059***	-0.7326***	-0.7391***	-0.7201***	-0.7254***
Age in 2013	0.0257	0.1472	0.4383	-0.4234	-0.2171
Age square	-0.0017	-0.0032	-0.0080	0.0060	0.0026
Parental SES & Family Variables					
Father's Schooling (Year)				0.1956***	0.1783***
missing (%)				-0.3526**	-0.2686*
Mother's Schooling (Year)				0.2314***	0.2162***
missing (%)				-0.2707	-0.2957
Log-family income 1996			0.7693***		0.4321***
missing (%)			0.0428		0.1306

Table 2.2 Continued

	Model 0	Model 1	Model 2	Model 3	Model 4
Mother's age child was born		0.0836***	0.0741***	0.0463***	0.0433***
No. of siblings		-0.1097**	-0.0831**	-0.0504+	-0.0412
Living with both parents (%)		1.4011***	1.0620***	1.1039***	0.9474***
Geographical Variables					
Metro, 1997	0.6131***	0.5376***	0.3574***	0.2647**	0.1806*
South, 1997	-0.4353***	-0.4003***	-0.3745***	-0.2663***	-0.2619***
Constant	14.8957	9.8221	-2.5435	14.1653	6.9095
Adjusted R2	0.0703	0.1646	0.1985	0.2781	0.2884
AIC	33425.76	32705.62	32428.2	31721.55	31628.54
BIC	33514.47	32818.40	32551.02	31858.02	31778.65

Notes: + indicates $p<=0.1$, * indicates $p<=0.05$, ** indicates $p<=0.01$, and *** indicates $p<=0.001$.

Table 2.3. Odds Ratios of the Generalized Ordered Logit Regression (Y>cat.j vs Y<=cat. j)

	Y>0 VS. Y=0	Y> 1 VS. Y<=1	Y>2 VS. Y<=2	Y>3 VS. Y<=3
Demographic Groups				
3+ generation whites	REF	REF	REF	REF
2nd generation whites	2.5700	1.2064	1.1811	0.7565
2nd generation blacks	4.5278+	1.7597*	2.1950**	1.1626
2nd generation Hispanics	1.9545*	1.6096***	1.3353*	1.2388
2nd generation Asians	24.5313***	2.7360**	2.2352*	3.1535***
Demographic variables				
Male	0.7605**	0.5145***	0.5425***	0.5567***
Age in 2013	0.1422	1.7018	1.4854	3.5316
Age square	1.0326	0.9915	0.9939	0.9813
Parental SES & Family Variables				
Father's Schooling (Year)	1.1055***	1.1460***	1.1636***	1.1113***
missing (%)	0.8641	0.8610	1.0348	0.8452
Mother's Schooling (Year)	1.2168***	1.1721***	1.1965***	1.1922***
missing (%)	0.4734***	0.8978	0.9592	0.7552
Log-family income 1996	1.4796***	1.3764***	1.4627***	1.3303***
missing (%)	0.9413	1.068	1.1465+	1.2092*
Mother's age child was born	1.0382***	1.0368***	1.0357***	1.0336**
No. of siblings	0.97	0.9769	0.9835	1.0912*

Table 2.3 Continued

	Y>0 VS. Y=0	Y> 1 VS. Y<=1	Y>2 VS. Y<=2	Y>3 VS. Y<=3
Living with both parents (%)	1.9923***	1.8591***	1.9953***	1.4512**
Geographical Variables				
Metro, 1997	0.9064	1.1244	1.2723**	1.168
South, 1997	0.8401+	0.8782*	0.9178	0.8290+

LR R2=0.1322

Model Fit X2=132129.91

Note: Y=0 refers to the category of less than high school;

Y=1 refers to the category of high school;

Y=2 refers to the category of associate degree;

Y=3 refers to the category of bachelor's degree; and

Y=4 refers to the category of graduate and professional degree.

+ indicates p<=0.1, * indicates p<=0.05, ** indicates p<=0.01, and *** indicates p<=0.001.

Reference

Asakawa, Kiyoshi, and Mihaly Csikszentmihalyi. 2000. "Feelings of Connectedness and
Internalization of Values in Asian American Adolescents." *Journal of Youth and
Adolescence* 29.2: 121-145.

Alba, Richard. 2017. "Continuities in Assimilation." *Ethnic and Racial Studies* 40.9: 1430-1437.

Bankston III, Carl L., and Min Zhou. 2002. "Social Capital and Immigrant Children's
Achievement." *Schooling and Social Capital In Diverse Cultures*. Emerald Group
Publishing Limited. 13-39.

Baum, Sandy, Jennifer Ma, and Kathleen Payea. 2013. "Education Pays 2010." *The College
Board*.

Borjas, George J. 1991. "Immigration and Self-Selection." *Immigration, Trade, and the Labor
Market*. University of Chicago Press. 29-76.

Bowles, Samuel, and Herbert Gintis. 1977. "The Marxian Theory of Value and Hetero-Geneous
Labour: A Critique and Reformulation." *Cambridge Journal of Economics* 1.2: 173-192.

Breen, Richard, and Jan O. Jonsson. 2005. "Inequality of Opportunity in Comparative
Perspective: Recent Research on Educational Attainment and Social Mobility." *Annual
Review of Sociology* 31: 223-243.

Cameron, Stephen V., and James J. Heckman. 2001. "The Dynamics of Educational Attainment
for Black, Hispanic, and White Males." *Journal of Political Economy* 109.3: 455-499.

Chiswick, Barry. 1999. "Are Immigrants Favorably Self-Selected?." *American Economic
Review* 89.2: 181-185.

Coleman, Richard Patrick, Lee Rainwater, and Kent A. McClelland.1979. *Social Standing in
America: New Dimensions of Class*. Taylor & Francis.

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Duong, Mylien T., et al. 2016. "Generational Differences in Academic Achievement among Immigrant Youths: A Meta-Analytic Review." *Review of Educational Research* 86.1: 3-41.

Feliciano, Cynthia. 2005. "Educational Selectivity in US Immigration: How Do Immigrants Compare to Those Left Behind?." *Demography* 42.1: 131-152.

Feliciano, Cynthia. 2008. "Gendered Selectivity: US Mexican Immigrants and Mexican Nonmigrants, 1960–2000." *Latin American Research Review* 43.1: 139-160.

Feliciano, Cynthia, and Yader R. Lanuza. 2017. "An Immigrant Paradox? Contextual Attainment and Intergenerational Educational Mobility." *American Sociological Review* 82.1: 211-241.

Farley, Reynolds, and Richard Alba. 2002. "The New Second Generation in the United States." *International Migration Review* 36.3: 669-701.

Fu, V. 1998. "Estimating Generalized Ordered Logit Models." *Stata Technical Bulletin* 44: 27–30. In Stata Technical Bulletin Reprints, 8, 160–164. College Station, TX: Stata Press.

Fuligni, Andrew J., Vivian Tseng and May Lam. 1999. "Attitudes Toward Family Obligations among American Adolescents with Asian, Latin American, and European Backgrounds." *Child Development* 70:1030-1044.

Gans, Herbert J. 1992. "Second-Generation Decline: Scenarios for the Economic and Ethnic Futures of the Post-1965 American Immigrants." *Ethnic and racial studies* 15.2: 173-192.

Grogger, Jeffrey, and Stephen J. Trejo. 2002. "Falling Behind or Moving Up." *Public Policy Institue of California*.

Goyette, Kimberly, and Yu Xie. 1999. "Educational Expectations of Asian American Youths: Determinants and Ethnic Differences." *Sociology of Education*: 22-36.

Hirschman, Charles and Morrison G. Wong. 1986. "The Extraordinary Educational Attainment
of Asian-Americans: A Search for Historical Evidence and Explanations." *Social
Forces* 65:1-27.

Hirschman, Charles. 2001. "The Educational Enrollment of Immigrant Youth: A Test of the
Segmented-Assimilation Hypothesis." *Demography* 38.3: 317-336.

Hout, Michael, and Thomas A. DiPrete. 2006. "What We have Learned: RC28's Contributions to
Knowledge about Social Stratification." *Research in Social Stratification and Mobility*
24.1: 1-20.

Hout, Michael. 2012. "Social and Economic Returns to College Education in the United
States." *Annual Review of Sociology* 38: 379-400.

Hsin, Amy, and Yu Xie. 2014. "Explaining Asian Americans' Academic Advantage over
Whites." *Proceedings of the National Academy of Sciences* 111.23: 8416-8421.

Ichou, Mathieu. 2014. "Who They Were There: Immigrants' Educational Selectivity and Their
Children's Educational Attainment." *European Sociological Review* 30.6: 750-765.

Jasso, Guillermina, and Mark R. Rosenzweig. 1990. *The New Chosen People: Immigrants in the
United States*. Russell Sage Foundation.

Jass, Guillermina, and Douglas S. Massey. 2004. *Immigrant Health: Selectivity and
Acculturation*. No. 04/23. IFS Working Papers, Institute for Fiscal Studies (IFS).

Kasnitz, Philip, John H. Mollenkopf, and Mary C. Waters, eds. 2004. *Becoming New Yorkers:
Ethnographies of the New Second Generation*. Russell Sage Foundation.

Kao, Grace, and Marta Tienda. 1995. "Optimism and Achievement: The Educational
Performance of Immigrant Youth." *Social Science Quarterly*: 1-19.

Kim, ChangHwan, and Arthur Sakamoto. 2010. "Have Asian American Men Achieved Labor

    Market Parity with White Men?." *American Sociological Review* 75.6: 934-957.

Kucera, Miroslav. 2008. "The Educational Attainment of Second Generation Immigrants in

    Canada: Analysis Based on the General Social Survey."

Lareau, Annette. 2011. *Unequal Childhoods: Class, Race, and Family Life*. University of

    California Press.

Lee, Jennifer, and Min Zhou. 2015. *The Asian American Achievement Paradox*. Russell Sage

    Foundation.

Long, J. Scott. 2014. "Regression Models for Nominal and Ordinal Outcomes." *Regression*

    Models: 173-204.

Long, J. S., and J. Freese. 2006. *Regression Models for Categorical Dependent Variables Using*

    Stata. 2nd ed. College Station, TX: Stata Press

Liu, Xing, and Hari Koirala. 2012. "Ordinal Regression Analysis: Using Generalized Ordinal

    Logistic Regression Models to Estimate Educational Data." *Journal of Modern Applied*

    Statistical Methods 11.1: 21.

Lizardo, Omar. 2017. "Improving Cultural Analysis: Considering Personal Culture in Its

    Declarative and Nondeclarative Modes." *American sociological review* 82.1: 88-115.

Massey, Douglas S., Joaquin Arango, Graeme Hugo, Ali Kouaouci, Adela Pellegrino, and J.

    Edward Taylor. 1993. "Theories of International Migration: A Review and

    Appraisal." *Population and Development Review*: 431-466.

Massey, Douglas S. 1995. "The New Immigration and Ethnicity in the United

    States." *Population and Development Review*: 631-652.

Massey, Douglas S. 2007. *Categorically Unequal: The American Stratification System*. Russell
Sage Foundation.

Portes, A. and M. Zhou 1993 "The New Second Generation: Segmented Assimilation and Its
Variants among Post? 1965 Immigrant Youth" *Annals of the American Academy of
Political and Social Science*.

Portes, Alejandro, and Rubén G. Rumbaut. 2005. "Introduction: The Second Generation and the
Children of Immigrants Longitudinal Study." *Ethnic and Racial Studies* 28.6: 983-999.

Portes, Alejandro, and Patricia Fernández-Kelly. 2008. "No Margin for Error: Educational and
Occupational Achievement among Disadvantaged Children of Immigrants." *The Annals
of the American Academy of Political and Social Science* 620.1: 12-36.

Reardon, Sean F. 2013. "The Widening Income Achievement Gap." *Educational
Leadership* 70.8: 10-16.

Rumbaut, Ruben G. 1991. "Migration, Adaptation, and Mental Health: The Experience of
Southeast Asian Refugees in the United States.": 383-427.

Stewart, Sunita M., Michael H. Bond, Osvelia Deeds and Siu F. Chung. 1999. "Intergenerational
Patterns of Values and Autonomy Expectations in Cultures of Relatedness and
Separateness." *Journal of Cross-Cultural Psychology* 30:575-593.

Sakamoto, Arthur, Kimberly A. Goyette, and ChangHwan Kim. 2009. "Socioeconomic
Attainments of Asian Americans." *Annual Review of Sociology* 35: 255-276.

Sewell, William H., Archibald O. Haller, and Alejandro Portes. 1969. "The Educational and
Early Occupational Attainment Process." *American sociological review*: 82-92.

Sun, Yongmin. 1998. "The Academic Success of East-Asian–American Students—An
Investment Model." *Social Science Research* 27:432-456.

Tao, Vivienne Y. and Ying-yi Hong. 2014. "When Academic Achievement is an Obligation: Perspectives from Social-Oriented Achievement Motivation." *Journal of Cross-Cultural Psychology* 45:110-136.

Williams, Richard. 2006. "Generalized Ordered Logit/Partial Proportional Odds Models for Ordinal Dependent Variables." *Stata Journal* 6.1: 58.

Williams, Richard. 2016. "GOLOGIT2: Stata Module to Estimate Generalized Logistic Regression Models for Ordinal Dependent Variables."

Zeng, Zhen, and Yu Xie. 2004. "Asian-Americans' Earnings Disadvantage Reexamined: The Role of Place of Education." *American Journal of Sociology* 109.5: 1075-1108.

CHAPTER III

DOES ETHNIC CAPITAL MATTER?

AN ANALYSIS OF INTERGENERATIONAL TRANSMISSION OF EDUCATION AMONG

HISPANIC AMERICANS

Introduction

Hispanic Americans now constitute the largest minority group in the U.S. Understanding

the sources of their socioeconomic status is important for providing a more accurate appraisal of

racial/ethnic inequality. It is reported that Hispanic Americans have the lowest educational level

among racial/ethnic groups in the U.S. For example, according to the U.S. Census, 54% of

Asians have a bachelor's degree or higher, followed by non-Hispanic Whites, 36%, and Blacks,

22%. Only 15% of Hispanics have a bachelor's degree or higher (U.S. Census Bureau 2015). In

addition, among Hispanics, foreign-born Hispanics demonstrate a lower educational level than

native-born Hispanics (Perlmann 2005). 20% of native Hispanics have a college degree

compared to 12% of foreign-born Hispanics in 2015 (U.S. Census Bureau 2015).

As education has become all but vital for social mobility and long-term economic success

(Hout 2012), low educational attainment has become a barrier to the social and economic

advancement of Hispanics (Perlmann 2005). In general, education provides immigrant children

with the opportunity to advance their economic success as adults as well as a means to foster

assimilation (Zhou 1997; Baum and Ma 2007; Hirschman 2016).

Previous studies have suggested that educational outcomes are heavily influenced by

family background, including parental educational level, family economic resources, family

structure, number of siblings, and parental styles (Becker 1997; Haveman and Wolfe 1995).

Intergenerational educational mobility is regarded as one of the central mechanisms underlying educational inequality and immigrant assimilation. Intergenerational educational mobility is measured by the parent-child schooling association. The value of intergenerational educational mobility is intergenerational educational elasticity, which is interpreted as the degree to which educational attainment persists from one generation to the next. A high degree of intergenerational transmission of education indicates that parental education plays an essential role in children's education, whereas a low degree of transmission suggests the opposite. It has been reported that intergenerational transmission of education in the U.S. is around 0.46, lower than Latin American countries, but higher than Nordic countries (Hertz et al 2007). Not only does intergenerational transmission of education differ across nations, but it may also vary within countries. Thus, it has been suggested that the transmission of education from parents to children is a heterogeneous process, which might be affected by contextual circumstances such as geography or institutional settings (Huang 2012). The U.S., as a country of immigrants, has a diverse body of racial/ethnic groups. Each group might demonstrate different levels of intergenerational transmission of schooling (Huang 2012).

Prior literature on immigration and assimilation suggests that in terms of educational outcomes and attainments, children of immigrants usually outperform first generation immigrants and children of native-born Americans (Kao and Tienda 1995; Fuligni 1997; Crosnoe 2013). Children from immigrant families also tend to do better academically than children of US-born parents of the same racial, ethnic, or national background (Crosnoe 2013). This phenomenon is often termed by social scientists as "immigrant optimism" and as one of the "immigrant paradoxes" (Kao and Tienda 1995; Feliciano 2005; Crosnoe 2013). Evidence also indicates that intergenerational educational mobility is typically high among children of

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immigrants. Children of Hispanic immigrants, however, seem more likely to be of low socioeconomic status as they demonstrate a low level of upward mobility (Duncan and Trejo 2011) and therefore may be an exception to the "immigrant optimism" thesis. Hispanics thus constitute an important case that needs further elucidation, especially with regard to understanding the linkages between their educational attainment, immigration status, and community contexts.

Regarding children of immigrants, extensive prior research has suggested that their educational attainments are not only determined by parental socioeconomic factors, but also by the social character and composition of the places where they were raised (Borjas 1992; Kibria 2002; Tran 2016; Lee and Zhou 2016). Social context is an important factor that influences assimilation (Tran 2016), and ethnic capital plays an important role in immigrant assimilation and upward mobility. Therefore, there might be an interactive relationship between parental educational transmission and ethnic capital, as they relate to child development. In other words, intergenerational transmission of education from parents to children may vary according to the level of human capital present in the neighborhoods where the child was raised (e.g., proportion of ethnic population and socioeconomic level of neighborhoods).

It is possible that children of immigrants who grew up in an area with a high level of human capital demonstrate greater intergenerational educational mobility. If this is the case, then contextual ethnic capital would play an important role in educational attainments and development of children from immigrant families. However, it is also possible that ethnic capital decreases intergenerational educational mobility, especially if a child felt disadvantaged in the community and the environment hinders the child's development. Finally, we must also

consider the possibility that environmental ethnic capital does not influence intergenerational transmission of schooling among Hispanics.

The present study uses restricted-access data from the National Longitudinal Survey of Youth 1997 to investigate whether intergenerational educational mobility varies by ethnic capital resources among native-born Hispanics. Based on parental birthplace, Hispanics are grouped into children of native-born Hispanic parents (i.e. 3+ generation Hispanics) versus children of at least one foreign-born Hispanic parent (i.e. 2nd generation Hispanics). Native-born non-Hispanic whites (i.e. 3+ generation whites) are also included in the study as a reference group. This study contributes to the literature on Hispanics' educational mobility and assimilation in order to better understand the dynamics of immigrant assimilation, which may lead to better strategies for helping children of immigrants achieve greater success in their educational attainments and labor market outcomes.

Background

Intergenerational Transmission of Education and Its Mediators

Whereas several studies have been conducted to examine intergenerational transmission of income and earnings, few studies have focused on intergenerational mobility in education (Black et al. 2013). Previous studies have suggested that the US and UK have an intergenerational education elasticity between 0.2 and 0.45 (Dearden et al. 1997; Mulligan 1999). Hertz and colleagues have reported that the U.S. has an intergenerational educational mobility of 0.46 (Hertz et al. 2007). These studies, however, did not examine differentials between demographic groups, such as racial/ethnic groups or immigration groups (Huang 2012).

Educational theories suggest two explanations for the relationship between parental education and children's educational attainment. One explanation implicates correlation, whereas the other emphasizes causation. The correlation explanation posits that highly educated parents make more money and therefore are better able to support their children's education, equipping them with a high level of human capital. The causation theory argues that education yields more involved and engaged parents. Specifically, educated parents have a more effective parenting style than those who are not educated, and therefore children of educated parents achieve higher education. Some previous research, however, suggests that educational transmission is correlational rather than causal (Black et al. 2013).

Both correlation and causation theories of intergenerational mobility, however, emphasize the importance of parental human capital. For example, research finds that family background accounts for up to 85% of the explainable variation in children's school attainment (Belzil and Hansen 2003). In addition, Woessmann (2004) suggests that the explanatory power of parental background in models of educational outcomes decreases the effects of school and institutional effects. In other words, parental background is more important than school in determining a child's educational attainment. Therefore, parents' educational attainment and class status significantly affect the academic performance of their children (Coleman 1966).

Immigrants who perform well in the first generation also tend to perform well in the second (Feliciana 2005). For example, children of highly educated immigrant parents consistently perform better in school than the descendants of poorly educated parents (Hirschman and Falcon 1985; Feliciano 2005). Research has indicated that parental schooling is the most important factor in explaining educational differences across groups (Hirschman and Falcon 1985; Feliciana 2005).

Previous studies have suggested that factors influencing intergenerational transmission of education from parents to children include family income, family structure, number of siblings, and parenting styles. Parental income provides the means for parents to transfer their human capital to their children (Hill and Duncan 1987). The parental investments perspective emphasizes how the earnings capacity and other resources of parents affect the educational attainments and earnings capacity of children (Solon 1999), in that the parental generation uses their resources to invest in their children's education, thus enhancing the earnings capacity of their children (Becker and Tomes 1986; Kao and Tienda 1994; Felicano 2005). Children from low-income backgrounds are more likely to have lower educational attainments (Duncan et al 1998) as well as lower household incomes or earnings in adulthood compared to those from high-income households.

Family socioeconomic background and structure influence the education of children of immigrants (Portes and Hao 2004). A prior study shows that children living in one-parent or other blended types of families tend to be disadvantaged in terms of socioeconomic status, education, and other limitations to life chances (Hernandez 1993). Among immigrants, research has suggested that a large number of children from immigrant families are raised by a single parent (Landale and Oropesa 1995). This family disruption might limit 2nd generation children's access to parental investment even if their parents work hard and have a high level of human capital, such as education and income (Landale and Oropesa 1995).

In addition, number of siblings has an unfavorable effect on one's educational attainment. Becker and colleagues (1973) have suggested that with given resources, parents can either have many children in which they invest little, or they can have few children allowing for greater investments per child and a higher "quality" upbringing. In other words, parents choose between

quality and quantity of children. Nguyen and Haile (2003) have found that the presence of more than two siblings has a negative effect on children's educational attainments in the U.S. Bjorklund and Jantti (1998) have suggested that in Finland, Sweden, and the U.S., children from large families are likely to achieve less socioeconomically than children born in small families.

Previous studies have suggested that parenting behaviors also influence the transmission of education across generations (Capaldi and Clark 1998; Crosnoe and Ansari 2016). Students from immigrant families who perform well in school tend to be supported by their family (Fuligni 1997). Based on measures of warmth and supervision in the parent-child interaction, psychologist Baumrind (1967) categorized 4 kinds of parenting styles, including authoritative (i.e. parents display high levels of both warmth and supervision), authoritarian (i.e. parents display high supervision but low warmth), permissive (i.e. parents display low supervision but high warmth), and disengaged (i.e. parents display both low warmth and low supervision). Research has indicated that an authoritative parenting style leads to favorable outcomes among their children (Maccoby and Martin 1983). In contrast, a disengaged parenting style has negative consequences for children.

Lareau (2003) also examined how parenting style affects child development. Based on her observations, she classified parenting techniques into "concerted cultivation" and "natural growth." The concerted cultivation style refers to active parental management of children's development and education, whereas the natural growth style is less involved in children's schooling and activities. Lareau suggests the concerted cultivation parenting style has a greater positive effect on children than the natural growth parenting style. Thus, the use of different parenting techniques leads to educational inequality (Lareau 2003).

In addition to the familial factors affecting intergenerational transmission of education, geographic location is also an important factor. For example, previous studies have suggested that children from the South are more likely to have a lower educational attainment than children who grew up in the North. In addition, children who are brought up in metropolitan areas are more likely to have a higher level of education than children from rural areas.

The Role of Ethnic Capital: Social Landscape of Counties

Extensive research on the assimilation of children of immigrants has revealed the important role of contextual environment (Kibria 2002; Tran 2016).   Borjas (1992) has coined the term "ethnic capital" to illustrate how children of immigrants are influenced by the community in which they were raised. In his study, Borjas focuses on a set of variables involving ethnic skills of different groups to analyze intergenerational mobility across first generation immigrants and their children (Borjas 1992). He suggests that if a child grows up in a community with a high proportion of immigrants, the child is more likely to associate with immigrants, which may influence the skills, language, and educational attainments of the child (Borjas 1992, 1995, 2006). Borjas also finds that being raised as part of a low-skilled community may reduce intergenerational mobility (Borjas 1992). However, Borjas (2006) suggests that children's continual exposure to a particular ethnic norm may pull the child toward that norm in the ethnic group, which may hinder the child's assimilation into mainstream society. Portes and MacLeod (1996) suggest that, in addition to parents, the strength of ethnic communities, including social networks and resources, are crucial factors influencing the attainments of immigrant children. Therefore, family background alone cannot explain the

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variation in educational outcomes among children from immigrant families (Rumbaut 1995; Fuligni 1997).

Several recent studies have emphasized the significance of ethnic capital in explaining group socioeconomic differences (Kasinitz 2008; Tran 2016). Group-level resources might substantially affect the assimilation of the second generation. Under certain circumstances, ethnic capital could benefit specific immigrant groups. Ogbu (1974, 1991, 2003) suggests that immigrant minorities might develop a positive view of shared heritage in the community, providing a sense of group pride, which in turn might stimulate the success of the next generation. Taken together, these family and community relations are regarded as "ethnicity as social capital" (Bankston, Caldas, and Zhou 1997).

For instance, Asian Americans on average have a higher socioeconomic status than the general population (Sakamoto et al. 2009; Kim and Sakamoto 2010). Second generation Asian immigrants tend to achieve high mobility regardless of their parents' socioeconomic status in the U.S. For example, Vietnamese and Sikh immigrants have lower socioeconomic attainments after coming to the U.S., whereas their children often excel in school beyond what is expected, considering their background (Hsin and Xie 2014). Evidence indicates that family and individual background factors cannot always fully explain 2nd generation Asian Americans' high achievement (Goyette and Xie 1999; Sakamoto et al. 2009).

Some scholars use ethnic capital to help explain the achievements of second-generation Asians Americans. For example, Zhou and Bankston (1998) describe how co-ethnic social support and control promote positive incorporations of second generation Vietnamese into a low-income neighborhood in New Orleans. Lee and Zhou (2015) suggest that Asian American children benefit from the ethnic environment in which they are raised, as they witness the

behavior and achievements of their peers who share the same national origin or pan-ethnic background regardless of their parents' socioeconomic status. In contrast, little is known about the role of ethnic capital in Hispanic Americans' educational attainments and assimilation.

Hypotheses

Previous literature has suggested that both parental and ethnic resources have important effects on educational attainments among children from immigrant families. The association between the two, however, has not been examined. It is possible that parental education and ethnic capital not only have individual effects on children's educational attainment, but that these two factors also have a compounded association with a child's educational attainment. Beyond this relationship, there is also the possibility that ethnic capital resources and parental education interact to influence children's educational attainment.

Findings of the present study may lead to insightful theoretical implications regarding the interaction between parental and contextual human-capital resources on assimilation and education of descendants of immigrants. In addition, the present study may have important implications for developing new policies geared toward promoting educational mobility among Hispanic youths. If ethnic capital is associated with increases in educational mobility, new policies should be put in place for improving neighborhood quality in order to increase upward mobility of disadvantaged Hispanic children.

It is not clear whether an interactive relationship between ethnic capital and parental education exists. If so, what is the direction of this interactive relationship? Intergenerational transmission of education from parents to children might not be affected by contextual environment. It is possible that parental factors and environmental factors are two separate

forces affecting a child's education. However, it is also possible that ethnic capital resources

reduce intergenerational transmission of education. In other words, it may be hypothesized that

Hispanic children from an area with a larger ethnic population and a higher level of human

capital will demonstrate greater intergenerational educational mobility. This would indicate a

negative interaction between parental education and ethnic capital variables. In this situation,

environmental ethnic capital plays a positive role in educational mobility. In addition, I

hypothesize that this interactive relationship between ethnic capital and parental education exists

only among Hispanic Americans, as this group is more vulnerable to environmental factors than

3+ generation non-Hispanic white Americans.

Data and Methods

Data and Sample

The National Longitudinal Survey of Youth 1997 (NLSY97) is an ongoing nationally

representative panel study of 8,984 youths aged 12 to 17 when first interviewed on December 31,

1996. The NLSY97 consists of a set of comprehensive surveys providing information about

educational and labor market activities at multiple time points. The sample consists of a

nationally representative sample of 6,748 youths and an over-sample of 2,236 Hispanic and non-

Hispanic black youths. NLSY97 is designed to document the transition from school to work,

and thus it collects detailed information about educational experiences over time among young

adults. The content of the survey includes detailed information about youths' educational data

and family background. Sources of data include the youths' parents and the youths themselves.

In this study, I use surveys from Round 1 (1997), and from Round 11 (2007) to Round 16

(2013). Many variables in the study are derived from the youth questionnaires. Information on

parental and household background is extracted from the Round 1 parent survey. It should be noted that over 80% of the parent surveys were answered by the biological mother of the youth.

Access to the NLSY97 Geocode data file is restricted from the public. It contains detailed information on county-level contextual characteristics of each NLSY resident. The variables indicating county-level demographic and socioeconomic characteristics in the Geocode data files are obtained based on the 1994 edition of the U.S. Census Bureau's *County and City Data Book*. The restricted data allows me to obtain ethnic capital variables for this study.

Target Population, Variables, and Measures

The target population of this study is Hispanic Americans. Hispanic Americans are grouped into children of native-born Hispanic parents (i.e. 3+ generation Hispanics) and children of at least one foreign-born parent (i.e. 2nd generation Hispanics). The parent survey provides information on parent's place of birth. Hispanic youth is coded as 2nd generation if at least one of the parents is foreign-born. Hispanic youth is coded as 3+ generation if both parents were born in the U.S. My sample yields 983 Hispanics from native-born families (i.e. 3+ generation Hispanics: N=983) and 917 Hispanics from immigrant families (i.e. 2nd generation Hispanics: N=917). It should be noted that my sample of 2nd generation Hispanics also includes 1.5 generation Hispanic Americans. 1.5 generation Americans are persons who were born outside the U.S. but migrated to the U.S. as a child. Previous immigration studies have suggested that 1.5 and 2nd generation Americans have similar upbringing and present a similar level of assimilation in the U.S. (Rumbaut 1994). Thus, conventional studies often group 1.5 generation persons into 2nd generation. In addition, I include children of native-born non-Hispanic whites (3+ generation whites) as a reference group (N=4,184).

Dependent Variable. The dependent variable of interest is years of schooling by age 28.

It is a continuous variable. Age 28 is used to determine education level, because by 28 most

people should already have finished their education, including persons working on a PhD or a

professional degree. I use surveys from Round 11 to Round 16 (from years 2007 to 2013) to

extract years of schooling at age 28 for respondents. At Round 16, the youngest respondents in

the sample have reached age 28.

Key Independent Variables. The key independent variables include father and mother's

years of schooling. In the parent survey, the responding parents were asked to provide

information about their years of schooling, as well as information about youth's other biological

parent, and residential father/mother. If biological parent's information on education is missing,

I use residential parent's years of schooling.

Ethnic Capital Variables. I use 4 demographic and socioeconomic variables from the

restricted-access data file as proxies of ethnic capital. All ethnic capital variables are measured

at the county level in 1997.   These include percentage of ethnic population, percentage of

college educated population, natural logarithm of median household income adjusted to 2010

dollars based on CPI-R-U, and percentage of families below poverty level. It should be noted

that for Hispanics, ethnic population is obtained by using Hispanic population in county divided

by total population in county; and for non-Hispanic whites, ethnic population is obtained by

using non-Hispanic white population in county divided by total population in county. All ethnic

capital variables are treated as continuous variables.

Control Variables. I use factors influencing intergenerational transmission of education

as control variables. The natural logarithm of annual household income in 1996 is included. I

adjusted parental household income based on CPI-R-U to 2010 dollars. Annual household

income below $1,000 is recoded to $1,000 to avoid biases produced by outliers. I have also

included number of siblings in the household and mother's age when she had the child. These

variables are treated as continuous variables. Furthermore, I include variables indicating whether

the child lived with both biological parents, whether parent participated in teacher-parent

meetings, and whether parents volunteered in schools. These variables are coded as

dichotomous variables (yes=1/no=0). In addition, based on Baumrind's parenting styles on

warmth and supervision in the parent-child interaction, 4 dichotomous variables of parenting

styles (authoritative, authoritarian, permissive, and disengaged) are included. I also have two

dichotomous variables indicating region, including metropolitan area and South, in the study.

Lastly, I include a set of variables indicating school quality when youths were teenagers

(Crosnoe 2004). These school quality variables include whether they feel safe at school, whether

teachers are engaged, and whether students disrupt the learning process (yes=1/no=0).

It is worth noting that there are many missing values in the dataset due to the nature of

panel surveys. For the dependent variable of education, I use listwise deletion to deal with

missing values. For the independent variables of parental schooling and family income, I use

multiple imputation (Royston 2004).

Methods

As a standard intergenerational mobility model, I apply the OLS regression model for

estimating correlations between educational outcomes of parents and children (Solon 1992;

Zimmerman 1992):

$$Y = \alpha_1 + \beta_1 * PE + \varepsilon \ldots\ldots\ldots\ldots(1)$$

$$Y = \alpha_2 + \beta_2 * PE + \beta_3 * EC + \beta_4 * X + \epsilon \ldots\ldots\ldots\ldots(2)$$

$$Y = \alpha_3 + \beta_5 * PE + \beta_6 * EC + \beta_7 * (PE * EC) + \beta_8 * X + \varepsilon_i \ldots\ldots\ldots\ldots(3)$$

where Y indicates child's years of schooling; PE indicates parent's education (i.e. father's years of education and mother's years of education); EC indicates a vector of county-level ethnic capital variables (i.e. percentage of ethnic population, percentage of college-educated population, natural logarithm of median household income, and percentage of families below poverty level); X indicates a vector of control variables (i.e. natural logarithm of annual family income, family structure, number of siblings, parenting styles, region, and quality of school); and ε indicates random errors.

All the analyses are conducted separately for men and women in order to include interaction effects by gender. The analyses are weighted using sample weights. The Bureau of Labor Statistics also generated custom weights for multiple samples based upon requests. In model 1, β_1 represents the parent-child school correlation. In Model 2, β_2 represents intergenerational transmission of education. The larger the value of β_2, the lower the educational mobility and the greater the child educational outcomes depending on parental education. In this model, intergenerational schooling association from Model 1 can be explained by independent variables in model 2, such as ethnic capital and other control variables. This can be interpreted as the effects of parental schooling on their children's years of schooling. In Model 3, the coefficient of the interaction terms (β_7) is the parameter of interest because a significant estimate of β_7 indicates significant heterogeneity in intergenerational mobility based on level of ethnic capital resources. If β_7 is statistically not significant, it indicates intergenerational transmission of education from parents to children is not affected by contextual environment. A positive sign of β_7 indicates that ethnic capital resources increase intergenerational transmission of education and a negative sign indicates the opposite.

Results

Sample Characteristics

Sample characteristics by race, immigration generation, and gender are reported in Table 3.1. Child's educational attainment is measured at age 28 for all respondents. In general, women have acquired more years of schooling by age 28 than men. Native non-Hispanic whites have more years of schooling than Hispanics. On average, NH-white women have the highest educational attainment (14.26 years) among all the demographic groups. 2nd generation Hispanic men and women have more years of schooling than 3+ generation Hispanic men and women, respectively. 3+ generation Hispanic men have the lowest educational level among all the groups. The results are consistent with prior findings indicating that 3+ generation Hispanic Americans have downward mobility (Duncan and Trejo 2004; Terriquez 2014).

Compared to parents' schooling, children's schooling is higher among all groups than their father and mother's schooling, indicating an intergenerational improvement in education among all groups. Overall, parental socioeconomics characteristics of NH-whites are higher than Hispanics (i.e. parents' schooling and family income).

Parent-Child Correlation of Schooling

Table 3.2 presents father-child and mother-child correlations of schooling across demographic groups. First, the overall correlations of parent-child schooling among NH-whites are 0.37-0.45, higher than Hispanics. Second, men have correlations of parent-child schooling that are higher than women from the same racial/ethnic categories. Third, father-son pairs have the highest correlations within each demographic group. Fourth, 2nd generation Hispanics have lower parent-child schooling correlations than 3+ generation Hispanics.

Results from Table 2 indicate that the correlation of parent-child schooling for NH-whites are consistent with previous findings (Hertz et al. 2007). This is also consistent with the previous observation that children of immigrants have higher educational mobility than 3+ generation persons (Kao and Tienda 1995).

Multivariate Regression Results

Table 3 presents the OLS regression coefficients of parental education estimating child's years of schooling when controlling for the covariates including natural logarithm of family variables, school variables, geographic variables, and ethnic capital variables (see Model 2). These coefficients represent intergenerational transmission of education. All the coefficients of parents' schooling on child's schooling reported in Table 3 are statistically significant at a $p<0.001$ level, indicating an association between child's and parent's schooling when other observed factors are controlled for.

Relative to the correlation values in Table 2, the coefficient values in Table 3 become smaller net of the control variables. This indicates that part of the parent-child schooling association can be explained by the mediator variables. Among NH-whites, father-son transmission of educational is 0.31, father-daughter transmission of education is 0.23, mother-son transmission of education is 0.28, and mother-daughter transmission of education is 0.33. Among 3+ generation Hispanics, father-son transmission of education is 0.22, father-daughter transmission of education is 0.20, mother-son transmission of education is 0.27, and mother-daughter transmission of education is 0.19. Among 2nd-generation Hispanics, father-son transmission of education is 0.23, father-daughter transmission of education is 0.18, mother-son transmission of education is 0.21, and mother-daughter transmission of education is 0.18.

Table 3.4 presents regression coefficients of parental education and their interaction

terms with ethnic capital variables while controlling for the covariates (see Model 3). The

coefficients for the interaction terms among 3+ generation NH-whites are not statistically

significant, which indicates that the influence of father and mother's educational levels on child's

education does not vary based on environmental ethnic capital for non-Hispanic white men and

women. For 3+ generation Hispanic men, the coefficient of the interaction term between

percentage of ethnic population and father's schooling is statistically significant (column 3: β_7=-

0.0044, p<0.05). This indicates that the percentage of Hispanics in the county where the child

resided when he/she was a teenager has a negative effect on father-son's schooling transmission.

In other words, educational mobility is higher if a 3+ generation Hispanic male teenager resides

in a place where percentage of Hispanics is higher. For 2nd generation Hispanic men, the

coefficient of the interaction between percentage of the college-educated population and parents'

schoolings are statistically significant (column 5: $\beta_{7\ of\ father}$=-0.0079, p<0.05; $\beta_{7\ of\ mother}$=-

0.0072, p<0.05). The results suggest that the transmission of schooling from father and from

mother vary according to the percentage of college-educated persons in the county where the

child resided as a teenager. Educational mobility is higher if the son of Hispanic immigrants

resides in a county where the college-educated population is larger. In addition, percentage of

families below poverty level and median household income do not have a significant relationship

with parental educational level across groups. Hispanic women of 3+ and 2nd generations do not

show significant coefficients of interaction terms.

To illustrate the estimated effects of OLS regression with interactions, I have plotted how

estimated years of schooling of 3+ generation and 2nd generation Hispanic men would be

expected to vary based on the percentage of the Hispanic population and the percentage of the

college-educated population in the county. Estimates are shown for counties with a 0, 10, 20, 30, and 40 percent Hispanic population and college-educated population, combined with parent's years of schooling of 1, 5, 10, and 15 years.

Based on the analyses in Table 3.4 column (3), Figure 3.1 presents predicted values of schooling years for a typical 3+ generation Hispanic man based on the percentage of the Hispanic population in the county. Using median values of control variables, a typical case is defined as a 3+ generation Hispanic man who has 1 sibling; whose mother gave birth to him when she was 25 years old; whose family income in 1996 was $41,513 after adjusting for inflation in 2010; who grew up with both biological parents in a non-South metropolitan area; and whose parents were authoritative, attended Teacher-Parent meetings, and volunteered at schools. In addition, this child felt safe at school, teachers were engaged in his education, and his education was not disrupted by other students in school.

Plots in Figure 3.1 reveal that if the father has 10 or 15 years of schooling, there is no discernible variation in estimated years of schooling for the child when there is an increase in the Hispanic population. However, if the father has 1 year of schooling, increasing the percentage of the Hispanic population in the county from 0 to 40 yields an estimated years of schooling increase from 10.2 years to 12.4 years among 3+ generation Hispanic men. In addition, if the father has 5 years of schooling, increasing the percentage of the Hispanic population in the county from 0 to 40 yields an estimated years of schooling increase from 11.5 years to 13 years among 3+ generation Hispanic men.

Based on the analyses in Table 3.4 column (5), Figure 3.2 and Figure 3.3 present predicted values of schooling years for a typical 2nd generation Hispanic man based on the percentage of the college-educated population in the county. Using median values of the control

variables, a typical case is defined as a 2nd generation Hispanic man who has 1 sibling; whose

mother gave birth to him when she was 25.5 years old; whose family income in 1996 was

$30,443 after adjusting for inflation in 2010; who grew up with both biological parents in a non-

South metropolitan area; and whose parents were authoritative, attended Teacher-Parent

meetings, and volunteered at school. In addition, this child felt safe at school, teachers were

engaged in his education, and his education was not disrupted by other students in school.

Data presented in Figure 3.2 indicate that for a typical 2nd generation Hispanic man, an

increase in the college-educated population from 0 to 40 percent yields an increase in estimated

years of schooling from 10.2 to 12.3 years if the father has an education of 1 year; an increase in

estimated years of schooling from 11.5 to 13 years if the father has an education of 5 years; and

an increase in estimated years of schooling from 13 to 13.5 if the father has an education of 10

years. However, there is no distinct variation of estimated years of schooling based on the

percentage of college-educated population if the father has an education of 15 years.

Figure 3.3 presents estimated years of schooling of typical 2nd generation Hispanic men

based on Mother's years of schooling and percentage of the college-educated population in the

county.   An increase in the college-educated population from 0 to 40 percent yields an increase

in estimated years of schooling of typical 2nd generation Hispanic men from 9.6 to 13.6 years if

the mother has an education of 1 year; an increase in estimated years of schooling from 11.1 to

14 years if the mother has an education of 5 years; and an increase in estimated years of

schooling from 13 to 14.5 if the mother has an education of 10 years. However, there is no

distinct variation of estimated years of schooling based on the percentage of the college-educated

population if the mother has an education of 15 years.

Discussion and Conclusion

Hispanic Americans are an important population with unique challenges. The present study examines the heterogeneity of intergenerational transmission of education from parents to children by ethnic capital resources among Hispanic children of immigrants and Hispanic children of native-born Americans. Men and women are analyzed separately. The benchmark population, 3+ generation non-Hispanic whites, is also included in the analysis as a reference group. While several studies have examined educational attainments among Hispanics (Wojtkiewicz and Donato 1995; Chiswick and DebBurman 2004) and the importance of parental schooling in explaining group educational disparities (Kao and Tienda 1995; Feliciano 2004), little research has investigated intergenerational transmission of education among Hispanics and whether the transmission varies by ethnic environment. This topic is important given the well-documented significance of parental education and contextual ethnic capital in affecting the socioeconomic attainments of descendants of immigrants.

My results indicate that ethnic capital resources do not affect intergenerational education mobility among NH-white men and women. This result is consistent with a previous study suggesting that neighborhood characteristics do not strongly influence school performance of 3+ generation children (Pong and Hao 2007). In addition, my results suggest that simple parent-child schooling correlations are around 0.4 among NH-whites. This number is consistent with a previous study, which reported an intergenerational educational elasticity around 0.46 in the U.S. in 1994–2000 (Hertz et al 2007). It is not surprising that my findings and Hertz's findings are consistent given that NH-whites constitute the majority population in the U.S. Since Hertz and colleagues used the 1929–1980 birth cohort in their study, it is expected that most of their sample were NH-whites. However, it is striking to see that the intergenerational educational mobility

level has remained stable over time. It will be important to continue investigating trends in intergenerational educational mobility across nations in further studies.

Regarding 3+ generation Hispanics, my findings suggest that having a higher percentage of Hispanic persons in the county where the Hispanic child resided as an adolescent decreases intergenerational persistence of education between father and son. This environmental feature, however, does not affect 3+ generation Hispanic women. This result is not surprising given that Hispanic youths living in a high-density Hispanic community might benefit from sociocultural advantages, and these advantages might outweigh the disadvantages of the socioeconomic characteristics of the neighborhood (Eschbach et al 2003). For example, minority children raised in an area with a higher percentage of minorities might face less discrimination and prejudice in public institutions, such as school. In addition, if teacher and minority students share a similar racial/ethnic background, students usually perform better in school (Dee 2005; Bates and Glick 2013) since a demographically similar teacher raises a student's academic motivation and expectations (Steele 1997). It is possible that 3+ generation men raised in areas with a higher percentage of Hispanics are more comfortable with the environment, are less likely to be stereotyped, experience less marginalization, and also have greater support and larger social networks. All these factors positively affect Hispanic men's education.

However, it is surprising to see that the percentage of Hispanics in the county does not affect intergenerational educational mobility among Hispanic youths from immigrant families, as previous work has suggested that ethnic population in the neighborhood affects socioeconomic outcomes of children from immigrant families (Borjas 1992). Rather, results demonstrate that the percentage of college-educated people in the county where the 2nd-generation Hispanic youth grew up has a negative effect on father-son and mother-son transmission of schooling. This

suggests that a higher percentage of college-educated people in the county increases intergenerational mobility of education among 2nd generation Hispanic men. Previous research has investigated the effects of residence characteristics on educational outcomes of children and youths. However, these prior studies have focused primarily on the economic conditions of the neighborhood, such as poverty level and income level (Massey 1996). My findings regarding second-generation Hispanics provide novel insights into how educational level of the community may positively affect immigrant youths' outcomes.

The collective socialization model might be able to explain how the college-educated population in a county affects education among children of Hispanic immigrants. The collective socialization model suggests that neighborhood role models and monitoring can promote student engagement and achievement (Jencks and Mayer 1990). Research indicates that when a sufficient proportion of adult residents have a high education or high-status occupation, this might send a positive message that hard work and a good education pays off, thereby having a positive effect on young people's attainments (Billy et al 2001).

One might argue that a smaller geographical area, such as a Census tract area, would serve as a more precise sample for studying the effects of ethnic capital. Previous research, however, suggests that county government is a key policy actor in the U.S. (Kelleher and Yackee 2004), which makes my analyses of county data useful for policymaking. In addition, using tract or smaller neighborhood geographic areas would potentially lead to endogeneity issues in the analyses. Oftentimes, parents may deliberately choose the neighborhood in which they live and raise their children. Parents with a higher family income, however, have more options and can afford to live in a better neighborhood.

Overall, the present findings have significant implications for public policy. As the Hispanic population continues to grow, issues surrounding socioeconomic status and assimilation level of Hispanic immigrants and their descendants have attracted public attention. Considering that Hispanic immigrants in general have lower educational and economic attainments compared to other groups, it is important for policymakers to provide Hispanic children with the means for upward mobility in order to increase equality. Children of Hispanics are usually disadvantaged in terms of parental socioeconomic support. However, my research suggests that children of Hispanics can benefit from certain environmental factors. If Hispanic children reside in an area with a large Hispanic population and a large college-educated population, they will most likely have higher educational mobility. Therefore, policymakers could focus on improving the socioeconomic quality of neighborhoods in order to provide 2nd-generation Hispanic children with an equal opportunity to succeed in their educational endeavors.

In terms of scientific implications, the present findings build on previous research which has emphasized the importance of parents' human capital and ethnic environment in determining the educational attainments of children from immigrant families. The present study also provides novel insights regarding the interactive relationship between parental capital and ethnic environment and how this interaction influences different population groups categorized by race, immigration generation, and gender. Future research should be conducted to determine whether parental capital and ethnic environment also interact to influence the educational attainments of other immigrant groups, such as Asian Americans.

Table 3.1. Descriptive Statistics

	NH-Whites_3+		Hispanics_3+		Hispanics_2nd	
	Men	Women	Men	Women	Men	Women
Dependent Variable						
Years of Schooling by age 28	13.60	14.26	12.53	12.93	12.58	13.04
Parental & Family Variables (1997)						
Father's schooling (Years)	13.39	13.31	11.02	11.24	8.73	9.00
Mother's schooling (Years)	13.30	13.28	11.24	11.18	9.06	8.98
Ln-family income	11.05	11.03	10.42	10.43	10.15	10.17
Mother's age when child was born	26.14	25.96	24.70	25.27	25.75	25.34
No. of siblings	1.24	1.25	1.61	1.54	1.81	1.89
Lived with both parents (%)	59.13	56.65	45.63	43.98	64.00	59.31
Parenting styles						
Authoritative	41.95	38.63	42.72	38.72	44.70	39.35
Authoritarian	10.58	12.74	9.39	13.27	12.19	15.05
Permissive	37.45	37.83	36.21	34.07	33.18	31.40
Disengaged	10.02	10.80	11.69	13.94	9.93	14.19
(Total)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
Parents volunteered in school (%)	49.26	48.91	31.18	32.82	33.11	30.62
Participate Teacher-Parent meetings (%)	59.73	58.23	44.49	44.2	70.89	69.16

Table 3.1 Continued

	NH-Whites_3+		Hispanics_3+		Hispanics_2nd	
	Men	Women	Men	Women	Men	Women
Feeling safe at school (%)	88.93	89.53	87.26	85.56	86.44	82.44
Engaging teachers (%)	86.62	85.86	88.78	85.34	88.89	86.72
Students disrupt learning (%)	58.58	60.91	62.74	63.46	65.78	61.67
Geographical Variables (1997)						
Metro (%)	75.42	75.35	91.83	91.68	98.89	97.86
South (%)	28.74	32.69	31.94	27.79	28.67	25.91
Ethnic Capital Variables (1997)						
% Ethnic Group	86.02	85.86	27.82	26.15	27.33	26.97
% College Educated	19.09	19.06	20.84	20.95	22.1	21.99
Median Household Income ($)	35,562.98	35,540.76	34,579.48	35,456.45	37,617.21	37,181.53
% Family below poverty	9.16	9.18	13.17	12.14	11.79	11.94
N	2,168	2,016	526	457	450	467

Table 3.2 Correlation of Years of Schooling between Children and Parents

	NH-Whites_3+		Hispanics_3+		Hispanics_2nd	
	Men	Women	Men	Women	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)
Father	0.4540***	0.3684***	0.3206***	0.3109***	0.4015***	0.3452***
Mother	0.3923***	0.4109***	0.3182***	0.3031***	0.3997***	0.3300***

Note: * p<0.05 ** p<0.01 *** p<0.001

Table 3.3 Intergenerational Transmission of Education

	NH-Whites_3+		Hispanics_3+		Hispanics_2nd	
	Men	Women	Men	Women	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Father's Schooling	0.3080***	0.2279***	0.2221***	0.2011***	0.2275***	0.1782***
Controls	Y	Y	Y	Y	Y	Y
Intercept	-27.9450***	-18.7090*	-37.4043+	-22.2189	16.3772	-2.5334
R2	0.3234	0.2793	0.2343	0.2627	0.2482	0.2644
Panel B: Mother's Schooling	0.2816***	0.3322***	0.2721***	0.1917***	0.2129***	0.1820***
Controls	Y	Y	Y	Y	Y	Y
Intercept	-27.9396*	-17.8034*	-37.773	-20.2924	11.7153	4.7597
R2	0.3046	0.3062	0.2459	0.2713	0.2463	0.2687

Note: * $p<0.05$ ** $p<0.01$ *** $p<0.001$

Covariates are controlled for in the models.

Table 3.4 OLS Regression Results for Years of Schooling

	NH-Whites		Hispanics_3+		Hispanics_2nd	
	Men	Women	Men	Women	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)
FATHER's Schooling						
Panel A: % Ethnic population						
Father's schooling	0.3247*	0.1684	0.3046***	0.2604**	0.2878***	0.2293***
% Ethnic population	0.0031	-0.0125	0.0582**	0.0453	0.0288	0.0289
FS* % ethnic population	-0.0002	0.0008	-0.0044*	-0.0024	-0.003	-0.0024
Panel B: % college educated population						
Father's schooling	0.3636***	0.2985***	0.2191*	0.0748	0.4068***	0.0166
% college educated population	0.0516	0.0546	0.0304	-0.0686	0.0978*	-0.0954*
FS* % college educated population	-0.003	-0.0033	-0.0004	0.006	-0.0079*	0.0072+
Panel C: Ln(median HH income)						
Father's schooling	1.3547	1.44	2.0725	-0.3708	0.4293	-0.6285
Ln(median HH income)	2.2239	1.4827	2.5923	-0.4802	0.1691	-1.1366
FS* Ln(median HH income)	-0.0973	-0.1116	-0.1724	0.0533	-0.0185	0.0741
Panel D: % family below poverty						
Father's schooling	0.2805***	0.2216***	0.1739	0.2615*	0.2487***	0.2129**
% family below poverty	-0.0577	0.0088	-0.0236	0.088	0.0214	0.054
FS* % family below poverty	0.0031	0.0013	0.0031	-0.0051	-0.0022	-0.0036

Table 3.4 Continued

	NH-Whites		Hispanics_3+		Hispanics_2nd	
	Men	Women	Men	Women	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)
MOTHER's Schooling						
Panel A: % Ethnic population						
Mother's schooling	0.1601	0.2046	0.2752***	0.1208	0.2506***	0.1754*
% Ethnic population	-0.0162	-0.0217	0.0115	-0.0218	0.018	0.0057
MS* % ethnic population	0.0015	0.0015	-0.0005	0.0033	-0.0019	0.0003
Panel B: % college educated population						
Mother's schooling	0.3335***	0.4154***	0.1371	0.2462*	0.3854***	0.0117
% college educated population	0.0545	0.0652	-0.049	0.047	0.1064**	-0.0931
MS* % college educated population	-0.0028	-0.0042	0.0062	-0.0021	-0.0072*	0.0074
Panel C: Log(median HH income)						
Mother's schooling	1.5617	1.4005	0.3583	2.8184*	1.4491	-0.3822
Ln(median HH income)	2.5636*	1.2264	0.72	3.1595*	1.6992	-0.972
MS* Log(median HH income)	-0.1188	-0.0986	-0.0083	-0.2406	-0.1138	0.0516
Panel D: % family below poverty						
Mother's schooling	0.2577***	0.3454***	0.2249*	0.0723	0.2231**	0.1533
% family below poverty	-0.0607	0.0375	-0.0282	-0.1264	0.0027	-0.0058
MS* % family below poverty	0.0029	-0.0008	0.0033	0.0128	-0.0016	0.0026

Table 3.4 Continued

Note: * p<0.05 ** p<0.01 *** p<0.001

Covariates are controlled for in the models.

Figure 3.1. Predicted years of schooling of 3+ generation Hispanic men for various level of father's schooling and percentage of Hispanic population in the county
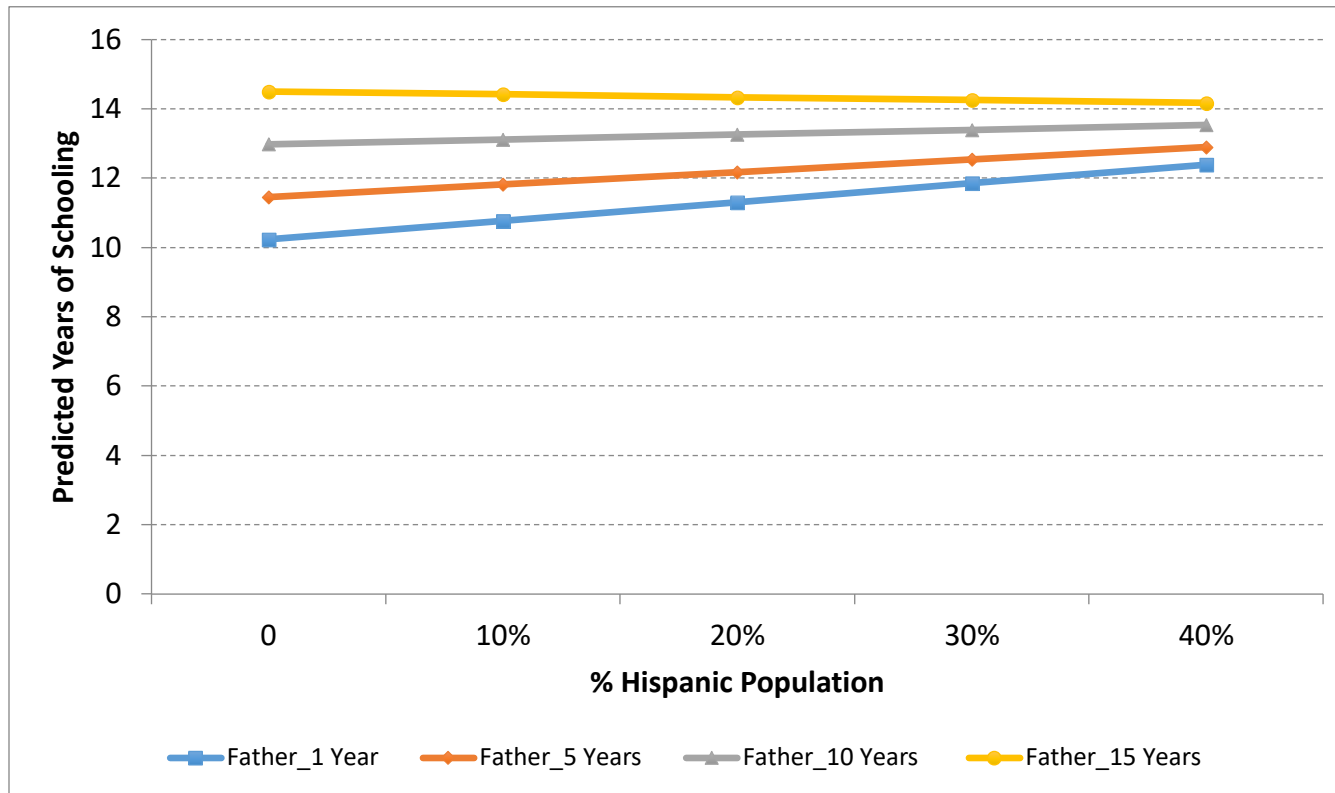
Figure 3.2. Predicted years of schooling of 2nd generation Hispanic men for various level of father's schooling and percentage of college-educated population in the county
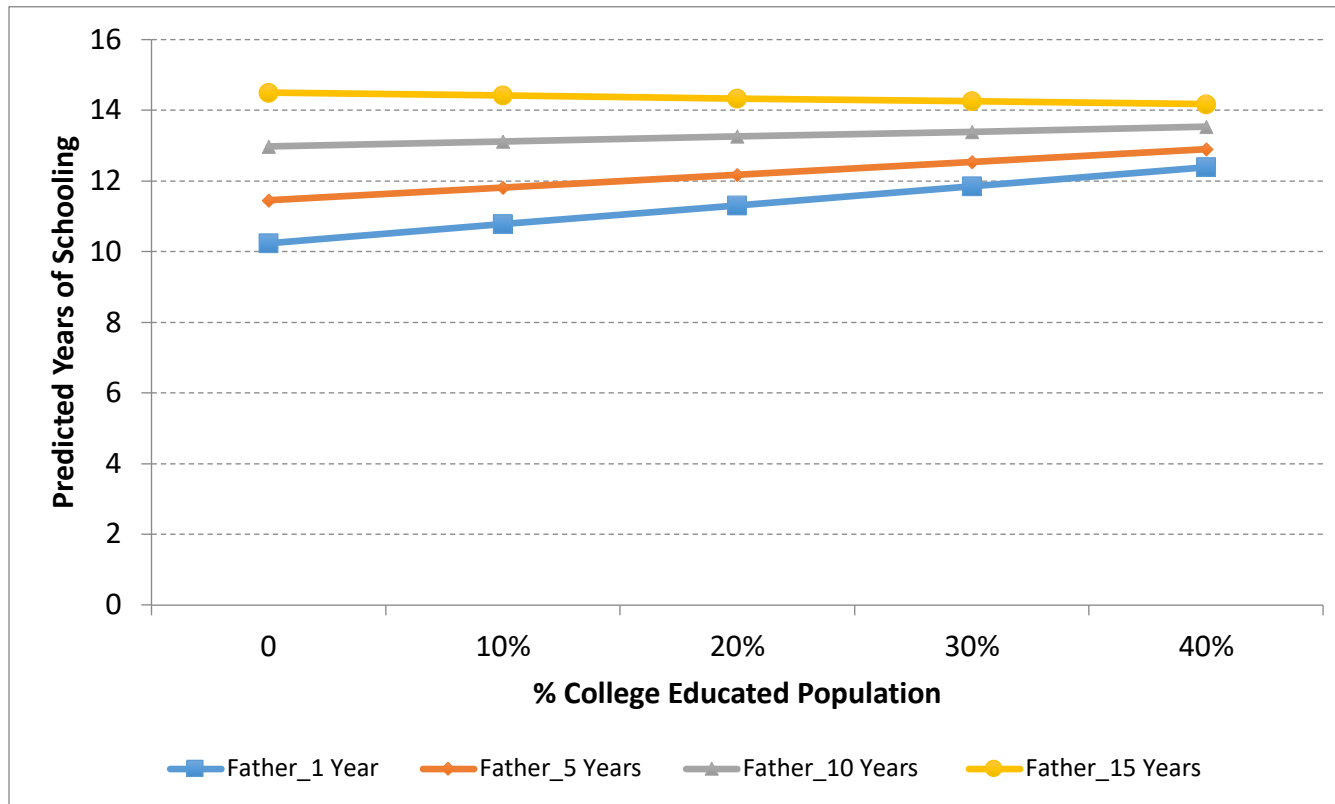
Figure 3.3. Predicted years of schooling of 2nd generation Hispanic men for various level of mother's schooling and percentage of college-educated population in the county
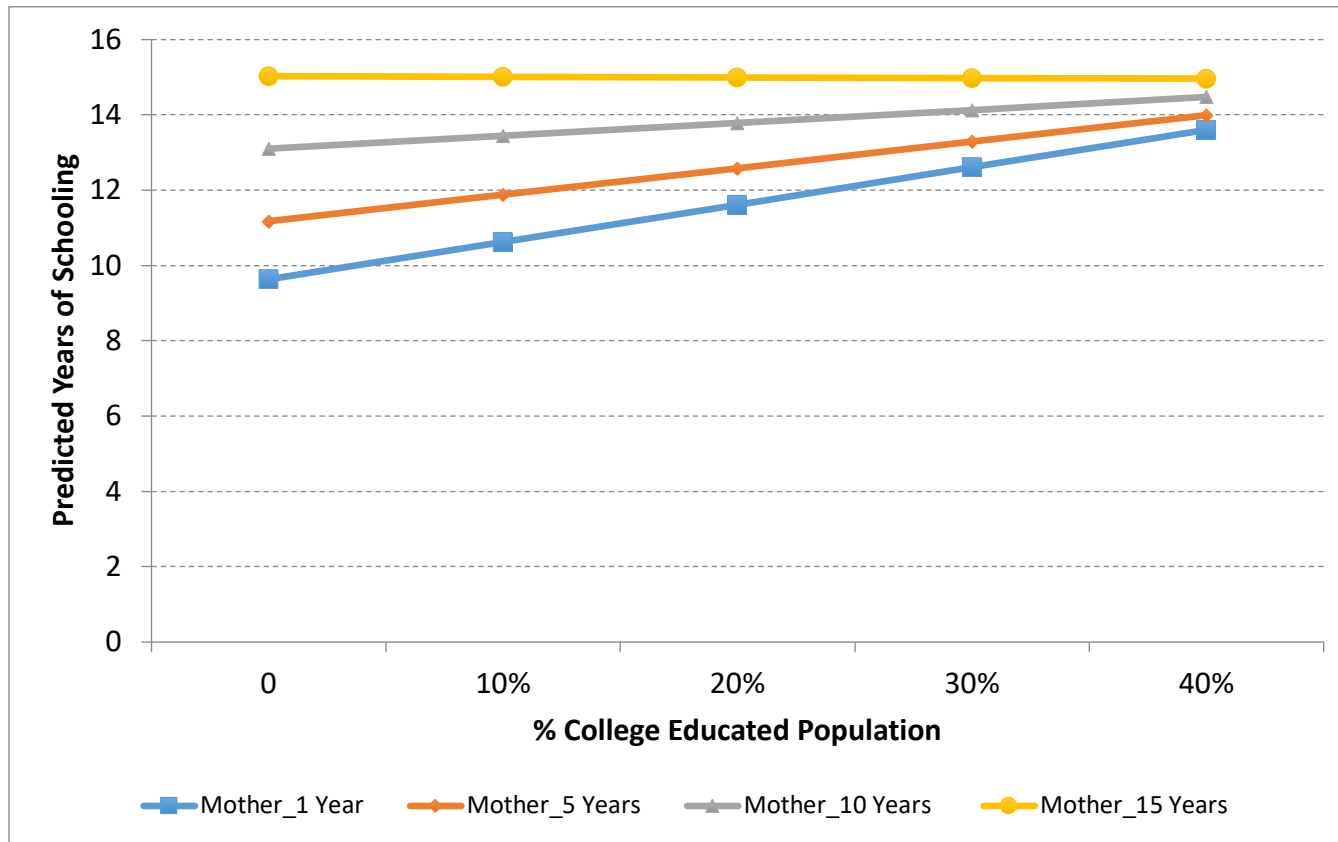
Reference

Bankston III, Carl L., Stephen J. Caldas, and Min Zhou. 1997. "The Academic Achievement of Vietnamese American Students: Ethnicity as Social Capital." *Sociological Focus* 30(1): 1-16.

Bates, Littisha A. and Jennifer E. Glick. 2013. "Does It Matter if Teachers and Schools Match the Student? Racial and Ethnic Disparities in Problem Behaviors." *Social Science Research* 42(5): 1180-1190.

Baum, Sandy and Jennifer Ma. 2007. *Education Pays: The Benefits of Higher Education for Individuals and Society*. Washington, DC: College Board.

Baumrind, Diana. 1967. "Child Care Practices Anteceding Three Patterns of Preschool Behavior." *Genetic Psychology Monographs*.

Becker, Gary S., and Nigel Tomes. 1986. "Human Capital and the Rise and Fall of Families." *Journal of Labor Economics* 4(3), Part 2: S1-S39.

Belzil, Christian, and Jörgen Hansen. 2003. "Structural Estimates of the Intergenerational Education Correlation." *Journal of Applied Econometrics* 18(6): 679-696.

Billy, John OG, William R. Grady, Audra T. Wenzlow, Nancy D. Brener, Janet L. Collins, and Laura Kann. 2000. "Contextual Influences on School Provision of Health Services." *Journal of Adolescent Health* 27(1): 12-24.

Björklund, Anders, and Markus Jäntti. 1999 *Intergenerational Mobility of Socio-Economic Status in Comparative Perspective*. Social Policy Research Centre, University of New South Wales.

Black, Sandra and Paul Devereux. 2010. *Recent Development in Intergenerational Mobility*.

    Bonn, Germany: The Institute for the Study of Labor (IZA).

Black, Sandra E., Paul J. Devereux, and Kjell G. Salvanes. 2005. "Why the Apple doesn't Fall

    Far: Understanding Intergenerational Transmission of Human Capital." *American*

    Economic Review 95(1): 437-449.

Borjas, George J. 1992. "Ethnic Capital and Intergenerational Mobility." *The Quarterly Journal*

    of Economics 107(1): 123-150.

Borjas, George J. 1995. "Assimilation and Changes in Cohort Quality Revisited: What Happened

    to Immigrant Earnings In The 1980s?." *Journal of Labor Economics* 13(2): 201-245.

Borjas, George J. 2006. *Making It In America: Social Mobility in the Immigrant Population*. No.

    w12088. National Bureau of Economic Research.

Capaldi, Deborah M., and Sara Clark. 1998. "Prospective Family Predictors of Aggression

    Toward Female Partners for At-Risk Young Men." *Developmental Psychology* 34(6):

    1175.

Chiswick, Barry R. and Noyna DebBurman. "Educational attainment: analysis by immigrant

    generation." *Economics of Education Review* 23.4 (2004): 361-379.

Coleman, James S. 1968. "Equality of Educational Opportunity." *Integrated Education* 6(5): 19-

    28.

Crosnoe, Robert. 2004. "Social Capital and the Interplay of Families and Schools." *Journal of*

    Marriage and family 66(2): 267-280.

Crosnoe, Robert. 2013. *Preparing the Children of Immigrants for Early Academic Success.*

Washington, DC: Migration Policy Institute.

Crosnoe, Robert, and Arya Ansari. 2016. "Family Socioeconomic Status, Immigration, and Children's Transitions into School." *Family Relations* 65(1): 73-84.

Dearden, Lorraine, Stephen Machin, and Howard Reed. 1997. "Intergenerational Mobility in Britain." *The Economic Journal*: 47-66.

Dee, Thomas S. 2005. "A Teacher Like Me: Does Race, Ethnicity, or Gender Matter?." *The American Economic Review* 95(2): 158-165.

Duncan, Brian, and Stephen J. Trejo. 2011. "Intermarriage and the Intergenerational Transmission of Ethnic Identity and Human Capital for Mexican Americans." *Journal of Labor Economics* 29(2): 195-227.

Duncan, Brian, and Stephen J. Trejo. 2011. "Who Remains Mexican? Selective Ethnic Attrition and the Intergenerational Progress of Mexican Americans." *Latinos and the Economy*: 285-320.

Duncan, Greg J., W. Jean Yeung, Jeanne Brooks-Gunn, and Judith R. Smith. 1998 "How Much does Childhood Poverty Affect the Life Chances of Children?." *American Sociological Review* 63(3): 406-423.

Eschbach, Karl, Glenn V. Ostir, Kushang V. Patel, Kyriakos S. Markides, and James S. Goodwin. 2004. "Neighborhood Context and Mortality among Older Mexican Americans: Is There a Barrio Advantage?." *American Journal of Public Health* 94(10): 1807-1812.

Feliciano, Cynthia. 2005. *Unequal Origins: Immigrant Selection and the Education of the Second Generation*. Lfb Scholarly Pub Llc.

Fuligni, Andrew. 1997. "The Academic Achievement of Adolescents from Immigrant Families: The Roles of Family Background, Attitudes, and Behavior." *Child Development*, 68(2): 351-363.

Goyette, Kimberly, and Yu Xie. 1999. "Educational Expectations of Asian American Youths: Determinants and Ethnic Differences." *Sociology of Education*: 22-36.

Haveman, Robert, and Barbara Wolfe. 1995. "The Determinants of Children's Attainments: A Review of Methods and Findings." *Journal of Economic Literature* 33(4): 1829-1878.

Hernandez, Donald J. 1993. *America's Children: Resources from Family, Government, and the Economy*. Russell Sage Foundation.

Hertz, Tom, Tamara Jayasundera, Patrizio Piraino, Sibel Selcuk, Nicole Smith, and Alina Verashchagina. 2007. "The Inheritance of Educational Inequality: International Comparisons and Fifty-Year Trends." *The BE Journal of Economic Analysis & Policy* 7(2).

Hill, Martha S., and Greg J. Duncan. 1987. "Parental Family Income and the Socioeconomic Attainment of Children." *Social Science Research* 16(1): 39-73.

Hirschman, Charles, and Luis Falcon. 1985. "The Educational Attainment of Religio-Ethnic Groups in the United States." *Research in Sociology of Education and Socialization* 5: 83-120.

Hirschman, Charles. 2016. *From High School to College*. Russell Sage Foundation.

Hout, Michael. 2012. "Social and Economic Returns to College Education in the United States." *Annual Review of Sociology* 38: 379-400.

Hsin, Amy, and Yu Xie. 2014. "Explaining Asian Americans' Academic Advantage over Whites." *Proceedings of the National Academy of Sciences* 111(23): 8416-8421.

Huang, Jin. 2013. "Intergenerational Transmission of Educational Attainment: The Role of Household Assets." *Economics of Education Review* 33: 112-123.

Kao, Grace, and Marta Tienda. 1995. "Optimism and Achievement: The Educational Performance of Immigrant Youth." *Social Science Quarterly* 76(1): 1-19.

Jencks, Christopher, and Susan E. Mayer. 1990. "The Social Consequences of Growing Up in a Poor Neighborhood." *Inner-city Poverty in the United States* 111: 186.

Kelleher, Christine A., and Susan Webb Yackee. 2004. "An Empirical Assessment of Devolution's Policy Impact." *Policy Studies Journal* 32.2: 253-270.

Kibria, Nazli. 2003. *Becoming Asian American: Second-Generation Chinese and Korean American Identities*. JHU Press.

Kim, ChangHwan, and Arthur Sakamoto. 2010. "Have Asian American Men Achieved Labor Market Parity With White Men?." *American Sociological Review* 75(6): 934-957.

Landale, Nancy and Ralph Salvatore Oropesa1995. "Immigrant Children and the Children of Immigrants: Inter- and Intra-ethnic Group Differences in the United States."Population Research Group (PRG) Research Paper 95-2. East Lansing: Institute for Public Policy and Social Research, Michigan State University.

Lareau, Annette. 2003. "Unequal Childhoods: Race, Class and Family Life." *Berkeley: University of California Press*.

Lee, Jennifer, and Min Zhou. 2015. *The Asian American Achievement Paradox*. Russell Sage Foundation.

Maccoby, Eleanor E., and John A. Martin. 1983. "Socialization in the Context of the Family: Parent-Child Interaction." in *Handbook of Child Psychology: Formerly Carmichael's Manual of Child Psychology* edited by Paul H. Mussen.

Massey, Douglas S. (1996). "The Age of Extremes: Concentrated Affluence and Poverty in the Twenty-First Century." *Demography*. 33(4): 395-412.

Mulligan, Casey B. 1999. "Galton versus the Human Capital Approach to Inheritance." *Journal of Political Economy* 107(6): 184-224.

Nguyen, Anh, and Haile Getinet. 2003. "Intergenerational Mobility in Educational and Occupational Status: Evidence from the US."

Ogbu, John U. 1974. "The Next Generation: an Ethnography of Education in an Urban Neighborhood." University of California, Berkeley.

Ogbu, John. 1991."Immigrant and Involuntary Minorities in Comparative Perspective." In M. Gibson and J. Ogbu, eds. *Minority Status and Schooling: A Comparative Study of Immigrant and Involuntary Minorities*: 3-33. New York: Garland Publishing.

Ogbu, John U. 2003. *Black American Students in an Affluent Suburb: A Study of Academic Disengagement*. Routledge.

Pong, Suet-ling, and Lingxin Hao. 2007. "Neighborhood and School Factors in the School

Performance of Immigrants' Children." *International Migration Review* 41.1: 206-241.

Perlmann, J., 2005. *Italians Then, Mexicans Now: Immigrant Origins and the Second-Generation Progress, 1890-2000*. Russell Sage Foundation.

Portes, Alejandro, and Dag MacLeod. 1996. "Educational Progress of Children of Immigrants: The Roles of Class, Ethnicity, and School Context." *Sociology of Education*: 255-275.

Portes, Alejandro, and Lingxin Hao. 2004. "The Schooling of Children of Immigrants: Contextual Effects on The Educational Attainment of the Second Generation." *Proceedings of the National Academy of Sciences of the United States of America* 101(33): 11920-11927.

Royston, Patrick. 2004. "Multiple Imputation of Missing Values." *Stata Journal* 4(3): 227-41.

Rumbaut, Ruben G. 1994. "The Crucible Within: Ethnic Identity, Self-Esteem, and Segmented Assimilation Among Children Of Immigrants." *International Migration Review*: 748-794.

Sakamoto, Arthur, Kimberly A. Goyette, and ChangHwan Kim. 2009. "Socioeconomic attainments of Asian Americans." *Annual Review of Sociology* 35: 255-276.

Solon, Gary. 1992. "Intergenerational Income Mobility in the United States." *American Economic Review, 82*, 393-408.

Steele, Claude M. 1997. "A Threat in the Air - How Stereotypes Shape Intellectual Identity and Performance." *American Psychologist*. 52 (6): 613-629.

Terriquez, Veronica. 2014. "Trapped in the Working Class? Prospects for The Intergenerational (Im) Mobility Of Latino Youth." *Sociological Inquiry* 84(3): 382-411.

Tran, Van C. 2016. "Ethnic Culture and Social Mobility among Second-Generation Asian

    Americans." *Ethnic and Racial Studies* 39(13): 2398-2403

Woessmann, Ludger. 2004. "How Equal are Educational Opportunities? Family Background and

    Student Achievement in Europe and the US." CESifo Working Paper Series No. 1162.

Wojtkiewicz, Roger A., and Katharine M. Donato. 1995. "Hispanic Educational Attainment: the

    Effects of Family Background and Nativity." *Social Forces* 74(2): 559-574.

Zimmerman, David J. 1992. "Regression Toward Mediocrity in Economic Stature." *The*

    American Economic Review: 409-429.

Zhou, Min. 1997. "Growing up American: The challenge confronting immigrant children and

    children of immigrants." *Annual Review of Sociology* 23(1): 63-95..

Zhou, Min, and Carl Bankston. 1998. *Growing up American: How Vietnamese children adapt to*

    life in the United States. Russell Sage Foundation.

CHAPTER IV

CAN HIGHER EDUCATION AMELIORATE RACIAL/ETHNIC DISADVANTAGE?

AN ANALYSIS OF THE WAGE ASSIMILATION OF COLLEGE-EDUCATED

HISPANICS

Introduction

Growth in the Hispanic population in the U.S. began increasing noticeably when

Congress initiated the Bracero program to alleviate labor shortages during World War II.   At

that time, Mexicans began moving to the U.S. in significant numbers to work as farmers and

manual laborers in the agricultural sector. This migration officially ended in 1964 when that

program was terminated. Nonetheless, immigration from Mexico and other Latin American

countries began to significantly rise in the 1970s including both documented and undocumented

migrants. Hispanic immigration is now persistent and when coupled with high fertility, the

Hispanic population has grown exponentially. In the U.S., about 50% of Hispanic Americans are

foreign-born and 20% of adult Hispanics are born to immigrant parents (Pew Research Center

2013). Hispanics are now the largest racial/ethnic minority group in America having overtaken

African Americans (U.S. Census Bureau 2015).

The large influx of Hispanic immigrants has provided social scientists with a unique

opportunity to evaluate and modify theories pertaining to immigrant assimilation. Using data

from the National Survey of College Graduates 2010, this chapter seeks to provide a systematic

examination of college-educated Hispanic Americans' wage assimilation. Employing an

innovative approach to categorize groups of Hispanic immigrants based on their immigration

generation. Place of birth and the age at which they entered the U.S. educational system are used

to determine immigration generation, resulting in four groups (1ˢᵗ, 1.25, 1.5, and 2ⁿᵈ generation). In addition, the present study focuses on college-educated Hispanics to determine whether wage assimilation may be observed at the upper-end of the labor market. Men and women are analyzed separately in order to include gender interactions in the labor market. This topic is not only relevant to school financing, educational curricula, and affirmative action legislation, but is also important for better understanding some of the underlying causes of lower wages among Hispanic Americans. The present study hopes to provide a timely contribution to the assimilation literature.

Classical assimilation theory posits that assimilation of immigrants into U.S. society transpires in a linear fashion (Gordon 1964; Alba and Nee 1997: Alba and Nee 2004). When first arriving at their destination country, immigrants face disadvantages in the labor market for a multitude of reasons, such as lack of language skills, social networks, or familiarity with local norms. Recent literature suggests that educational degrees obtained in a foreign country becomes devalued in the context of the U.S. labor market (Chiswick 1978; Duleep and Regets 1997; Stewart and Hyclack 1984; Friedberg 2000), and this might result in lower wages for immigrants compared to native-born persons (Zeng and Xie 2009; Kim and Sakamoto 2010). One explanation for this devaluation of foreign degrees can be gleaned from educational theory. According to educational theory, an educational degree is useful as a signaling function (Thurow 1975). That is, when employers make hiring decisions, they look at a potential candidate's field of study and highest degree obtained as a signal for (1) their human capital and past productivity and (2) their ability to fulfill the obligations of the position and succeed in the role. However, when evaluating a potential candidate with a foreign degree, employers may find it difficult to fully understand the meaning, significance, and achievements associated with the degree, as

colleges in other countries may have different requirements. Therefore, foreign degrees may lose their signaling function when transferred into the U.S. labor market. Consistent with this idea, recent empirical research suggests that immigrants who completed their highest degrees in the U.S. usually fair better in the labor market than immigrants who do not have any educational experience in the U.S. (Zeng and Xie 2004; Kim and Sakamoto 2010).

In assimilation studies, immigrants are usually classified into three groups, including the first generation, 1.5th generation, and second generation (Rumbaut 1991; Portes and Rumbaut 2005). First generation immigrants usually refer to those who were born outside the U.S. and moved here as adults. The 1.5 generation refers to those who were born in a foreign country but moved to the U.S. before the age of 15 so that they reach adult maturity in this country. The second generation refers to those who were born in the U.S. to at least one foreign-born parent. The second generation by law has U.S. citizenship and is typically fluent in English as their dominant and native language. While assimilation patterns can vary, the 1.5 generation usually is fluent in English and is completely familiar with American customs and culture. By contrast, the first generation generally encounters the U.S. as a foreign country having been socialized in their country of origin.

Kim and Sakamoto (2010) innovatively define a "1.25 generation" to refer to persons who were foreign born and attended primary and secondary schooling in their country of origin, but who later came to the U.S. to complete their highest level of education (i.e. college or graduate school). The "1.25 generation" immigrants have received much of their socialization in their country of origin, however, they have also have some U.S. educational experience, especially they obtain a educational degree from the U.S. institutions, which are recognizable by employers. Furthermore, arriving in the U.S. closer to adulthood, mastering English language

might become more difficult compared to the 1.5 generation who learns English naturally as a youth. Therefore, the situation of the "1.25 generation" is "in-between" that of the first generation and the 1.5 generation in terms of language acquisition and socialization into American culture, which are important human capital for labor market success.

In the present chapter, I break down Hispanic population into 1st generation, 1.25 generation, 1.5 generation, and native-born Hispanics. The first generation Hispanics (HIS-1.0) are foreign-born and have completed their education abroad; the 1.25 generation Hispanics (HIS-1.25) are foreign born and have completed high school in a foreign country, but have received their highest educational degree in the U.S.; the1.5 generation Hispanics (HIS-1.5) are foreign born but moved to the U.S. before high school and have received both their high school degree and highest educational degree in the U.S.; and native-born Hispanics (HIS-NB) who were born in the U.S. and also have completed all their education in the U.S. The classification of Hispanics is summarized in Table 4.1. In should be noted that the I could not differentiate 2nd generation immigrants from 3+ generation immigrants in the sample because the dataset used for this study does not provide information on respondents' parental place of birth.

Background

Hispanic Immigrants' Socioeconomic Assimilation

Assimilation is arguably an important reality for much of American society dating back to the 19th century (Lieberson and Waters 1988). From a generational perspective, conventional straight-line assimilation theory suggests that first generation immigrants face disadvantages in the U.S. On average, the foreign-born population has lower socioeconomic attainments compared to native-born persons, which has been attributed to their lack of U.S.-specific human

capital (Kim and Sakamoto 2010). Specifically, after arriving in the U.S., first generation immigrants often demonstrate poor English proficiency, social networks, and familiarity of local norms (Bonacich 1972). In addition, sometimes first-generation immigrants' education cannot be completely transferred into the U.S labor market (Zeng and Xie 2004; Kim and Sakamoto 2010). Therefore, first generation immigrants are more likely to be concentrated in the secondary labor market (Bailey and Waldinger 1991).

Classical assimilation theory posits that after staying in the U.S. for an extended period of time, foreign-born immigrants will converge with the native-born population and demonstrate comparable economic assimilation, marriage assimilation, spatial assimilation, etc. (Gordon 1964; Alba and Nee 1997). In addition, after several generations, the immigrant population will eventually assimilate into the U.S. mainstream society (Gordon 1964). Assimilation research uses the term "straight-line" assimilation to illustrate the experience of early European immigrants. However, Alba and Nee (2003) have advocated a new classical assimilation theory, suggesting that the new wave of second generation Americans demonstrate upward mobility regardless of their minority racial/ethnic backgrounds. This new theory is optimistic in predicting that assimilation will eventually occur, as it had for the earlier waves of European immigrants (Alba and Nee 2003; Alba 2017). However, other recent studies have criticized classical assimilation theory, suggesting that it only applies to the previous waves of European immigrants, but not recent non-white immigrants (Portes and Zhou 1993).

Hispanics fall behind other racial/ethnic groups in terms of educational and socioeconomic attainments (Chapa and Valencia 1993; DeNavas-Walt and Proctor 2014). Specifically, Hispanics have lower median household income compared to whites ($40,963 vs. $58,270), and their poverty rate is also higher than the U.S. average (23.5% vs. 14.5% as

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reported by U.S. Census Bureau [2013]). Their educational attainment remains below the national average. About 15% of Hispanic Americans over the age of 25 have a college degree while this figure is close to 30% for Americans overall (U.S. Census Bureau, 2013). In addition to a lower rate of college attendance, prior research indicates that Hispanics are more likely to attend part-time school and are also more likely to receive their college education in their mid-20s or beyond. By the same token, Hispanic Americans are less likely to pursue graduate or professional degrees (Fry 2002). Thus, Hispanics' lower socioeconomic status is partly due to their lower educational attainments (Trejo 1997). These socioeconomic disadvantages are typically inherited by second generation Hispanics although their attainments are actually much higher than those of their foreign-born parents (Chapa 1988; Alba and Nee 1997). Hispanic Americans are blamed to be "not assimilating" due to their stagnant inter- and intra- generational mobility.

Education In The Contemporary Labor Market

In recent years, the economic return to education has likely reached its peak (Goldin and Katz 2007). There is a remarkable correlation between economic attainment and education (Mare 1981; Hout and DiPrete 2006). Educated people have a higher personal income, household income, and job status, while they also experience lower unemployment rates and shorter periods of unemployment (Hout 2012). In addition, a large body of literature provides evidence showing a role of education in not only individuals' economic attainments, but also individuals' social achievements (Card 1999). Educated individuals are more likely to have stable families, lower divorce rates, healthy lifestyles, and longer life spans (Hout 2012). In addition, educated people are more likely to report being happy (Argyle 1999).

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Extensive previous research indicates socioeconomic differences between individuals who are college-educated versus individuals who are not college-educated. Hout (2012) demonstrates that graduating from college increases occupational standing for both men and women, and occupational standing is further increased after receiving an advanced degree. Evidence also indicates an earnings advantage. Hout (2012) also suggests that for men and women hourly wages rise 18% following each educational attainment. Moreover, in a recent study examining lifetime earnings, investigators employed administrative tax records of Survey of Income and Program Participation (SIPP)'s respondents to examine the relationship between education and lifetime earnings in the U.S. Results indicate that the gap in lifetime earnings between high school and college graduates is around $1.13 million for men and $792,000 for women. The study suggests that the net return of higher education is greater than the net cost (Tamborini et al 2015).

In terms of racial/ethnic differentials of earnings, several studies indicate that racial/ethnic minorities' relatively lower income is largely attributed to their lower achievements of education compared to the benchmark majority whites (Portes and Zhou 1993). Education also accounts for immigrants' lower economic attainments. Previous study shows that country of origin explains 30% of the variation in average education levels among immigrants in the 2000 Census. For example, immigrants from Mexico, Vietnam, and El Salvador in general have fewer years of schooling than natives (Card 2005).

Although extensive evidence indicates a socioeconomic benefit of receiving higher education, few studies have examined the extent of income inequality within the educated population and whether a college-degree facilitates immigrants' assimilation. Bowen and Bok (1998) find that the earnings of African Americans who graduated from liberal arts colleges or

research universities where affirmative action is valued have greater earnings than whites nationally. Card (1992) argues that the wage gaps between minority men to white men are affected by pre-labor market factors. Specifically, the earning differences of college educated black men who were born outside of south to white men can all be explained by the control variables. But for college educated black men who were born in the south, this wage differentials are attributed to the generally poor quality of education at precollege and college levels (Black et al 2006).

By contrast, little is known about the wage assimilation among college-educated Hispanics. This neglect might be attributed to the fact that, on average, Hispanics fall behind other racial/ethnic groups in terms of educational and socioeconomic attainments (Chapa and Valencia 1993; DeNavas-Walt and Proctor 2014). The lower socioeconomic attainment of Hispanic Americans have led to politicization and persistent oversimplified images of Hispanic immigrants and American-born Hispanics as being "low quality" and exclusively "lesser educated."

As for the so-called Model Minority view which has been debated in regard to Asian Americans (Sakamoto, Goyette and Kim 2009), some researchers have argued that Asian Americans have reached economic parity with whites by overachieving in education (Hirschman and Wong 1984). Asian Americans have a lower income than whites within the same educational levels (Hirschman and Wong 1984). Closer investigation of the returns to college education reveals, however, that this economic disadvantage is attributable to more Asian Americans having overseas educational credentials which are devalued in the U.S. labor market (Zeng and Xie 2004; Kim and Sakamoto 2010). This research demonstrates the importance of

controlling for "place of education" when assessing racial/ethnic earnings inequalities (Zeng and Xie 2004).

Prior research has not considered "place of education" for this minority group even though a large proportion of adult Hispanics are immigrants to the U.S. (U.S. Census Bureau 2011). At the same time, given the exceptional growth of the Hispanic population, a rising generation of Hispanics born in the U.S. is more likely to attend American colleges than overseas institutions. Disaggregating these different components of the Hispanic population is an important task for understanding the labor market outcomes for this minority group.

Other Factors Associated With Labor Market Outcomes

Prior studies have shown that a person's human capital, such as immigration status (Chiswick 1978), level of schooling, and work experience (Reimers, 1983) can have a substantial impact on labor market outcomes. For example, minority-white wage differentials in the U.S. labor market may be attributed to discrimination and group characteristics, such as education level, geographic location, employment type, and health, all of which may be influenced by policy (Reimers 1983). In this section, I discuss how some other pre-labor market and labor market factors interact to influence Hispanic Americans' economic outcomes[1].

Field of study, in recent years, has drawn considerable attention from researchers who study labor economics. Consistent with conventional wisdom, field of study is closely associated with an individual's income. Using data from German university graduates, one study shows that graduating with a major in the arts or humanities leads to lower average monthly income,

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[1] In this paper, I refer Hispanic Americans to those Americans who identify themselves Hispanics regardless their citizenship status. I will use Hispanic Americans and Hispanics interchangeably.

relative to other majors (Grave and Goerlitz 2012). Moreover, several researchers suggest that Asian Americans' higher socioeconomic achievement in the U.S. is partly due to the fact that Asian Americans are more likely to obtain degrees from science, technology, engineering, or math-related (STEM) fields of study (Sakamoto et al 2009). Indeed, extensive evidence indicates that STEM fields of study provide higher economic returns (Rumberger 1984; James et al 1989). Kim and colleagues (2015) indicate that lifetime earning differentials between different fields of study can be even larger than the gaps between college graduates and high school graduates.

In addition to field of study, *college characteristics* play an important role in a person's labor market outcomes. Graduates from research universities and private universities earn more than their counterparts from liberal arts colleges and public institutions (Monks 2000; Kim and Sakamoto 2010). Therefore, both field of study and college classification should be considered when examining the earning disparity between college-educated Hispanics and college-educated whites.

Work characteristics, such as type and size of employment and type of occupation, may also be associated with a person's wage (Schmidt and Zimmermann 1991). For example, neoclassical economic theory suggests a positive relationship between wage and firm size, in that large firms pay substantially more than small ones (Brown and Medoff 1989; Dun 1986). In addition, Groshen (1991) argues that an employer's generic ability-to-pay plays a key role in wage inequality among college-educated workers.

Racial discrimination is another important factor. Extensive research has shown that racial/ethnic minorities have for a long time been oppressed in the U.S. labor market (Jones 1998). Relative to the white majority, racial/ethnic minorities are less likely to receive a job

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interview, are more likely to be paid less for the same kind of occupation, and are less likely to

be promoted. Furthermore, prior sociological research has emphasized racial discrimination as a

major factor pushing Hispanics into lower socioeconomic status (McCall 2001). It is possible

that racial/ethnic discrimination may also exist for Hispanic in the top end of the labor market.

However, McCall (2001) did not adequately control for such factors as field of study, place of

education, and college characteristics because such information was not available in her data.

Data and Methods

Data, Target Population, and Variables

This chapter uses data from the National Survey of College Graduates (NSCG) for the

year 2010. The sampling frame for the 2010 is nationally representative and consists of non-

institutionalized persons who participated in the American Community Survey and who

indicated that they had a bachelor's or some higher degree. As is conventional in labor market

studies, the analysis is restricted to persons aged 25 to 64 who were not enrolled in school when

answering the survey. In addition, persons who reported that they worked outside of the U.S. are

not included in this study.

For the purposes of the research concerns, the NSCG has a number of important

advantages. First, it is one of the few data sets that specifically identifies place of education.

With that information, I am able to accurately differentiate first-generation and 1.25 generation

Hispanics from the sample that would otherwise be subject to significant measurement error

(e.g., immigrants who obtained a graduate degree at a somewhat older age). Another advantage

of the NSCG is that it provides information on field of study for the highest degree as well as

indicators relating to college prestige. No other data set in the public domain provides all of

these variables that are crucial given our focus on the college-educated segment of the labor force.[2] Furthermore, the dataset provides information on parental educational level which is often lacking in immigration studies. As earlier chapters have suggested, parental education plays an important role in explaining person's socioeconomic outcomes.

The dependent variable in the multivariate models is the natural logarithm of hourly wage. The variables in the dataset permit the direct calculation of the hourly wage by using the variables on annual earnings during the previous year, number of weeks worked in the previous year, and the usual hours worked per week in the previous year (i.e., the hourly wage equals annual earnings divided by the product of the number of weeks worked and usual hours worked per week). Given that the regional distribution of racial/ethnic groups might affect their comparable purchasing power across the nation (Kim and Sakamoto 2010), the computed hourly wages are further adjusted for cost-of-living differences based on regional price levels (Aten 2007).[3] Calculated hourly wages that were initially less than 1.00 were recoded to 1.00 while those that were initially greater than 750.00 were recoded to 750.00 in order to minimize the influence of outliers and probable measurement error.[4]

The key independent variables are the four generational Hispanic groups. These Hispanic demographic groups include (1) first generation Hispanics (HIS-1.0) who are foreign-born and have completed their education abroad; (2) 1.25 generation Hispanics (HIS-1.25) who are foreign born and have completed high school in a foreign country, but have received their

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[2]. A limitation of these data for our research purposes is that no direct information is provided about proficiency in English.
[3]. Aten (2007) provides Spatial Price Indexes for each state based on the 2003 and 2004 CPI and county-level rent surveys from the U.S. Census Bureau. We used this information about Spatial Price Indexes but collapsed them to the level of the 9 standard U.S. Census regions.
[4]. Recoding extreme values is preferable to deleting them which could generate sample selection bias.

highest educational degree in the U.S.; (3) 1.5 generation Hispanics (HIS-1.5) who are foreign born but moved to the U.S. before high school and have received both their high school degree and highest educational degree in the U.S.; and (4) native-born Hispanics (HIS-NB) who were born in the U.S. and also have completed all their education in the U.S. The reference group is native-born Non-Hispanic whites.

It is worth noting that in the actual sample, the vast majority of the Hispanics (i.e., 4855 out of the 5294 Hispanic respondents or 92%) identify as white. The remaining 8% identify as black, Asian, other, or multi-racial (i.e., some combination of white, black, Asian or other). The racial composition of this sample is consistent with previous research that finds that Hispanics with a college degree are more likely to identify themselves as white (Choi, Sakamoto and Powers 2008).

Additional independent variables are used to control for other factors that affect the wage. The first set includes demographic characteristics including age in years and its quadratic, marital status, disability status, gender, presence of had children under the age of 6 in the household, and parents' educational level in years. Two dichotomous variables are also constructed to indicate missing data on father's education and missing data on mother's education. The rationale for including these two missing-indicator variables is that they are indirect measures of family structure while growing up, and children from single-parent family are generally known to have lower socioeconomic outcomes (Bloome 2017).

The second set of control variables refers to measures of educational attainment. Although the sample is restricted to persons with at least a college degree, notable variation in the highest educational level completed still remains. Using the bachelor's degree as the reference group, additional dichotomous variables are included to indicate the highest degree

being a master's degree, a professional degree or a doctorate degree. Additional dichotomous

variables are used to indicate 14 different major field of study for the highest degree. The fields

of study include: computer science and technology; life science; chemistry and physics;

astronomical science; economics; political science; psychology; sociology and anthropology;

engineering; health related majors; education; business; social service and social work; and other

majors. Other dichotomous variables are included to indicate the Carnegie classification type for

institution awarding the highest degree (i.e., Research I University; Research II University;

Doctoral Granting; Comprehensive; Liberal Arts I; Liberal Arts II; and Other).

A third set of control variables is used in some models to indicate work characteristics

including those pertaining to the job and the employer. Dichotomous variables are used to

indicate employer type (i.e., whether the establishment is private sector for-profit; private sector

non-profit; self-employed unincorporated; self-employed incorporated; elementary or secondary

school; junior college; university; medical school; research institute; local government; state

government; and federal government). Employer size is indicated by the number of employees

at the establishment. Occupation is also controlled for. Due to its focus on only college-

educated workers, the NSCG does not provide a full set of occupational codes. I instead use a

set of 45 dichotomous variables to indicate the available occupational codes in these data.[5]

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[5]. The 45 occupations include computer scientist, mathematical scientist, agricultural scientist, biological scientist, forest scientist, chemist, geography scientist, physical scientist, other physical scientists, economists, political scientists, psychologist, social scientist, other social scientist, astronomical engineer, chemical engineer, civil engineer, computer engineer, industrial engineer, mechanical engineer, other engineer, health related occupations, computer and engineering related managers, secondary teacher, technicians, other technicians, architects, actuaries, top and mid-level managers, accountants/personal training/other management related, pre-secondary teachers, post-secondary teachers, clergy/counselors, social workers, marketing related occupation, writer, historian, administration, farmers/lawyers/librarians, public service, tutors, construction, and other occupations.

Prior labor market studies—in both sociology and economics—have shown that these variables have direct effects on wages (Dun 1986; Brown and Medoff 1989; Groshen 1991; Schmidt and Zimmermann 1991; Sakamoto and Wang 2017). Nonetheless, I do not include this set of work characteristics in all of the model specifications because these independent variables are not predetermined or exogenous with respect to the dependent variable. That is, in contrast to demographics and educational attainment, work characteristics are intervening variables because they are determined in the labor market simultaneously with the wage. Work characteristics mediate the effects of the (primarily) pre-labor market variables (i.e., demographics and education). The model specification that includes the variables for work characteristics yields the direct effects demographics and education (i.e., not the total effects).

The fourth set of the control variables refers to 9 regions of residence including New England, Mid-Atlantic, East North Central, West North Central, South-Atlantic, East South Central, West South Central, Mountain, and Pacific. Region is viewed as being primarily pre-determined because regional differentials cost of living from the wage have already been eliminated using cost-of-living adjusted wage. Citizenship status, an important variable for many immigrants in regard to their labor market outcomes, is also included in some of the models as a dichotomous independent variable (i.e., "yes" coded as 1 versus "no" coded as 0).

Statistical Models

Multiple OLS regression models are specified with the natural logarithm of the hourly wage as the dependent variable. Using OLS estimation, the major theoretical interest lies in the effects of the four Hispanic immigrant groups (i.e., HIS-1.0, HIS-1.25, HIS-1.5, and HIS-NB). I construct a set of regression model specifications as shown below. Model 0 serves as the

baseline model showing the total bivariate differentials between non-Hispanic whites (i.e., the

reference group) and the Hispanic groups. Model 1 controls for the pre-labor market factors

including demographics, educational attainment, and region. Model 2 adds citizenship to Model

1. Model 3 is the full model specification that controls for pre-labor market (demographics,

education, region), citizenship, and work characteristics. These models are estimated separately

for men and women due to notable interactions (i.e., differences) by gender.

$$Y_{it} = \alpha_t + \varepsilon_{it} \tag{0}$$

$$Y_{it} = \alpha_t + \beta_{it}x\text{demo}\_ + \beta_{it}x\text{edu}\_ + \beta_{it}x\text{region}\_ + \varepsilon_{it} \tag{1}$$

$$Y_{it} = \alpha_t + \beta_{it}x\text{demo}\_ + \beta_{it}x\text{edu}\_ + \beta_{it}x\text{region}\_ + \beta_{it}x\text{citizenship}\_ + \varepsilon_{it} \tag{2}$$

$$Y_{it} = \alpha_t + \beta_{it}x\text{demo}\_ + \beta_{it}x\text{edu}\_ + \beta_{it}x\text{region}\_ + \beta_{it}x\text{citizenship}\_ + \beta_{it}x\text{work}\_ + \varepsilon_{it} \tag{3}$$

where Y_{it} refers to the log hourly wage of the ith individual who belongs to the tth demographic

group with t = 0,1,2,3,4, indicating native-born non-Hispanic whites, HIS-1.0, HIS-1.25, HIS-

1.5, and HIS-NB, respectively. In these specifications, α_t represents an intercept. X is a given

vector that denotes the sets of the control variables while the β's are their population-level

effects. In order to ensure a more nationally representative sample, the results are obtained using

the survey sampling weights for the NSCG.

Results

Descriptive Statistics

The descriptive statistics are presented in Table 4.2. In the sample of college-educated

members of the labor force, non-Hispanic whites have a higher average hourly wage compared

to HIS-NB and HIS-1.0, but a lower average hourly wage compared to HIS-1.25 and HIS-1.5.

Surprisingly, among all the groups, HIS-NB make the lowest hourly wages, before and after

adjusting for the cost of living. The descriptive statistics also indicate that HIS-NB and HIS-1.5 are generally younger than the other groups. Hispanics report lower educational levels for their parents compared to non-Hispanic whites. In addition, Hispanics have more missing data on their parents' educational levels.

With regard to educational characteristics, HIS-1.25 are more likely to achieve a doctorate or master's degree and less likely to achieve a professional degree or only a bachelor's degree, relative to other groups. This pattern might be partly attributable to the fact that master's and doctorate programs usually offer scholarships and fellowships that cover tuition and the cost of living whereas undergraduate and professional programs are less likely to do so. Therefore, HIS-1.25 may have been more likely to pursue a graduate degree than an undergraduate or professional degree in the U.S. In contrast, HIS-1.0 are more likely to achieve only bachelor's degrees or professional degrees compared to other demographic groups. HIS-1.5 and HIS-2.0 have a distribution of educational attainment similar to non-Hispanic whites. In addition, HIS-1.25 are more likely to receive their highest degrees from a Research I University compared to other groups.

It should be noted, however, that Hispanics' distribution of field of study is quite different from that of Asians. Previous findings have indicated that Asians are known for being concentrated in the STEM fields which contributes to their higher earnings compared to other groups (Xie and Goyette 2003; Goyette and Mullen 2006; Sakamoto et al 2009). In contrast, HIS-1.5 and HIS-NB are more likely to study social sciences such as psychology, political science, and sociology which are not as financially lucrative. However HIS-1.25 and HIS-1.0 are more likely to study engineering than non-Hispanic whites.   HIS-1.0 are also more likely to major in health-related fields than other groups. This pattern might reflect the demand for skilled

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immigrants (i.e., STEM) in the U.S. that affects immigration policies relating to HIS-1.25 and HIS-1.0.

Regarding work characteristics, HIS-NB are less likely to work for private for-profit corporations while HIS-1.0 are more likely to work for private for-profit corporations than the other groups. In addition, compared to other groups, HIS-1.25 are more likely to work for universities whereas HIS-1.5 and HIS-NB are more likely to work for elementary and middle schools. HIS-1.0 are also more likely to be self-employed than other groups. With regard to region of residence, Hispanics are less likely to reside in the North and are more likely to live in West South Central (which includes Texas) and Pacific (which includes California).

Table 4.3 shows mean hourly wages by the educational variables. The results indicate that professional degree holders have the highest hourly wage (M=$64.75). Those who received a degree from a Research I University have a higher hourly wage (M=$43.66) compared to other types of educational institutions. Business, health, engineering, and economics majors earn a higher hourly wage compared to other majors.

Multivariate Analyses

Table 4.4 displays the estimated effects of being Hispanic by generation on log hourly wage with four model specifications among men. The key independent variables are the four Hispanic demographic groups (HIS-1.0, HIS-1.25, HIS-1.5, and HIS-NB), and native-born Non-Hispanic white men serves as the reference group. Because the dependent variable is a natural logarithm, a slope coefficient (i.e., b) from the regression refers to a proportionate difference after being exponentiated (i.e., $e^b - 1$). The coefficient for HIS-1.5 is slightly negative (b= -0.0711) but not statistically significant. The coefficient for HIS-1.5 is also substantively small

and not statistically significant in Models 1, 2 and 3. These findings imply that the HIS-1.5 and

non-Hispanic white men do not have statistically significant wage gaps.

Regarding HIS-1.25, results indicate that college-educated HIS-1.25 men have a bivariate

wage differential of about 22% (i.e., $e^{.1962} - 1$) that is statistically significant (p<0.01) in Model

0. This substantially higher wage relative to non-Hispanic white men is statistically explained

away in Model 1 when the coefficient for HIS-1.25 is close to zero and not statistically

significant. After controlling for education and the other pre-labor market variables, no net

effect is found for HIS-1.25. The same conclusion of no net effects of HIS-1.25 is also evident

in Models 2 and 3 where the coefficients for this group are not substantively or statistically

significant.

One group for which a net multivariate effect is statistically significant is HIS-NB men.

In Model 0, the coefficient is statistically significant and implies that college educated HIS-NB

men have an average wage that is about 21% (i.e., $e^{-.2383} - 1$) lower than college-educated

native-born white men. After controlling for pre-labor market characteristics in Model 1, the

estimate remains significant but is notably reduced, indicating that HIS-NB have an average

wage that is about 10% (i.e., $e^{-.1004} - 1$) lower net of demographic characteristics, educational

characteristics, and region. The pre-labor labor market characteristics explain about half of HIS-

NB's wage disadvantage. The results remain similar in Models 2 and 3. Results indicate that

HIS-NB have a net wage disadvantage of 10% relative to comparable non-Hispanic white men.

HIS-1.0 men' coefficient in Model 0 indicates that their overall bivariate difference is

statistically significant and implies that they have an average wage that is about 33% (i.e.,

$e^{-.4029} - 1$) lower than native-born white men. In addition, this disadvantage could not be

statistically explained by the pre-labor market variables, as the estimate in Model 1 remains

similar (i.e., about 34% [i.e., $e^{-.4140} - 1$] lower). However, an important independent variable for HIS-1.0 men is citizenship status, because in Model 2 the coefficient for this group is still significant but is substantially reduced. It is suggested that 30% of the net disadvantage could be explained by the lack of citizenship. The effect of not having citizenship appears to be mostly direct, however, because the coefficient in Model 3 implies a 21% (i.e., $e^{-.2295} - 1$) disadvantage which is not very different from the result in Model 2. That is, work characteristics such as employer type, establishment size and occupation do not further explain much of the wage disadvantage for HIS-1.0 after controlling for citizenship.

The regression results for women are shown in Table 4.5. In contrast to men, no net effect of HIS-NB is evident for women in Table 4.5. While an overall bivariate differential is statistically significant in Model 0, indicating a 12% (i.e., $e^{-.1261} - 1$) lower average wage relative to non-Hispanic white women, the coefficient for HIS-NB is no longer statistically significant in Model 1 when controlling for the pre-labor market variables. The coefficients for HIS-NB are also not significant in Models 2 and 3, indicating college educated HIS-NB women do not have statistically significant wage disadvantage when comparing to college educated white women.

According to Model 0, HIS-1.5 women have a 17% (i.e., $e^{.1607} - 1$) higher average wage than non-Hispanic white women without controlling for the covariates. After controlling for the pre-labor market variables in Model 1, the net effect of being HIS-1.5 is reduced slightly, and they still have an advantage of 15% (i.e., $e^{.1368} - 1$). That is, given their demographic characteristics, education, and region, HIS-1.5 women have 15% higher wages relative to comparable white women. The advantage for HIS-1.5 women in Table 5 is even slightly larger in Models 2 and 3.

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Regarding HIS-1.25 women, the coefficients are not statistically significant in any of the models. A substantively and statistically significant coefficient is evident for HIS-1.0, however, in Model 0 where the estimate indicates a 25% (i.e., $e^{-.2839} - 1$) lower mean wage than white women. This estimate is very similar in Model 1 when controlling for the pre-labor market variables. It suggests that demographic characteristics, education, and region do not account for their lower wage. The HIS-1.0 coefficient becomes insignificant in Model 2 when controlling for citizenship. It suggests that citizenship is the key variable that is associated with the lower wages of HIS-1.0 women compared to non-Hispanic white women.

Auxiliary Analysis

In this exploratory analysis to ethnic differentials, I therefore limit the models to foreign-born Hispanics and again used native-born non-Hispanic whites as the reference group. It is limiting to use ethnic groups that have an adequate sample size for each immigrant category including HIS-1.0, HIS-1.25, and HIS-1.5. Using a cutoff of at least 24 cases for each of the three immigrant groups for each gender, only Mexican and Colombians could be specifically identified.[6] All other ethnic groups are simply grouped together in an Other Hispanic category.

Table 4.6 presents the multivariate results for Mexican, Colombian, and Other Hispanic men. Native-born, non-Hispanic white men are the reference group. The same statistical models are estimated. The results for HIS-1.0 show that compared to Hispanics overall in Table 4.4,

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6. The sample sizes of Hispanics born in Peru or Cuba are fairly large overall, but not for each of the three foreign-born immigrant groups after breaking down by gender. In order to ensure statistical robustness, Peruvians and Cubans are therefore included into the Other Hispanics category.

Mexicans have more negative effects while the effects for Colombians are smaller not statistically significant. The effects for Other Hispanics in Table 4.6 are generally closer to the effects for the models in Table 4.4. These findings suggest that Mexicans are less selective while Colombians are the most selective among HIS-1.0.

Compared to the results in Table 4.4 for HIS-1.25, the estimates in Table 6 are very similar for Other Hispanics. Colombians are the most selective and Mexicans are the least selective according to Model 0, but after controlling for the other independent variables in the other models, none of the effects are statistically significant for any ethnic group of HIS-1.25. This multivariate similarity is the same conclusion for Table 4.4. In regard to HIS-1.5, none of the coefficients in any of the models for any of the groups is statistically significant. This finding is the same basic conclusion for Table 4. Whether or not an overall Hispanic category or Mexican or Colombian, HIS-1.5 men appear to be on par with non-Hispanic white men.

Table 4.7 shows the multivariate results for Mexican, Colombian, and Other Hispanic women using the same statistical models. Native-born, non-Hispanic white women are the reference group. The results for HIS-1.0 women show that the effects for Mexicans are not statistically significant while the effects for Colombians are more negative and statistically significant in Models 0 and 1. Thus, in contrast to men as well as to HIS-1.0 women overall, HIS-1.0 Mexican women are not less selective while HIS-1.0 Colombian women are less selective.

In regard to HIS-1.25 women in Table 4.7, none of the coefficients are statistically significant except for Colombians for whom the estimates are also extremely large in all of the models. For example, the coefficient for HIS-1.25 Colombian women in Model 1 controlling for the pre-labor market variables is 1.1885, indicating a net advantage of 228% (i.e., $e^{1.1885} - 1$).

As shown in Table 4.7, however, this finding is based on only 26 cases. The coefficient in Model 1 for HIS-1.25 women overall in Table 5 was not statistically significant because Colombians are such a small group in this immigrant category. The finding of a large advantage for Columbian women in Table 4.7 suggests that they are an extraordinarily select group compared to Mexican and Other Hispanic HIS-1.25 women but also compared to Columbian HIS-1.25 men. While not nearly as large, the coefficients for HIS-1.5 in Table 4.7 are also statistically significant for Columbians. The coefficients for Other Hispanics in Table 4.7 are statistically significant as well. The combined sample size for these two groups substantially exceeds the sample size for Mexican HIS-1.5 as shown in Table 4.7. The coefficients for Mexican HIS-1.5 women are not statistically significant in any of the models.

Discussion and Conclusion

The college-educated Hispanic population is an important demographic group; however, research on this group is still lacking. Using labor market parity as a measure for assimilation, the present study examines wage assimilation among college-educated Hispanics while taking into account Hispanic population's immigration generational status. Hispanic immigrants are broken down into groups based on their place of birth and the time they entered the U.S. educational system. The findings generally support the conclusion that college-educated Hispanic women have achieved wage parity relative to native-born, college-educated, non-Hispanic white women in the labor market. The auxiliary analysis where Hispanics are broken down into Mexicans, Colombians, and Other Hispanics shows similar results. Indeed, Colombian women who immigrated at a young age or for college actually have higher wages than comparable non-Hispanic white women.

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The coefficient for native-born Hispanic women is negative and significant in Model 0. In a broader sense, the average socioeconomic standing of native-born, college-educated Hispanic women still lags behind that of college-educated, non-Hispanic white women. However, that discrepancy is not due to the labor processes that discriminate against Hispanics but rather to pre-labor market factors (e.g., demographics, field of study, college prestige) that are controlled for in Model 1. The wage disadvantage of HIS-1.0 women seems to be statistically explained by citizenship in Model 2. After controlling for citizenship in addition to the pre-labor market variables, the negative coefficients for Hispanic adult female immigrants are no longer statistically significant at the $p<0.05$ level. This finding is consistent with a prior study finding that Hispanics with legal status in the U.S. fare better in the labor market than Hispanics without legal status (Hall et al. 2010).

Regarding college-educated Hispanic men, results indicate that HIS-1.5 and HIS-1.25 also have achieved labor market parity relative to college-educated, native-born, non-Hispanic white men. Surprisingly, native-born college-educated Hispanic men have not achieved full labor market parity relative to native-born, college-educated non-Hispanic men. The disadvantage is about 10% which is statistically significant. This finding controls for field of study and college prestige so the continuing racial/ethnic disadvantage for native-born college-educated Hispanic men is also a notable outcome.

This disadvantage of 10% poses a slight problem for traditional assimilation theory. Hispanic men who immigrated at a young age or for college seem to have achieved labor market parity as noted above, but native-born Hispanic men should be more assimilated than foreign-born Hispanic men. According to traditional assimilation theory one would have expected the disadvantage to be associated with immigrant Hispanic men rather than with native-born

Hispanic men (as is the case with Asian Americans [Kim and Sakamoto 2010]). The estimate of

10% is also slightly higher than the generic estimate of 4% mentioned earlier for native-born

Hispanic men in 1990 (Sakamoto, Wu and Tzeng 2000:46). This puzzling finding is augmented

by the expectation that college-educated workers should be (if anything) more assimilated than

workers without a college degree since American schooling generally promotes assimilation.

Perhaps the higher level of inequality in the 21st century labor market has exacerbated average

differences between groups (Blau and Kahn 1992). As the earnings distribution becomes more

dispersed, the distance between any two prior points on that distribution is accordingly stretched

out.

College-educated Hispanic men who immigrated as adults face the largest wage

penalties. In contrast to women, a sizeable wage disadvantage persists after controlling for

citizenship (in Model 2) and even work characteristics (in Model 3). This larger penalty for

adult male immigrants is not necessarily contrary to assimilation theory because the college

degree and much of the prior labor market experience were obtained outside of the U.S.

Nonetheless, the clear disadvantage among college-educated Hispanics who are adult immigrants

underscores heightening stratification in the contemporary labor market.

The other general conclusion from the findings is that racial/ethnic effects may vary

notably by gender. This conclusion has been made elsewhere for other racial/ethnic categories

(Greenman and Xie 2008) and has been theoretically considered in terms of "intersectionality"

(Shields 2008). Most concretely, the findings highlight that racial/ethnic inequalities in wages

can vary considerably by gender in that the Hispanic–white wage differential among women

(i.e., a Hispanic group of women compared to non-Hispanic women) is often quite different from

the Hispanic–white wage differential among men (i.e., a Hispanic group of men compared to

non-Hispanic men). For this reason, both theorists and researchers of racial/ethnic inequalities need to be careful to clarify which specific groups their conclusions apply to as well as what specific reference group is being used to make the contrast.

The findings of the present study have important theoretical implications. For instance, the results in part challenges conventional assimilation theory, which suggests that native-born Americans have better labor market outcomes compared to immigrants. In contrast, results indicate that native-born college-educated Hispanic men lag behind comparable non-Hispanic white men in terms of hourly wages, whereas foreign-born Hispanic men who received education in the U.S. have achieved wage parity with native-born non-Hispanic white men. In addition, results indicate that Hispanic men and women fare differently in the labor market. Thus, it will be important for future research to analyze men and women separately in order to prevent overlooking important gender differences in the labor market outcomes of immigrants.

In terms of policy implications, the findings indicate that receiving a college education in the U.S. could benefit immigrants. Thus, policymakers should implement educational programs for adult immigrants in order to ameliorate their disadvantages in the U.S. labor market. In addition, wage gaps between college-educated native-born Hispanics and comparable whites might reflect an unfair reward system in the U.S. labor market, and measures should be taken to prevent such issues.

Table 4.1 Summary of Immigrant Groups

	Born in the U.S.	Finished High School in the U.S.	Finished Highest Degree in the U.S.
HIS-NB	Yes	Yes	Yes
HIS-1.5	No	Yes	Yes
HIS-1.25	No	No	Yes
HIS-1.0	No	No	No

Table 4.2. Descriptive Statistics

	Whites	HIS-NB	HIS-1.5	HIS-1.25	HIS-1.0
Hourly wage ($)	38.79	33.84	42.51	40.89	34.61
COLA adjusted hourly wage ($)	37.37	31.58	39.91	38.83	32.99
Average hours worked per week	43.06	43.23	43.06	44.21	43.61
Average weeks worked previous year	50.21	50.12	50.28	49.99	50.66
Average age (years)	45.22	40.65	41.72	44.34	46.82
Married (%)	74.48	61.41	64.80	78.26	80.14
Males (%)	59.21	50.71	59.62	64.13	60.29
Children under age 6 (%)	17.94	22.18	22.37	22.61	19.14
Parents' education					
Father's education (years)	14.85	13.72	13.77	14.45	14.11
Missing on father's education (%)	0.35	1.44	2.59	1.52	2.50
Mother's education (years)	14.10	13.43	13.25	12.94	13.11
Missing on mother's education (%)	0.13	0.31	2.05	1.09	1.43
Level of education attainment (%)					
Bachelor's degree	53.95	58.42	57.98	28.48	60.64
Master's degree	34.10	29.21	29.33	50.65	18.43
PhD	5.20	4.46	4.23	18.91	8.41
Professional degree	6.75	7.91	8.46	1.96	12.52
Total	(100)	(100)	(100)	(100)	(100)
Highest degree from Research I (%)	34.13	28.53	31.51	41.52	NA
Major for highest degree (%)					
Computer science and technology	10.14	9.10	11.87	10.65	11.45
Life science	9.32	8.45	6.41	8.04	9.84
Chemistry and physics	4.70	4.07	2.05	3.70	2.33
Astronomical science	1.21	1.50	1.50	1.74	1.43
Economics	2.37	2.18	2.46	3.48	3.94
Political science	2.67	3.90	5.32	2.83	0.36

Table 4.2 Continued

	Whites	HIS-NB	HIS-1.5	HIS-1.25	HIS-1.0
Psychology	5.72	8.42	8.87	3.48	3.76
Sociology and anthropology	4.02	7.06	6.82	2.83	2.68
Engineering	17.12	15.11	19.24	24.78	28.62
Health	11.58	9.69	8.46	6.96	18.43
Education	7.93	8.56	6.00	5.43	2.68
Business	9.15	7.54	10.37	16.09	7.87
Social service	2.24	2.09	1.77	0.43	0.72
Other majors	11.83	12.34	8.87	9.57	5.90
Total	(100)	(100)	(100)	(100)	(100)
Citizen (% of Yes)	100.00	100.00	92.67	66.74	55.28
Regions of residence					
Northeast	7.36	2.57	4.01	3.77	4.31
Mid-Atlantic	14.02	10.34	16.62	13.44	13.33
East North Central	17.50	6.71	5.59	5.66	11.76
West North Central	9.59	1.94	1.15	2.59	1.57
South-Atlantic	17.85	13.67	25.64	27.59	27.65
East South Central	4.60	1.18	1.72	2.83	2.94
West South Central	8.17	16.15	11.32	16.75	13.73
Mountain	7.64	9.43	4.15	5.19	4.51
Pacific	13.28	38.01	29.80	22.17	20.20
Total	(100)	(100)	(100)	(100)	(100)
Employment Type					
Elementary and middle school	9.98	13.02	12.55	8.91	7.16
Junior college	1.77	2.09	1.36	2.17	1.25
University	4.95	5.28	4.09	10.87	2.68
Medical school	1.50	1.44	1.64	1.52	3.76
Research Institute	0.96	1.21	0.95	3.48	1.79

Table 4.2 Continued

	Whites	HIS-NB	HIS-1.5	HIS-1.25	HIS-1.0
Private for profit	42.66	37.63	40.38	43.70	50.81
Private non-profit	8.02	6.89	6.96	6.52	5.90
Self-employed (not incorporated)	5.71	5.20	4.64	4.13	7.33
Self-employed (Incorporated)	10.94	9.46	12.28	6.52	11.81
Local government	3.15	5.40	5.73	3.04	2.50
State government	4.04	4.44	3.41	2.83	1.43
Federal government	5.62	6.72	5.32	3.91	1.97
Other employment type	0.70	1.21	0.68	2.39	1.61
Total	(100)	(100)	(100)	(100)	(100)
Sample size	29,410	3,540	733	460	559

Note: HIS-NB refers to native-born Hispanics. HIS-1.5 refers to foreign-born Hispanics who immigrated to the U.S. at a young age and attended high school (and later college) in the U.S. HIS-1.25 refers to foreign-born Hispanics who attended high school overseas but obtained their highest degree in the U.S. HIS-1.0 refers to foreign-born Hispanics who obtained all of their schooling overseas.

Table 4.3. Mean Hourly Wage by Educational Characteristics

		Adjusted hourly wage	
	Hourly wage ($)	($)	Sample Size
Educational Degree			
Bachelor's degree	34.35	33.05	18,830
Master's degree	39.47	37.86	11,613
Doctoral degree	40.51	38.72	1,852
Professional degree	62.16	59.39	2,407
Carnegie classification			
Research I University	42.96	41.20	11,471
Research II University	38.36	37.45	2,986
Doctoral Grant	38.23	37.07	4,984
Comprehensive	33.85	32.26	9,120
Liberal Arts I	34.26	32.26	913
Liberal Arts II	29.45	28.46	1,599
Other types	39.93	38.04	3,629
Major of highest degree			
Computer science and technology	37.84	36.34	3,503
Life science	30.94	29.55	3,180
Chemistry and physics	36.46	35.23	1,572
Astronomical science	41.93	40.09	437
Economics	42.73	40.95	830
Political science	38.60	36.71	978
Psychology	31.50	29.73	2,082
Sociology and anthropology	29.57	27.85	1,509
Engineering	41.15	39.77	5,984
Health	45.40	43.83	3,946
Education	31.67	30.38	2,718
Business	43.55	42.14	3,153

Table 4.3 Continued

	Hourly wage ($)	Adjusted hourly wage ($)	Sample Size
Social service	31.89	30.55	753
Other majors	41.18	39.23	4,057

Note: The adjusted hourly wage is adjusted for regional cost-of-living differences.

Table 4.4. Estimated Effects of Being Hispanic by Immigrant Group on Log Hourly Wage among Men

	Model 0	Model 1	Model 2	Model 3
Hispanics (Native-born Non-Hispanic white is reference group)				
HIS-NB	-0.2383***	-0.1004*	-0.1003*	-0.1040*
	(0.0456)	(0.0437)	(0.0437)	(0.0410)
HIS-1.5	-0.0711	-0.0498	-0.0371	-0.0272
	(0.0988)	(0.0674)	(0.0690)	(0.0607)
HIS-1.25	0.1962**	-0.0158	0.0443	0.0153
	(0.0644)	(0.0560)	(0.0606)	(0.0539)
HIS-1.0	-0.4029***	-0.4140***	-0.2681**	-0.2295**
	(0.1088)	(0.1013)	(0.0801)	(0.0716)
Control Variables				
Demographics		Y	Y	Y
Parents' education		Y	Y	Y
Educational achievement		Y	Y	Y
Field of study for highest degree		Y	Y	Y
Carnegie classification		Y	Y	Y
Region		Y	Y	Y
Citizenship			Y	Y
Employment type				Y
Employment size				Y
Occupation				Y
Intercept	3.4210***	1.0051***	0.7990***	1.1055***
Adjusted R2	0.0104	0.2373	0.2376	0.3259
N	20,279	20,279	20,279	20,279

Note: *** p<0.001 **p<0.01 *p<0.05

Table 4.5. Estimated Effects of Being Hispanic by Immigrant Group on Log Hourly Wage among Women

	Model 0	Model 1	Model 2	Model 3
Hispanics (Native-born Non-Hispanic white is reference group)				
HIS-NB	-0.1261*	-0.0652	-0.0651	-0.0725
	(0.0573)	(0.0517)	(0.0517)	(0.0464)
HIS-1.5	0.1607**	0.1368**	0.1465**	0.1409*
	(0.0552)	(0.0600)	(0.0595)	(0.0574)
HIS-1.25	0.1810	0.0882	0.1476	0.1801
	(0.2012)	(0.2077)	(0.2182)	(0.1789)
HIS-1.0	-0.2839**	-0.2875**	-0.1493	-0.0488
	(0.0890)	(0.1067)	(0.1275)	(0.1087)
Control Variables				
Demographics		Y	Y	Y
Parents' education		Y	Y	Y
Educational achievement		Y	Y	Y
Field of study for highest degree		Y	Y	Y
Carnegie classification		Y	Y	Y
Region		Y	Y	Y
Citizenship			Y	Y
Employment type				Y
Employment size				Y
Occupation				Y
Intercept	3.1436***	1.7243***	1.4551***	1.5048***
Adjusted R2	0.0050	0.1430	0.1437	0.2281
N	14,423	14,423	14,423	14,423

Note: *** p<0.001 **p<0.01 *p<0.05

Table 4.6. Estimated Effects of Being Hispanic Country of Origin on Log Hourly Wage among Men

	Model 0	Model 1	Model 2	Model 3
Hispanic ethnic groups (Non-Hispanic white men is reference group, N=17,415)				
HIS-1.0				
Mexican	-0.6094**	-0.5713**	-0.4213**	-0.3617**
(N=103)	(0.2055)	(0.1742)	(0.1618)	(0.1245)
Colombian	-0.1267	-0.1788	-0.0371	-0.1313
(N=31)	(0.1338)	(0.1400)	(0.1577)	(0.1261)
Other Hispanics	-0.3335**	-0.3680**	-0.2363*	-0.1929*
(N=203)	(0.1229)	(0.1177)	(0.0953)	(0.0853)
HIS-1.25				
Mexican	0.1441	-0.0434	-0.0076	-0.0953
(N=57)	(0.1351)	(0.1282)	(0.1226)	(0.0916)
Colombian	0.3320**	0.0481	0.1254	0.1186
(N=48)	(0.1225)	(0.0816)	(0.0782)	(0.0757)
Other Hispanics	0.1881*	-0.0254	0.0362	0.0318
(N=190)	(0.0873)	(0.0730)	(0.0773)	(0.0712)
HIS-1.5				
Mexican	-0.2033	-0.0353	-0.0249	0.0341
(N=133)	(0.1855)	(0.0834)	(0.0845)	(0.0625)
Colombian	-0.0603	-0.1174	-0.1159	-0.3590+
(N=35)	(0.1407)	(0.1180)	(0.1184)	(0.1876)
Other Hispanics	0.0315	-0.0672	-0.0519	-0.0237
(N=269)	(0.1142)	(0.1087)	(0.1114)	(0.0841)
Control Variables				
Demographic		Y	Y	Y
Parents' education		Y	Y	Y
Educational achievement		Y	Y	Y

Table 4.6 Continued

	Model 0	Model 1	Model 2	Model 3
Field of study for highest degree		Y	Y	Y
Carnegie classification		Y	Y	Y
Region		Y	Y	Y
Citizenship			Y	Y
Employment type				Y
Employment size				Y
Occupation				Y
Intercept	3.4210***	0.9710***	0.7770**	1.0555***
Adjusted R2	0.0059	0.2339	0.2342	0.4253
N	18,484	18,484	18,484	18,484

Note: *** p<0.001 **p<0.01 *p<0.05 + p<0.1. The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses.

Table 4.7. Estimated Effects of Being Hispanic Country of Origin on Log Hourly Wage among Women

	Model 0	Model 1	Model 2	Model 3
Hispanic ethnic subgroups (Non-Hispanic white women is reference group, N=11,995)				
HIS-1.0				
Mexican	0.2098	0.1299	0.2682	0.3325
(N=49)	(0.2587)	(0.2590)	(0.2455)	(0.2526)
Colombian	-0.4521**	-0.4251*	-0.3286+	-0.0742
(N=36)	(0.1399)	(0.1715)	(0.1902)	(0.1734)
Other Hispanics	-0.3280**	-0.3945**	-0.2557+	-0.2149+
(N=137)	(0.1261)	(0.1289)	(0.1330)	(0.1229)
HIS-1.25				
Mexican	0.0585	-0.2293	-0.0927	-0.165
(N=25)	(0.2225)	(0.1779)	(0.1799)	(0.1202)
Colombian	1.1511***	1.1885**	1.2066**	1.2926**
(N=26)	(0.3089)	(0.4341)	(0.4225)	(0.4329)
Other Hispanics	-0.0249	-0.1247	-0.0733	-0.0073
(N=114)	(0.1347)	(0.0801)	(0.0904)	(0.1314)
HIS-1.5				
Mexican	0.0477	0.1007	0.1059	0.0496
(N=75)	(0.1299)	(0.1274)	(0.1260)	(0.1198)
Colombian	0.1886***	0.1784**	0.1814**	0.1585**
(N=24)	(0.0460)	(0.0565)	(0.0566)	(0.0596)
Other Hispanics	0.2284**	0.1372+	0.1501+	0.1746*
(N=197)	(0.0720)	(0.0796)	(0.0790)	(0.0776)
Control Variables				
Demographic		Y	Y	Y
Parents' education		Y	Y	Y
Educational achievement		Y	Y	Y

Table 4.7 Continued

	Model 0	Model 1	Model 2	Model 3
Field of study for highest degree		Y	Y	Y
Carnegie classification		Y	Y	Y
Region		Y	Y	Y
Citizenship			Y	Y
Employment type				Y
Employment size				Y
Occupation				Y
Intercept	3.1436***	1.7876***	1.5384***	1.6053***
Adjusted R2	0.0068	0.1426	0.1431	0.2257
N	12,678	12,678	12,678	12,678

Note: *** $p<0.001$ **$p<0.01$ *$p<0.05$ + $p<0.1$. The hourly wage is adjusted for regional cost-of-living differences. Robust standard errors are reported in the parentheses.

Reference

Aten, Bettina H. 2013. *Estimates of State Price Levels for Consumption Goods and Services: a first brush*. BiblioGov,

Bailey, Thomas, and Roger Waldinger. 1991. "Primary, Secondary, and Enclave Labor Markets: A Training Systems Approach." *American Sociological Review*: 432-445.

Blau, Francine D., and Lawrence M. Kahn. 1994. "Rising Wage Inequality and the US Gender Gap." *The American Economic Review* 84.2: 23-28.

Bloome, Deirdre. 2017. "Childhood Family Structure and Intergenerational Income Mobility in the United States." *Demography* 54.2: 541-569.

Bonacich, Edna. 1972. "A theory of ethnic antagonism: The split labor market." *American Sociological Review*: 547-559.

Brand, Jennie E., and Yu Xie. 2010. "Who Benefits Most from College? Evidence for Negative Selection in Heterogeneous Economic Returns to Higher Education." *American Sociological Review* 75.2: 273-302.

Brewer, Dominic J., Eric R. Eide, and Ronald G. Ehrenberg. 1999. "Does it Pay to Attend an Elite Private College? Cross-Cohort Evidence on the Effects of College Type on Earnings." *Journal of Human Resources*: 104-123.

Brown, Charles, and James L. Medoff, 1989. "The Employer Size Wage Effect." *Journal of Political Economy* 97:1027-1059

Chapa, Jorge, and Richard R. Valencia. 1993. "Latino Population Growth, Demographic

　　Characteristics, and Educational Stagnation: An Examination of Recent Trends."

　　Hispanic Journal of Behavioral Sciences 15.2: 165-187.

Cheng, Siwei. 2014. "A Life Course Trajectory Framework for Understanding the Intracohort

　　Pattern of Wage Inequality." *American Journal of Sociology* 120.3: 633-700.

Choi, Kate H., Arthur Sakamoto, and Daniel Powers. 2008. "Who is Hispanic? Hispanic Identity

　　among African Americans, Asian Americans, Others, and Whites." *Sociological Inquiry*

　　78.3: 335-371.

Dunn, Lucia F. 1986. "Work Disutility and Compensating Differentials: Estimation of Factors in

　　the Link between Wages and Firm Size." *The Review of Economics and Statistics* : 67-73.

Duleep, Harriet Orcutt, and Mark C. Regets. 1997. "The decline in immigrant entry earnings:

　　less transferable skills or lower ability?." *The Quarterly Review of Economics and*

　　Finance 37: 189-208.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith. 2014. *Income and Poverty*

　　in the United States: 2013. United States Census Bureau.

Espino, Rodolfo, and Michael M. Franz. 2002. "Latino Phenotypic Discrimination Revisited: the

　　Impact of Skin Color on Occupational Status." *Social Science Quarterly* 83.2: 612-623.

Farley, John E. 1987. "Disproportionate Black and Hispanic Unemployment in US Metropolitan

　　Areas: the Roles of Racial Inequality, Segregation and Discrimination in Male

　　Joblessness." *American Journal of Economics and Sociology*: 129-150.

Fischer, Claude S., and Michael Hout. 2006. *Century of Difference: How America Changed in the Last One Hundred Years*. Russell Sage Foundation

Fry, Richard. 2002. "Latinos in Higher Education: Many Enroll, Too Few Graduate." Washington DC: Pew Hispanic Center.

Gerber, Theodore P., and Sin Yi Cheung. 2008. "Horizontal Stratification in Postsecondary Education: Forms, Explanations, and Implications." *Annual Review of Sociology* 34: 299-318.

Greenman, Emily, and Yu Xie. 2008. "Is Assimilation Theory Dead? The Effect of Assimilation on Adolescent Well-Being." *Social Science Research* 37.1: 109-137.

Goldin, Claudia, and Lawrence F. Katz. 2007. *The Race between Education and Technology: The Evolution of US Educational Wage Differentials, 1890 to 2005*. No. w12984. National Bureau of Economic Research,

Gordon, Milton Myron. 1964. *Assimilation in American Life: The Role of Race, Religion, and National Origins*. Oxford University Press on Demand.

Goyette, Kimberly A., and Ann L. Mullen. 2006. "Who Studies the Arts and Sciences? Social Background and the Choice and Consequences of Undergraduate Field of Study." *Journal of Higher Education*: 497-538.

Grenier, Gilles. 1984. "The Effects of Language Characteristics on the Wages of Hispanic-American Males." *Journal of Human Resources*: 35-52.

Groshen, Erica L. 1991. "Sources of Intra-Industry Wage Dispersion: How Much Do Employers Matter?." *The Quarterly Journal of Economics*: 869-884.

Hall, Matthew, Emily Greenman, and George Farkas. 2010. "Legal Status and Wage Disparities for Mexican Immigrants." *Social Forces* 89.2: 491-513.

Hout, Michael and Thomas DiPrete. 2006. "What Have We Learned? RC28's Contributions to Knowledge about Social Stratification." *Research in Social Stratification and Mobility* 24:1–20.

Hout, Michael. 2012. "Social and Economic Returns to College Education in the United States." *Annual Review of Sociology* 38: 379-400.

Kalleberg, Arne L. 2009. "Precarious Work, Insecure Workers: Employment Relations in Transition." *American Sociological Review* 74.1: 1-22.

Kenney, Genevieve M., and Douglas A. Wissoker. 1994. "An Analysis of the Correlates of Discrimination Facing Young Hispanic Job-seekers." *The American Economic Review*: 674-683.

Kim, ChangHwan, and Arthur Sakamoto. 2008. "The Rise of Intra-Occupational Wage Inequality in The United States, 1983 To 2002." *American Sociological Review* 73.1: 129-157.

Kim, ChangHwan, and Arthur Sakamoto. 2010. "Have Asian American Men Achieved Labor Market Parity With White Men?" *American Sociological Review* 75.6: 934-957.

Kim, ChangHwan, Christopher R. Tamborini, and Arthur Sakamoto. 2015. "Field of Study in College and Lifetime Earnings in the United States." *Sociology of Education* 88.4: 320-339.

Landale, Nancy S., and Ralph S. Oropesa. 2007. "Hispanic Families: Stability and Change."

    Annual Review of Sociology. 33: 381-405.

Lopez, Gustavo and Kristen Bialik. 2017. "Key Findings about U.S. Immigrants." Pew Research

    Center.

Logan, John R. 2002. *Hispanic Populations and Their Residential Patterns in the Metropolis.*

    Lewis Mumford Center for Comparative Urban and Regional Research, University at

    Albany.

Mattoo, Aaditya, Ileana Cristina Neagu, and Çağlar Özden. 2008. "Brain Waste? Educated

    Immigrants in the US Labor Market." *Journal of Development Economics* 87.2: 255-269.

McManus, Walter, William Gould, and Finis Welch. 1983. "Earnings of Hispanic Men: The

    Role of English Language Proficiency." *Journal of Labor Economics*: 101-130.

Maia, Alexandre Gori, Arthur Sakamoto, and Sharron Xuanren Wang. 2015. "Socioeconomic

    Attainments of Japanese Brazilians and Japanese Americans." *Sociology of Race and*

    Ethnicity 1.4: 547-563.

Monks, James. 2000. "The Returns to Individual and College Characteristics: Evidence from the

    National Longitudinal Survey of Youth." *Economics of Education Review* 19.3: 279-289.

Neal, Derek. 2002. "The Measured Black-White Wage Gap Among Women Is Too Small". No.

    w9133. National Bureau of Economic Research.

Pew Research Center. 2013. "Second Generation Americans: A Portrait of the Adult Children of

    Immigrants"

Portes, Alejandro, and Rubén G. Rumbaut. 2005. "Introduction: The Second Generation and the

    Children of Immigrants Longitudinal Study." *Ethnic and Racial Studies* 28.6: 983-999.

Reimers, Cordelia W. 1983. "Labor Market Discrimination Against Hispanic and Black Men."

    The Review of Economics and Statistics 570-579.

Sakamoto, Arthur, Huei-Hsia Wu, and Jessie M. Tzeng. 2000. "The Declining Significance of

    Race Among American Men During the Latter Half of the Twentieth Century."

    Demography 37.1: 41-51.

Sakamoto, Arthur, Kimberly A. Goyette, and ChangHwan Kim. 2009. "Socioeconomic

    Attainments of Asian Americans." *Annual Review of Sociology* 35: 255-276.

Sakamoto, Arthur, and Daniel A. Powers. 1995. "Education and the Dual Labor Market for

    Japanese Men." *American Sociological Review*: 222-246.

Sakamoto, Arthur, and Sharron Xuanren Wang. 2017. "Occupational and Organizational Effects

    on Wages among College-educated Workers in 2003 and 2010." *Social Currents* 4.2:

    175-195.

Schmidt, Christoph M., and Klaus F. Zimmermann. 1991. "Work Characteristics, Firm Size and

    Wages." *The Review of Economics and Statistics* 705-710.

Shields, Stephanie A. 2008. "Gender: An Intersectionality Perspective." *Sex Roles* 59.5-6: 301-

    311.

Sowell, Thomas. 1983. *The Economics and Politics of Race.* New York: William Morrow and

    Company.

Stolzenberg, Ross M. 1990. "Ethnicity, Geography, and Occupational Achievement of Hispanic Men in the United States." *American Sociological Review*: 143-154.

Stolzenberg, Ross M., and Marta Tienda. 1997. "English Proficiency, Education, and The Conditional Economic Assimilation of Hispanic and Asian Origin Men." *Social Science Research* 26.1: 25-51.

Tamborini, Christopher R., ChangHwan Kim, and Arthur Sakamoto. 2015. "Education and Lifetime Earnings in the United States." *Demography* 52.4: 1383-1407.

Tainer, Evelina. 1988. "English Language Proficiency and the Determination of Earnings among Foreign-born men." *Journal of Human Resources*: 108-122.

Trejo, Stephen. 1997. "Why Do Mexican Americans Earn Low Wages?" *Journal of Political Economy* 105.6: 1235–1268.

Xie, Yu, and Kimberly Goyette. 2003. "Social Mobility and the Educational Choices of Asian Americans." *Social Science Research* 32.3: 467-498.

Zeng, Zhen and Yu Xie. 2004. ''Asian-Americans' Earnings Disadvantage Reexamined: The Role of Place of Education.'' *American Journal of Sociology* 109:1075–11.

CHAPTER V

CONCLUSION

Assimilation is arguably the most important topic pertaining to immigration in the U.S.

(Lieberson and Waters 1988). The socioeconomic attainments of the new wave of immigrants

are becoming evident and are dramatically shaped by racial/ethnic stratification in the U.S. As

mentioned above, there are two prominent sociological theories potentially describing the

pathway to assimilation. The traditional linear assimilation theory suggests immigrants will

eventually assimilate and integrate into U.S. society in a linear fashion, with more time spent in

the U.S. being associated with greater assimilation, regardless of race, ethnicity, and nation of

origin (Alba and Nee 2009). In contrast, the segmented assimilation takes into account the

influence of racial/ethnic stratification on assimilation of U.S. immigrants and their descendants

(Portes and Zhou 2012). To evaluate the explanatory power of these alternative theories, the

series of studies described above examines the educational levels and wages of immigrants and

their children. This information is important for understanding whether and to what extent the

current wave of immigrants and their children are assimilating into U.S. society and whether

assimilation may differ depending on race/ethnicity and immigration generation.

The study presented in Chapter 2 is designed to ascertain the educational attainments of

second generation immigrants of different racial/ethnic backgrounds. The benchmark

population, non-Hispanic whites of native-born parents, is also included in the study as a

reference group. Two measures of educational attainment are employed in the study: (1) years of

schooling at age 28 and (2) highest educational degree obtained by the year 2013. I use an OLS

regression model to predict years of schooling by age 28 as a continuous dependent variable, and

then use Generalized Ordered Logit Regression to examine highest education level obtained by year 2013. The OLS regression results indicate that second generation Hispanic Americans have lower educational attainments than 3+ generation whites, but this disadvantage can be explained by parents' educational level. In addition, net of personal, family, and geographical characteristics, second-generation immigrants of black, Hispanic, and Asian backgrounds have higher educational levels compared to 3+ generation non-Hispanic white Americans. In addition, second generation non-Hispanic whites do not differ significantly from 3+ generation non-Hispanic whites in terms of educational level. Results of the Generalized Ordered Logit Regression indicate that the educational advantage is strong at some college level for second generation blacks and Hispanics, and the educational advantage is strong at college level for second generation Asians. This study is important for evaluating the explanatory power of traditional assimilation theory and the optimism theory of assimilation in second generation immigrants' educational attainments.

Chapter 3 focuses on intergenerational educational mobility among Hispanic Americans from immigrant families. This topic is important given that intergenerational educational mobility is an important indicator of societal inclusiveness and educational inequality. Education theory emphasizes the importance of parental educational level in explaining children's educational outcomes (Black et al. 2005). Assimilation theory also stresses the significant effects of ethnic capital and environmental characteristics in socioeconomic outcomes of children of immigrants (Borjas 1992). I use restricted-access data from the National Longitudinal Survey of Youth 1997 (NLSY97) to investigate whether intergenerational educational transmission varies by ethnic capital and contextual environment for Hispanic Americans. Based on parental birthplace, Hispanic Americans are grouped into 3+ generation

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(i.e. children of native-born Hispanic parents) and 2nd generation (i.e. children of foreign-born Hispanic parents). My analyses control for family income, family structure, number of siblings, parenting styles, and school qualities, in order to factor out potential bridges for educational transmission from parents to children. The results indicate that intergenerational educational mobility is higher if 3+ generation Hispanic men reside in areas with a larger Hispanic population, and if 2nd generation Hispanic men reside in areas with a larger college-educated population, during their adolescent years. However, ethnic capital does not seem to affect intergenerational educational mobility of Hispanic women, non-Hispanic white men, or non-Hispanic white women.

Chapter 4 uses data from the 2010 National Survey of College Graduates (NSCG2010) to investigate wage attainments among college-educated Hispanics. Hispanic Americans are innovatively categorized based on their place of birth and age in which they entered the U.S. education system. Specifically, Hispanic Americans are broken down into 1st generation Hispanics (i.e. born outside of the U.S., and no educational experience in the U.S.), 1.25 generation Hispanics (i.e., born outside of the U.S. and have obtained the highest educational degree in the U.S.), 1.5 generation Hispanics (i.e. born outside of the U.S., and came to the U.S. before high school), and native-born Hispanics (i.e. born and received education in the U.S.). Results indicate that native-born and foreign-born Hispanic women who have at least a college degree have reached approximate wage parity with comparable native-born non-Hispanic white women. By contrast, native-born Hispanic men face a 10% wage penalty relative to comparable native-born non-Hispanic white men. In addition, foreign-born Hispanic men who immigrated as adults and obtained their college degree outside of the U.S. face larger wage penalties that are augmented by a lack of citizenship. The auxiliary analysis, where Mexicans, Colombians, and

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other Hispanics are analyzed separately, shows consistent findings. The results are surprising given that classical linear assimilation theory posits that the native-born population should be more assimilated, and if any of the groups have achieved wage parity with non-Hispanic whites, it should be native-born Hispanics. However, results from chapter 4 contradict this assumption.

Chapter 2 and Chapter 3 have indicated that today's second generation immigrants do especially well academically, which correspond with linear assimilation theory and the immigration optimism theory. In addition, both chapters emphasize the fact that educational outcomes of children from immigrant families are affected by their family socioeconomic status, especially parental educational level, contextual neighborhood characteristics, and their racial/ethnic background. Results from Chapter 4, however, suggest that among Hispanic Americans, the more assimilated group (i.e. college-educated, native-born Hispanics) does not necessarily have the smallest wage gap compared to non-Hispanic whites.

This three-article formatted dissertation has profound theoretical and policy implications. Many researchers have raised doubts about whether the experiences of today's immigrants and their descendants fit the linear assimilation process. However, the findings in Chapter 2 demonstrate that second generation immigrants of minority racial/ethnic backgrounds are exceeding expectations in terms of education based on their family socioeconomic status. Nevertheless, results from Chapter 2 also suggest that second generation immigrants of some minority racial/ethnic backgrounds, such as Asian Americans, benefit more from this "immigrant advantage," compared to other minority groups, such as second generation Hispanic Americans who are not enjoying the same immigrant advantage. Selectivity theory might provide a good explanation for this observation. Previous studies have shown that immigrants are usually a selected group. Immigrants are usually physically healthy, have economic resources to migrate

between countries, and are motivated (Feliciano 2005). However, the level of selectivity might differ among immigrant groups (Jasso and Rozensweig 1995; Chiswick 2000; Feliciano 2005). That is, some immigrant groups might face different kinds of hurdles when moving to the U.S. For instance, Mexican immigrants might not have the same level of human or economic capital as Asian immigrants, because Mexico is in close proximity to the U.S. (Jasso and Rozensweig 1995). This parental human capital difference might result in a difference in educational outcomes between second generation Asian Americans and second generation Hispanic Americans. However, it has been suggested that Hispanic immigrants have a higher level of social capital (i.e. networks, cultural/language preservation) than Asian Americans, which might potentially facilitate assimilation (Massey and Espania 1987; Massey et al. 1993; Palloni et al. 2001).

Social capital is an important factor for immigrant assimilation and achievement (Sanders and Nee 1996; Kao 2004), and ethnic capital is a transform of social capital among immigrant minorities (Borjas 1992). As observed with social capital, previous studies have suggested that contextual environment and ethnic capital have profound effects on children's educational outcomes (Kao 2004). This may be explained by the ability for strong ethnic capital to provide vast social networks, preserve home culture, and provide numerous role models in their community. In Chapter 3, I examine intergenerational educational mobility among Hispanic children from immigrant families. The results illustrate that the percentage of college-educated people and Hispanic people in the county has a dramatic effect on Hispanic men's intergenerational educational mobility. Thus, these findings are largely consistent with the idea that ethnic capital and contextual environmental characteristics play a critical role in the edification of young Hispanic Americans.

The results from Chapter 4, however, have raised challenges for classical straight-line assimilation theory. Chapter 4 suggested that 1.25 and 1.5 generation Hispanic men and women have achieved wage parity with non-Hispanic white men and women, respectively, whereas college-educated native-born Hispanic men have a 10% wage disadvantage. This is in direct contradiction with traditional straight-line assimilation theory, which would suggest that native-born ethnic groups should have at least achieved wage parity. Nevertheless, the native-born Hispanic group includes second generation Hispanics as well as 3+ generation Hispanics. Second generation immigrants are deemed as high achievers in terms of socioeconomic attainments. There is research, however, showing a third generation decline among Hispanics (Portes and Rumbaut 2001). Therefore, it is possible that the sample of native-born Hispanics in Chapter 4 includes many third generation Hispanics, and this could be driving down the average socioeconomic attainments of this group. While the dataset employed does not allow me to differentiate between 2nd and 3+ generation Hispanics, future research could further examine the underlying causes for disadvantages in 3rd generation Hispanics.

There are some unexamined factors that could slightly limit the generalizability of the present dissertation findings, and these potential variables should be an added focus for future research on this topic. For instance, it would helpful to determine how many Hispanic respondents dropped out from the survey. In addition, when asked about race, Hispanics may identify as white, black, Asian, or other. It may be instructive to determine how race serves as an additional variable modulating the economic and educational (dis)advantages of Hispanic Americans. Indeed, previous studies have suggested that college-educated Hispanics are more likely to identify as whites. Moreover, using a longitudinal survey and including information about respondents' grandparents, Duncan and colleagues (2017) have found that many third

generation persons who have Hispanic great-grandparents no longer identify themselves as Hispanic. This could be partially attributed to inter-marriage, which is prevalent among college-educated Hispanics and could influence how Hispanics identify themselves. It will be important for future research to determine how multiracial Hispanics of second generation Americans identify themselves (Choi et al 2008), while also incorporating this population into the analyses as a distinct sub-group with potential differences in education and wages, relative to the greater Hispanic population.

Overall, my dissertation contributes novel insights to the scientific literature on immigration and assimilation in a number of important ways. Previous studies examining children of immigrant backgrounds often neglect parental socioeconomic characteristics due to a lack of suitable datasets. Parental characteristics, such as education, income, and family structure, however, have been suggested to have profound effects on one's later socioeconomic outcomes. My dissertation uses nationally represented datasets to incorporate parental characteristics in the measurement of assimilation and attainments of adult children from immigrant families. The findings of this dissertation emphasize the importance of parental education and family socioeconomic resources in explaining children's outcomes. In addition, my dissertation provides important evidence relevant to the scientific debate between linear assimilation and segmented assimilation theories. My findings indicate that children from immigrant families generally achieve upward mobility in relation to their parents. Some immigrant groups of racial/ethnic minority backgrounds even perform better than 3+ generation non-Hispanic whites in terms of education and wages. However, the present studies also indicate disadvantages of some racial/ethnic immigrant groups in the labor market. Thus, whereas a general trend for upward mobility across generations provides evidence in favor of traditional

straight-line assimilation theory, observations of advantages and disadvantages for certain racial/ethnic groups suggests that racial stratification in the U.S. also plays a critical role, providing support for segmented assimilation theory. Thus, the findings from my three studies suggest both traditional straight-line assimilation and segmented assimilation theories may be at least partially correct, and that an interaction between linear and segmented processes may better explain the experiences of today's immigrants and their descendants in terms of their assimilation to U.S. society.

In addition to the important theoretical implications of my research, the studies described above also lead naturally to some ideas for improving public policy in order to prevent or compensate for potential economic and educational disadvantages of first and second-generation Americans. As observed in Chapter 2, human capital of adult Hispanic first-generation immigrants has a profound impact on the educational achievements of their children. Thus, policymakers should focus on improving Hispanic adult immigrants' human capital by providing them greater opportunities in education. In addition, schools should also make available volunteer tutors to help children from immigrant families achieve in education, since these children might not be able to receive help from their parents. The findings described in Chapter 3 suggest that children of Hispanics can benefit from certain environmental factors. If Hispanic children reside in an area with a large Hispanic population and a large college-educated population, they will most likely have higher educational mobility. Therefore, policymakers could focus on improving the socioeconomic quality of neighborhoods in order to provide 2nd-generation Hispanic children with an equal opportunity to succeed in their educational endeavors. Lastly, Chapter 4 suggests that certain Hispanic groups have not achieved wage parity with non-Hispanic whites controlling for exogenous variables. Therefore, policymakers

should focus on improving equal pay and preventing discrimination based on race/ethnicity and nation of origin in the labor market.

Reference

Alba, Richard, and Victor Nee. 2009. *Remaking the American Mainstream: Assimilation and Contemporary Immigration*. Harvard University Press.

Black, Sandra E., Paul J. Devereux, and Kjell G. Salvanes. 2005. "Why the Apple Doesn't Fall Far: Understanding Intergenerational Transmission of Human Capital." *American economic review* 95.1: 437-449.

Borjas, George J. 1992. "Ethnic Capital and Intergenerational Mobility." *The Quarterly Journal of Economics* 107.1: 123-150.

Chiswick, Barry R. 2000. "Are Immigrants Favorably Self-Selected." *Migration Theory: Talking across Disciplines*: 61-76.

Choi, Kate H., Arthur Sakamoto, and Daniel Powers. 2008. "Who is Hispanic? Hispanic Identity among African Americans, Asian Americans, Others, and Whites." *Sociological Inquiry* 78.3: 335-371.

Duncan, Brian, Jeffrey Grogger, Ana Sofia Leon, and Stephen J. Trejo. 2017. *New Evidence of Generational Progress For Mexican Americans*. No. w24067. National Bureau of Economic Research.

Feliciano, Cynthia. 2005. "Educational Selectivity in US Immigration: How do Immigrants Compare to Those Left Behind?." *Demography* 42.1: 131-152.

Jasso, Guillermina, and Mark R. Rosenzweig. 1995. "Do Immigrants Screened for Skills Do
    Better Than Family Reunification Immigrants?." *International Migration Review*: 85-
    111.

Kao, Grace. 2004. "Social Capital and Its Relevance to Minority and Immigrant
    Populations." *Sociology of Education* 77.2: 172-175.

Lieberson, Stanley, and Mary C. Waters. 1988. *From Many Strands: Ethnic and Racial Groups
    In Contemporary America*. Russell Sage Foundation.

Massey, Douglas S., and Kristin E. Espinosa. 1997. "What's Driving Mexico-US Migration? A
    Theoretical, Empirical, and Policy Analysis." *American Journal of Sociology* 102.4: 939-
    999.

Massey, Douglas S., Joaquin Arango, Graeme Hugo, Ali Kouaouci, Adela Pellegrino, and J.
    Edward Taylor. 1993. "Theories of International Migration: A Review and
    Appraisal." *Population and Development Review*: 431-466.

Palloni, Alberto, Douglas S. Massey, Miguel Ceballos, Kristin Espinosa, and Michael Spittel.
    2001. "Social Capital and International Migration: A Test Using Information on Family
    Networks." *American Journal of Sociology* 106.5: 1262-1298.

Portes, Alejandro, and Rubén G. Rumbaut. 2001. *Legacies: The Story of The Immigrant Second
    Generation*. University of California Press.

Sanders, Jimy M., and Victor Nee. 1996. "Immigrant Self-Employment: The Family as Social
    Capital and The Value of Human Capital." *American Sociological Review*: 231-249.

Zhou, Min, and Alejandro Portes. 2012. "The New Second Generation: Segmented Assimilation
    and Its Variants." *The New Immigration*. Routledge, 99-116.