THE SCHOOL PERFORMANCE OF HISPANIC STUDENTS:

A GENERATIONAL APPROACH

A DISSERTATION

SUBMITTED IN PARTIAL FULLFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

DEPARTMENT OF SOCIOLOGY AND SOCIAL WORK

COLLEGE OF ARTS AND SCIENCES

BY

NIHAN KAYAARDI-HINOJOSA

DENTON, TEXAS

DECEMBER 2011

TEXAS WOMAN'S UNIVERSITY

DENTON, TEXAS

August 23, 2011

To the Dean of the Graduate School:

I am submitting herewith a dissertation written by Nihan Kayaardi-Hinojosa entitled "The School Performance of Hispanic Students: A Generational Approach." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree Doctor of Philosophy with a major in Sociology.

Dr. Philip Q. Yang, Major Professor

We have read this dissertation, and recommend its acceptance:

Department Chair

Accepted:

Dean of the Graduate School

ACKNOWLEDGMENTS

I would like to acknowledge the support and assistance of my committee. Professor Philip Yang, Professor Jim Williams, Professor Cynthia Cready, and Professor Mahmoud Sadri all provided me with support and encouragement and assistance throughout this long process. To Dr. Yang, especially, do I extend a heartfelt thank you for your encouragement to see this process through.

Deepest gratitude is expressed to my friends Serkan Celtek and Marcie De La Cruz whom I leaned on whenever I needed help. For those times I needed an extra set of eyes, let me say thanks to Rosendo Cavazos and Stephanie Stoyanof. I would also like to thank my family and friends in Turkey, especially my parents who were always there, always supporting me and cheering me on, and always just a phone call away.

Last, but definitely not least, to my husband, Servando, do I say thank you. He has always been there for me, helping and encouraging me not to give up during the times I felt the toughest challenges before me. Servando, your help was very valuable during this last year, especially with the endless number of drafts you read through. Thank you for helping me through this challenging time.

ABSTRACT

NIHAN KAYAARDI-HINOJOSA

THE SCHOOL PERFORMANCE OF HISPANIC STUDENTS:
A GENERATIONAL APPROACH

DECEMBER 2011

While it has long been recognized that Hispanic students face sizeable challenges in the classroom, the matter of whether their academic performance varies by immigration generation and by Hispanic sub-group remains understudied. Taking the view that generational status may bear heavily on the classroom success of Hispanic students and that members of different Hispanic sub-groups engage the U.S. educational system differently, this study examines school achievement among three generations of Mexicans, Puerto Ricans, Cubans, and other Hispanics.

This study hypothesizes that different generations of Hispanic students within specific ethnic groups will exhibit identifiable differences in classroom performance. The cultural ecological model, classical assimilation model, segmented assimilation model, and immigrant aspiration model are utilized to help explain educational achievement among minority groups. Taking these theories into account, I predicted that second generation Hispanic students will have an advantage over their first and third generation counterparts. I also hypothesized that Mexicans and Puerto Ricans would be the most likely to follow a nonlinear pattern of generational achievement in education, in contrast to Cubans who would experience linear upward mobility.

This study focuses on different measures of school achievement captured by the database, NELS 1988. This database permits the examination of how variables like generation, student, parent, family, and school characteristics affect the academic performance of Hispanic eighth grade students in U.S. schools. The NELS 1988 sample of 3,154 respondents affords a very useful cross-section of Hispanic students and the factors that shape their school success. The study uses ordinary least squares regression because it is the most appropriate procedure to test the relationships between several predictors and an interval-ratio dependent variable.

Among the chief findings is that, by and large, generation effects no significant differences in school performance as measured by GPA and standardized subject test scores. This applies either before or after holding student, parental, familial, and school characteristics constant for Hispanic students as a whole and among major Hispanic sub-groups. This lack of significant generational differences in Hispanic school performance may have to do with the enormous diversity of the Hispanic sub-groups in question, a relatively low level of class background among Hispanic immigrants, and the disproportionately small sample sizes of some Hispanic sub-groups.

This study, however, finds that father's educational level and student variables such as positive attitudes toward high school graduation, higher educational expectations, and homework hours have consistently significant effects upon school performance, while school and family variables do not seem to impact school performance.

These findings may alert us to the subject competence status of Hispanic students as they approach high school and remind us of the urgency of better preparing students for the 21st century workforce. In addition, they may draw attention to the known effects of determinants like parental education and attitudes toward graduation that can be explored further.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

The United States is undergoing a dramatic demographic transformation. According to figures from the Bureau of the Census (2010), the Hispanic population is growing at a very rapid rate. From 2000 to 2010, the resident population of Hispanics grew from 35.3 million to 50.5 million (Bureau of the Census 2010). The Hispanic growth rate was more than four times (43 percent) the growth rate of the total population (9.7 percent). Hispanics represented 16.3 percent of the population; they were thus the largest ethnic minority group in the United States (Bureau of the Census 2010). Their rapid rate of growth and now sizeable population invites more attention and analysis.

The current profile of Hispanics in the United States is 63 percent Mexican, 13.5 percent Central and South American, 9.2 percent Puerto Rican, 3.5 percent Cuban, and 10.8 percent other Hispanics (Census 2010). Today, large numbers of Latin American immigrants from many countries continue to diversify the U.S. Hispanic population. It is important to note that members of many Hispanic sub-groups use different self identifiers. A factor that must remain at the forefront of planning for the education of Hispanic students is that Hispanics are not a homogenous group. As a whole, the U.S population of Hispanics differs from the general population in a number of significant ways, especially when it comes to socioeconomic status, language background, and educational attainment. For instance, although Hispanics constitute the fastest growing

U.S. minority group, they are also the nation's least educated one (NCES 2008). Compared with non-Hispanic whites, Hispanic educational achievement remains stilted. According to the 2009 Current Population Survey data, 61.9 percent of all Latinos age twenty-five and older have completed high school versus 87.1 percent of non-Hispanic whites. Moreover, the rate of college degree completion or more for Hispanic was 13.2 percent versus 29.9 percent for non-Hispanic whites.

Lack of educational attainment among Hispanics is associated with the income level of students' families, well-being of families, sense of familial obligations, and language background of students. The association between Hispanics' language background and educational attainment has been extensively investigated (Rumbaut 1995; Rumberger and Larson 1998; Suarez-Orozco and Suarez-Orozco 2004; Valverde 1987).

Hispanic students face numerous obstacles to achieving educational equity and excellence, something that has prompted researchers to try and theorize the lower levels of educational attainment among immigrants or members of minority groups. At the moment, though, the research on educational attainment and Hispanics exhibits both informative observations as well as gaps of coverage. When education research on Hispanics focuses on the educational attainment of immigrants, we find that this is generally lower, but not much is known regarding how different generations perform post-immigration. More variables like these have to be accounted for. The performance of Hispanics in the actual classroom has also received much scholarly attention but it needs to

be clarified along the lines of academic activities and benchmarks and how these are associated with SES and other factors. Scholars (Kao and Thompson 2003) have emphasized that understanding ethnic and immigrant group variation in educational achievement and attainment is more and more important than ever as the U.S. population becomes increasingly diverse.

With this in mind, I attempt to advance our understanding of generational differences in educational attainment among Hispanics and Hispanic sub-groups.

THE RESEARCH PROBLEM

Since Latino immigrants represent an important part of the United States' economic, social, and political future, their educational achievement matters both to themselves and to the national collective. Educational attainment among these and other Hispanics, consequently, has received substantial attention from researchers (Kao, Tienda, and Schneider 1996; Lopez and Stanton-Salazar 2001; Portes and Rumbaut 2001). This research has shown, among other things, that although the number of Hispanic students in public school has increased dramatically in recent decades (Provasnik, Stephen, Kewal Ramani, Gilbertson, and Fox 2007), Hispanic students as a group attain only the lowest levels of education and have the highest dropout rate. And even though this dropout rate decreases with each generation (NCES 2009), educational attainment among Hispanics lags far behind that of the population as a whole at all levels of education. To be sure, while there are differences in educational attainment among members of distinct Hispanic sub-groups, and among immigrant and non-immigrant

Hispanics, research on this has been insufficient. We now know more about how educational attainment varies between Hispanics and non-Hispanic whites (Gonzalez 2004; Kao and Tienda1995, 1998; Kao and Thompson 2003; Taggart and Kao 2003), but the current lack of data on Hispanic sub-groups and their differences in generational educational attainment must be redressed.

The tremendous diversity in the Hispanic population demands an examination beyond a lump-sum analysis. Since research on Hispanics is heavily attuned to demographically-dominant Mexican Americans, it is incumbent upon researchers to not lose sight of the great diversity within the Hispanic population. Neither should researchers assume an equivalence between all Hispanic experience, nor accept a "one size fits all" strategy for explaining educational outcomes, especially when the effects of generational differences are at play. However, the various limitations of many of these studies, referred to earlier, make it difficult to come to any firm conclusions about which aspects of parental involvement have the greatest impact.

This research addresses how different generations of Hispanic students vary in school performance, and how different Hispanic sub-groups differ in school performance over generational time. School performance is defined as the achievement outcome of schooling and is normally measured by grade point average and standardized test scores (Yang 2005).

In this study I employ the term "Hispanic" largely because it is the term most frequently used in the sociology and education literature to refer to people with ethnic

origins in Spanish America. This technically excludes people associated with Portuguese, Dutch, French, English, and other language areas of the Americas, even if they might get included in studies broadly concerned with Hispanics in the United States. This presents one limitation with the term "Hispanic". Another limitation is the fact that the term largely arose as an identifier of convenience during the Nixon administration, and was intended to subsume people of different national, territorial, and ethnic origins into one category for ease of official classification. It is not a "grass roots" term in the way that other identifiers, such as mexicano or puertorriqueño are, or in the way "Latino" has become used as a general classifier, especially in southern California. Still, the term "Hispanic" has utility, and will serve as a basic demographic platform from which to specify those groups of most interest to this study, namely, those of Mexican, Puerto Rican, and Cuban descent and, at times, of an "other" Latin American background. And because the term "Latino" is increasingly used in the literature to denote what the government has conventionally called "Hispanic", I will treat "Latino" as analogous to "Hispanic". As a final point, although "Hispanic" may imply individuals with immediate origins in Spain, I do not use it in this sense, following conventional practice in minority studies.

RESEARCH QUESTIONS

The purpose of this project is to identify generational differences in school performance among Hispanic students as well as differences in trajectories in school performance across generations in different Hispanic sub-groups.

This project seeks to answer two key questions:

Q1- How do different generations of Hispanic students differ in school performance?

Q2- How do major Hispanic sub-groups vary in trajectories of cross-generation school performance?

Depending on the availability of information in the different data sets, major Hispanic groups in this report include Mexican, Puerto Rican, Cuban, and Other Hispanic.

This project focuses on Hispanics for two reasons. First, they have been the fastest growing population in the United States and second, they consist of diverse groups with very different cultural and class backgrounds and different immigration experiences. They therefore have great potential for evidencing segmented adaptation and the divergent paths of educational mobility.

SIGNIFICANCE OF THE STUDY

Having limited educational achievement impacts Hispanic Americans' life chances in very negative ways. Since Hispanics represent a significant force in the country's social, economic, and political future it is vital to both identify and understand factors related to Hispanic educational outcomes. This study enhances our understanding of whether and how immigrants and their succeeding generations achieve educational mobility and paints a more complete picture of the educational attainment of Hispanics. Since over 50 million people classified as Hispanics live today in the United States, to achieve a more integral understanding of their struggles with educational achievement is to advance our overall

knowledge of whether the U.S. educational system is meeting its goals, and where it is falling short. Moreover, it is important to understand the educational progress of Hispanics since the economic value of education has increased substantially in the labor market. Therefore, educational achievement can help predict eventual economic success in society (Feliciano 2006).

This project provides a more sophisticated view of statistics that are becoming increasingly necessary for understanding educational progress for Hispanics of different backgrounds. The findings of this study better inform the public and researchers about the educational achievement of Hispanics and the educational environment in the U.S., and highlight problems that can hinder further educational achievement.

ORGANIZATION OF THE DISSERTATION

This dissertation, therefore, first provides an in-depth overview of the literature on educational achievement theories that center on immigrant and minority populations. It then determines, in Chapter II, the appropriate theoretical orientations to guide this study with. Chapter III includes a description of the data, the sample, the variables tested, and the statistical methods used. Chapter IV and Chapter V report the results of the statistical analysis, and summarize and interpret the statistical findings. The final chapter supplies the conclusion, discusses the findings, and ponders directions for further research.

CHAPTER II

THEORIES AND HYPOTHESES

This chapter highlights relevant research and theory pertaining to Hispanic educational achievement and the generational approach to elucidating this. The first part explores empirical studies in regards to the generational approach and Hispanic educational achievement. The second part centers on theories used to explain the educational attainment of minority groups. The last part, meanwhile, contains the hypotheses that are put forth and tested in this study.

LITERATURE REVIEW

As stated earlier, the educational attainment of Hispanics has received substantial research attention. No single characteristic, however, constitutes the only variable of importance in Hispanic educational research. Researchers have attempted to develop a more comprehensive view, one that includes an understanding of the relationship between home and school, and one that integrates students' and parents' expectations. Among the factors that must be borne in mind when planning the education of Hispanic students is that Hispanics are not a homogenous group. Past research has shown that Hispanic sub-groups differ greatly in their background characteristics (Nielsen and Fernandez 1981; Wojtkiewicz and Donato 1995). Researchers are giving greater attention to Hispanic educational attainment, but few studies have taken a generational approach. A

number of studies, however, have expanded to include the effects of migration and nativity of parents into their inquiries.

Qualitative studies have focused mainly on one particular Hispanic community at a time. Some ethnographic studies (Matute-Bianchi 1986; Suarez-Orozco and Suarez-Orozco 1995; Valenzuela 1999) show that among Mexican and Central American students, generational status plays an important role in schooling experience. According to these studies, first and second generation students perform better academically compared to third or later generation students. Matute-Bianchi (1986) found that first generation Mexican students as well as second generation Mexican students who maintain a separate identity as mexicanos tend to perform relatively better in school than their third generation counterparts. Suarez-Orozco and Suarez-Orozco (1995) indicated that first generation Mexican students put greater importance on education than whites and third generation Mexican Americans. Valenzuela (1999), in her book *Subtractive Schooling*, argued that schooling is the reason that third generation Mexican students show decline. She (ibid) stated that educational achievement declines because schooling subtracts resources from youth.

Much of the quantitative research on educational achievement, meanwhile, has made headway into some of the most pressing areas of interest to this study, for instance, into how Hispanic sub-groups differ in their educational achievement (Nielsen and Fernandez 1981). Some researchers (Ogbu 1987; Hirschman and Wong 1984; Suarez-Orozco 1991; Reed, Hill, Jepsen, and Johnson 2005; Rumberger and Larson 1998) have attempted to

understand the importance of educational attainment among Hispanics by specifically focusing on immigrants. Researchers have tried to identify which generation succeeds more than another and why. Educational attainment remains the subject of intense study because this is linked to an individual's future earnings and success. In 2009 (CPS 2009) the median income for all households was $49,000. Significantly, this survey showed that for all racial/ethnic groups, the median income increased when educational attainment increased.

Among the many ways that the U.S. Hispanic population differs from the population at large, differences in educational attainment constitute one of the most prominent. Even though researchers (Kao and Tienda 1995; Kao and Tienda 1998; Ogbu 1991; Rong and Grant 1992) are giving some attention to the link between educational achievement and immigrant status, there has not been a serious commitment made to analyzing all generations of Hispanic sub-groups. Most educational research (Pedraza – Bailey1985; Suarez-Orozco and Suarez Orozco 1995; White and Glick 2000; Valverde 1987) focuses on just one generation (usually the immigrant or the native-born generation) when looking at educational attainment. Consequently, clear knowledge about how different generations of Hispanics differ in educational attainment is lacking. As Zsembik and Llanes (1996) indicated, however, some of these conflicting results about Hispanics' educational attainment across generations are due to aggregating Hispanics of various national origins into a single analytical category.

When the different generations are separated, we see interesting results. Buriel and Cardoza (1988) found no differences between first, second, and third generation Mexican students on any of the three achievement test scores. Wojtkiewicz and Donato (1995), on the other hand, indicated that second generation Mexicans have higher educational attainment than first and the third generation, while birth place had no effect on Puerto Ricans. Other researchers (Kao and Tienda 1995; Rumberger 1995) observed something similar in that second generation Hispanic youth achieved the most academically because these students are more proficient in English and their parents are more optimistic about the opportunities in the new society. Rong and Grant (1992) indicated a positive association between years of education and generation for Hispanics. In Driscoll's (1999) research on generation and high school drop outs, meanwhile, she indicated that first and second generation Hispanic students are less likely to drop out than third generation students. One can see that studies on the association between the first, second, and third generations and academic outcomes have produced inconsistent results.

In many ways, various limitations can be detected in studies that take a generational approach to education research. First of all, the findings of the above cited studies, with regard to Hispanics in particular, require further verification because of some of the researchers' technical approaches. Some of the empirical research performed, for example, is either based on bivariate analysis or does not control for many important variables, as is evident in Rong and Grant's (1992) analysis. Similarly, Kaufman, Chavez, and Lauen's (1998) results are based on bivariate crosstabulation without controlling for

other variables. Other researchers (Kao and Tienda 1995; Taggart and Kao 2003), meanwhile, define generational status solely in terms of mother's nativity, but not on the father's or on both parents'. Buriel and Cardoza (1988) included only high school seniors of all generations in their sample, but since high school attrition is common for Hispanics the year before the last year of school, their sample may constitute a select group of students.

Secondly, owing to the broader scope of these prior analyses, the attention devoted to Hispanic students is somewhat limited. For instance, Kaufman, Chavez, and Lauen (1998) focused so much on comparisons between Hispanic and Asian students, that the generational differences in educational achievement between students of different Hispanic sub-groups were left unattended.

Moreover, they did not analyze generational differences in grades and standardized test scores in mathematics, science, reading, and social studies, which are conventional measures of school performance (Yang 2005). Using NELS data, Kao and Tienda (1995) found that SES provided the best explanation of the difference between grades and test scores between immigrant Hispanic students and U.S. born Hispanic students. In the same study Kao and Tienda (1995) indicated that generational status did not influence educational performance. Nevertheless their regression models include only parents' educational level and family income as control variables. Other potential determinants of scholastic performance such as homework hours, students' aspiration, and school characteristics have not been controlled for. Scholars have argued that it is

necessary to go beyond family SES to understand differences among groups. For instance, Hanson (1994) pointed out that socioeconomic background variables have more of an effect on whites' educational achievement than on that of minorities.

Kalogrides (2009), meanwhile, using the ELS 2002 took a contrary position and pointed out that educational achievement increases across generations among Hispanic students. But she also admitted that her study was limited because it did not consider sub-group (i.e. Mexican, Puerto Rican, and Cuban) differences. Prior to this research some (Bean, Chapa, Berg, and Sowards 1994; Chapa 1988) disputed this notion of upward mobility and they revealed generationally blocked opportunities for Mexicans. It is therefore unclear whether and to what extent the results and conclusions of these studies will change if alternative technical modifications are made to the methodology.

To the extent possible, then, this study will supply data about educational attainment among Hispanic sub-groups. To fill the gaps in the literature, this project analyzes the generational differences of Hispanics in both school performance and cumulative educational attainment and sub-group differences in these two dimensions of educational attainment.

An important consideration is worth noting here. Most current research on educational experience employs "Hispanic" as an umbrella term for groups of different nationalities such as Mexicans and Cubans, or of different territorial backgrounds, such as Puerto Ricans and Central and South Americans. While U.S. Hispanics differ from non-Hispanics whites in terms of immigration history, income, and language

backgrounds, there exists considerable diversity among Hispanics themselves. Those referred to as Hispanics comprise not only an enormous mixture of new immigrants from Spanish-speaking Latin America but also different generations of people (Rumbaut 2006). The fact that the Hispanic population is often lumped into one ethnic group in most studies, given the unique backgrounds of specific sub-groups, should be of concern. This is particularly true if one of the objectives of educational research is to understand how discrete population segments, with their unique backgrounds, have differential access to the classroom over time. Therefore, to better grasp the current educational outcomes of Hispanics it is vital to first identify Hispanic sub-groups and their respective educational experiences.

THEORIES AND HYPOTHESES

A review of the literature revealed several theories that attempt to explain educational achievement among minority groups. In view of the fact that different theoretical lenses can provide a broader understanding of how different Hispanic groups advance through their educational lives, I examine below different theories of particular relevance to this study.

Cultural Ecological Theory

This theory derived from ethnographic research on minority students and their educational progress in U.S society, and attempted to shed light on differences in educational achievement between members of the researched minority groups. According to the cultural ecological perspective, factors such as immigration status, minority status,

and school and labor market pay-off for educational attainment contribute to educational progress or lack thereof.

Ogbu (1992) indicated that minority students have traditionally experienced unequal opportunities in making use of their educational credentials in a socially and economically rewarding way. Moreover, dominant group members who control the public schools have encouraged minorities to consider school an instrument for replacing their non-dominant cultural identity with the dominant group identity, even if the adopters are not duly rewarded for doing so. Ogbu (1992) further stated that even before this situation arose, caste-like minorities immigrated involuntarily under oppressive conditions and experienced exploitation. He argued, for instance, that African Americans, Mexican Americans,[1] and Native Americans have had involuntary forms of contact; therefore they have had experiences different from those who voluntarily immigrated to America (Ogbu 1987). As Suarez-Orozco and Suarez-Orozco (1995) explained, Mexican Americans were subjected both to instrumental exploitation for economic purposes and to psychological exploitation in the form of negative stereotyping. Therefore, they have problems cooperating- and identifying with the educational institution. Rather than revealing the upward mobility pattern historically evident among European-origin groups, research on the generational attainments of Mexican-origin people points to an

[1] The US-Mexican War legally transformed Mexicans into American citizens (1848). From 1821-1880 Mexicans were a regionally conquered people, therefore their experience was involuntary (Gutierrez 2004).

"invisible ceiling" of blocked opportunity (Bean et al. 1994; Gans 1992; Valenzuela 1999).

Building on the argument of differential immigration experiences, Gibson uses the construct of ''accommodation without assimilation'' when examining the involuntary/voluntary minority experiences ingrained in the lives of Punjabi Sikhs (Gibson 1991). Valenzuela (1999) was also able to apply the "involuntary/voluntary" distinctions to her studies of education among both immigrant Mexicans and U.S- born Mexicans. Suarez-Orozco and Suarez-Orozco (1995) took this further and argued that Mexican immigrants do better than Mexican Americans in school because of how their difficult immigration circumstances compel them to think that their less-fortunate family members can eventually benefit from their educational efforts. Researchers (Suarez-Orozco and Suarez-Orozco 1995) have also pointed out that foreign born Mexican students placed greater importance on education and academic achievement than did U.S. born Mexican students. This constitutes one example of how first and second generation individuals aspire to high levels of education, but later generations perceive limitations and temper their expectations about the pay-offs of educational achievement (Rong and Grant 1992). Suarez-Orozco and Suarez-Orozco (1995) consequently explained that Hispanic adolescents in the U.S. are highly motivated, but their expectations for success are colored by experiences of societal hostility and discrimination.

In recent years, studies of immigrant and minority education have established that to understand the larger picture of achievement and social mobility, it is necessary to first

consider the local workings of different factors. For example, the benefits of acquiring a high school diploma may affect life outcomes differently depending on the age at which a person achieved it, which in turn can depend on the person's household economic status. Or, a family's social status might depend on whether their life in the U.S. over several generations occurred during periods of general prosperity, of bitter job markets, or even of nativist hostility. Different living situations can certainly invite outlooks ranging from eagerness to assimilate to outright disillusionment with U.S. society (Gonzalez 2005; San Miguel 2003; Suarez Orozco and Suarez-Orozco 1995; Tapa 2000).

With this in mind, the study of intergenerational outcomes of immigrants and their children, and especially of the latter's educational advancement, has been an important part of educational research. A number of scholarly inquiries have subsequently tried to grasp how members of ethnic minority groups adapt to their new societies. The following section addresses how assimilation theories attempt to frame educational attainment within this transnational experience.

Assimilation theory offers a framework for understanding the process of immigrant adaptation. In the first half of the 20th century linear assimilation theory was applied to understanding how immigrants integrate into U.S. society (Gordon 1964; Park 1950; Warner and Srole 1945). Later revisions of assimilation theory expanded our understanding of the assimilation process, with scholars like Gans (1997), Portes and Zhou (1993), and Alba and Nee (1997) demonstrating the complexity of the assimilation experience.

Classical Assimilation Theory

Initial assimilation-centered thinking asserted that immigrants follow a linear process and that eventually all would assimilate. Based on this premise each immigrant generation represents a new stage of adjustment to the mainstream culture. Therefore, the immigrants who conform to the dominant culture will do better educationally and economically. This classical assimilation approach predicts a positive correlation between generational status and level of socioeconomic status.

This approach, however, tends to de-emphasize differences among different ethnic groups and generations. Consequently, social theorists like Warner and Srole (1945), Portes and Zhou (1993), and Alba and Nee (2003) have insisted that factors of race and ethnicity must be included when analyzing the overall assimilation experience. They have revealed how crucial it is to know the historical experiences of different racial/ethnic groups because the historical experience of each of the groups heavily determines where they stand in today's society.

The form of contact between different ethnic groups also bears heavily upon their assimilation possibilities. According to Park (1950), in order for assimilation to occur racial groups must go through what he called a "Race Relations" cycle. This cycle starts at the point of "contact" between groups and leads to "competition," then "accommodation" to the dominant group and, finally, "assimilation" occurs (Yang 2000:84). In Gordon's (1999:273) modification of Park's theory, he indicates that *Anglo-conformity* has been the most prevalent ideology of assimilation goals in America in the

nation's history. Anglo-conformity ideology, he argues, has attempted to strip the immigrant of his native culture and attachments and reinvent him/her as an American along Anglo-Saxon lines (Gordon 1999: 275). In essence, Park's and Gordon's work asserts a sense that all racial and ethnic groups will eventually assimilate.

Taking a contrary position, San Miguel (2003) sees linear assimilation ideology and deficit thinking theory as lacking in legitimacy when it comes to identifying the reasons why Hispanic children underperform in school. According to San Miguel, for educators to understand differences among students, they must first understand the background of Hispanic students. The failure of educators to appreciate these students' backgrounds has led to these students' poor educational outcomes, even as the Hispanic population continues to grow. The rapid growth of the U.S. Hispanic population since the mid 20th century has prompted scholars to refocus on the assimilation process. In addition to examining the socioeconomic attainment of adults, scholars have also become interested in the educational progress of recent waves of immigrants and their children as a means of assessing their future socioeconomic prospects (Kalogrides 2009). In one California study, for example, Reed et al. (2005) found evidence of substantial progress among second generation immigrants and their foreign-born parents, and even more progress among the second and third generation. However, by the third generation, Mexican Americans in California had not attained the educational levels that whites had. Greenman and Xie (2008) and Kalogrides (2009) similarly reported that there is no significant decline between the second and third generations and that, on the contrary,

there was even a modest educational increase. One approach that has proven useful for analyzing immigrant generational differences in educational attainment and social mobility underscores the dynamics of specific population segments.

Segmented Assimilation Theory

The assimilation process has been different for members of different racial/ethnic groups. As a result, as scholars like Glazer (1993), Kao and Tienda (1995), and Suarez-Orozco and Suarez-Orozco (1995) have demonstrated, the linear assimilation model is found to have many limitations. The more that is known about different racial/ethnic groups in North America, the clearer it becomes that assimilation is, as Yetman (1999) and Yang (2000) argue, more multidimensional than unidimensional, involving far more than what linear assimilation has accounted for.

Segmented assimilation posits that there are different segments of society available for immigrant groups, therefore the type of community in which the immigrant group lives determines the social and economic assimilation patterns of the immigrant (Rumbaut 1994). Some immigrants assimilate into the middle class, others acculturate and assimilate into the urban underclass, and lastly, some immigrants preserve their own culture as they achieve economic integration (Portes and Zhou 1993).

Scholars have emphasized that under some circumstances, immigrant children may in fact be better off avoiding assimilation into the U.S. mainstream and instead should remain within their ethnic community. Zhou (1997:978) stated that "the longer the U.S. residence the more maladaptive the outcomes, whether measured in terms of school

performance, aspirations, or behavior and regardless of immigrant group." Tellingly, in Suarez-Orozco and Suarez-Orozco's (1995:61) work on Latino immigrants, one teacher stated that, "The more Americanized they become, the worse is their attitude in school." The authors (Suarez-Orozco and Suarez-Orozco 1995) nonetheless found that Mexican and immigrant groups placed greater importance on education and academic achievement than did their white and Mexican American counterparts.

Portes and Zhou (1993:96) likewise reported that children of nonwhite immigrants may not have the opportunity to gain access to middle class white society, no matter how acculturated they become. They remain in their own ethnic communities because otherwise they will not have any material or moral resources. Portes and Zhou (1993) indicate that while segmented assimilation is one strategy that may help immigrant minorities, they also assert that this situation varies based on the history of the minority group in the society. In a context as challenging as U.S. society, for example, successive generations of immigrants may fall short of their expected assimilation objectives. When this happens, as Ogbu pointed out in the 1970s, it may reflect how minority group members can become increasingly cynical about their life chances in American society. The adults' communication of this cynicism to their children may then account for the children's school failure. Segmented assimilation theory, nonetheless, has been criticized by some scholars who claim that some of its premises are not supported with empirical research (Greenman and Xie 2008; Kalogrides 2009).

Taking their cue from segmented assimilation research, some researchers have ascribed the underperformance of Hispanics in the classroom to resisting assimilation. Gradually, though, as this body of theory has fallen short of fully explaining differential educational outcomes among different minority subgroups, a space is created for other theoretical formulations.

Immigrant Aspiration Theory

The argument in immigrant aspiration theory is that immigrant parents have higher schooling expectations of their children, leading to higher educational aspirations among minority students. Immigrant aspiration theory can explain why educational achievement does not always increase across generations, especially in disadvantaged segments of the society. Accordingly, scholars (Kao and Tienda 1995; Yang 2005) have found that educational progress among generations is not always even and streamlined. Research among different immigrant groups, including Hispanics, has also bolstered the idea of second generation advantage and third generation decline (Boyd and Grieco 1998; Kao and Tienda 1995; Smith 2003; Yang 2005; Zsembik and Llanes 1996).

This theory advanced a premise that different attitudes between immigrant and native parents is key to understanding generational differences in classroom success (Kao and Tienda 1995). For instance, first and second generation Hispanic youth express more college graduation aspirations than do U.S. born Hispanics (Kao and Tienda 1995).

Immigrants tend to be optimistic about their children's chances of upward mobility, and these children indeed often outperform their U.S born classmates (Kao and

Tienda 1995). Some of the parents' ambition may be at work on their children. Yang (2005), accordingly, acknowledged the strong role that ambition plays in immigrant lives. And even though the act of immigration will mean facing language barriers, discrimination, and temporary downward mobility early on, immigrant ambition often accompanies a belief they will do far better in the U.S. than they could in their home country (Yang 2005).

Still, a single formula that accounts for the educational achievement and attainment of all immigrants and minorities continues to elude scholars. This is especially evident with respect to Hispanic groups. There is still much to be learned about the educational achievement and generational status of different immigrant/ethnic groups. More clarification is needed, for one, regarding why different studies point to different educational outcomes among the same generation of the same ethnic group. The current state of research reaffirms that more data about different immigrant groups will help to account for these discrepancies, as well as better identify the interaction of factors that condition different educational and life outcomes.

All these theories will be used to understand the paths of Hispanic sub-group educational attainment across generations.

Hypotheses

A number of theories have tried to frame and explain educational achievement across generations among U.S. Hispanics, and several theories have been put forth in the literature to explain the generational patterns we see in this regard. Some scholars have

indicated, for instance, that while there is clear progress in educational attainment between the first and second generations, average education levels remain essentially the same for the second and later generations of Hispanics. Among those taking the position that Hispanic intergenerational progress appears to stall after the second generation, Grogger and Trejo (2002), Kao and Tienda (1995; Kao 2004), and Portes and Rumbaut (2001) stand out. In light of these findings, I predicted that second generation Hispanic students as a whole will have more positive outcomes compared to students of later generations.

Given the fact that different Hispanic sub-groups have shown considerable variation in their educational achievement, explanations for these inter-group differences have had to be developed. Among other considerations at play in these cases, it is important to keep in mind the unequal situation of these Hispanic sub-groups, associated as they are with different countries and different socioeconomic and educational backgrounds, because this affects their possibilities for integration into U.S. society. For example, although Cubans may share some cultural and language similarities with Mexicans, and many with Puerto Ricans, Cubans' racial, political, and economic characteristics have afforded them advantages not enjoyed by these other groups (Gonzalez 2005). Therefore, Hispanic educational achievement or lack thereof cannot be explained with a one-size-fits-all theory. The most useful elements of different theories must be brought to bear.

Classical assimilation theory anticipates a positive linear relationship between generational status and level of educational attainment. As immigrants give up their own ways of being and assimilate into the dominant culture, they find big rewards. Even

though scholars (Kalogrides 2009; Rong and Grant 1992) find that assimilation improves educational outcomes in the Hispanic population, this classical assimilation model does not fully elucidate the situation of Mexican Americans. Nevertheless, I predict that the classical assimilation model can explain educational achievement among Cuban Americans. For instance, Cuban Americans tend to attain higher educational levels than all other U.S. Hispanic groups (Portes and Bach 1985). According to the U.S. Census (CPS 2009) twenty-five percent or more of Cuban Americans (and South Americans) have achieved a bachelor degree or more of education. The Cuban American high school graduation rate is seventy five percent, while for Mexican Americans it is fifty-three percent. The large numbers of Cubans in Florida and their educational and social capital have given rise to political and social power, which in turn has made their cultural adaptation different from that of other Hispanics (Portes 1995). Receiving financial assistance, educational programs, and aid in attaining citizenship are among some of the factors that have enabled Cubans to experience successful structural assimilation and therefore close-knit communities in which academic achievement is encouraged (Pedraza-Bailey 1985; Portes and Rumbaut 1996; Schmid 2001). Portes and Stepick (1994) also pointed out government support for Cubans as a part of the explanation of their success.

Cultural ecological theory, meanwhile, predicts a negative relationship between generation and educational achievement. According to this theory, while voluntary immigrants tend to overcome obstacles in a new host country, involuntary immigrants

who have lived in the U.S. for several generations can become cynical about upward mobility because of their negative experiences in the host country. For instance, Mexican Americans and Puerto Ricans were involuntarily included in the U.S. through conquest and colonization, thereby getting excluded from structural assimilation (Ogbu 1987). Consequently, these involuntary immigrants distrust the major institutions in society. Moreover, researchers (Bean and Tienda 1987; Duncan, Hotz and Trejo 2006) revealed that Mexicans and Puerto Ricans display a similar general pattern compared to Cubans and other Hispanics. For this reason I hypothesize, in line with cultural ecological theory, that higher generation Mexican Americans and Puerto Ricans would be less likely to reach higher levels of educational achievement. This being the case, the statistically-demonstrated poorer educational outcomes of Puerto Ricans, along with Mexican Americans, raise questions about how likely either group can expect to assimilate into U.S. society, let alone achieve social parity with whites.

Coverage of these two Hispanic sub-groups should encourage not so much comparisons about which group has suffered more under U.S. hegemony, but act to further analysis of the different factors affecting each sub-group. Mexican Americans also include individuals who could be considered voluntary economic migrants, whose educational trajectories could be very different from that of involuntary immigrants. I therefore project that second generations of this group of voluntary immigrant Mexican Americans will outperform its third generation. This hypothesis derives from immigration aspiration theory (Kao and Tienda 1995) that imputes advantage upon the second generation.

Second generation Mexican immigrant students will have the best of both worlds, including having Mexican immigrant parents who have a positive attitude about upward mobility, and having proficiency in English. That being said, voluntary and involuntary immigration, which cannot be addressed convincingly with the NELS data, may still help account for shortcomings of cultural ecological and immigrant aspiration theory. Until we know better the correspondences between voluntary and involuntary immigrant experiences and on-the-ground outcomes of family life and schooling, we can only appreciate part of the explanatory power of theories that have not fully spoken to the role of willingness within immigration.

Segmented assimilation theory indicates that each immigrant group encounters a different "mode of integration" to a society. According to this approach, upward and downward mobility hinges on the type of community into which the immigrant group is trying to assimilate (Portes and Zhou 1996). For instance, if newly arrived poor immigrants find themselves in economically depressed surroundings with few work opportunities, low quality of schools, and heightened states of violence, these factors will contribute markedly to their adaptation process (Suarez-Orozco 2000). Moreover, Puerto Ricans are more racially heterogeneous group than other Hispanic groups, by which one could argue that some Puerto Ricans could be integrated into various segments of the society. While Puerto Ricans' racially diverse characteristics might enable a segmented assimilation experience, this and other possibilities need to be explored in a future study.

Recognizing the very different lived experiences of Mexican Americans and Puerto Ricans as immigrants, then, I foresee that different theoretical approaches will have better explanatory power for each group.

As stated earlier, looking at Hispanics as a single population risks overlooking so many sizeable differences among Hispanic sub-groups, that such an approach becomes virtually meaningless. Having said that, it remains a worthwhile challenge to try and identify the educational trajectories of Other Hispanics. Since this group is well represented by a cross-section of Central and South American populations, it becomes difficult to generalize about their experiences compared with rest of the Hispanic sub population. For instance, Cubans and South Americans have achieved the greatest degree of socioeconomic success in the United States, and their demographic behavior is the most likely among Hispanic sub-groups to reflect this fact (Bean and Tienda 1987). On the other hand, Central Americans are on average more socioeconomically disadvantaged and less likely to come from homes where English is spoken (Marrow 2007; Reardon and Galindo 2009), suggesting more differences between themselves and South Americans than perhaps between Cubans and South Americans. Identifying this degree of heterogeneity among Other Hispanics, then, I foresee that theoretical approaches that explain certain trends among Hispanics as a whole will also be applicable for the Other Hispanics group. The range of theoretical tools available to us for researching the many Hispanic sub-groups involved in this study can, if not conclusively discover the dominant explanatory paradigm behind Hispanic educational achievement, at least identify which

theoretical lines better account for lived educational experience in given groups, and which theoretical lines are less useful.

SUMMARY

This literature review revealed substantial scholarly concern about Hispanic educational attainment, as well as some of the limitations inherent to different theoretical approaches to understanding this educational attainment. Having identified and examined several such theories in this chapter, I then presented my guiding hypotheses and their underlying rationale. In the process of conducting this review it became patently clear that, while researchers have taken close looks at immigrant status and educational achievement, they have not made a serious commitment to analyzing all generations of different Hispanic sub-groups. This is one of many limitations found in generational studies of Hispanic classroom achievement.

Among the theories that attempt to explain educational achievement among minority groups, a handful have proven the most useful. Cultural ecological theory, for instance, indicates a negative relationship between generation and educational achievement. Classical assimilation theory, meanwhile, opposes this notion, and predicts a positive association between generation and educational achievement. Segmented assimilation theory posits that there are different segments of society available for immigrant groups; social mobility may thus lead to upward as well as downward outcomes. Immigrant aspiration theory, lastly, predicts that children of immigrants often outperform their U.S.-born classmates.

These theoretical frameworks have helped me to better conceptualize the different generational outcomes in education, and have directly shaped the research hypotheses guiding this study. Taking these theoretical contributions into account, then, I predicted that second generation Hispanic students as a whole will have more positive outcomes compared to students of later generations. I also expressed the expectation that different Hispanic sub-groups will exhibit different patterns of educational mobility across generations. In particular, I hypothesized that Mexican American students and Puerto Rican students would be most likely to follow a nonlinear educational mobility trajectory, and I predicted that third and higher generations would do less well educationally. I also predicted that linear upward educational mobility would characterize the Cuban American experience. Recognizing a high degree of heterogeneity among Other Hispanics, I anticipated that theoretical approaches that explain certain trends among Hispanics as a whole would also be applicable for the Other Hispanics group.

CHAPTER III

DATA AND METHODS

This chapter discusses the data and defines the population for the study. This study examines the generational differences in educational achievement among Hispanics and Hispanic sub-groups. The research methods that will be used to study Hispanic educational achievement across several generations are primarily quantitative. One of the study's expectations is that the research findings will clarify key educational differences among the Hispanic sub-groups, and explain why they are expressed in generationally distinct ways. In the first section the types of data collected are described. The second section describes the selection of the sample. The third section then describes the basic measurements for the criterion variable.

DATA

Data Source

Data for this study derive from the National Educational Longitudinal study of 1988, known as NELS:88. During the spring term of the 1987-1988 school year, the National Center for Education Statistics (NCES) initiated a national longitudinal study of eighth grade students attending high schools across the United States. The NELS:88 schools were selected from a universe file of approximately 40,000 public and private eighth grade schools across the United States. For the approximately 1,000 public and private schools with eighth grade that were sampled and agreed to participate in NELS:88, complete eighth grade rosters were produced for each school.

From this roster, approximately 24 students were randomly selected. The remaining students on the roster were then grouped by race and ethnicity, and an additional 2-3 Asian and Hispanic students were then selected for each school. A total of 24,599 eighth graders were surveyed in the base year of NELS:88. Many of these same students were then re-surveyed in 1990, 1992, 1994, and 2000. Depending on the year, data were also collected from parents, schools, teachers, and from extant high school and postsecondary transcripts. The nearly 25,000 students sampled in NELS:88 represent the 3,000,000 eighth graders attending schools in 1988, with the exception of Bureau of Indian Affairs (BIA) schools, special schools for students with disabilities, area vocational schools that do not enroll students directly, and schools for dependents of U.S. personnel serving overseas (NELS Report 1990).

Sample

This study will use data from NELS: 88 (The National Educational Longitudinal Study), a nationally representative, multipurpose study of the educational status of approximately 25,000 students collected by the National Center for Education Statistics (NCES). This sample supplied data on both student and parent birthplace, which allowed me to categorically isolate all first, second, third, and later generation Hispanic students. The advantage of studying all three generations of Hispanic and Hispanic sub-group students, something not possible with most other nationally representative data sets, lies in how this may reveal different dimensions of diversity within the Hispanic population.

NELS provides data for investigating family background, immigration status/generation, and ethnicity of the student respondents. While the data set covers non-Hispanic whites, blacks, Native Americans, Asians and Pacific Islanders, and

Hispanics, the current project will only address Hispanics. The NELS data set offered many crucial advantages for this project for several reasons. First, NELS oversampled Hispanic students. Second, NELS is among the few large data sets that contain detailed sub-group classifications for Hispanics. Information on Hispanic ethnicity (including Mexican/ Chicano, Puerto Rican, Cuban, Other Hispanic) is readily available in NELS. Hence, comparison of Hispanic group and generation within each group could be performed. Nevertheless, the sample sizes of some students pertaining to certain Hispanic sub-groups were small (i.e. Cubans and Puerto Ricans), especially when the samples were further divided into generations. Therefore, in some instances, the statistical power was not sufficient to make reliable statements about large apparent differences between groups.

In this project I selected data from the first stage of sampling in 1988 (NELS: 88), when the students were eighth graders. Of the 25,851 total respondents, a total of 3,154 cases were available in NELS: 88. Among them, there were 1,952 Mexican/Chicanos, 136 Cubans, 375 Puerto Ricans, and 691 "other Hispanics" (predominantly persons of Central and South American descent). The NELS:88 survey included eighth-graders, their parents, their teachers, and their school principals.

Despite some limitations, NELS data has been used by most studies focusing on educational attainment and generational difference among minority groups (Glick and White 2003; Gonzalez 2005; Kao and Tienda 1996; Taggart and Kao 2003; Yang 2005). Its use in this study will therefore enable comparisons to be made with earlier studies.

VARIABLES AND MEASUREMENTS

This section discusses key issues related to measurements of Variables. Table 3.1 contains the definitions and the source of each variable. In my analysis of the school performance of eighth graders, I took into account the potentially competing influences of generation, language background, and ethnicity, as well as factors that have repeatedly been shown to influence academic performance, such as family structure, parents' characteristics, student characteristics, and school characteristics. Respondents who answered questions "don't know" and "multiple responses" were coded as missing responses throughout the sample.

Dependent Variables

The primary focus of this study is to assess the generational differences of Hispanics and Hispanic sub-groups in educational attainment. In this analysis, school performance is the dependent variable. I measured school performance using grade point average (GPA) and standardized test scores in mathematics, science, reading, and social studies. GPA is measured on a 4.0 scale which varied from 0 to 4.0. All four standardized scores (mathematics, reading, science and social studies) used 100-point scales in 1988. These are widely recognized and used measurements of school performance. Mathematics standardized scores varied from 34 to 99 in NELS:88. Science standardized score ranged from 32 to 99 in NELS:88. Reading standardized scores ranged from 31 to 99 in 1988. Social studies standardized scores varied from 29 to 99.

Table 3.1 Description of Variables

Variable	Measurements
Dependent Variables	
GPA	Interval -Ratio (0-4.00)
Reading standardized score	Interval- Ratio (0-100)
Math standardized score	Interval- Ratio (0-100)
Science standardized score	Interval- Ratio (0-100)
Social science standardized score	Interval -Ratio (0-100)
Independent Variables	
Second generation	1=second generation, 0=otherwise
Third generation	1=third generation, 0=otherwise
Control Variables	
Number of hours homework	1=none, 2=.50 to 1.99 hours, 3=2.00-2.99 hours, 4=3.00-5.49 hours, 5=5.50-10.49 hours, 6=10.50-12.99 hours, 7=13.00-20.99 hours, 8=21.00 and more hours
How sure graduate from high school	1=very sure won't, 2=probably won't, 3=probably will, 4=very sure will
Child's educational expectation	1=won't finish high school, 2=will finish high school, 3=vocational, trade, business school after High School, 4=will attend college, 5=will finish college, 6=higher school after college.
Enrolled in bilingual education	1=enrolled, 0=otherwise
Limited English proficiency	0=student not LEP, 1=student is LEP
Father's Education	1=not finish H.S.; 2=graduated from H.S.; 3=junior college;4=college Lt 4 years; 5=graduated from college; 6=master's degree;7=Ph.D., M.D. etc.
Mother's Education	Same as above
Education Expectation	1=less than high school diploma; 2=GED; 3=high school graduation; 4=vocational, trade, business school less than 1 year; 5=vocational, trade, business school less 1-2 years; 6=vocational, trade, business school 2 years or more; 7=less than 2years of college; 8=2 or more years of college; 9=finish 2 year program; 10=finish 4-5 year program; 11=Master's degree; 12=Ph.D., M.D.
Frequency of checking homework	1=often, 2=sometimes, 3=rarely, 4=never
Re how often talks to child about school experience	1=not at all, 2=rarely, 3=occasionally, 4=regularly.
Two Parents	1=married/married like relations,0=Otherwise
Number of Siblings	0=none,1=one,2=two,3=three, 4=four, 5=five,6=six or more
Study environment scale	composite measure based on 12 indicators: (1) a specific place for study, (2) a daily newspaper, (3) a regularly received magazine, (4) an encyclopedia, (5) an atlas, (6) a dictionary, (7) a typewriter, (8) a computer, (9) more than 50 books, (10) a VCR, (11) a pocket calculator, (12) a bed room
Family Income	1=none, 2=less than $1,000, 3=$1,000-2,999, 4=$3,000-4,999, 5=$5,000-7,499, 6=$7,500-9,999, 7=$10,000-14,999, 8=$15,000-19,999, 9=$20,000-24,999, 10=$25,000-34,999, 11=$35,000-49,999, 12=$50,000-74,999, 13=$75,000-99,999, 14=$100,000-199,999, and 15=$200,000 or more.
Public school	1=Public school, 0=otherwise
Student Teacher Ratio	10=10,11=11,12=12, 29=29,30=30 and above.
%minority in school	1=1-5%,2=6-10%,3=11-20%,4=21-40%,5=41-60%,6=61-90%,7=91-100%.
Number of Hispanic teachers	0=none,1=1,2=2,3=3-5,4=6 or more
Urban (School district)	1=Urban, 0=otherwise

Independent Variables

The primary independent variable is generation. In NELS data generation can be determined because information on respondents' and parents' country of birth was collected. Dummy variables for first generation, second generation, and third generation are included with first generation as the reference category in regression analysis.

NELS contains information on the student's country of birth, his/her mother's country of birth, and his/her father's country of birth, so that the generational status of students can be determined up to three generations. I operationalized the term "first generation" to verify that both child and at least one of the child's parents were born outside of the United States. Second generation means that the child was born in the United States, but at least one parent was not. Third generation means that the child and both parents were born in the United States.

Based on these operational definitions of generation, the first generation accounted for 17.3 percent of the NELS:88 sample, the second generation accounted for 41.1 percent, and the third or higher generation accounted for 41.6 percent for all Hispanics (Figure 3.1). When broken down into sub-groups (Figure 3.2), the Mexican American first generation accounted for 14.9 percent of the sample, the second generation accounted for 36.8 percent, and the third generation accounted for 48.3 percent. Among sampled Cubans, 19.3 percent were first generation, 67.5 percent were second generation, and 13.5 percent were third generation. First generation Puerto

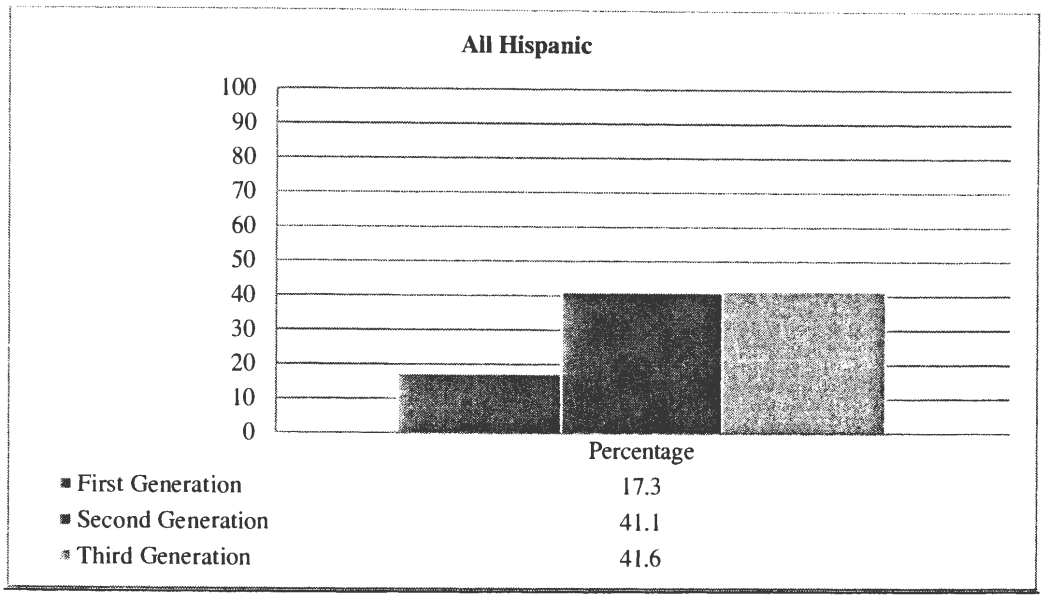


Figure 3.1 Percentage Distribution of All Hispanic Students by Generation, NELS 1988

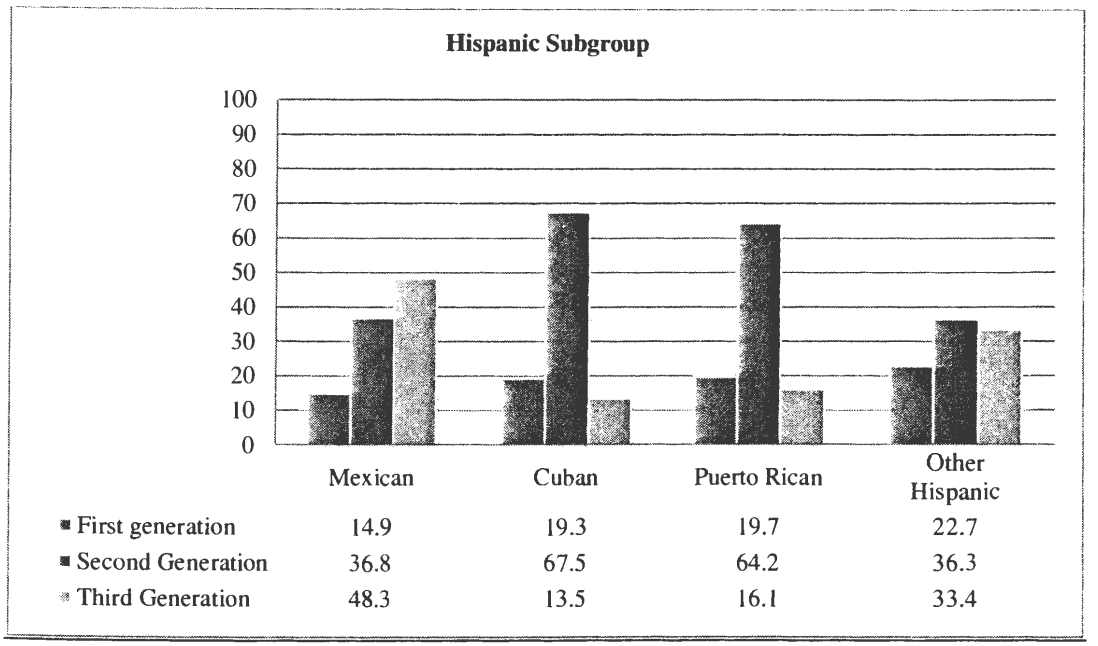


Figure 3.2 Percentage Distribution of Students by Generation and Ethnicity, NELS 1988

Ricans accounted for 19.7 percent of this sub-group, second generation ones made up 64.2 percent of it, and third generation ones accounted for 16.1 percent. Lastly, among Other Hispanics, 22.7 percent of the sample was first generation, 36.3 percent was second generation, and 33.4 percent was third generation.

Control Variables

The NELS also includes numerous variables related to school performance, of which I selected nineteen as predictor variables. These variables can be grouped into four categories: student characteristics, parental characteristics, family variables, and school characteristics (see Table 3.1). Since the bottom of Table 3.1 includes the levels of measurement and categories of these variables, only a brief explanation is necessary.

The student variables. These variables consist of the following: total number of homework hours per week, the student's education expectation, high school graduation, whether the student had limited English proficiency, and whether enrolled in bilingual education.

Total number of homework hours is an ordinal variable and measured by asking how many hours of homework the respondent does. With this variable 1 equals to 0 number of homework hours, going all the way to 8 which equals 21 hours of homework hours the student is performing. The student's educational expectation variable denotes "How far in school the student expects to get." This is an ordinal variable with higher scores reflecting more positive expectations: 1=won't finish high school; 2=will finish high school; 3= vocational, trade, after H.S.; 4=will attend college; 5=will finish college; 6=higher school after college. High school graduation

is measured by a question about students' prediction of their high school graduation: 1=very sure won't; 2=probably won't; 3=probably will; 4=very sure will. In this case higher scores reflect a more favorable attitude towards graduation.

Limited English proficiency is a nominal variable that categorized whether the student has limited English proficiency. Responses were coded 1 for yes and 0 for no in the NELS: 88 data. In this research I dummy coded this variable, as indicated in Table 3.1. Bilingual education is measured by asking whether the student enrolled in a bilingual class or did not enroll in bilingual class. Reponses were coded 1 for yes and 0 for no in the NELS: 88 data.

The parental variables. These variables contained the following: mother's and father's education level; parents' education expectation; frequency of homework checks by parents; and frequency of parental discussion with the student about school experience.

Parents' level of education was coded in seven categories as a number of years of school completed. The higher scores revealed higher education levels completed. Parent's educational expectations are ordinal measures, higher scores in which indicate higher parental educational expectations from a child. Frequency of homework checks is measured with a question "how often parents check on child's homework?" In this category higher scores denoted more (non-)involvement of a parent in child's homework. Frequency of parental discussion about a school experience is an ordinal variable and higher scores in this category reveal there to be frequent discussion about school between child and parent.

Family background variables. These variables included number of siblings, presence of parents, family income, and study environment scale. The number of siblings is measured continuously. The smaller the number of siblings, the more favorable. Scholars indicated that the presence of numerous siblings may dilute family resources and decrease parental attention devoted to each child (Goyette and Xie 1999). Family income is parent-reported yearly family income. This variable is an interval ratio variable that starts from zero income to all the way up to $200,000 or more a year family income. Presence of family is a coded dummy variable, indicating whether the family is intact with the presence of both parents. The study environment scale is a composite measure based on twelve indicators about study-related resources present in the student's home. Respondents were asked whether they had the following items at home: "an encyclopedia, a dictionary, a calculator, books, newspapers, a computer, ..." Each of the twelve indicators was dummy coded with 1 for having a given item and 0 otherwise. The twelve dummy variables were then summed to create the study environment scale. The scale has a range of 0-12 with a higher number indicating a better study environment accessible to a particular respondent.

*The school variables. The*se variables included school type, percentage of minority students in a school, student-teacher ratio, and number of Hispanic teachers. Type of school categories was collapsed into "Public School," coded 1, and "non public schools" coded 0. Percentage of minority variable is an ordinal measure and reflects the percentage of minority students in the eighth grade reported by the school. The type of school district a student attends specified urbanicity of the student's

school. In NELS:88, the original categories of this variable included urban, suburban, and rural school districts. This variable was recoded with 1 indicating urban school districts and 0 non-urban ones. Student-teacher ratio denotes the number of students to every one teacher for the school. The smaller the number of students per teacher, measured as a lower score, the more favorable. From the school questionnaire the number of Hispanic teachers variable is also included in the analysis to see whether having teachers of Hispanic ethnicity will impact students' school performance.

These variables allowed me to test the extent to which generational differences of Hispanic and Hispanic sub-group students in school performance can be attributed to generation or to some of these factors, and to compare the determinants of school performance across generations.

METHODS AND ANALYTICAL STRATEGIES

To address the key research questions, ordinary least-square (OLS) regression using SPSS 19 was employed. Descriptive and inferential statistics were employed to provide information on the effects of generation on school performance in Hispanics and Hispanic sub-groups. OLS regression was chosen because it is the most appropriate procedure to learn more about the relationship between multiple predictor variables and an interval-ratio dependent variable. All of my dependent variables are all interval-ratio variables.

Descriptive statistics such as percentage, mean, and standard deviation are used to describe the characteristics of the sample. I first compared three generations of all Hispanics in mean GPA and mean standardized test scores for mathematics, science, reading, and social studies in 1988. I also compared mean GPA and all subjects of

standardized test scores by three generations in Hispanics sub-group. I then used NELS:88 to select a series of variables as independent variables for linear regression analysis. Descriptive statistics are presented for all variables. Definitions and descriptive tabulations of variables are shown in Table 3.1.

To examine the independent effects of generation, student, parent, family, and school characteristics on school performance I used several regression models. I tested a series of statistical models for all dependent variables. For each dependent variable, I tested a multiple regression model that included dummy variables for the three generations with the first generation as the reference category and several nested models that gradually added different categories of control variables to see how much the effect of generation on school performance is mitigated by other predictors. Five regression models were applied to estimate the impact of generation and all control variables on GPA and standardized test scores. In the first step, I estimated the effects of the generation variables. In the second step, I added student variables. In the third step, I included parent variables. In the fourth step I added family variables. And in the fifth and last step I included school variables. I replicated all the models in Hispanic sub-groups on GPA and standardized test scores. Predictably, the small Cuban and Puerto Rican sample sizes did not permit me to apply a series of statistical models to these groups. I was therefore required to do some adjustment to ensure the integrity of the study. Subsequent results will be presented and discussed in chapter IV and V.

LIMITATIONS OF DATA

The NELS:88 database, while extensive, is not exhaustive. The nearly 25,000 students sampled in NELS:88 represent the 3,000,000 eighth graders attending

schools in 1988, but not students affiliated with the agencies and schools listed above (NELS 1990). Moreover, as indicated in the NELS report (1990), the data excluded students with mental handicaps, language barriers, and those with severe physical and emotional problems. Of the 10,853 excluded students, about 57 percent were excluded for mental disability, about 35 percent owing to language problems, and fewer than 8 percent because of physical or emotional disabilities (NELS 1990). Since Hispanic students with limited English proficiency were more likely to be excluded from the surveys, the exclusion factor should be taken into account before making generalizations from the NELS:88 sample to eighth graders in the nation as a whole.

Hispanic students were relatively few in number compared to the overall number of included students. When broken down into generations, some of the Hispanic sub-groups' sample sizes grew yet smaller. One should therefore exercise caution when reporting any major differences between sub-groups. Furthermore, in great contrast with the large number of Mexican Americans sampled, the sample size was small for Cubans and Puerto Ricans, something which made it impossible to employ additional models with more variables with these latter two groups. In the end, it became very difficult to give equal weight to each Hispanic sub-group.

SUMMARY

The data for this study is based on the NELS of 1988 that was conducted by NCES, and included only Hispanic eighth graders. A total of 2,542 Hispanic first, second, and third generation eighth graders were sampled for this study which included 1,952 Mexican, 136 Cuban, 375 Puerto Rican, and 691 Other Hispanic students.

This study set out to examine generational differences in educational achievement among Hispanics and Hispanic sub-groups. For this reason, I designated school performance (as measured with GPA and standardized test scores) as the dependent variable, and named generation as the key independent variable. Then, I selected nineteen variables, from a large group of variables related to school performance, to be predictor variables. These variables singled out student, family, parent, and school characteristics. Throughout, I made use of the analytical tools OLS to answer the research questions posed in this dissertation. Bearing in mind the NELS data set's limitations described above, the NELS nonetheless supplied very good materials with which to analyze generational educational variation among Hispanics and Hispanic sub-groups.

CHAPTER IV

FINDINGS: THE POOLED SAMPLE

This chapter details the study's findings regarding the first research question posed in Chapter 2: How do different generations of Hispanic students differ in school performance? Scholars note that a straight-line pattern of educational mobility would be an oversimplification. I expect that the school performance of Hispanic students as a whole will exhibit a curvilinear pattern. To answer this research question and test my hypothesis, I use the pooled sample of all Hispanic students. This chapter provides results of descriptive analysis, bivariate analysis, and multiple regression analysis.

DESCRIPTIVE ANALYSIS

Table 4.1 presents descriptive statistics of the variables used in this study for all Hispanics. This sample consisted of only 3,154 cases, and when broken down by generation, the sample size dropped to 2,542 cases. Since these statistics are straightforward, only a few explanatory notes are required. In this analysis, school performance served as the dependent variable. In terms of GPA, eighth grade Hispanic students that attended school during 1988 got 2.6 grade points on average. All four standardized scores (mathematics, reading, science, and social sciences) used 100 point scales in 1988 NELS. On average the standardized scores of all Hispanic students were 48.9 points in math, 49.1 points in reading, 49.0 points in science, and 49.3 points in social studies.

Table 4.1 Descriptive Statistics of All Hispanics, NELS 1988

Variable	Mean	SD
GPA	2.68	.81
Reading	49.17	14.91
Math	48.98	14.90
Science	49.04	15.11
Social Studies	49.31	16.00
Student Variables		
Homework hours per week	3.82	1.50
How sure H.S. graduation	3.66	.58
Enrolled in Bilingual edu	.07	.26
R's educational expectation	4.31	1.43
Ltd. English proficiency	.08	.27
Parental Variables		
Father's education level	2.43	1.74
Mother's education level	2.26	1.55
Education expectation	8.30	3.02
Check homework	1.91	0.98
Discuss school experience	3.59	.66
Family Variables		
Two parents	.63	.48
Number of siblings	2.83	1.73
Study environment scale	7.85	2.40
Family income	8.36	2.76
School Variables		
Public school	.87	.33
% minority in school	5.02	1.76
Student-Teacher Ratio	19.14	4.93
Number of Hispanic Teachers	1.97	1.62
Urban	.45	.49
N	3154	

This study also included numerous variables related to school performance Hispanic students studied on average close to 3 to 5.5 hours per week. They had a positive attitude towards high school graduation along with positive outlooks for

furthering their education. On average, eighth grade Hispanic students indicated that they expected to attend college. Only 7 percent of Hispanic students attended bilingual education classes while 8 percent of the students reported having limited English proficiency. The average educational level for both parents was high school graduate, however, father's educational level registered a bit higher than mother's. Hispanic parents, on average, expected their child to go to 2 or more years of college, and they also talked with their children about school experiences more than occasionally. On average, Hispanic students had close to 3 siblings (mean=2.8), and 63 percent of the students lived in intact families. The study environment variables included twelve indicators that were study-related resources present in the student's home. The mean score of 7.8 points indicated that Hispanic students had almost 8 of these items in their household. Mean family income for the sample ranged between $15,000 and $19,999 a year. Approximately 87 percent of the student respondents attended public schools. In those schools Hispanics attended, on average minority students made up 41-60 percent of the total student population. Approximately 45 percent of Hispanic students in this sample attended urban schools. When it came to student ratio, there were approximately 19 students per teacher in the schools Hispanic students attended. On average, the schools that participated in this study had 2 Hispanic teachers.

BIVARIATE ANALYSIS

Figure 4.1 shows the average GPA of all Hispanic students by generation. Note that the GPA of the second generation (2.73) was slightly higher than those of the first generation (2.69) and the third generation, but the differences across generations were

trivial. In addition to GPA scores, standardized test scores in mathematics, science, reading, and social studies are also important measurements of school performance.

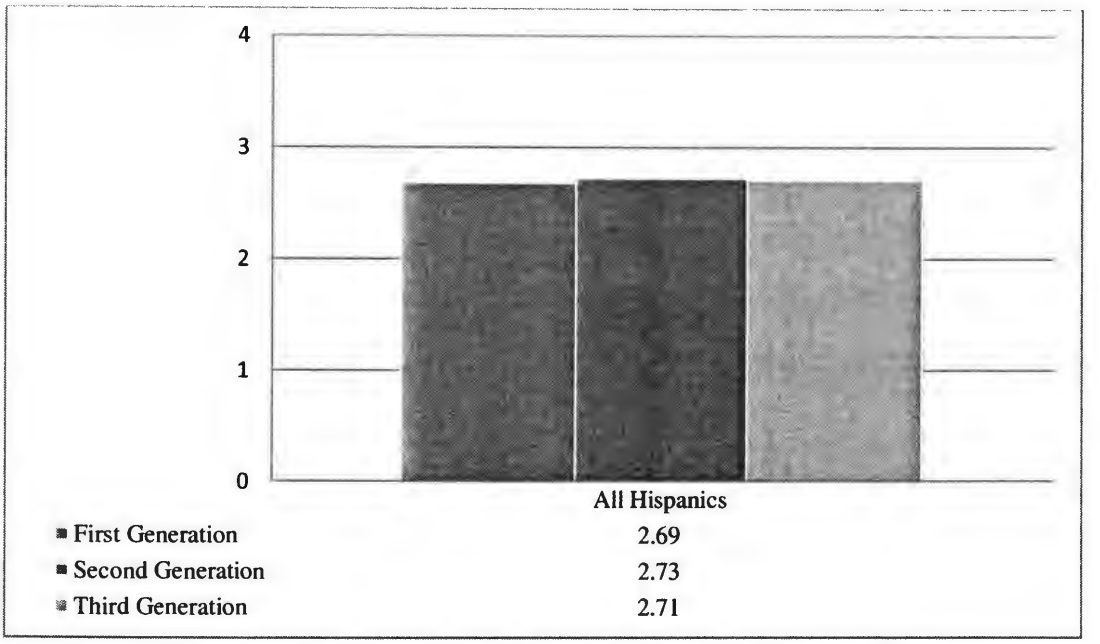


Figure 4.1 Mean GPAs of All Hispanic Students by Generation, NELS 1988

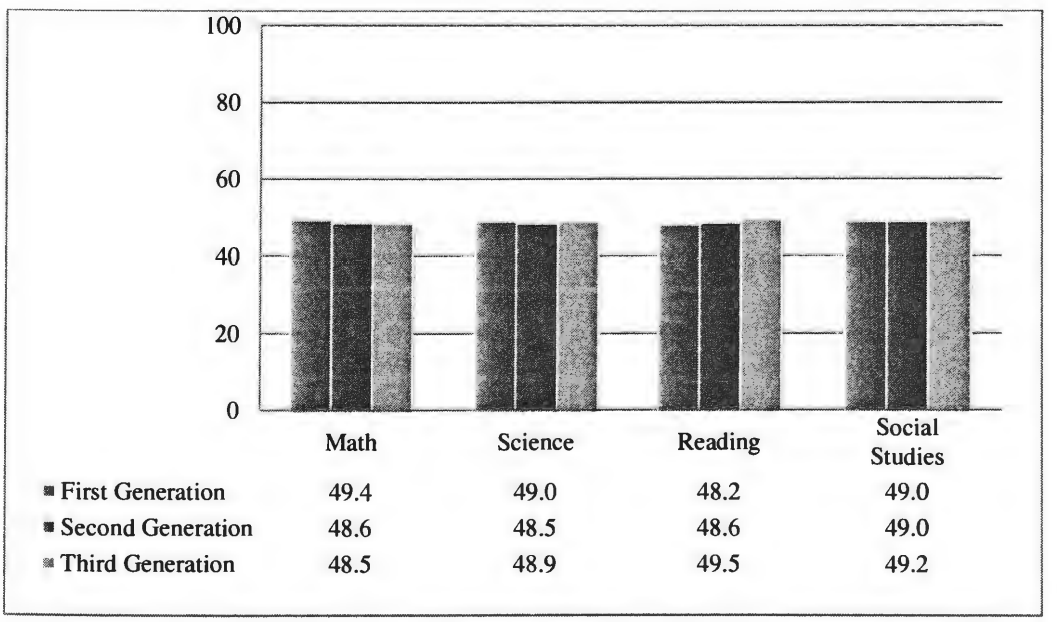


Figure 4.2 Mean Standardized Test Scores of All Hispanic by Generation, NELS 1988

Figure 4.2 illustrates the average standardized test scores of all Hispanic students by generation. There was a slight downward pattern in mathematics standardized score over generations, but the differences were very small. Generational differences in science standardized test score were trivial although the first generation (mean = 49.0) performed slightly better than other generations. In reading and social studies scores, one can see slight upward linear mobility patterns, but again only trivial differences existed. . In brief, in 1988, for all Hispanic students, there were only minor differences across generations in school performance as measured by GPA, mathematics, and science scores.

Characteristics of students, parents, families, and schools by generation may give us some hints about generational differences in school performance. Table 4.2 provides basic bivariate statistics on all variables by generation. The mean for a dummy variable can be interpreted as a proportion, or percentage if multiplied by 100. Table 4.2 exhibits the number of differences across generations in student, family, parent, and school characteristics. The student variables include total number of homework hours per week, how sure student is to graduate from high school, the student's education expectation, whether the student is enrolled in bilingual education, and whether the student is of limited English proficiency. Certain indicators, such as number of homework hours, are ordinal variables. Although in principle, median and range are appropriate for ordinal variables, means and standard deviations are often reported in practice, and they can also display subtle variation. Hence, I report them here. For the total number of homework hours, 4 means 3.00-5.49 hours. All three generations spent between 3-5 hours on homework assignments each week.

Table 4.2 Means and Standard Deviations of Predictor Variables for All Hispanic Students by Generation, NELS 1988

	Generation 1		*Generation 2*		*Generation 3+*	
Variable	Mean	SD	Mean	SD	Mean	SD
Student Variables						
Homework hours per week	3.88	1.45	3.88	1.55	3.80	1.49
How sure H.S. graduation	3.60	.61	3.68	.53	3.71	.56
Enrolled in Bilingual edu	.07	.26	.04	.20	.10	.30
R's educational expectation	4.27	1.46	4.44	1.37	4.26	1.44
Ltd. English proficiency	.17	.37	.08	.28	.03	.19
Parental Variables						
Father's education level	2.21	1.76	2.34	1.78	2.65	1.68
Mother's education level	2.02	1.57	2.20	1.55	2.46	1.53
Education expectation	8.41	2.90	8.34	3.03	8.12	3.07
Check homework	1.93	.95	1.98	1.02	1.82	.94
Discuss school experience	3.48	.75	3.52	.70	3.71	.54
Family Variables						
Two parents	.70	.45	.63	.48	.64	.47
Number of siblings	2.92	1.78	2.73	1.69	2.93	1.75
Study environment scale	7.85	2.33	7.67	2.43	7.80	2.44
Family income	8.26	2.79	8.19	2.75	8.55	2.60
School Variables						
Public school	.92	.25	.82	.37	.91	.27
% minority in school	4.90	1.81	5.33	1.66	4.99	1.68
Student-Teacher Ratio	19.12	4.78	19.25	5.26	18.60	4.51
Number of Hispanic Teachers	2.15	1.69	2.35	1.63	1.71	1.53
Urban	.53	.49	.48	.49	.37	.48
N	441		1044		1057	

The first generation and second generation spent the exact same amount of time (mean=3.8) and a little more than the third generation (mean=3.8) with small variations (SD = 1.49). Students' attitude toward high school graduation is determined on a scale from 1 to 4, with 4 indicating greatest certainty about graduation. The data show that all three generations were determined to graduate from high school, but the later the generation, the higher the degree of certainty about the graduation. Hispanic students

across all generations expected to attend college. Surprisingly, as Table 4.2 indicates, about 7 percent of the first generation students enrolled in bilingual education as compared to 4 percent of the second generation and 10 percent of the third generation. The increase in third generation enrollment in bilingual education is difficult to make sense of, but it could be explained with Hansen's (1996) "principle of third-generation interest" which indicated that the third generation values ethnic heritage in contrast to the second generation that prefers to abandon it. Not surprisingly, first generation students were more likely to be limited in English proficiency, compared with later generations.

Parental education is measured by mother's and father's highest level of education. Father's and mother's education level increased by generation, but only slightly. Parents on average had a high school diploma across all generations. Parents expected their children to do better than they did. All generations expected their children to attend 2 or more years of college. That being said, the mean of parental educational expectation score was slightly lower in higher generations. Second generation Hispanic parents, on average, were somewhat more likely to check their children's homework assignments. Third generation parents, meanwhile, were more likely to talk to their children about experiences in school than were their second generation counterparts. Earlier generations might inquire less about school experiences due to unfamiliarity with the school system and its dominant language.

Seventy percent of first generation Hispanics resided in family households, more than the other two generations, with only 64 percent of third-generation students residing in such households. The number of siblings remained similar across the generations. However, second-generation students had the smallest number of siblings (2.7) while

their first and third generation counterparts had a slightly higher number (2.9). The study environment scale is a composite measure based on twelve indicators about whether the student's family had (1) a specific place for study, (2) a daily newspaper, (3) a regularly received magazine, (4) an encyclopedia, (5) an atlas, (6) a dictionary, (7) a typewriter, (8) a computer, (9) more than 50 books, (10) a VCR, (11) a pocket calculator, and (12) own a bedroom. It varies from 0 (none of these conditions) to 12 (all of these conditions). The families of all generation students possessed somewhat similar study environments, reporting having almost 8 out of the 12 items. The average family income of all Hispanic student families was between $15,000-$19,999, for all generations. To some extent third generation had a higher income than the other generations. First and third generation students were most likely (92 percent and 91 percent, respectively) to attend a public school, while second-generation students were least likely to do so (82 percent). Similarly, first-and third-generation students were slightly less likely to attend schools with more than 50 percent of minorities than second-generation students. First- and second-generation students tended to be in a school with the highest number of students per teacher (19) while third-generation students attended a school with a lower student-teacher ratio (18). Based on the school district, the higher the generation, the lower the percentage of students that attended urban schools. While 53 percent of first generation students attended urban schools, only 37 percent of third generation students attended urban schools. First and second generation students attended schools that had somewhat higher numbers of full time Hispanic teachers (mean= 2.1; 2.3) compared to third-generation students (mean=1.7).

Although intriguing, these findings are preliminary because many other variables that can potentially affect school performance have not been controlled. To assess the independent effect of generation, holding other predictors constant, and to ascertain the similarities and differences in determinants of school performance for different generations of Hispanic students, regression analysis is required. Having provided bivariate statistics of the dependent variables used in this study, I will next describe predictor variables by generation.

MULTIPLE REGRESSION ANALYSIS

Using multiple regression analysis, I try to answer the following question: How do different generations of Hispanic students differ in school performance, after controlling for characteristics related to school performance?

Regression analysis will offer some clarification regarding whether generational differences in school performance persist after student, parental, family, and school characteristics are held constant. If they do, then generation is an independent, and perhaps important, factor responsible for differences in school performance. If they do not, generation does not have an independent or net effect on school performance. The following will begin with the net effect of generation on GPA and then continue on to the net effect of generation on scores in mathematics, science, reading, and social studies standardized tests.

GPAs

Table 4.3 presents the results of five nested OLS regression models predicting GPA of Hispanic American students. Model 1 consists of two dummy variables for

generation, with the first generation being the reference category. This model explains only .5 percent of the variation in GPA among Hispanic American students (R^2 = .005).

The constant (2.604) indicates the mean GPA of the first generation (the omitted category). The regression coefficients for both dummy variables are highly significant at the .001 level. The positive regression coefficients for the second-generation dummy variable (B = .133) and third generation dummy variable indicate that these two generations scored higher than the first generation in GPA (the average GPA of the second generation = 2.604 + .133 = 2.733; and average GPA of third generation= 2.604 + .112 = 2.71). As one could easily point out, these scores are consistent with the mean GPAs for all Hispanic students (total) reported in Figure 4.1, and the regression results confirm the nonlinear pattern in GPA across generations. This finding confirms the hypothesis that Hispanic students may experience gains between the first and second generations, but that this does not translate into gains for the next generation. Third generation GPA is higher than first generation GPA, but it is lower than the second generation. Nevertheless generational differences do not persist when other predictor variables are introduced into the regression model. The next four steps increasingly examine student variables, parental variables, family variables, and school variables against a preceding simpler model. The purpose of this strategy is to assess how the effect of generation is modified by the added variables. Model 2 adds five student characteristics to Model 1. All the added predictors are somewhat significant, and the variance explained increases substantially to 20.7 percent (R^2 = .207), indicating that these student characteristics are important predictors of GPA. Although the regression coefficients for the generation dummy variables from Model 1 have changed, they are

not significant. This pattern indicates that when the student variables are added in Model 2, the generational differences seen in Model 1 disappear.

Table 4.3 Unstandardized Regression Estimates Predicting GPA, All Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	2.604***	.890***	. 660***	.758***	.900***
	(.025)	(.094)	(.082)	(.209)	(.647)
Generation (ref. =Generation 1)					
Generation 2	.133***	.007	.004	-.029	-.027
	(.035)	(.034)	(.051)	(.055)	(.059)
Generation 3+	.112***	.044	-.007	-.056	-.054
	(.035)	(.034)	(.052)	(.056)	(.059)
Student Characteristics					
Homework hours per week		.063***	.055***	.061***	.058***
		(.009)	(.012)	(.013)	(.014)
How sure graduate from H.S		.247***	.271***	.284***	.281***
		(.027)	(.038)	(.041)	(.042)
R's education expectation		.156***	.150***	.141***	.148***
		(.011)	(.016)	(.017)	(.017)
Limited English proficiency		-.098	-.083	-.079	-.118
		(.052)	(.076)	(.081)	(.085)
Enrolled in Bilingual education		-.096	-.204**	-.195*	-.175*
		(.051)	(.074)	(.079)	(.083)
Parental Variables					
Father's education			.035*	.040**	.034*
			(.014)	(.015)	(.016)
Mother's education			-.027	-.026	-.016
			(.016)	(.017)	(.018)
Parents' education expectation			-.007	-.005	-.005
			(.006)	(.007)	(.007)
Frequency parents check homework			.001	.005	.020
			(.019)	(.020)	(.021)
Frequency parents discuss school experience			079**	.054	.044
			(.029)	(.030)	(.032)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				.031	.049
				(.048)	(.051)
Number of siblings				-.007	-.010
				(.012)	(.013)
Family study environment				.008	.008
				(.010)	(.010)
Family income				-.014	-.013
				(.009)	(.010)
School Variables					
Public school					-.023
					(.067)
% minority in school					.003
					(.015)
Student-teacher ratio					-.008
					(.004)
Number of Hispanic Teachers					.008
					(.016)
Urban					-.051
					(.042)
R^2	.005	.207	.222	.223	.232
N	3154	2560	1346	1178	1071

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

In Model 3, five parental variables are added to Model 2. These variables are all also somewhat statistically significant. Additional variables accounted for 22 percent of the variance in school performance ($R^2 = .222$), suggesting that the parental variables contribute significantly to variation in GPA. One important change takes place. Namely, for students with the same individual and parental characteristics, the third generation performs worse than the first generation in GPA, but not significantly.

Model 4 adds four family variables to Model 3. The model R^2 increases only by .001 point. None of the family variables such as residing with two parents, having a certain number of siblings, study environment, and family income have significant effects on GPA. This finding confirms previous research (Gandara 1995; Ibarra 2004) that large family size is not associated with reducing motivation and achievement. Both the second and third generations fare worse than their first generation counterparts after controlling for student, parental, and family variables, but not significantly.

Model 5 comprises the school variables on top of Model 4. The model R^2 increases a little to .232. As seen in the previous model none of the school variables is significant. The coefficients of the generation dummy variables resemble those in Model 4. Holding all relevant variables constant, the second and third generations fall behind the first generation in GPA. However, this is not statistically significant.

While Model 1 seems to indicate second generation success, when the other predictors are included in the analysis the generational effect disappears. Across the four models, in fact, generational differences are not statistically significant among Hispanic

students. Based on the regression models outcome, therefore, the research hypothesis is not supported. There is no statistically significant difference between generations.

Across all the models, the effects of other predictors are consistent and largely coincide with expectations. For instance, with higher scores in homework hours, student's education expectation, and certainty about high school graduation, GPA increases, whereas enrollment in bilingual classes reduces GPA. Father's level of education, frequency of parents talking to the respondent about school experience, and parents checking homework are positively related to GPA. Nevertheless, while mother's education and parents' educational expectation of a child are unexpectedly negatively associated with GPA, this association is insignificant. In addition, father's education and parental discussion with students about school experience were significant at the .01 level. Coltrane et al. (2004) likewise indicated in their research on Mexican low income families the importance of father's education in terms of positive results for the whole family. Students who have both parents and who have a favorable study environment have a slightly higher GPA than their counterparts. However, these predictors are not statistically significant. The effect of number of siblings concords with the conventional wisdom that number of siblings should be negatively associated with GPA. Family income, though, is negatively associated with GPA, though like all family variables, it has no significant effect on GPA. Marital status and family size do not seem to have an effect on children's school performance.

As expected, students in public schools have a lower GPA than those in non-public schools, yet this is not statistically significant. Higher scores in student-teacher ratio and attendance in urban school districts are anticipated to be negatively correlated with GPA, and the results confirm this. Percentage of minority students in school and number of Hispanic teachers is positively related to GPA. Although minority students are the numerical majority in many school districts and Hispanics probably benefit from going to school with fellow Hispanics, they probably benefit, too, from having Hispanic teachers serve as role models. However, since these variables were not statistically significant, this cannot be argued conclusively. Higher student-teacher ratio is anticipated to be negatively correlated with GPA, but the result shows otherwise.

Mathematics Standardized Test Score

The unstandardized OLS regression estimates predicting mathematics standardized test scores are shown in Table 4.4. As in the analysis of GPA, this regression analysis includes five models and the same analytical strategy of gradually adding predictors. Each more complex model fits the data better than its preceding simpler model in terms of increment in model R^2. Model 1 shows a downward linear pattern in mathematics standardized score across the three generations. The first generation scores the highest (49.734), the second generation ranks second (49.734-1.052= 48.682), and the third or higher generation scores the lowest (49.734 – 1.193= 48.541), but the generational differences are statistically insignificant, unlike those reported for GPA. It is worth bearing

in mind, though, that these results have not controlled for other predictors of mathematics score.

Adding the student variables in Model 2 does not alter the conclusion reached in Model 1. With the addition of the parental characteristics in Model 3, the family variables in Model 4, and the school variables in Model 5, the downward linear pattern continues to hold. The second and especially third generation lag behind the first generation. However, it should be emphasized that generational differences in math score are statistically insignificant at the .05 level, thereby offering no supporting evidence for my hypothesis that the second generation will do better than the first generation. The effects of student, parental, family, and school variables are expected and uniform across all models. The regression models reveal that students' homework hours per week, the students' education expectations, and father's education bear strongly upon mathematics score. The students' homework hours and education expectation are positively correlated with mathematics standardized scores. Students' attitude toward high school graduation has a positive impact on mathematics score. The students' limited English proficiency and bilingual education experience evidently have no impact on mathematics standardized test scores, but the higher the father's educational level, the higher the student's mathematics standardized test scores. Mother's education, however, is insignificant.

This implies that having low levels of education among Hispanic mothers does not impact children's math score. Unexpectedly, though, parental educational

expectation, the frequency of checking homework, and the frequency of discussing school experiences by parents are not associated with higher mathematics scores.

Science Standardized Test Score

The OLS regression models predicting science test scores are exhibited in Table 4.5. All five models explain only a small part of the variation in science standardized score. Model 5, with the highest R^2, explains 8 percent of the variation in science standardized score. Regression coefficients in all five models indicate that generation is not a significant predictor of science test score. Across all five models, generational differences in science test score are statistically insignificant. Hence, my hypothesis is not supported by the results.

Table 4.4 Unstandardized Regression Estimates Predicting Math Standardized Test Score, All Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.734***	38.406***	33.147***	32.862***	34.077***
	(.459)	(1.928)	(3.569)	(4.052)	(4.881)
Generation (ref. =Generation 1)					
Generation 2	-1.052	-.864	-.076	-.632	-.915
	(.651)	(.691)	(1.004)	(1.060)	(1.058)
Generation 3+	-1.193	-.868	-1.040	-2.029	-1.701
	(.649)	(.693)	(1.014)	(1.073)	(1.062)
Student Characteristics					
Homework hours per week		.889***	1.016***	1.034***	.650*
		(.189)	(.243)	(.257)	(.257)
How sure graduate from H.S.		.849	1.399	1.966*	1.607*
		(.554)	(.757)	(.790)	(.771)
R's education expectation		1.075***	.723*	.809*	.725*
		(.223)	(.303)	(.319)	(.314)
Limited English proficiency		.312	2.400	1.153	-.020
		(1.073)	(1.500)	(1.561)	(1.548)
Enrolled in Bilingual Education		-1.885	-1.252	-1.137	-1.944
		(1.057)	(1.439)	(1.527)	(1.501)
Parental Variables					
Father's education			1.014***	1.055***	1.058***
			(.268)	(.285)	(.281)
Mother's education			.217	.324	.600
			(.305)	(.321)	(.325)
Parents' education expectation			-.007	-.044	-.091
			(.120)	(.130)	(.129)
Frequency parents check homework			.582	.762	.654
			(.374)	(.397)	(.393)
Frequency parents discuss school experience			.518	.343	.181
			(.572)	(.592)	(.584)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				.925	1.359
				(.926)	(.915)
Number of siblings				.099	.168
				(.235)	(.231)
Family study environment				-.183	-.058
				(.182)	(.183)
Family income				-.109	-.025
				(.169)	(.175)
School Variables					
Public school					-.438
					(1.221)
% minority in school					.392
					(.263)
Student-teacher ratio					-.047
					(.080)
Number of Hispanic Teachers					-.263
					(.280)
Urban					-.148
					(.763)
R^2	.001	.031	.069	.087	.096
N	3154	2560	1348	1177	1070

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Table 4.5 Unstandardized Regression Estimates Predicting Science Standardized Test Score, All Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.623***	38.628***	33.437***	33.649***	31.427***
	(.466)	(1.970)	(3.642)	(4.152)	(5.049)
Generation (ref. =Generation 1)					
Generation 2	-1.044	-.747	-.729	-1.217	-1.446
	(.660)	(.706)	(1.044)	(1.093)	(1.103)
Generation 3+	-.703	-.258	-.579	-1.127	-.858
	(.658)	(.708)	(1.054)	(1.106)	(1.108)
Student Characteristics					
Homework hours per week		.715***	.944***	1.082***	.820**
		(.193)	(.253)	(.264)	(.268)
How sure graduate from H.S.		1.230*	1.682*	2.055*	1.922*
		(.566)	(.787)	(.814)	(.803)
R's education expectation		.818***	.695*	.928**	.856**
		(.228)	(.315)	(.329)	(.328)
Limited English proficiency		-.381	2.327	1.125	.204
		(1.096)	(1.560)	(1.609)	(1.614)
Enrolled in Bilingual Education		-1.690	-.533	-.243	-1.291
		(1.080)	(1.496)	(1.574)	(1.564)
Parental Variables					
Father's education			.762**	.774**	.787**
			(.279)	(.294)	(.293)
Mother's education			.043	.166	.518
			(.317)	(.331)	(.339)
Parents' education expectation			-.002	-.007	-.051
			(.125)	(.134)	(.134)
Frequency parents check homework			.496	.805*	.834*
			(.389)	(.409)	(.409)
Frequency parents discuss school experience			.798	.484	.305
			(.594)	(.610)	(.609)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				1.021	1.450
				(.955)	(.954)
Number of siblings				-.132	-.096
				(.242)	(.240)
Family study environment				-.099	.052
				(.188)	(.191)
Family income				-.202	-.158
				(.174)	(.182)
School Variables					
Public school					1.211
					(1.273)
% minority in school					.471
					(.274)
Student-teacher ratio					-.017
					(.083)
Number of Hispanic Teachers					-.292
					.292
Urban					-.268
					(.795)
R^2	.001	.022	.050	.071	.079
N	3154	2560	1348	1177	1070

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Across all models, several variables are consistently statistically significant at the .05 level. Number of homework hours (.715, p<.001), students' certainty of high school graduation (1.230, p<.05) and student educational expectations (.818, p<.001) are associated with a higher standardized test score. These findings confirm that student variables are important predictors of science test score.

Another result is that among family variables, as Model 4 indicates, father's education (.774, p<.01) and frequency of parental homework check (.805, P<.05) have a positive impact on science test score. A higher father's education and parental involvement with homework increases eighth graders' test scores. Family and school variables had no statistically significant effect on test scores.

Reading Standardized Test Score

Table 4.6 presents five OLS regression models predicting reading standardized score by generation. All five models have minimal explanatory power with R^2 ranging from .001 to .102. Model 5 accounts for about 10 percent of total variance in reading standardized score. As in the previous regression models, generational differences in the reading score are all insignificant, thereby providing no support for my hypothesis.

Some control variables are significant. For example, each level of increase in homework hours each week is associated with .714 points increase in reading test scores in Model 2, .894 points in Model 3, 1.025 points in Model 4, and .685 in Model 5. Eighth graders' attitude towards high school graduation is highly associated with their reading test scores. Along with high school graduation, students' educational expectation is also

significant across all five models, something consistent throughout all standardized test scores. Only in Model 2 does bilingual education have negative impact on students' reading scores at the .05 level. Those who attend bilingual classes score 2.092 less in their reading standardized test score than those who do not attend bilingual education classes, but the effect lost significance in the later models. One could interpret this to mean that students who attend these classes are lacking English proficiency in the first place and are therefore having difficulty in subjects requiring advanced verbal skills, like reading. Among the family variables father's education is consistently linked to increased standardized test scores all through the models. Parents' involvement with eighth graders' homework is also associated with higher test scores. However, as seen in previous regression analyses, family variables and school variables are not significant predictors of reading standardized score.

Table 4.6 Unstandardized Regression Estimates Predicting Reading Standardized Test Score, All Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.253***	37.519***	31.863***	31.084***	33.290***
	(.460)	(1.930)	(3.615)	(4.091)	(4.943)
Generation (ref. =Generation 1)					
Generation 2	-.564	-.417	.380	-2.250	-.364
	(.651)	(.691)	(1.021)	(1.076)	(1.080)
Generation 3+	.317	.745	1.250	.814	1.455
	(.649)	(.694)	(1.031)	(1.089)	(1.084)
Student Characteristics					
Homework hours per week		.714***	.894***	1.025***	.685**
		(.189)	(.247)	(.260)	(.262)
How sure graduate from H.S		1.180*	1.763*	2.298**	2.040**
		(.555)	(.770)	(.802)	(.787)
R's education expectation		1.071***	.811**	1.094***	.994**
		(.223)	(.309)	(.324)	(.321)
Limited English proficiency		-1.101	2.507	1.329	.267
		(1.074)	(1.526)	(1.585)	(1.580)
Enrolled in Bilingual Education		-2.092*	-2.089	-1.842	-2.780
		(1.058)	(1.464)	(1.551)	(1.532)
Parental Variables					
Father's education			.711**	.760**	.680*
			(.273)	(.289)	(.287)
Mother's education			.400	.328	.587
			(.310)	(.326)	(.332)
Parents' education expectation			-.031	-.039	-.066
			(.122)	(.132)	(.131)
Frequency parents discuss school experience			.687	.466	.210
			(.581)	(.601)	(.596)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				.558	1.045
				(.941)	(.934)
Number of siblings				-.093	-.039
				(.239)	(.235)
Family study environment				-.239	-.153
				(.185)	(.187)
Family income				-.052	-.007
				(.171)	(.178)
School Variables					
Public school					-1.563
					(1.246)
% minority in school					.417
					(.268)
Student-teacher ratio					-.036
					(.081)
Number of Hispanic Teachers					-.306
					(.286)
Urban					.449
					(.778)
R^2	.001	.031	.066	.087	.102
N	3154	2560	1348	1177	1070

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Social Studies Standardized Test Score

Table 4.7 exhibits five regression models predicting social studies standardized test score. The variances explained increase from 0 percent for Model 1 (R^2=.000) to 9 percent for Model 5 (R^2=.092). Model 5 fits the data better than previous models. In all five models, social studies standardized test score does not significantly differ across generations either before or after the addition of control variables. Thus, the evidence fails to support my hypothesis.

As shown in Table 4.7, number of homework hours, the eighth grader's high school graduation expectation, educational expectation, and limited English proficiency are associated with social science standardized score. Students' increase in homework hours enhances social studies standardized score from Model 1 through Model 4. Eighth graders' certainty about their high school graduation positively impacts their score across the models. Students' educational expectations increase their score. Model 2 indicates that students that have limited English proficiency score 2.696 points less in social science standardized score than those who have English proficiency. Among the parental variables, father's education and parental participation in homework have a positive effect on students' test scores. Every level increase in father's education boosted students' social studies test score by more than 1 point. Moreover, parental assistance with homework increases the test score by almost 1 point.

SENSITIVITY ANALYSIS

Since there is a big drop in the number of cases from Model 1 to Model 5 for each dependent variable, I performed a sensitivity analysis for each dependent variable based on the sample size of Model 5 to verify whether the insignificant outcomes of the generation variables remain unchanged. For GPA, while Table 4.3 shows significant generational differences in Model 1, but insignificant differences in later models, the sensitivity analysis indicates insignificant generational differences in GPA for all models including Model 1. While some minor differences appear among the effects of control variables, no unexpected outcomes are observed. For all the standardized test scores, consistent with the results presented in this chapter the sensitivity analyses reveal insignificant generational differences for all models. Overall, the sensitivity analyses reveal no significant generational differences in all indicators of school performance. Hence, changes in sample sizes across models have no bearing upon my conclusions for all Hispanic students.

Table 4.7 Unstandardized Regression Estimates Predicting Social Studies Standardized Test Score, All Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.641***	38.205***	31.158***	31.521***	30.718***
	(.493)	(2.068)	(3.880)	(4.402)	(5.378)
Generation (ref. =Generation 1)					
Generation 2	-.557	-.281	.724	.439	.263
	(.699)	(.741)	(1.097)	(1.158)	(1.175)
Generation 3+	-.418	-.475	-.255	-.803	-.206
	(.697)	(.743)	(1.108)	(1.172)	(1.179)
Student Characteristics					
Homework hours per week		.516*	.667*	.699*	.386
		(.203)	(.265)	(.280)	(.285)
How sure graduate H.S.		1.328*	2.338**	2.626**	2.204**
		(.594)	(.828)	(.863)	(.855)
R's education expectation		1.073***	.699*	.917**	.819*
		(.239)	(.332)	(.349)	(.349)
Limited English proficiency		-2.696*	1.300	.089	-.686
		(1.151)	(1.640)	(1.706)	(1.719)
Enrolled in Bilingual Education		-1.405	-.886	-1.077	-2.415
		(1.134)	(1.573)	(1.669)	(1.666)
Parental Variables					
Father's education			1.181***	1.233***	1.235***
			(.293)	(.311)	(.312)
Mother's education			.134	.195	.464
			(.333)	(.351)	(.361)
Parents' education expectation			-.043	-.116	-.128
			(.131)	(.142)	(.143)
Frequency parents check homework			.897*	1.110*	1.042*
			(.409)	(.434)	(.436)
Frequency parents discuss school experience			.598	.366	.108
			(.625)	(.646)	(.648)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				-.058	.590
				(1.012)	(1.015)
Number of siblings				-.030	.084
				(.257)	(.256)
Family study environment				-.119	.005
				(.199)	(.203)
Family income				-.024	-.025
				(.184)	(.194)
School Variables					
Public school					-.360
					(1.355)
% minority in school					.348
					(.292)
Student-teacher ratio					.132
					(.089)
Number of Hispanic Teachers					-.455
					(.311)
Urban					.365
					(.847)
R^2	.000	.027	.062	.081	.092
N	3154	2560	1348	1177	1070

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

SUMMARY

This chapter analyzes whether there are generational differences in school performance among all Hispanic students. The most important and consistent finding of this chapter is that generation does not seem to play a large role in determining the school performance of Hispanic children. In the case of GPA, there appear to be significant differences before the addition of control variables. The second generation has an advantage over the first and third generations, and there is a third generation decline. This finding is consistent with my hypothesis. Nonetheless, generational differences in GPA disappear when student, parent, family, and school factors are controlled for. These results suggest that the initial generational differences in GPA are the result of differences in student, parent, family, and school variables, or that generation has no independent effect on GPA. The results of standardized test scores for mathematics, science, reading and social studies reveal no significant difference in all of these test scores across generations either before or after the control variables are introduced, indicating that generation plays no significant part in standardized test scores. These results run counter to my hypothesis and raise questions about how to explain insignificant differences in school performance among Hispanic students.

This analysis also finds a number of variables to have a significant effect on the school performance of Hispanic students. The students' own educational expectations and number of hours of studying significantly enhance school performance. On the other hand, students who attended bilingual education classes exhibited a disadvantage when it

came to reading test scores. Furthermore, students who were limited in English proficiency achieved lower social studies test scores. These results were expected, since reading and social sciences required more verbal skills. Conversely, bilingual education status and English proficiency did not have any influence on math and science scores. Among parent, family, and school variables, the father's education and parents' involvement in child's homework weighed significantly on scores across all subject areas. To sum up, student and parental variables included in the regression models are the best predictors of school performance. The remaining variables were not found to significantly increase or decrease the standardized test scores.

CHAPTER V

SUBGROUP ANALYSES

Having presented the findings regarding the Hispanic students as a group in the last chapter, this chapter reports findings for each of the four Hispanic sub-groups examined: Mexicans, Puerto Ricans, Cubans, and other Hispanics. The overall goal of this analysis is to answer the second research question of this study: How do major Hispanic sub-groups vary in their trajectories of cross-generation school performance?

I foresee that different patterns in school performance will unfold among different Hispanic sub-groups and I predict that third and later generation Mexican students and Puerto Rican students will be less likely to reach a higher level of educational achievement than their second generation counterparts. I therefore project that the first and second generations of these groups of voluntary immigrant Mexican Americans and Puerto Ricans will outperform their third generation counterparts. For Cuban Americans, on the other hand, I predict a linear upward mobility pattern in educational achievement. The sub-group designated "Other Hispanic," for its part, contains members of such diverse origins that they are likely to reflect the overall educational attainment patterns of U.S. Hispanics as a whole.

For each group, I will first provide descriptive and bivariate statistics, followed by regression analysis. Since Mexican Americans make up the largest Hispanic sub-group

the sample, the results of analysis for this group may be different from results for the remaining sub-groups.

MEXICANS

Descriptive Analysis

Table 5.1 provides descriptive analysis of Mexicans as a whole group. The total number of cases is 1,952; however, when broken down by generation this number shrunk. As presented in Table 9, the average GPA of all generations Mexican students (2.6) was similar to that of all Hispanics. Mexican standardized test scores also approach those of all Hispanics. Students spent 3 to 5.59 hours on homework assignments a week. Mexican students as a whole reported having a positive attitude towards high school graduation and attending a college. Eight percent of Mexicans enrolled in bilingual education and eight percent claimed to have limited English proficiency. On average the Mexican fathers and mothers obtained high school degrees, but compared to all Hispanics the mean score is low. Mexican parents reported that on average they expected their children to attend 2 or more years of college. Parents on average checked homework sometimes, and more than occasionally talked to their child about school experience. Mexican students had on average 3 siblings, and 64 percent of them resided in two parent families. Students reported having approximately 7 of 12 study environment indicators. Mexican students had an average household income of between $15,000 to $19,999 a year. Ninety-four percent of Mexicans attended public schools, 40 percent attended urban schools, and in those schools minority students made up 41 to 60 percent of all students. Schools attended by Mexican students had

approximately 19 students per teacher in the classroom and 2 full time Hispanic teachers in each school.

Table 5.1 Descriptive Statistics of Mexicans Students, NELS 1988

Variable	Mean	SD
GPA	2.66	.80
Reading	49.09	15.37
Math	49.04	15.42
Science	49.01	15.31
Social Science	48.83	16.04
Student Variables		
Homework hours per week	3.74	1.46
How sure H.S. graduation	3.61	.60
Enrolled in Bilingual edu	0.08	.27
R's educational expectation	4.16	1.45
Ltd. English proficiency	.08	.28
Parental Variables		
Father's education level	2.09	1.50
Mother's education level	1.96	1.33
Education expectation	8.12	3.07
Check homework	1.88	.95
Discuss school experience	3.56	.68
Family Variables		
Two parents	.64	.47
Number of siblings	3.00	1.74
Study environment scale	7.52	2.44
Family income	8.05	2.72
School Variables		
Public school	.94	.21
% minority in school	5.19	1.63
Student-Teacher Ratio	19.32	4.51
Number of Hispanic Teachers	1.96	1.63
Urban	.40	.49
N	1952	

Bivariate Analysis

Figure 5.1 presents the average GPAs of Mexican students by generation. It is worth noting that the GPA of the second generation was higher than that of the first generation (mean=2.6) and of the third generation (mean=2.7). That being said, there was only a slight drop in GPA between second and third generations.

In addition to GPA scores, standardized test scores in mathematics, science, reading, and social studies are also included as measurements of school performance. Figure 5.2 presents the average mathematics standardized test scores of Mexican students by generation. Inspecting the data for Mexican students, we observe a clear downward pattern in mathematics standardized score over generations. First-generation students scored 1.7 points higher than second generation students and 1.6 points more than their third generation counterparts. Generational differences in science standardized test score are shown in Figure 5.2. First generation Mexicans (mean = 48.8) slightly outperformed others in average sciences standardized score. The mean science standardized score of third-generation students was somewhat higher than that of second generation students. In contrast with mathematics and science scores, one can see linear upward mobility in reading scores, but the increment was small (Figure 5.2). Figure 5.2 exhibits a slight parabolic pattern in social studies scores across the three generations. Most of the patterns on school performance for Mexicans are similar to the patterns found for all Hispanics.

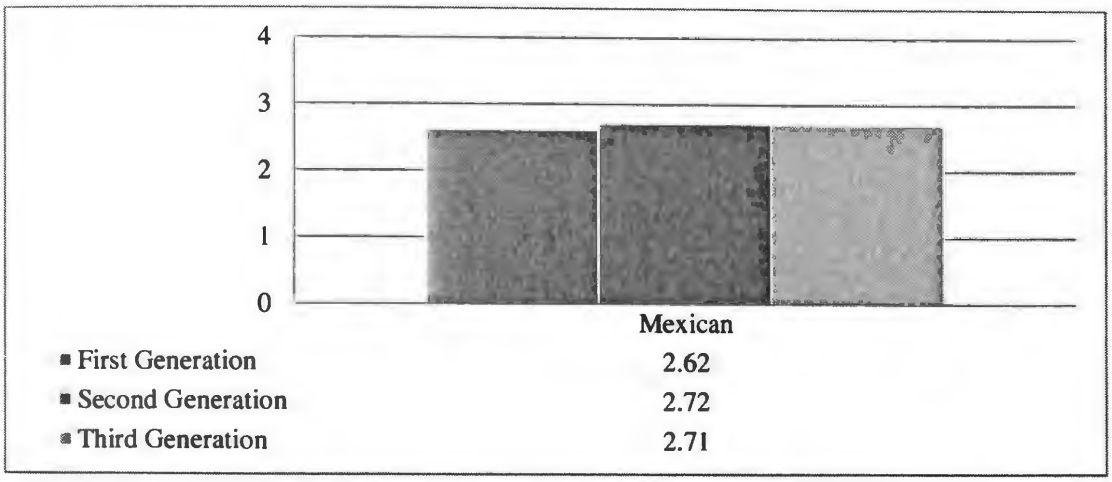


Figure 5.1 Mean GPAs of Mexican Students by Generation, NELS 1988

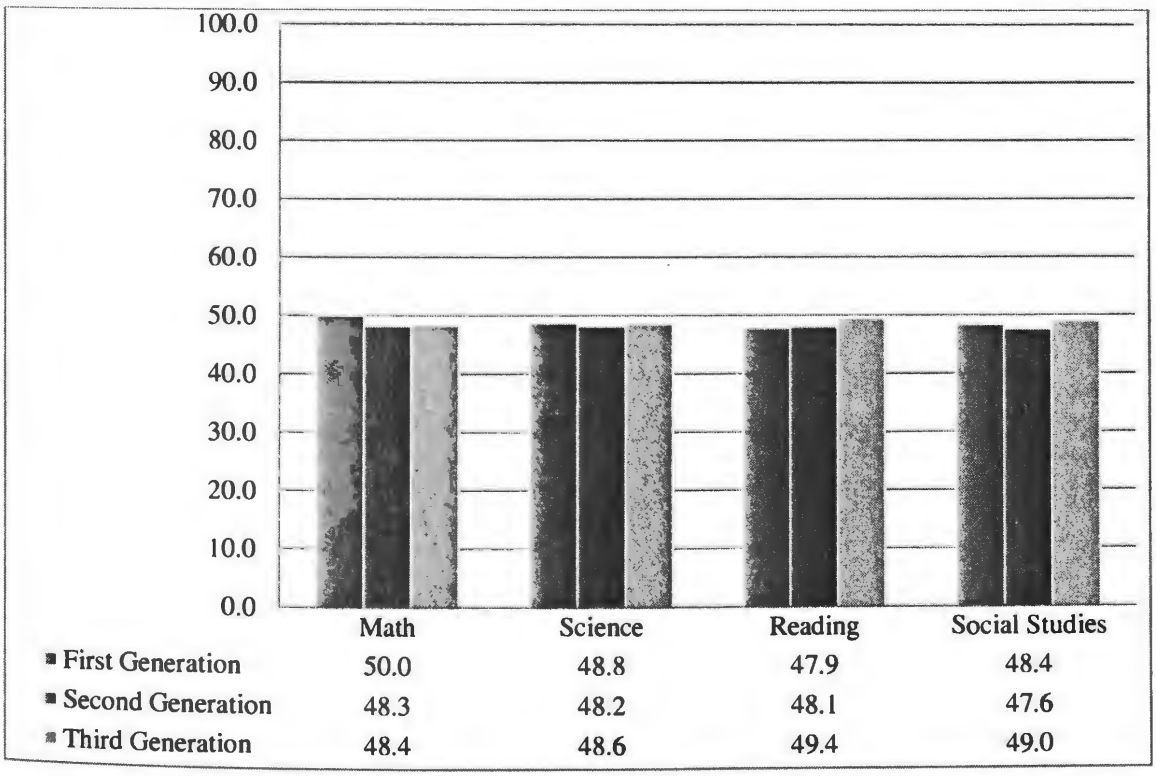


Figure 5.2 Mean Standardized Test Scores of Mexican Students by Generation, NELS 1988

In brief, in 1988, Mexican student performance revealed nonlinear patterns in GPA and mathematics and science scores across generations, but the differences among generations were relatively small. A linear upward pattern in reading and social studies scores, on the other hand, was evident for Mexican students, but the generational differences were statistically insignificant as well. It is clearly difficult to make any generalization based on these results.

These findings are preliminary because many other variables that can potentially affect school performance have not been controlled for. Having provided bivariate statistics of the dependent variables used in this study, I will next describe predictor variables by generation.

Generational differences in predictor variables may provide some clues about generational differences in school performance. Table 5.2 provides descriptive statistics of all variables by generation. The bivariate analysis exhibits the number of differences across generations in terms of student, family, parent, and school characteristics. All three generations seemed to be in the same category in this case, but the third generation spent the fewest hours on homework assignments per week. Still, among all Mexican students, later generation students were more confident about their graduation likelihood. Mexican students across all generations expected to attend college, but the second generation was most likely to do so. Surprisingly, the third generation students were most likely to enroll in bilingual education classes.

Table 5.2 Means and Standard Deviations of Predictor Variables for Mexican Students by Generation, NELS 1988

	Generation 1		*Generation 2*		*Generation 3+*	
Variable	Mean	SD	Mean	SD	Mean	SD
Student Variables						
Homework hours per week	3.88	1.54	3.80	1.43	3.73	1.44
How sure H.S. graduation	3.51	.65	3.60	.57	3.70	.53
R's education expectation	4.01	1.50	4.25	1.40	4.22	1.43
Ltd. English proficiency	.16	.37	.10	.30	.05	.21
Enrolled in Bilingual Education	.07	.25	.05	.22	.10	.30
Parental Variables						
Father's education level	1.66	1.42	1.84	1.38	2.43	1.54
Mother's education level	1.50	1.18	1.77	1.21	2.27	1.39
Education expectation	8.39	2.93	8.01	3.16	8.07	3.08
Check homework	1.92	.94	1.92	.98	1.81	.92
Discuss school experience	3.30	.81	3.46	.74	3.72	.53
Family Variables						
Two parents	.74	.43	.66	.47	.62	.48
Number of siblings	3.12	1.76	2.91	1.72	3.09	1.76
Study environment scale	7.50	2.39	7.26	2.51	7.45	2.40
Family income	7.85	2.86	7.82	2.85	8.32	2.47
School Variables						
Public school	.98	.12	.92	.25	.95	.21
% minority in school	5.19	1.50	5.37	1.57	5.40	1.39
Student-teacher ratio	19.76	4.35	19.66	4.67	18.75	4.50
Number of Hispanic Teachers	2.30	1.67	2.29	1.70	1.84	1.55
Urban	.44	.49	.39	.48	.39	.48
N	236		583		766	

Not unexpectedly, 16 percent of first generation students claimed to have limited English proficiency, compared to only 10 percent of second generation students, and 5 percent of third generation students.

Father's and mother's education level increased by generation. First generation mother and father had the lowest education, that is, less than high school. By the third

generation both parents obtained a High school degree. Parents expected their children to do better than they did. Mexicans of all generations expected their children to attend 2 or more years of college. Nevertheless, the mean of parental educational expectation score was slightly lower in the second generation. On average, parents of all generations of Mexicans indicated that they sometimes checked their children's homework assignments. First generation parents, meanwhile, were less likely to talk to their children about experiences in school than were their second and third generation counterparts. Earlier generations might inquire less about school experiences due to unfamiliarity with the school system and with its dominant language.

Seventy four percent of first generation Mexicans resided in two-parent family households, more than the other two generations, compared with only 62 percent of third-generation students. The number of siblings remained similar across the generations. However, first generation students had the largest number of siblings (3.12), while their second and third generation counterparts had a slightly lower number. The study environment scale is a composite measure based on twelve indicators about whether the student's family had from none of these (0) to all of these (12) conditions. The families of all generations' students possessed somewhat over 7 of 12 study environment indicators. The average income of Mexican student families was between $15,000-19,999, for all generations. To some extent, though, third generation income was higher than that of previous generations. Mexican students of all generations were highly likely to attend a public school. Similarly, all three generations of Mexican students were more or less likely

to attend schools that had over 50 percent minority enrollment. First and second generation students tended to be in schools with the highest number of students per teacher (19), while third generation students attended a school with a lower number of students per teacher (18). Based on the school district survey, the higher the generation, the lower the percentage of students that attended urban schools. While 44 percent of first generation students attended urban schools, only 39 percent of second and third generation students attended these schools. First and second generation students attended schools that had somewhat higher numbers of full time Hispanic teachers (mean= 2.30; 2.29) compared with the schools attended by third generation students (mean=1.84).

Multiple Regression Analysis

Regression analysis will clarify whether generational differences in school performance persist after student, parental, family, and school characteristics are held constant. This would verify that generation is an independent, and perhaps important, factor responsible for differences in school performance. I will next examine the net effect of generation on GPA and then examine the net effect of generation on scores in mathematics, science, reading, and social studies standardized tests.

GPAs. Table 5.3 presents the results of five nested OLS regression models predicting GPA of Mexican students. Model 1 consists of two dummy variables for generation, with the first generation being the reference category. This model explains only 1.1 percent of the variation in GPA among Mexican eighth graders ($R^2 = .011$). The regression coefficients for both dummy variables are highly significant at the .001 level.

The positive regression coefficients for the second-generation dummy variable (B = .188) and third generation dummy variable indicate that these two generations scored higher than the first generation in GPA (the average GPA of the second generation = 2.537 + .188 = 2.72; and average GPA of third generation= 2.537 + .174 = 2.71) at the end. This finding confirms the hypothesis that Mexican students may experience gains between the first and second generations, but that this does not translate into gains for the next generation. Third generation GPA is higher than first generation GPA, but it is lower than second generation GPA. Nevertheless, generational differences do not persist when other predictor variables are introduced into the regression model.

Table 5.3 Unstandardized Regression Estimates Predicting GPA, Mexican Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	2.537***	.635***	.767***	.696***	.632***
	(.033)	(.365)	(.227)	(.044)	(.365)
Generation (ref. =Generation 1)					
Generation 2	.188***	.057	.054	.025	.057
	(.047)	(.044)	(.068)	(.072)	(.078)
Generation 3+	.174***	.048	-.019	-.084	-.073
	(.044)	(.042)	(.068)	(.072)	(.078)
Student Characteristics					
Homework hours per week		.047***	.039*	.046*	.043*
		(.012)	(.017)	(.018)	(.020)
How sure graduate from H.S.		.199***	.209***	.242***	.249***
		(.033)	(.050)	(.052)	(.055)
R's education expectation		.168***	.172***	.164***	.176***
		(.014)	(.020)	(.021)	(.023)
Limited English proficiency		-.098	-.008	-.007	-.061
		(.124)	(.095)	(.098)	(.107)
Enrolled in Bilingual education		-.097	-.196*	-.179	-.147
		(.063)	(.088)	(.094)	(.101)
Parental Variables					
Father's education			.069***	.067**	.072**
			(.021)	(.023)	(.024)
Mother's education			-.047*	-.048	-.039
			(.023)	(.025)	(0.28)
Parents' education expectation			-.005	-.002	-.003
			(.008)	(.009)	(.009)
Frequency parents check homework			.003	.001	-.015
			(.026)	(.028)	(.030)
Frequency parents discuss school experience			.083	.068	.044
			(.036)	(.037)	(.040)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				.058	.087
				(.062)	(.067)
Number of siblings				-.012	-.013
				(.015)	(.017)
Family study environment				.007	.008
				(.012)	(.013)
Family income				-.011	-.012
				.011	(.013)
School Variables					
Public school					.139
					(.128)
% minority in school					.002
					(.022)
Student-teacher ratio					-.006
					(.006)
Number of Hispanic Teachers					.006
					(.020)
Urban					-.057
					(.055)
R^2	.011	.205	.224	.234	.252
N	1952	1567	831	728	643

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

The next four models sequentially examine student variables, parental variables, family variables, and school variables against a preceding simpler model. Model 2 adds five student characteristics to Model 1. All the added predictors are somewhat significant, and the variance explained increases substantially to 20.5 percent ($R^2 = .205$), indicating that these student characteristics are important predictors of GPA. Based on Model 2 statistics, every increase in homework hours is positively associated with higher GPA. Eighth graders' attitude towards graduation and future educational expectations also influenced GPA at the .001 level. Although the regression coefficients for the generation dummy variables from Model 1 have changed, they are not significant. This pattern indicates that when the control variables are added in Model 2, the generational differences seen in Model 1 disappear. Therefore, generation might not be a significant predictor of school performance for Mexican students.

In Model 3, five parental variables are added to Model 2. These variables are all also somewhat statistically significant. Additional variables explained 22 percent of the variance in school performance ($R^2 = .224$). One important change takes place, namely, for students with the same individual and parental characteristics, the third generation performs worse than the first generation in GPA. However, this result is not statistically significant. In Model 3 student characteristics continue to be significant predictors. Moreover, limited English proficiency and attending bilingual classes inversely associated with students' GPA. Among parental variables father's education was associated with higher GPA at the .001 level for Mexican students. Unlike in the all Hispanic sample, though, mother's education

was negatively associated with GPA at the .05 level. Mexican parents' conversations with their children about school experience also had significant positive effects on GPA.

As new variables are added in Model 4, R^2 increases only .010 points. Again, the generation variable shows no significant effects on GPA. Among student variables, though, homework hours and students' attitude towards graduation and educational expectation shows significance at the .05 level or better. Among parental variables only father's education continues to bear significantly upon GPA.

Model 5 comprises the school variables on top of Model 4. Holding all relevant variables constant, the third generation falls behind the first generation in GPA, but this occurs in a way that is not statistically significant. None of the school variables is significant. Higher scores in student-teacher ratio, attendance in urban school districts, and being in minority dominant schools are anticipated to be negatively correlated with GPA, and the results confirm this. However, none of these predictors was statistically significant. Unexpectedly, students in public schools have a higher GPA than those in non-public schools, but this is not statistically significant, either. Having Hispanic teachers is associated with higher GPA, but neither does this variable have significant effects. The coefficients of the generation dummy variables resemble those in Model 4.

Adding the student, parental, family, and school variables suppresses the influence of generation variables in Model 1. Across all the models, with increases in scores in homework hours, student's education expectation, certainty about high school graduation, and father's level of education, the GPA increases, with a significance at least at the .05

level. Nevertheless, only in Model 3 are bilingual education and mother's education unexpectedly associated negatively with GPA. Grogger and Trejo's (2002) study on Mexican students' intergenerational progress indicated that maternal education was somewhat less important in explaining educational attainment. The same study, however, indicated family size and family income as important factors in educational achievement for Mexicans. Family income is also negatively associated with GPA, though like all family variables, it has no significant effect on GPA. Students who have both parents and who have a favorable study environment have a slightly higher GPA than their counterparts. Still, these predictors are not statistically significant.

Findings in Model 1 confirm the research hypothesis that second generation Mexican students have better school outcomes than first and third generation Mexicans do. Mexican third generation GPA is higher than first generation GPA, but it is lower than the second generation. These results concord with the immigrant optimism hypothesis that the second generation performs better than their third generation counterpart (Kao and Tienda 1995; Wojtkiewizc and Donato 1995). Grogger and Trejo (2002), in their study of Mexican Americans, likewise indicated that progress for Mexican Americans appears to stall after the second generation.

Then again, when the other predictor variables are included in the analysis these generational differences do not retain their significance. Therefore, based on Model 1, the data supports the research hypothesis that the second generation enjoys an advantage over the first generation. This advantage, however, does not carry over onto the full model,

showing a lack of support for the research hypothesis. The GPA regression results for different generations of Mexicans in Model 1 show the second generation advantage followed by a third generation stalling, that is also found among all Hispanics in Model 1.

Mathematics standardized test scores. The unstandardized OLS regression estimating mathematics standardized test scores is shown in Table 5.4. As in the previous regression model this regression included five regressions, and the same analytical strategy of gradually adding predictors is employed. Generation variables in Model 1 explained .5 percent of the variance in math scores. Model 1 shows a downward linear pattern in mathematics standardized score across the three generations. The first generation scores the highest (50.691), the second generation ranks second (50.691-2.354 = 48.337), and the third generation scores the lowest (50.691 – 2.411= 48.28). The mathematics scores indicated that first generation students do better than their second and third generation counterparts in mathematics.

Adding the student variables in Model 2 does not alter the conclusion reached in Model 1. The generation variable is inversely associated with math standardized scores. Based on Model 2 it seemed that the third generation scored .412 higher than the second generation did, but the first generation actually had the highest score. Not surprisingly, eighth graders' homework hours and educational expectation is associated with higher math scores. The second and third generations lag behind the first generation. However, the generation variable does not retain significance in Model 3, Model 4, and Model 5.

There are no significant effects of parental, family, and school variables on math scores, except that in Model 5, father's education is positively associated with math score. The regression models reveal that students' homework hours per week, the students' education expectations and, additionally in Model 3, limited English proficiency bear upon improved math scores. This means the students that spend more hours on homework and have positive attitudes toward high school graduation earn a better mathematics score. Each model explains the school performance better than the previous model, but Model 5 explains only 6 percent of variance in math standardized test score.

Table 5.4 Unstandardized Regression Estimates Predicting Math Standardized Test Score, Mexican Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	50.691***	42.847***	33.337***	39.868***	38.419***
	(.627)	(2.451)	(4.426)	(4.992)	(6.612)
Generation (ref. =Generation 1)					
Generation 2	-2.354**	-2.269**	-1.038	-1.846	-1.474
	(.894)	(.962)	(1.307)	(1.355)	(.1.383)
Generation 3+	-2.411**	-1.857*	-.827	-2.217	-1.613
	(.839)	(.914)	(1.300)	(1.361)	(.1.387)
Student Characteristics					
Homework hours per week		1.020***	1.445***	1.503***	.945**
		(.260)	(.329)	(.343)	(.351)
How sure graduate from H.S.		.162	.166	.328	.167
		(.723)	(.961)	(.985)	(.979)
R's education expectation		.718*	.719	1.025**	.856*
		(.300)	(.387)	(.401)	(.400)
Limited English proficiency		2.378	3.849*	2.636	1.278
		(1.387)	(1.822)	(1.856)	(1.883)
Enrolled in Bilingual Education		-1.688	-1.162	-.677	-1.816
		(1.371)	(1.694)	(1.779)	(1.793)
Parental Variables					
Father's education			.708	.749	1.028*
			(.410)	(.429)	(.432)
Mother's education			-.038	.056	.324
			(.449)	(.471)	(.494)
Parents' education expectation			.003	-.110	-.138
			(.151)	(.162)	(.163)
Frequency parents check homework			.487	.676	.509
			(.503)	(.524)	(.528)
Frequency parents discuss school experience			.310	-.230	-.494
			(.695)	(.704)	(.710)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				-.309	.293
				(1.164)	(1.181)
Number of siblings				.021	.243
				(.291)	(.293)
Family study environment				-.072	.058
				(.220)	(.228)
Family income				-.085	-.040
				(.212)	(.227)
School Variables					
Public school					1.297
					(2.297)
% minority in school					.078
					(.383)
Student-teacher ratio					.026
					(.114)
Number of Hispanic Teachers					-.405
					(.351)
Urban School					.475
					(.976)
R^2	.005	.023	.047	.064	.061
N	1952	1567	831	728	643

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Based on these findings it is difficult to draw conclusions, but Model 1 and Model 2 do reveal a decline in mathematics score from first to second generation Mexican students. Our hypotheses are supported by the results from these two models. That the first generation does better than the second and third generation in mathematics score provides a measure of support for Ogbu's (1987) cultural ecological model. In Suarez-Orozco's (1991) ethnographic research on Mexican students, he likewise found that Mexican immigrant children perform better in school than native born students. While Model 1 and Model 2 express general agreement with this cultural ecological approach, the full model does not conform to it. When parental, family, and school variables are included, the statistical difference across generations in mathematics score does not retain significance.

*Science standardized test score.*OLS regression models of science test scores are exhibited in Table 5.5. All five models explain only a small part of the variation in science standardized score. Across all models, several variables have regression coefficients that are consistently statistically significant at the .05 level. Model 1 shows a downward curvilinear pattern in science score, with the second generation scoring the lowest in a statistically significant way. Second generation Mexican students scored 1.952 points lower in the science standardized test than their first generation counterparts at the .05 level. The third generation made an even lower grade than the first, but this finding is insignificant.

Table 5.5 Unstandardized Regression Estimates Predicting Science Standardized Test Score, Mexican Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	50.184***	41.093***	34.284***	34.514***	27.907***
	(.623)	(2.445)	(4.436)	(4.978)	(6.607)
Generation (ref. =Generation 1)					
Generation 2	-1.952*	-1.665	-.103	-.710	-.179
	(.888)	(.959)	(1.317)	(1.362)	(1.398)
Generation 3+	-1.493	-.980	.658	-.498	-.111
	(.833)	(.912)	(1.310)	(1.391)	(1.403)
Student Characteristics					
Homework hours per week		.853***	1.250***	1.391***	.970**
		(.259)	(.331)	(.345)	(.355)
How sure graduate from H.S.		.779	.716	1.384	1.532
		(.721)	(.969)	(.999)	(.989)
R's education expectation		.665*	.712	.999**	.867*
		(.299)	(.390)	(.403)	(.404)
Limited English proficiency		1.352	3.525*	2.327	1.227
		(1.383)	(1.837)	(1.866)	(1.905)
Enrolled in Bilingual Education		-1.200	-.883	-.091	-1.658**
		(1.367)	(1.708)	(1.362)	(1.813)
Parental Variables					
Father's education			.450	.493	.673
			(.414)	(.431)	(.437)
Mother's education			-.051	.080	.365
			(.452)	(.473)	(.500)
Parents' education expectation			.075	.063	.060
			(.153)	(.162)	(.165)
Frequency parents check homework			.380	.651	.641
			(.507)	(.526)	(.534)
Frequency parents discuss school experience			.811	.275	.042
			(.701)	(.707)	(.718)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				.354	1.095
				(1.170)	(1.194)
Number of siblings				-.162	.023
				(.293)	(.297)
Family study environment				-.233	-.090
				(.221)	(.230)
Family income				-.036	.000
				(.213)	(.230)
School Variables					
Public school					2.583
					(2.295)
% minority in school					.546
					(.388)
Student-teacher ratio					.089
					(.115)
Number of Hispanic teachers					-.643
					(.355)
Urban					-.461
					(.987)
R^2	.003	.018	.043	.062	.067
N	1952	1567	831	728	643

$p \leq .05$ ** $p \leq .01$ *** $p \leq .001$ (two-tailed test)

Mexican students with more homework hours and with higher educational expectations achieved higher science standardized test scores across all five models. Findings in Model 3 show that students with limited English proficiency scored higher compared to English proficient students. In the full model, Mexican students that enrolled in bilingual education scored 1.658 points lower in science score. Across all models, however, none of the family, parental, or school variables had a significant impact on science test score.

To sum up, Model 1 indicates that the first and second generations differ significantly in terms of a second generation decline in science test scores. While this confirms the prediction that later generations will do worse than the first generation, this prediction is not supported by the full model.

Table 5.6 Unstandardized Regression Estimates Predicting Reading Standardized Test Score, Mexicans Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.609***	41.132***	35.102***	36.292***	31.988***
	(.626)	(2.457)	(4.525)	(5.136)	(6.852)
Generation (ref. =Generation 1)					
Generation 2	-1.479	-1.370	.116	-.479	-.060
	(.893)	(.964)	(1.344)	(1.406)	(1.451)
Generation 3+	-.194	.435	2.560	1.229	2.341
	(.837)	(.916)	(1.337)	(.356)	(1.456)
Student Characteristics					
Homework hours per week		.773**	1.143***	1.229***	.756***
		(.260)	(.338)	(.356)	(368)
How sure graduate from H.S		.474	.289	.846	.782
		(.725)	(.988)	(1.022)	(1.027)
R's education expectation		.874**	.961*	1.319**	1.181
		(.301)	(.398)	(.416)	(.419)
Limited English proficiency		.380	3.778*	2.811	1.448
		(1.390)	(1.874)	(1.926)	(1.976)
Enrolled in Bilingual Education		-1.787	-2.173	-1.589	-2.990
		(1.374)	(1.742)	(1.846)	(1.882)
Parental Variables					
Father's education			.423	.447	.605
			(.422)	(.445)	(.454)
Mother's education			-.010	.057	.358
			(.462)	(.489)	(.519)
Parents' education expectation			.007	-.038	-.047
			(.156)	(.168)	(.171)
Frequency parents check homework			.454	.555	.497
			(.518)	(.543)	(.554)
Frequency parents discuss school experience			.716	.178	.014
			(.715)	(.730)	(.745)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				-.398	.409
				(1.208)	(1.239)
Number of siblings				-.150	.072
				(.302)	(.308)
Family study environment				.236	-.110
				(.228)	(.239)
Family income				.002	.012
				.220	(.238)
School Variables					
Public school					1.043
					(2.383)
% minority in school					.290
					(.402)
Student-teacher ratio					.106
					(.119)
Number of Hispanic Teachers					-.431
					(.368)
Urban					.816
					(1.024)
R^2	.002	.020	.051	.066	.074
N	1952	1567	831	728	643

*p ≤ .05** p ≤ .01*** p ≤ .001 (two-tailed test)

Reading standardized test score. Table 5.6 presents five OLS regression models predicting reading standardized score by generation. In other words, significant predictor variables in Model 5 account for almost 8 percent of total variance for reading standardized score. The generation variable in Model 1 is negatively associated with reading score but these results are statistically insignificant. All across the models the generation variables are largely insignificant. Each level of increase in homework hours per week is associated with an incremental increase in reading test scores, until reaching Model 5. Mexican students' educational expectations are associated with higher test scores all across the models.

Unexpectedly, though, in Model 3 a student who is limited English proficient has better reading scores than a student who is English proficient, significant at the .05 level. This status does not hold in previous or later models, though. From Model 3 through Model 5 all parental, family, and school variables proved to not impact reading score at statistically significant levels. These findings bear similarity to findings for all Hispanics. Based on these findings, since the generation variable is not significant across all models, one could conclude that the research hypothesis is not supported by the data.

Social studies standardized test score. Findings in Model 1 (Table 5.7) show that second generation social studies standardized test scores differ significantly from that of the first generation. The regression coefficient for the second generation indicated a 2.012 points decrease in social studies score compared with the first generation, significant at the .05 level. Third generation Mexican students score lower than first

generation students but this variable is not statistically significant. This result again confirms Ogbu's (1977) notion that immigrants will do better than later generations. Part of my predictions for Mexicans, therefore, was that first generation immigrants would do better than their U.S.-born counterparts. It is difficult to draw firm conclusions here, though, because the difference between generations does not persist when other variables are introduced to understand school performance. By adding the control variables, Model 5 fits the data better than previous models by explaining 6 percent of the variations in social studies score. As shown in Table 5.7, the number of homework hours all through Model 4 is associated with higher social studies standardized score. Mexican students' educational expectations increase their score in three models. Among parental variables father's education has a positive effect on student test scores. The higher the father's education, the higher the students' social studies test score, significant at the .05 level.

Table 5.7 Unstandardized Regression Estimates Predicting Social Studies Standardized Test Score, Mexicans Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.681***	40.708***	31.025***	30.880***	25.074***
	(.653)	(2.522)	(4.644)	(5.257)	(6.970)
Generation (ref. =Generation 1)					
Generation 2	-2.012*	-1.555	-.873	.547	1.099
	(.931)	(1.001)	(1.380)	(1.439)	(1.476)
Generation 3+	-.636	-.347	1.814	.772	1.649
	(.873)	(.952)	(1.373)	(1.445)	(1.481)
Student Characteristics					
Homework hours per week		.715**	1.049**	1.061**	.520
		(.271)	(.347)	(.364)	(.375)
How sure graduate H.S.		.734	1.388	1.919	1.676
		(.753)	(1.015)	(1.046)	(1.044)
R's education expectation		.797**	.700	1.005*	.858*
		(.313)	(.409)	(.426)	(.426)
Limited English proficiency		-1.030	2.685	1.845	.754
		(1.444)	(1.924)	(1.971)	(2.010)
Enrolled in Bilingual Education		-.865	-.176	-.218	-2.018
		(1.428)	(1.786)	(1.889)	(1.914)
Parental Variables					
Father's education			.736	.708	.920*
			(.433)	(.455)	(.461)
Mother's education			-.005	.056	.339
			(.474)	(.500)	(.527)
Parents' education expectation			.028	-.076	-.087
			(.160)	(.172)	(.174)
Frequency parents check homework			.717	.894	.868
			(.531)	(.556)	(.564)
Frequency parents discuss school			.754	.590	.278
Experience			(.735)	(.747)	(.758)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				-.346	.614
				(1.236)	(1.260)
Number of siblings				-.061	.227
				(.309)	(.313)
Family study environment				-.094	.122
				(.234)	(.243)
Family income				.024	.036
				(.225)	(.243)
School Variables					
Public school					1.244
					(2.424)
% minority in school					.288
					(.409)
Student-teacher ratio					.166
					(.121)
Number of Hispanic Teachers					-.294
					(.374)
Urban					.285**
					(1.042)
R^2	.003	.017	.045	.057	.067
N	1952	1567	831	728	643

*p ≤ .05** p ≤ .01*** p ≤ .001 (two-tailed test)

To sum up, the generational variable was only impactful in Model 1, at the .05 level of significance. Only a few student and parental variables, moreover, had any predictive power for social studies standardized test score. The remaining variables were not found to significantly increase or decrease the standardized test score.

Generational differences in GPA score for Mexicans followed a pattern similar to the overall Hispanic sample which showed a second generation advantage but also a third generation with stalled progress. These results confirm the research hypothesis that the second generation will perform better than the first and third generation. Much of what we see in the overall Hispanic sample, in fact, carries over to the Mexican sample, with some key differences. First generation Mexican students scored better than second generation students in math, science, and social studies scores. This conforms to the research hypothesis provided by the Cultural Ecological Model, which asserts a first generation advantage. A complex picture emerges of early immigration experiences among Mexican-origin people, and speaks to how different motivational contingencies may be at work among first and second generation people. All these findings leave open questions about how impactful generation might really be upon school achievement outcomes. Although generation showed a relationship with school performance for Mexican students, a mixed effect persisted among different measures of school performance. Because the significant effects of the generation variable were observed in Model 1, but not in the full model, no support for the hypothesis can be claimed.

Sensitivity Analysis

As in the pooled sample, the number of cases in the Mexican subsample decreases significantly or substantially from Model 1 to Model 5 for each dependent variable. For this reason, I performed sensitivity analyses for all school performance variables based on the sample sizes of Model 5's to see if the changes in the sample sizes have any significant impact on my findings and conclusions. The results of regression analyses presented in this section indicate significant generational differences in Model 1 and/or Model 2 for GPA and math, science, and social studies standardized test scores, but the sensitivity analyses found insignificant differences for all models of all dependent variables. On the whole, the sensitivity analyses confirm no significant generational differences in school performance for Mexican students—the key finding for the Mexican subsample.

CUBANS

Cubans are the third largest Hispanic group in the United States. However, the number of Cuban students in NELS 1988 is relatively small. The small size of the Cuban sample and the loss of cases preclude some of the analysis, but descriptive and bivariate statistics and regression analysis will be presented. Regression analysis is restricted to only two models because the small sample size does not permit me to apply a series of statistical models to the group.

Descriptive Analysis

Descriptive statistics (Table 5.8) shows the means and standard deviations of the variables used in the analysis. The total number of cases is 136.

The mean GPA for all Cubans was 2.7, higher, unsurprisingly, than the overall Hispanic sample. On average, all four standardized scores exceeded 50 points, making these scores higher than all Hispanics' standardized scores. Cuban students studied on average close to 3 to 5.49 hour per week. Cuban eighth graders had a positive attitude towards high school graduation along with expectations of finishing college. Only 3 percent of Cuban students enrolled in bilingual classes while 5 percent of them reported limited English proficiency. The mean educational level for Cuban parents was junior college. Cuban parents, on average, expected their child to finish a 4-5 year program and they also talked with their children about school more than occasionally. Cuban students averaged 2 siblings, and 63 percent of them resided in intact families. The study environment scale indicated that Cuban students had 9 out of 12 items in their household. Mean family income range for the sample was $25,000-34,999 a year. On average 62 percent of Cuban students attended public schools and on average 21 to 40 percent of enrollment at the schools attended was made up of minority students. Cuban classrooms had a mean of 19.7 students for every teacher, and their schools had, on average, one full time Hispanic teacher.

Table 5.8 Descriptive Statistics of Cuban Students, NELS 1988

Variable	Mean	SD
GPA	2.78	0.90
Reading	51.12	15.83
Math	51.07	15.73
Science	52.22	18.63
Social Science	53.94	18.85
Student Variables		
Homework hours per week	4.15	1.73
How sure H.S. graduation	3.72	.53
Enrolled in Bilingual edu	.03	.17
R's educational expectation	4.87	1.32
Ltd. English proficiency	.05	.23
Parental Variables		
Father's education level	3.28	2.00
Mother's education level	2.96	1.81
Education expectation	9.63	2.47
Check homework	1.96	1.07
Discuss school experience	3.69	.61
Family Variables		
Two parents	.63	.83
Number of siblings	2.26	1.55
Study environment scale	9.00	2.03
Family income	9.88	2.43
School Variables		
Public school	.62	.48
% minority in school	4.42	2.18
Student-Teacher Ratio	19.73	4.23
Number of Hispanic Teachers	1.08	1.25
Urban	.72	.44
N	136	

Bivariate Analysis

Figures 5.3 and 5.4 chart average GPA and standardized test scores in four subjects. It is worth noting that second generation GPA (mean=2.9) was higher than first and third generation GPA. The third generation GPA score was the lowest, suggesting that third generation students experienced a disadvantage. Likewise, mathematics, science, reading, and social studies scores revealed a second generation advantage over the first and third generation. Third generation overall subject scores were higher than first generation scores, but they were lower than those of the second generation. Based on these findings one could note a general second generation advantage and third generation decline, but because of small sample size, this must remain tentative.

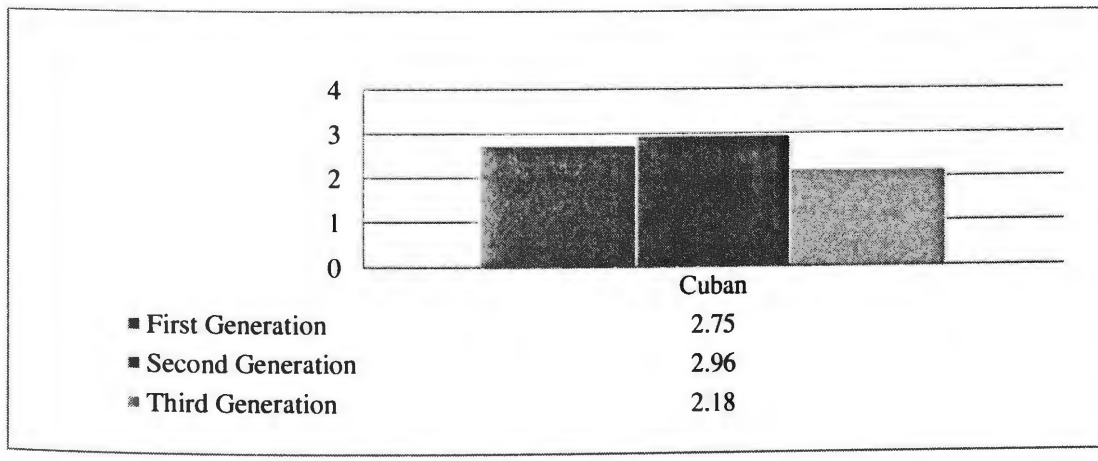
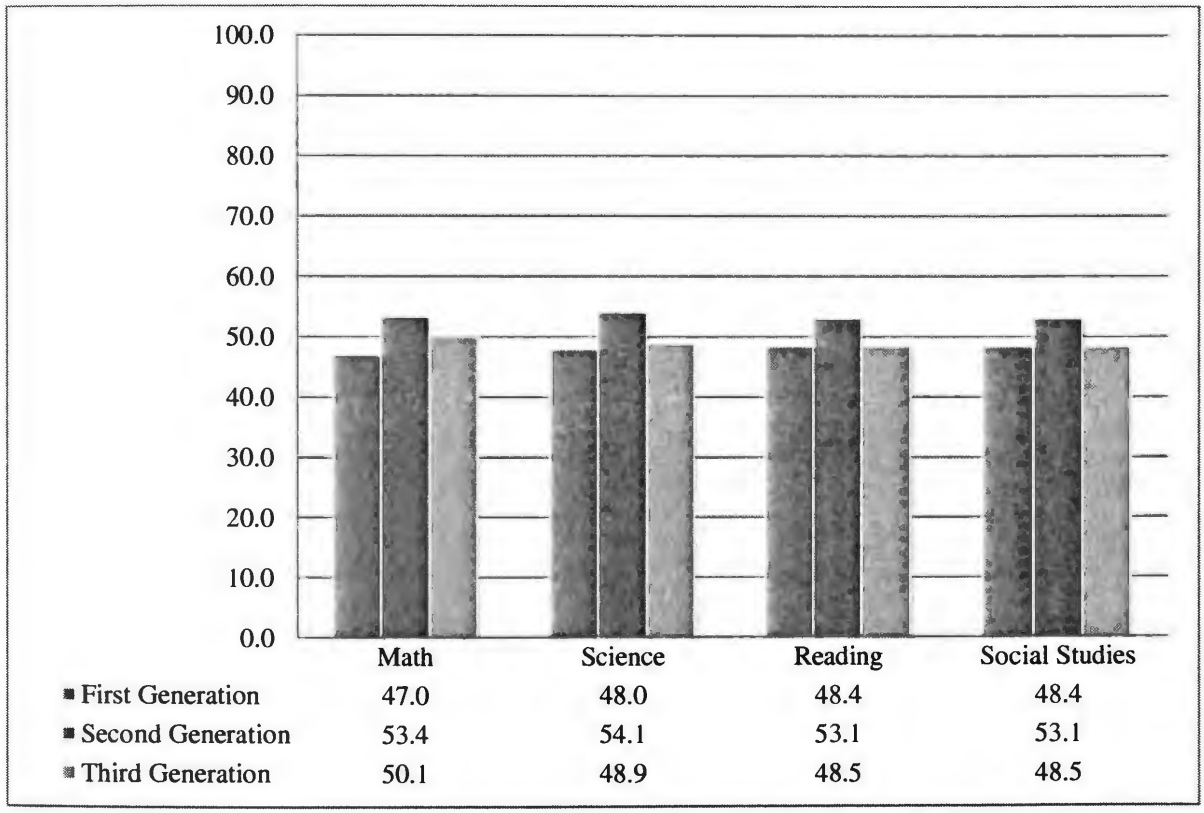


Figure 5.3 Mean GPAs of Cuban Students by Generation, NELS 1988



	Math	Science	Reading	Social Studies
First Generation	47.0	48.0	48.4	48.4
Second Generation	53.4	54.1	53.1	53.1
Third Generation	50.1	48.9	48.5	48.5

Figure 5.4 Mean Standardized Test Scores of Cuban Students by Generation, NELS 1988

Bivariate statistics in Table 5.9 contain all variables by generation for Cuban students. All three generations spent between 3 to 5 and half hours on homework assignments. Cuban students' attitude toward high school graduation indicated great certainty about graduation among the second generation, but the third generation expressed less certainty than the second and first generation. The first and the second generation expected to finish college whereas the third generation only expected to attend college. Thirteen percent of the first generation and 3 percent of second generation reported to be limited English proficient. The second and the third generation parents had junior college level education, whereas the second generation father's education was

almost a 4 year college degree. All generations expected their children to attend higher education. Second and third generation parents expected their children to finish a 4-5 year program. Parents from all generations reported that more than occasionally they talked to their children about school experience. Fifty nine percent of first generation, 67 percent of second generation, and 40 percent of third generation students resided in two-parent family households. The first generation averaged almost 3 siblings while the third generation averaged 2. The first generation had the fewest study environment items and had the lowest family income of from $15,000 to 19,999 a year, while the third generation had the most items and the highest family income of from $25,000 to 34,999. Cuban students of higher generations were less likely to attend public schools and be in urban school districts. Third generation students were less likely to attend school with more than 40 percent minorities. The first generation students tended to be in schools with the higher student-teacher ratio (21) and somewhat higher numbers of full-time Hispanic teachers, compared to the second and the third generation. One can easily see that the different generations are not represented by an equal percentage of the population, making it difficult to draw generalizeable conclusions from this data.

Table 5.9 Means and Standard Deviations of Predictor Variables for Cuban Students by Generation, NELS 1988

	Generation 1		*Generation 2*		*Generation 3+*	
Variable	Mean	SD	Mean	SD	Mean	SD
Student Variables						
Homework hours per week	4.0	1.64	4.29	1.79	4.16	1.99
How sure H.S. graduation	3.68	.56	3.84	.36	3.46	1.12
R's education expectation	4.76	1.30	5.12	1.16	3.92	1.73
Ltd. English proficiency	.13	.35	.03	.19	.00	.00
Enrolled in Bilingual education	.05	.22	.00	.00	.15	.37
Parental Variables						
Father's education level	1.81	1.27	3.70	2.02	3.50	2.01
Mother's education level	1.72	1.22	3.35	1.80	3.27	1.67
Education expectation	8.52	3.51	9.77	2.24	10.60	.84
Check homework	1.54	.59	2.24	1.13	1.21	.57
Discuss school experience	3.77	.52	3.68	.61	3.60	.82
Family Variables						
Two parents	.59	.50	.67	.47	.40	.507
Number of siblings	2.76	1.70	2.11	1.44	2.00	1.41
Study environment scale	7.94	2.71	9.17	1.66	10.06	2.21
Family income	8.64	2.80	9.81	2.39	11.00	2.23
School Variables						
Public school	.95	.21	.51	.50	.53	.516
% minority in school	5.00	2.77	4.71	2.14	3.53	1.84
Student-teacher ratio	21.36	1.76	19.40	4.92	18.73	3.95
Number of Hispanic Teachers	2.45	1.84	.55	.52	.80	.941
Urban	.86	.35	.71	.45	.53	.51
N	22		77		15	

Multiple Regression Analysis

The following multiple regression analysis addresses part of the second research question, elucidating how different generations of Cuban students differ in school performance, after controlling for student characteristics related to school performance.

Predictably, small Cuban sample sizes did not permit me to apply a full series of statistical models to these groups. I was therefore required to do some adjustment to ensure that the integrity of the study would not be compromised.

GPAs. Table 5.10 presents the results of two regression models predicting the GPA of Cuban students. Model 1 regressions indicate that generation variables are not an important factor in explaining GPA for Cuban students. This stands in contrast to the all Hispanics and Mexican students' cases which do express generational differences in GPA in Model 1 and Model 2. The very uneven sizes of the Cuban generation samples, however, might preclude a clear reading of the effect of generation upon GPA. We can observe that in both models, students' homework hours, attitudes toward high school graduation, and educational expectation was associated with higher GPA at the .05 level. My research hypothesis that expected higher generations to perform better than previous' generations is, at any rate, not supported by the data.

Table 5.10 Unstandardized Regression Estimates Predicting GPA, Cuban Students, NELS 1988

Predictor	**Model 1**	**Model 2**
Constant	2.668***	.567***
	(.132)	(.520)
Generation (ref. =Generation 1)		
Generation 2	.298	.106
	(.165)	(.152)
Generation 3+	-.482	-.118
	(.261)	(.262)
Student Characteristics		
Homework hours per week		.108*
		(.043)
How sure graduate from H.S		.305*
		(.148)
R's education expectation		.133*
		(.061)
Limited English proficiency		-.413
		(.278)
R^2	.077	.263
N	136	122

*p ≤ .05 ** p ≤ .01*** p ≤ .001 (two-tailed test)

Mathematics standardized test score. Table 5.11 presents estimates from mathematic standardized score regressions that include the possible effect of generation and student variables. Findings in Model 1 and Model 2 confirmed the second generation advantage compared with the first generation. The significant positive change in the second generation coefficient suggests that the second generation scored 6 points more in mathematics score compared to the first generation. The research hypothesis predicted that an increase in generation would result in improved school performance. These findings do

not support my hypothesis, however, and I am unable to conclude that Cubans experience straight line progress in their classroom performance.

All the coefficients of student variables had no significant effect upon mathematics standardized scores.

Table 5.11 Unstandardized Regression Estimates Predicting Math Standardized Test Score, Cuban Students, NELS 1988

Predictor	**Model 1**	**Model 2**
Constant	47.296***	21.358***
	(2.352)	(9.961)
Generation (ref. =Generation 1)		
Generation 2	6.122*	6.283*
	(2.948)	(2.916)
Generation 3+	2.831	4.237
	(4.665)	(5.026)
Student Characteristics		
Homework hours per week		.735
		(.828)
How sure graduate from H.S		4.469
		(2.832)
R's education expectation		1.230
		(1.174)
Limited English proficiency		-8.965
		(5.320)
R^2	.032	.152
N	136	122

*p ≤ .05 ** p ≤ .01*** p ≤ .001 (two-tailed test)

Science, reading and social studies standardized test score. The following three Tables (5.12; 5.13; 5.14) present OLS regression models of science, reading, and social studies test scores. In Table 5.12, Model 1 and Model 2 show a second generation advantage in science scores, but without statistical significance. These results, and others, should be approached cautiously because of the very small sample size. Cuban students'

homework hours, certainty towards high school graduation, and educational expectation have a positive impact on scores, although those who report limited English proficiency suffer with lower scores. Here, again, though, the coefficients signal statistical insignificance.

Much of what we see in regression analysis predicting science scores carries over into predictions of the reading and social studies scores, particularly as relating to a second generation advantage, even if statistically insignificant. Based on these findings the research hypothesis is not supported by the data.

Table 5.12 Unstandardized Regression Estimates Predicting Science Standardized Test Score, Cuban Students, NELS 1988

Predictor	**Model 1**	**Model 2**
Constant	50.041***	34.643***
	(2.809)	(12.077)
Generation (ref. =Generation 1)		
Generation 2	4.153	3.745
	(3.521)	(3.592)
Generation 3+	-1.549	-1.739
	(5.571)	(6.191)
Student Characteristics		
Homework hours per week		1.806
		(1.020)
How sure graduate from H.S		2.331
		(3.488)
R's education expectation		.755
		(1.446)
Limited English proficiency		-10.181
		(6.553)
R^2	.015	.080
N	136	122

*p ≤ .05 ** p ≤ .01*** p ≤ .001 (two-tailed test)

Table 5.13 Unstandardized Regression Estimates Predicting Reading Standardized Test Score, Cuban Students, NELS 1988

Predictor	Model 1	Model 2
Constant	48.406***	21.840***
	(2.378)	(10.111)
Generation (ref. =Generation 1)		
Generation 2	4.760	4.362
	(2.981)	(2.960)
Generation 3+	.173	1.328
	(4.717)	(5.101)
Student Characteristics		
Homework hours per week		1.002
		(.840)
How sure graduate from H.S		3.961
		(2.874)
R's education expectation		1.559
		(1.191)
Limited English proficiency		-7.384
		(5.400)
R^2	.022	.138
N	136	122

*p ≤ .05 ** p ≤ .01*** p ≤ .001 (two-tailed test)

Table 5.14 Unstandardized Regression Estimates Predicting Social Studies Standardized Test Score, Cuban Students, NELS 1988

Predictor	Model 1	Model 2
Constant	51.249***	34.643***
	(5.159)	(12.077)
Generation (ref. =Generation 1)		
Generation 2	5.159	3.870
	(3.547)	(3.536)
Generation 3+	-2.080	-1.772
Student Characteristics	(5.612)	(6.093)
Homework hours per week		1.370
		(1.004)
How sure graduate from H.S		2.636
		(3.433)
R's education expectation		.295
		(1.423)
Limited English proficiency		-11.692
		(6.450)
R^2	.024	.091
N	136	122

*p ≤ .05** p ≤ .01*** p ≤ .001 (two-tailed test)

PUERTO RICANS

Puerto Ricans are the second largest Hispanic group in the United States. A significant proportion of Puerto Ricans are blacks in terms of race. While it would be interesting to see how different generations of Puerto Rican students perform in school, the sample size of Puerto Ricans is relatively small. Hence, my multiple regression analysis is limited.

Descriptive Analysis

Table 5.15 provides a descriptive analysis of Puerto Ricans as a group. The total number of cases is 375. The GPA of Puerto Rican students of all generations, mean=2.6, is identical to that of all Hispanics. Average standardized test scores also approach those of all Hispanics. Puerto Rican students spend 3 to 5.49 hours a week on homework assignments, and as a whole report having a positive attitude towards high school graduation and attending college. Only 6 percent of students enrolled in bilingual education classes, while 8 percent of the students reported limited English proficiency. The average educational level for both parents indicated high school education, and Puerto Rican parents on average expected their children to finish 2 or more years of college. Students averaged 3 siblings and 60 percent of students resided in intact families. On average the students had 8 of the possible study environment items. The mean annual family income for the sample was $20,000-24,999. Some 78 percent of Puerto Rican students attended public schools, and 68 percent resided in urban school districts. Schools attended by Puerto Ricans had no more than 60 percent minority enrollment. The average

classroom had 17.7 students per teacher, and the schools they attended employed on average two full time Hispanic teachers.

Table 5.15 Descriptive Statistics of Puerto Rican Students, NELS 1988

Variable	Mean	SD
GPA	2.65	.79
Reading	48.62	1.49
Math	46.96	13.65
Science	47.51	14.68
Social Studies	48.67	16.00
Student Variables		
Homework hours per week	3.80	1.54
How sure H.S. graduation	3.73	.55
Enrolled in Bilingual edu	.06	.25
R's educational expectation	4.37	1.33
Ltd. English proficiency	.08	.27
Parental Variables		
Father's education level	2.57	1.79
Mother's education level	2.45	1.59
Education expectation	8.67	2.94
Check homework	2.07	1.04
Discuss school experience	3.60	.62
Family Variables		
Two parents	.60	.49
Number of siblings	2.39	1.70
Study environment scale	8.33	2.19
Family income	8.95	2.66
School Variables		
Public school	.78	.40
% minority in school	5.08	.75
Student-Teacher Ratio	17.76	5.89
Number of Hispanic Teachers	1.97	1.53
Urban	.68	.46
N	375	

Bivariate Analysis

The following figures (5.5; 5.6) present GPA, along with standardized scores of math, science, reading, and social studies subjects. Figure 5.5 displays the difference in GPA between generations among Puerto Rican students. It is worth noting that the third generation GPA score (mean=2.8) is higher than the first and second generation GPA scores. Math and science scores indicated the same pattern for Puerto Rican students in that the third generation showed higher scores. There was a small decline between the first and second generation scores, but reading and social studies test scores indicated a straight line increase. There appears to be a third generation advantage among Puerto Ricans, while the differences between the first and second generations are trivial.

Table 5.16 provides bivariate analysis on all variables based on generation. All three generations spent similar amounts of time on homework assignments, but the third generation spent the most. Puerto Rican students of the first and the second generations expected to attend college, but the third generation expected to finish college. Sixteen percent of the first generation reported limited English proficiency, and not unexpectedly, in the second and the third generation this percentage dropped. Parental education indicated that the third generation obtained the highest degree compared to the first and the second generation. Puerto Rican parents of all generations expected their children to attend 2 or more years of college. Parents of all generations were involved with their children's homework and school experience. Seventy percent of the first generation resided with intact families but this percentage declined in successive generations. Across

all generations, Puerto Rican students had an average of 2 siblings, and their households had at least 8 indicators of study environment items. Second and third generation students lived in households with an average income of $15,000 to 19,999 a year, representing a small decline from the first generation. The first generation students were more likely to attend public schools and urban district schools than later generations. Second generation students attended schools with the highest percentage of minority enrollment, reaching up to 90 percent, and the schools that had the highest number of Hispanic full time teachers. The third generation had the highest student teacher ratio (mean=18) compared with earlier generations.

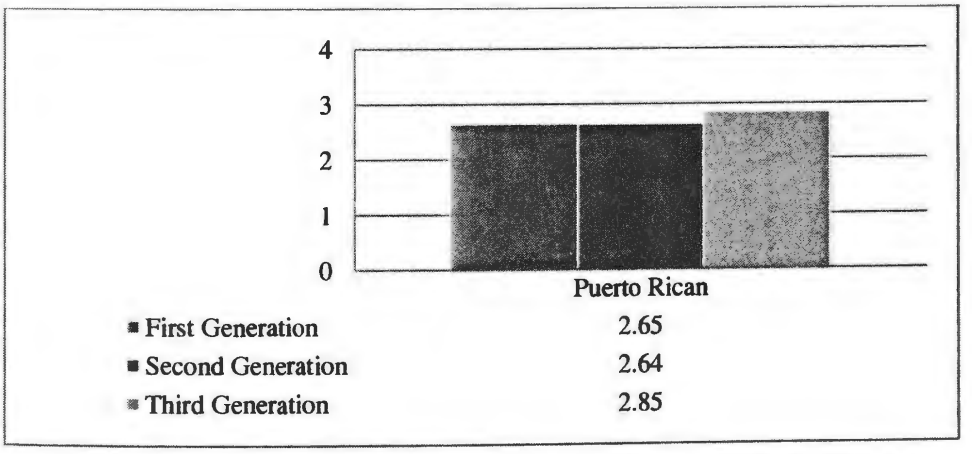


Figure 5.5 Mean GPAs of Puerto Rican Students by Generation, NELS 1988

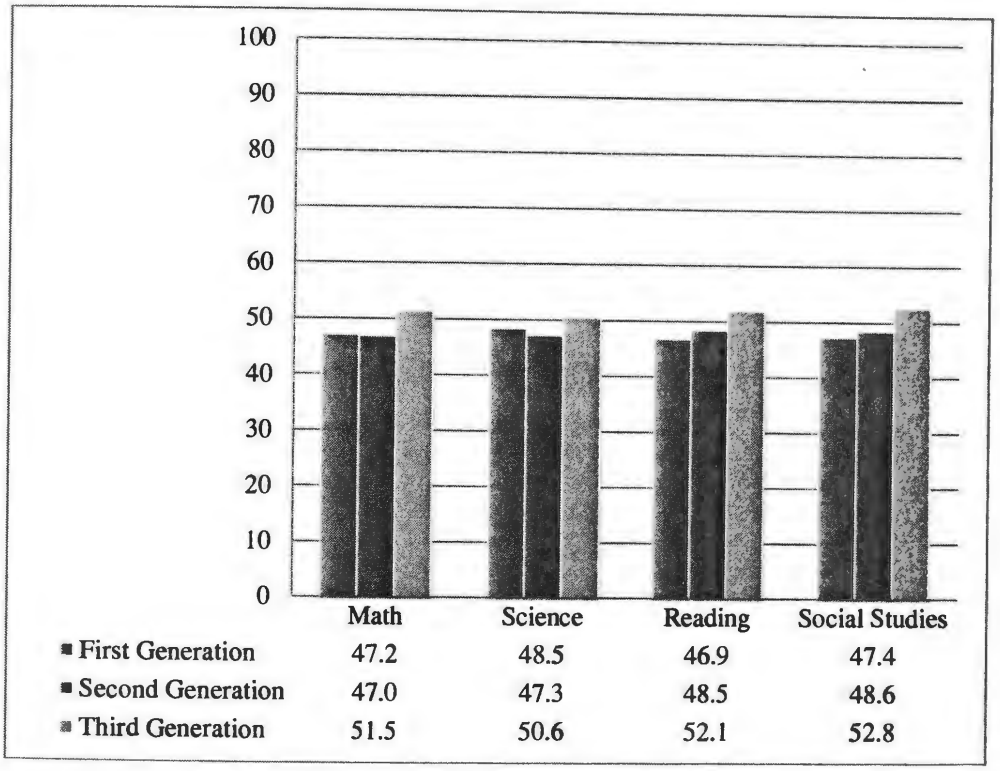


Figure 5.6 Mean Standardized Test Scores of Puerto Rican Students by Generation, NELS 1988

Table 5.16 Means and Standard Deviations of Predictor Variables for Puerto Rican Students by Generation, NELS 1988

	Generation 1		*Generation 2*		*Generation 3+*	
Variable	Mean	SD	Mean	SD	Mean	SD
Student Variables						
Homework hours per week	3.75	1.37	3.83	1.65	4.0	1.76
How sure H.S. graduation	3.60	.709	3.76	.49	3.81	.54
R's education expectation	4.21	1.34	4.35	1.25	4.88	1.09
Ltd. English proficiency	.16	.37	.07	.26	.04	.20
Enrolled in Bilingual education	.09	.29	.03	.19	.10	.30
Parental Variables						
Father's Education	2.60	1.71	2.38	1.74	3.52	1.87
Mother's Education	2.70	1.47	2.29	1.55	3.21	1.93

Table (Continued)

Education expectation	8.28	2.80	8.59	2.84	8.17	3.14
Check homework	1.90	.956	2.18	1.10	1.84	.95
Discuss school experience	3.67	.613	3.55	.66	3.65	.47
Family Variables						
Two parents	.70	.45	.50	.50	.64	.49
Number of siblings	2.72	1.94	2.28	1.61	2.81	1.82
Study environment scale	7.92	2.14	8.12	2.22	7.90	2.40
Family income	8.58	2.39	8.30	2.50	8.25	3.04
School Variables						
Public school	.94	.22	.83	.37	.68	.46
% minority in school	4.50	1.78	5.75	1.54	4.62	1.77
Student-teacher ratio	16.73	4.43	16.92	5.60	18.36	5.97
Number of Hispanic Teachers	1.65	1.62	2.67	1.42	1.28	1.21
Urban	.80	.40	.67	.47	.51	.50
N	55		179		45	

Multiple Regression Analysis

Like in the case of Cubans, the small size of the Puerto Rican sample does not permit me to apply a full series of statistical models to these groups.

GPAs. Table 5.17 presents the results of two OLS regression models predicting GPA and math standardized score of Puerto Rican students. Model 1 explains only 1 percent of the variation in GPA among Puerto Rican students. The regression coefficient for both dummy variables is insignificant. Model 2 indicates that generation variables are not significant. Although I predicted a downward linear pattern in school performance, the GPA data does not reflect this. All added student variables in Model 2 are somewhat significant. Students' number of homework hours, attitude towards high school graduation, and educational expectation had a significant positive effect on GPA.

Table 5.17 Unstandardized Regression Estimates Predicting GPA, Puerto Rican Students, NELS 1988

Predictor	Model 1	Model 2
Constant	2.597***	.919***
	(.064)	(.293)
Generation (ref. =Generation 1)		
Generation 2	.048	.008
	(.087)	(.084)
Generation 3+	.256	.126
	(.134)	(.130)
Student Characteristics		
Homework hours per week		.077**
		(.027)
How sure graduate from H.S.		.187*
		(.078)
R's education expectation		.165***
		(.033)
Limited English proficiency		-.028
		(.151)
R^2	.010	.185
N	375	332

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Mathematics standardized test score. OLS regression models on mathematics test score are exhibited in Table 5.18. Both models explain only a small part of the variation in math scores, however. According to Model 1 and Model 2, there is a third generation advantage over math test score. Being in the third generation increased the mathematics score by almost 6 points in Model 1. Moreover, the second and third generation scores were higher than first generation scores, which indicate an upward progression. Still, it is difficult to argue this conclusively since the second generation is not statistically significant. The third generation score increase, however, refutes my hypothesis since I predicted a decline

in later generations. Among student variables, students' educational expectation is positively correlated with a higher score at the .01 level.

Table 5.18 Unstandardized Regression Estimates Predicting Math Standardized Test Score, Puerto Rican Students, NELS 1988

Predictor	**Model 1**	**Model 2**
Constant	45.549***	30.697***
	(1.104)	(5.547)
Generation (ref. =Generation 1)		
Generation 2	1.453	1.221
	(1.499)	(1.599)
Generation 3+	5.985**	5.408*
	(2.305)	(2.471)
Student Characteristics		
Homework hours per week		.677
		(.508)
How sure graduate from H.S.		1.501
		(1.475)
R's education expectation		1.686**
		(.623)
Limited English proficiency		-.380
		(2.871)
R^2	.018	.073
N	375	332

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Science standardized test score. Table 5.19 presents the results of two regression models for science score. These two models explain only a small part of the variation in science test scores. Although Model 1 and Model 2 indicate that second and third generation science scores are higher than first generation scores, the differences are not statistically significant. Still, they reflect an upward trend in scores, which counters my research hypothesis. Only positive student attitude towards high school graduation proves a significant predictor for science score.

Table 5.19 Unstandardized Regression Estimates Predicting Science Standardized Test Score, Puerto Rican Students, NELS 1988

Predictor	**Model 1**	**Model 2**
Constant	46.804***	35.629***
	(1.622)	(6.150)
Generation (ref. =Generation 1)		
Generation 2	.524	.243
	(1.622)	(1.773)
Generation 3+	3.802	3.371
	(2.494)	(2.740)
Student Characteristics		
Homework hours per week		.411
		(.563)
How sure graduate from H.S.		1.593*
		(1.636)
R's education expectation		..964
		(.691)
Limited English proficiency		-2.247
		(3.183)
R^2	.006	.030
N	375	332

*p ≤ .05** p ≤ .01*** p ≤ .001 (two-tailed test)

Reading standardized test score. OLS regression models of reading test scores are exhibited in Table 5.20. Although both Model 1 and Model 2 show weak predictive power over reading standardized scores, Model 2 seems to explain more variations in these scores. Just as with test scores in mathematics and science, reading scores appear to be climbing with each successive generation. However, this is not statistically significant, and lends no support to my hypothesis. The only variable with positive significant bearing upon reading standardized score is Puerto Rican students' educational expectation.

Table 5.20 Unstandardized Regression Estimates Predicting Reading Standardized Test Score, Puerto Rican Students, NELS 1988

Predictor	Model 1	Model 2
Constant	47.615***	35.397***
	(1.218)	(6.083)
Generation (ref. =Generation 1)		
Generation 2	.957	.322
	(1.653)	(1.754)
Generation 3+	4.479	3.802
	(2.542)	(2.711)
Student Characteristics		
Homework hours per week		.531
		(.557)
How sure graduate from H.S.		1.392
		(1.618)
R's education expectation		1.366*
		(.683)
Limited English proficiency		-2.872
		(3.149)
R^2	.009	.046
N	375	332

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Social studies standardized test score. Table 5.21 presents the results for social studies standardized score. In social studies test scores, the third generation has an advantage over the first generation in Model 1, as shown by an almost 5.5 point higher score than the first generation. However, when the control variables are added in Model 2, the significance of the third generations' advantage seen in Model 1 disappears. Still, the apparent upward linear progression for Puerto Ricans does not conform to my hypothesis, with or without significance. Moreover, none of the student variables had a significant effect on social studies score.

Table 5.21 Unstandardized Regression Estimates Predicting Social Studies Standardized Test Score, Puerto Rican Students, NELS 1988

Predictor	**Model 1**	**Model 2**
Constant	47.412***	37.973***
	(1.273)	(6.581)
Generation (ref. =Generation 1)		
Generation 2	1.273	1.439
	(1.764)	(1.897)
Generation 3+	5.445*	5.395
	(2.711)	(2.932)
Student Characteristics		
Homework hours per week		-.125
		(.603)
How sure graduate from H.S.		1.555
		(1.751)
R's education expectation		1.082
		(.739)
Limited English proficiency		-4.446
		(3.406)
R^2	.011	.036
N	375	332

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

OTHER HISPANICS

Other Hispanics were included as a sampled sub-group to chart certain trends among Hispanics overall. We should take note of the high degree of heterogeneity present among people included in the Other Hispanics demographic bracket. In the following section, descriptive analysis, bivariate statistics, and then multiple regression analysis are presented.

Descriptive Analysis

Table 5.22 provides descriptive statistics of Other Hispanics as a whole. Much of what we see in the all Hispanic sample carries over into the Other Hispanics sample, with some key differences. Average GPA for Other Hispanic students, 2.7, is higher than that of all Hispanics, which is 2.6. Other Hispanic students on average expected to finish college, and on average, the parents of Other Hispanics had higher levels of education, which they obtained with junior college degrees.

5.22 Descriptive Statistics of Other Hispanic Students, NELS 1988

Variable	Mean	SD
GPA	2.75	.80
Reading	49.31	13.26
Math	49.51	13.78
Science	49.31	13.88
Social Studies	50.13	15.10
Student Variables		
Homework hours per week	4.00	1.54
How sure H.S. graduation	3.74	.52
Enrolled in Bilingual edu	.07	.27
R's educational expectation	4.61	1.38
Ltd. English proficiency	.07	.26
Parental Variables		
Father's education level	3.15	1.97
Mother's education level	2.86	1.80
Education expectation	8.36	2.94
Check homework	1.91	1.00
Discuss school experience	3.66	.62
Family Variables		
Two parents	.63	.48
Number of siblings	2.69	2.67
Study environment scale	8.27	2.27
Family income	8.60	2.81

Table (Continued)		
School Variables		
Public school	.75	.43
% minority in school	4.64	1.92
Student-Teacher Ratio	19.27	5.48
Number of Hispanic Teachers	2.17	1.63
Urban	.40	.49
N	691	

Bivariate Analysis

Figure 5.7 and Figure 5.8 show GPA and standardized scores of math, science, reading, and social studies among Other Hispanics. It is worth noting that the second generation GPA score was higher than for later generations. In terms of math and social studies standardized scores, the first generation scored slightly higher than did later generations, but the differences were trivial. This declining trend was not in evidence with science and reading scores. Further analysis could clarify whether statistically demonstrable differences in scores are in place across generations.

Table 5.23 provides basic bivariate statistics on all variables by generation. Student variables indicated that attitude towards high school graduation and amount of homework hours are similar for all generations. Other Hispanics of all generations, both students and parents, had similar college aspirations for students, but second generation students had the highest expectation of actually finishing college. As expected, limited English proficiency diminishes with each passing generation. On average for all generations, fathers and mothers obtained junior college degrees, but first generation

mothers scored the lowest (mean=2.7) in this area. Sixty four percent of the first and second generation resided in two-parent family households compared with 72 percent of the third generation. The first and the third generation students reported more study environment indicator items in their houses and lived in higher income households with from $20,000 to 34,999 a year compared with second generation students.

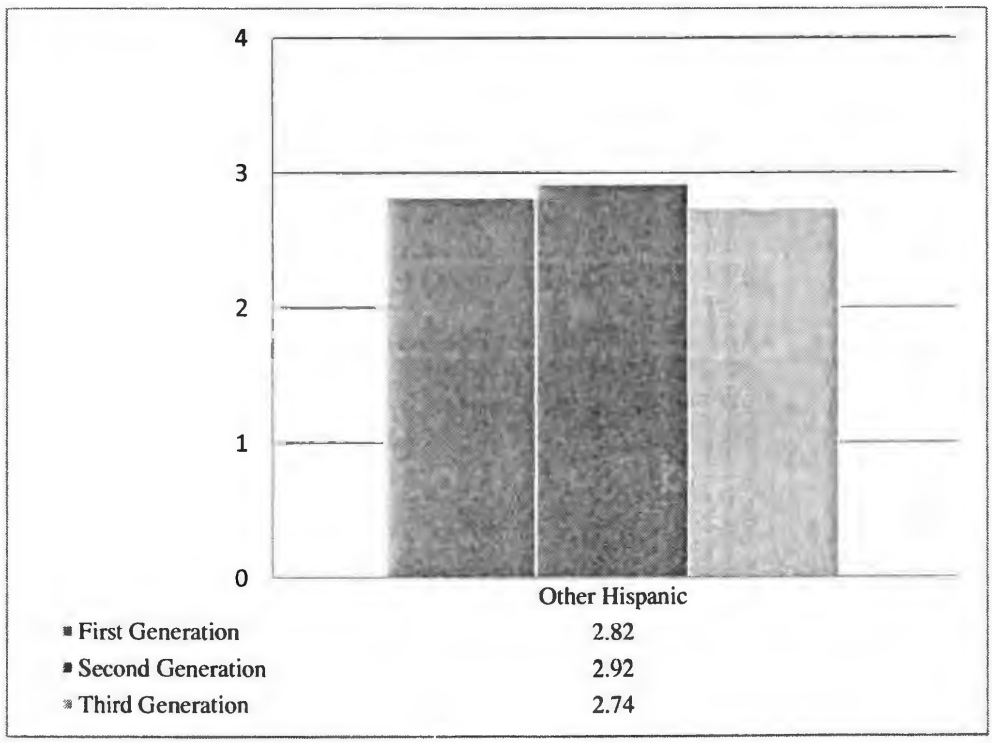


Figure 5.7 Mean GPAs of Other Hispanic Students by Generation, NELS 1988

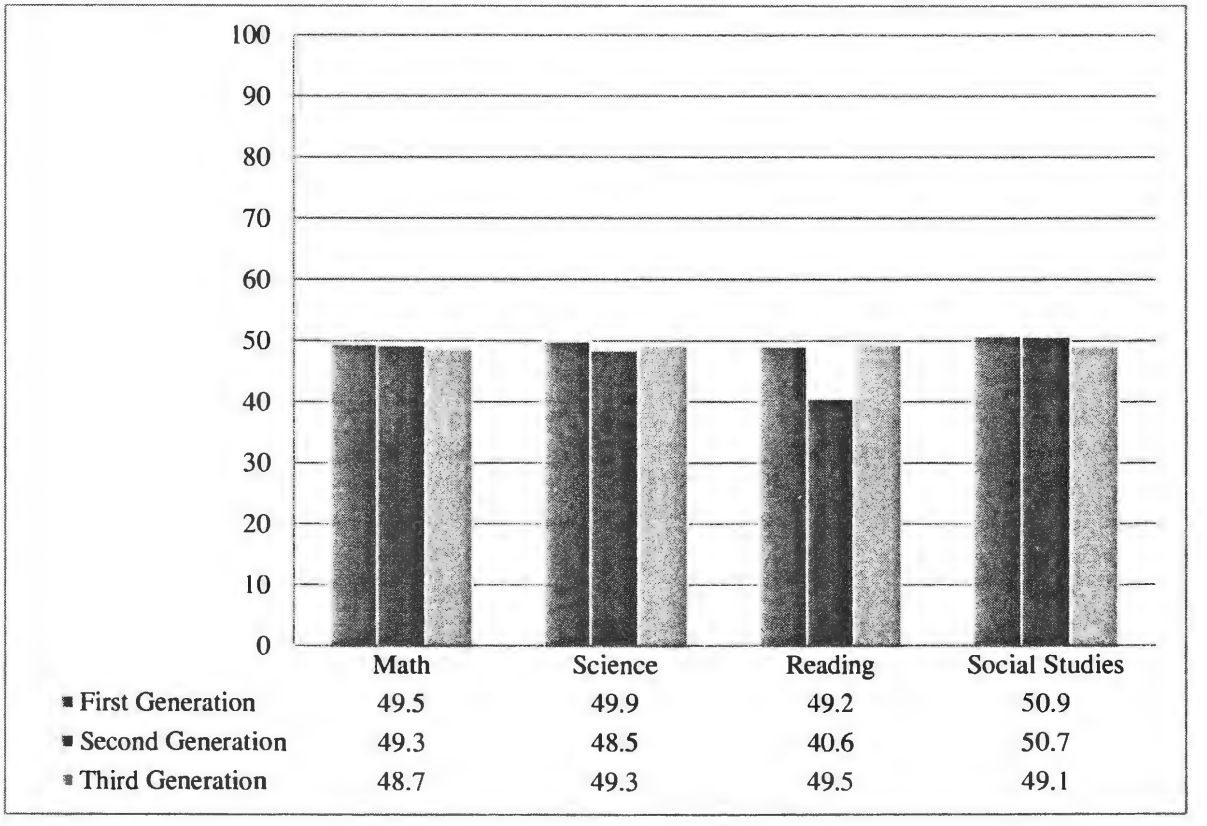


Figure 5.8 Mean Standardized Test Scores of Other Hispanic Students by Generation, NELS, 1988

Table 5.23 Means and Standard Deviations of Predictor Variables for Other Hispanic Students by Generation, NELS 1988

	Generation 1		*Generation 2*		*Generation 3+*	
Variable	Mean	SD	Mean	SD	Mean	SD
Student Variables						
Homework hours per week	3.90	1.31	4.01	1.65	3.98	1.55
How sure H.S. graduation	3.74	.43	3.76	.48	3.73	.61
R's education expectation	4.68	1.35	4.85	1.25	4.30	1.47
Ltd. English proficiency	.18	.39	.07	.26	.00	.06
Enrolled in Bilingual education	.07	.26	.05	.22	.08	.28
Parental Variables						
Father's education level	3.27	1.99	3.16	2.10	3.17	1.89
Mother's education level	2.74	1.89	2.90	1.79	2.88	1.72
Education expectation	8.49	2.82	8.51	2.88	8.13	3.07
Check homework	2.03	1.01	1.90	1.00	1.88	1.01
Discuss school experience	3.65	.65	3.63	.64	3.71	.55
Family Variables						
Two parents	.64	.48	.64	.47	.72	.44
Number of siblings	2.66	1.71	2.83	1.64	2.48	1.60
Study environment scale	8.48	2.11	7.88	2.29	8.76	2.27
Family income	8.91	2.71	8.51	2.48	9.18	2.77
School Variables						
Public school	.81	.39	.64	.48	.87	.32
% minority in school	4.54	2.02	5.11	1.75	3.88	1.88
Student-teacher ratio	18.59	5.55	20.05	6.06	18.13	4.24
Number of Hispanic Teachers	2.06	1.69	2.92	1.35	1.43	1.50
Urban	.51	.50	.48	.50	.28	.45
N	128		205		231	

Only 28 percent of third generation students attended urban schools compared with 50 percent of the first and the second generation students. The schools attended by

the second generation students had higher student teacher ratios but also had higher numbers of full time Hispanic teachers.

Multiple Regression Analysis

The following section presents the net effect of generation on GPA, and then the net effect of generation on standardized test scores in mathematics, science, reading, and social studies.

GPAs. Table 5.24 presents the OLS regression models predicting the GPA of Other Hispanic students. Model 1 regression coefficients for dummy variables are insignificant, however. The next models successively examine the effects of student, parental, family, and school variables on generational differences in GPA. Model 3 through to Model 5 predictor variables alter the results for the generation variable, showing a second generation decline in GPA for Other Hispanic students. My hypothesis is thus not confirmed by this data, since a second generation advantage was predicted. Across all models, the students' attitude towards high school graduation, educational expectation, and number of hours studying has a significant effect on GPA. None of parental, family, and school variables, meanwhile, has significant effects on GPA.

Mathematics standardized test score. OLS regression models of math test scores are exhibited in Table 5.25. The variances explained increased to 23 percent from Model 1 to Model 5. All across the models, the generation coefficients for second and third generation were negative, suggesting a second and third generation decline in math score. These coefficients were not significant, however. Since I predicted a second generation

advantage for Other Hispanic students, my research hypothesis is not confirmed by this data. All across the models certainty about high school graduation had a significant effect on mathematics test scores. Models 2 and 3 indicate that the higher the students' educational expectations, the higher their math scores. Father's education had a positive effect on students' test score at the .01 level. Parental discussion about school experience also positively associated with math scores. Unlike with other Hispanic sub-groups, when Other Hispanic students had an intact family this had significant positive effects upon math scores.

Table 5.24 Unstandardized Regression Estimates Predicting GPA, Other Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	2.758***	.178***	.216***	.144***	.688***
	(.051)	(.225)	(.394)	(.470)	(.556)
Generation (ref. =Generation 1)					
Generation 2	.012	-.096	-.213*	-.254*	-.272*
	(.076)	(.068)	(106)	(.117)	(.122)
Generation 3+	-.015	-.017	-.074	-.076	-.026
	(.074)	(.068)	(.102)	(.112)	(.120)
Student Characteristics					
Homework hours per week		.083***	.058**	.062**	.058*
		(.018)	(.024)	(.025)	(.026)
How sure graduate from H.S.		.470***	.547***	.516***	.487***
		(.062)	(.081)	(.091)	(.093)
R's education expectation		.123***	.105***	.102**	.097**
		(.022)	(.032)	(.035)	(.036)
Limited English proficiency		-.123	-.116	-.078	-.016
		(.120)	(.195)	(.225)	(.226)
Enrolled in Bilingual education		-.071	-.251	-.296	-.319
		(.104)	(.169)	(.193)	(.196)
Parental Variables					
Father's education			.029	.040	.029
			(.024)	(.027)	(.028)
Mother's education			-.028	-.014	-.011
			(.028)	(.030)	(.031)
Parents' education expectation			-.004	.002	-.006
			(.013)	(.015)	(.015)
Frequency parents check homework			.013	-.006	-.005
			(.037)	(.041)	(.043)
Frequency parents discuss school experience			.102	.043	.053
			(.066)	(.075)	(.079)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				-.015	.000
				(.008)	(.105)
Number of siblings				.008	.006
				(.027)	(.027)
Family study environment				.010	.011
				(.022)	(.022)
Family income				-.021	-.019
				(.018)	(.019)
School Variables					
Public school					-.153
					(.105)
% minority in school					-.006
					(.030)
Student-teacher ratio					-.014
					(.008)
Number of Hispanic Teachers					.026
					(.036)
Urban					.028
					(.090)
R^2	.000	.253	.289	.289	.296
N	691	589	327	284	274

*p ≤ .05 ** p ≤ .01*** p ≤ .001 (two-tailed test)

Table 5.25 Unstandardized Regression Estimates Predicting Math Standardized Test Score, Other Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	50.371***	28.292***	21.285***	18.382***	17.124***
	(.864)	(4.256)	(7.107)	(8.101)	(9.136)
Generation (ref. =Generation 1)					
Generation 2	-1.017	-1.160	-.355	-3.618	-3.327
	(1.294)	(1.310)	(1.916)	(2.027)	(2.024)
Generation 3+	-1.647	-1.880	-2.229	-3.772	-4.199
	(1.253)	(1.278)	(1.843)	(1.945)	(1.977)
Student Characteristics					
Homework hours per week		1.436	.148	-.172	-.115
		(.343)	(.426)	(.438)	(.436)
How sure graduate from		3.421**	3.553*	4.233**	3.513*
H.S.		(1.166)	(1.470)	(1.575)	(1.534)
R's education expectation		1.744***	1.202*	1.166	1.101
		(.425)	(.578)	(.608)	(.599)
Limited English proficiency		-3.829	-2.336	-7.400	-6.751
		(2.270)	(3.519)	(3.894)	(3.733)
Enrolled in Bilingual Education		-2.097	-1.060	-1.367	-.577
		(1.960)	(3.055)	(3.345)	(3.230)
Parental Variables					
Father's education			1.353**	1.442**	1.266**
			(.438)	(.465)	(.461)
Mother's education			-.203	-.400	-.032
			(.504)	(.524)	(.518)
Parents' education expectation			.061	.376	.406
			(.227)	(.255)	(.252)
Frequency parents check homework			.526	.480	.787
			(.668)	(.714)	(.712)
Frequency parents discuss school			1.529	2.639*	3.719*
experience			(1.196)	(1.301)	(1.296)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				4.237*	3.958*
				(1.783)	(1.737
Number of siblings				.860	.686
				(.461)	(.450)
Family study environment				-.711	-.668
				(.377)	(.366)
Family income				-.273	-.228
				(.305)	(.313)
School Variables					
Public school					.161
					(1.741)
% minority in school					.332
					(.496)
Student-teacher ratio					.053
					(.133)
Number of Hispanic Teachers					-.269
					(.594)
Urban					-2.715
					(1.479)
R^2	.003	.091	.144	.214	.232
N	691	589	327	284	274

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Science standardized test score. Table 5.26 presented five regression models predicting science standardized score. In contrast to the generation variable coefficient results from Model 1 through Model 3, the control variables included in Model 4 and Model 5 produced significant coefficients. Based on the full model, one could observe a second generation decline in science standardized test scores. According to Model 4 and Model 5, this decline amounted to an almost 6 points decrease in science scores among the second generation. As with the other subject test regressions, these results do not confirm my hypothesis. In Model 2 the students' certainty about high school graduation and educational expectation had a significant effect on test scores. Most of the parental, family, and school variables, though, had no significant impact on test scores. Family income, however, did produce a noteworthy result. Family income was inversely associated with test scores.

Table 5.26 Unstandardized Regression Estimates Predicting Science Standardized Test Score, Other Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.892***	45.970***	44.103***	49.105***	39.775***
	(.870)	(3.382)	(7.536)	(8.396)	(10.198)
Generation (ref. =Generation 1)					
Generation 2	-1.346	-.955	-2.667	-6.101**	-5.613*
	(1.304)	(1.349)	(2.090)	(2.212)	(2.231)
Generation 3+	-.516	-.270	-2.906	-3.818	-4.046
	(1.262)	(1.316)	(2.010)	(2.123)	(2.191)
Student Characteristics					
Homework hours per week		.317	.105	.041	.205
		(.353)	(.465)	(.478)	(.483)
How sure graduate from H.S.		-3.186**	-3.033	-2.911	-2.456
		(1.200)	(1.604)	(1.719)	(1.700)
R's education expectation		1.423**	1.153	1.116	1.848
		(.438)	(.631)	(.664)	(.664)
Limited English proficiency		-2.240	-.432	-4.648	-4.500
		(2.337)	(3.839)	(4.250)	(4.136)
Enrolled in Bilingual Education		-1.568	2.384	.798	1.556
		(2.017)	(3.332)	(3.651)	(3.579)
Parental Variables					
Father's education			.871	.583	.820
			(.477)	(.508)	(.511)
Mother's education			-.214	-.226	.206
			(.549)	(.572)	(.574)
Parents' education expectation			-.076	.144	.144
			(.248)	(.278)	(.279)
Frequency parents check homework			.572	.375	.625
			(.729)	(.779)	(.789)
Frequency parents discuss school experience			.989	1.252	2.021
			(1.305)	(1.420)	(1.437)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				1.533	1.206
				(1.947)	(1.925)
Number of siblings				.285	.136
				(.503)	(.498)
Family study environment				.011	-.014
				(.412)	(.406)
Family income				-.849**	-.764*
				(.333)	(.347)
School Variables					
Public school					1.854
					(1.929)
% minority in school					.778
					(.550)
Student-teacher ratio					.056
					(.147)
Number of Hispanic Teachers					-.801
					(.658)
Urban					-1.078
					(1.639)
R^2	.002	.058	.079	.132	.142
N	691	589	327	284	274

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test

Reading standardized test score. Table 5.27 estimates the effect of generation and other predictor variables on reading standardized score. As shown in the table, generational differences remained insignificant from Model 1 through Model 5. Therefore the generation variable had no impact on reading standardized score for Other Hispanic students. This data refutes my hypothesis of second generation advantage for Other Hispanics. The control variables displayed similar effects as shown in previous regression analysis, although in Model 4 intact family household and father's education had a significant positive impact on reading scores. Certainty about high school graduation, moreover, proved to have a consistent positive effect on reading scores across all models.

Social studies standardized test score. Table 5.28 highlights unstandardized regression coefficients of social studies score. Model 1 indicated no significant effect of generation upon test score. By adding the control variables in Model 5, however, a significant third generation decline was observed. Although I hypothesized that the second generation would exhibit an advantage, the data did not support this position. This is an unexpected finding since later generations would presumably be better equipped to achieve higher reading and social science scores due to their language advantage over the first generation. As we have seen in previous analyses, specific student variables and father's education emerged as significant predictors of school performance. Lastly, Other Hispanics were unique in that family income and Hispanic teachers were found to inversely affect test scores, at significant levels.

Table 5.27 Unstandardized Regression Estimates Predicting Reading Standardized Test Score, Other Hispanic Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	49.528***	28.036***	21.224***	18.035***	20.508***
	(.832)	(4.143)	(6.978)	(8.059)	(9.129)
Generation (ref. =Generation 1)					
Generation 2	-.830	-.475	-.146	-2.674	-2.282
	(1.246)	(1.275)	(1.878)	(2.013)	(2.010)
Generation 3+	.110	.207	-.619	-1.433	-1.033
	(1.206)	(1.224)	(1.807)	(1.932)	(1.973)
Student Characteristics					
Homework hours per week		.386	.203	.186	.218
		(.334)	(.418)	(.435)	(.435)
How sure graduate from H.S.		-3.518**	-4.227**	-4.787**	-4.345**
		(1.135)	(1.447)	(1.564)	(1.531)
R's education expectation		1.510***	1.106	1.133	.960
		(.414)	(.567)	(.604)	(.598)
Limited English proficiency		-2.911	-.305	-4.930	-4.162
		(2.210)	(3.450)	(3.868)	(3.726)
Enrolled in Bilingual Education		-1.338	-.801	-1.437	-1.035
		(1.907)	(2.995)	(3.323)	(3.224)
Parental Variables					
Father's education			1.064*	1.139*	.931
			(.429)	(.462)	(.461)
Mother's education			-.034	-.217	.122
			(.494)	(.520)	(.517)
Parents' education expectation			-.016	.228	.235
			(.223)	(.253)	(.251)
Frequency parents check homework			.973	1.145	1.134
			(.655)	(.709)	(.710)
Frequency parents discuss school experience			1.042	2.088	2.474
			(1.173)	(1.293)	(1.294)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				3.569*	3.097
				(1.771)	(1.734)
Number of siblings				.476	.272
				(.457)	(.449)
Family study environment				-.412	-.275
				(.373)	.313
Family income				-.363	-1.107
				(.303)	1.738
School Variables					
Public school					-1.107
					(1.738)
% minority in school					.424
					(.495)
Student-teacher ratio					-.017
					(.132)
Number of Hispanic Teachers					-.577
					(.593)
Urban					-1.011
					(1.477)
R^2	.001	.076	.129	.184	.192
N	691	589	327	284	274

*p ≤ .05 ** p ≤ .01 *** p ≤ .001 (two-tailed test)

Table 5.28 Unstandardized Regression Estimates Predicting Social Studies Standardized Test Score, Other Hispanics Students, NELS 1988

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	50.589***	30.163***	38.114***	44.767***	43.231***
	(.946)	(4.714)	(8.278)	(9.587)	(10.918)
Generation (ref. =Generation 1)					
Generation 2	.120	-.041	-.438	-2.979	-2.820
	(1.148)	(1.451)	(2.232)	(2.402)	2.413
Generation 3+	-1.479	-1.980	-3.626	-4.110	-5.190*
	(1.373)	(1.416)	(2.147)	(2.305)	(2.368)
Student Characteristics					
Homework hours per week		.141	-.230	-.289	-.154
		(.380)	(.496)	(.519)	(.523)
How sure graduate H.S.		3.325**	3.761*	3.754*	3.050
		(1.292)	(1.713)	(1.867)	(1.838)
R's education expectation		1.756***	.975	1.076	.904
		(.471)	(.674)	(.721)	(.718)
Limited English proficiency		-4.573	-2.907	-7.714	-8.425
		(2.515)	(4.099)	(4.615)	(4.472)
Enrolled in Bilingual Education		-1.288	-2.383	-4.033	-4.085
		(2.171)	(3.559)	(3.965)	(3.870)
Parental Variables					
Father's education			1.290*	1.491**	1.334*
			(.510)	(.552)	(.553)
Mother's education			.030	-.147	.261
			(.587)	(.621)	(.621)
Parents' education expectation			-.181	.049	.211
			(.265)	(.302)	(.302)
Frequency parents check homework			.712	.595	.576
			(.778)	(.846)	(.853)
Frequency parents discuss school			-1.271	-1.680	-.987
Experience			(1.383)	(1.542)	(1.553)

Table (Continued)

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Family Variables					
Two Parents				1.622	1.239
				(2.114)	(2.081)
Number of siblings				.075	-.235
				(.546)	(.539)
Family study environment				-.235	-.423
				(.447)	(.438)
Family income				-.773*	-.857*
				(.361)	(.375)
School Variables					
Public school					.882
					(2.086)
% minority in school					.534
					(.594)
Student-teacher ratio					.276
					(.159)
Number of Hispanic Teachers					-1.940*
					(.712)
Urban					-.715
					(1.773)
R^2	.002	.075	.111	.152	.183
N	691	589	327	284	274

*P≤ .05 ** p ≤ .0 *** p ≤ .001 (two-tailed test)

SUMMARY

This chapter explores generational patterns in school achievement among four Hispanic sub-groups. Along with some of the generational differences within each group, this chapter observes some of the key differences between the four groups. The data analysis of the sub-groups provides a partial but significant understanding of the school performance and generational progress, or lack thereof, of each group.

Bivariate data showed various differences, at times encouraging, between generations for each group. For instance, a few differences stood out in GPA score and standardized test scores between different generations of Mexicans, Cubans, Puerto Ricans, and Other Hispanics. But GPA and standardized scores for Mexicans indicated inconsistent results. The Cuban findings, on the other hand, indicated a second generation advantage and a third generation decline. Puerto Rican data, meanwhile, indicated a third generation advantage, with Other Hispanics' demonstrating mixed results. Can we argue, then, that there are substantive differences in school performance across the generations among different Hispanic sub-groups? Regression analysis for each sub-group suggests that there is an inconsistent effect of generation on school performance. I expected to find a first and second generation school performance advantage for Mexicans. While regression analyses of GPA, math, and science test scores support this hypothesis in the earlier models, the regression results in the full models do not support this hypothesis. In regression analysis of Mexican students' math, science, and social studies scores, the earlier model indicated a first generation advantage. Regression analysis of GPA in the

earlier model, however, indicated a second generation advantage. Based on these regression results one could argue that the generational pattern of overall school performance among Mexican students provides partial support for the cultural ecological model and for Kao and Tienda's (1995) immigrant aspiration model, respectively. The full model of these regression results, still, does not support my research hypothesis. Indeed, as confirmed by the sensitivity analyses, my prediction that Mexicans would have a first or second generation advantage was not supported.

The generation variable in the Cuban regressions proved largely insignificant, except for the second generation advantage shown in mathematics score. Because I had predicted an upward linear model of school achievement, and this was not in evidence with the third generation, my hypothesis was not supported by the data. The analysis of Puerto Rican students, meanwhile, suggested continual improvement in math score across the generations, and revealed a significant third generation advantage in this subject. The earlier model for social studies score also showed a significant third generation advantage. Nevertheless, the full model showed this advantage to be insignificant. Based on these results the research hypotheses for Cubans and Puerto Ricans remain unconfirmed. It is important to remember that these two groups were represented by small samples, and that this might have some bearing on the accuracy of estimates.

As previously mentioned, Other Hispanics constituted a very mixed group, making it hard to foresee their outcomes. The regression findings in later models suggested that generation had a significant effect on school performance among Other

Hispanics when it came to GPA, science, and social science test scores. Furthermore, GPA and science score findings suggested a second generation decline, while social studies subject scores suggested a third generation decline. The research hypothesis, because it predicted a second generation advantage, is not confirmed by the data. Although I predicted that Other Hispanics would carry on in ways similar to Hispanics as a whole, the results showed otherwise.

Based on these findings, one cannot conclude that generation has a vital impact on school performance. A range of findings, in fact, indicates quite uneven generational patterns of overall school performance. Still, it is crucial to note that across all the models and sub-groups, student variables had the most impact on school performance. Father's education and parental involvement prove important predictors of school performance among some sub-groups, but not among others. In conclusion, given the demographic differences between the Hispanic sub-groups in U.S. society, this researcher considers that a single model of achievement may not be adequate for explaining classroom success outcomes among all groups.

CHAPTER VI

CONCLUSION

In this chapter I will provide a brief summary of the research findings for all Hispanics and Hispanic sub-groups, and discuss how these findings expand our understanding of school performance and generational approaches to it. I will then offer comments on some of the study's unexpected findings and their implications. Then, following a discussion of this work's limitations, I will point to some directions for future research.

SUMMARY OF THE FINDINGS

The major objective of this study has been to explore differences in school performance among different generations of Hispanic students and various Hispanic sub-groups. School performance was measured by GPA and standardized test scores for mathematics, science, reading, and social studies. The results presented here contribute to the ongoing investigation of the significance of generational status among different groups of Hispanics in the country.

A review of the literature reveals a variety of views about how different Hispanic generations might achieve differently. While some research suggests that Hispanics do exhibit generational differences in achievement and aspiration, the overall results have been inconclusive. For instance, some (Kalogrides 2009; Rong and Grant 1992) have argued that Hispanics show increasing educational achievement over successive

generations. Others (Kao and Tienda 1995; Portes and Rumbaut 2001; Zsembik and Llanes 1996), though, have shown that Hispanics meet their educational aspirations more in the first and second generations, and in some cases, witness a third generation decline. Still other researchers (Kaufman et.al 1998; Wojtkiewicz and Donato 1995) have found that family structure and parental education were more important in explaining differences in educational attainment than was generational status. As these past analytical efforts make clear, we cannot easily generalize about Hispanics and their school performance across generations.

The literature review also identifies certain theories that have attempted to predict outcomes among each group under study. Concern about the educational achievement of Hispanics has been framed within a larger debate over different theories such as classical assimilation theory, segmented assimilation theory, cultural ecological theory, and immigrant aspiration theory. In brief, classical assimilation theory portrays an increasing success over generations, segmented assimilation theory foresees various patterns in achievement, cultural ecological theory anticipates a decreasing success over generations, and the immigrant aspiration model predicts a second generation advantage and a third generation decline. This study's research hypotheses derive from these theories.

The findings discussed herein were derived from analysis of the NELS 1988 data that comprised a nationally representative sample. The major methods of analysis include descriptive and bivariate statistics and ordinary least squares multiple regression. Following this, sensitivity analysis is applied to verify the results of regression analysis.

The most important finding of this study that resulted from the statistical analyses performed on all Hispanics and Hispanic sub-groups is that no major significant differences in school performance across generations could be identified. A baseline regression model that includes dummy variables for generation for all Hispanics does reveal a second generation advantage in GPA, but the significance of this difference between generations disappears when the other predictor variables are introduced. Still, no significant generational difference appeared when it came to standardized test scores in all subjects, and this was confirmed by sensitivity analysis. Since the generational performance results were uneven, the immigrant aspiration hypothesis proved insufficient for explaining the results for all Hispanics.

The study predicted that the school performance of different Hispanic sub-groups would exhibit different trajectories within each sub-group. Given the many cultural differences among these sub-groups, the researcher reasoned that a single model of success might not be adequate for all. A partial exception to this may be the manner in which the statistical analyses of some Hispanic sub-groups, in a simpler model, resulted in findings similar to those of the all Hispanic sample, e.g. the second generation advantage in GPA in the Mexican sample and the all Hispanic sample. In the regressions done on later models, though, there were no significant generational differences observed. It remains the case that the achievement profiles of particular Hispanic sub-groups should guide the theoretical framing of those groups, and that we should not

assume a one-size-fits-all body of theory will explain classroom achievement. A review of some major sub-group findings makes this clear.

Mexican students were predicted to do well in the first and the second generation, but were expected to decline in performance in the third generation. The NELS 1988 showed that, indeed, while Mexican students enjoyed a first generation advantage, especially in terms of mathematics, science, and social studies test scores, and that this was followed by a second generation advantage, their performance stalled in the third generation. These results, although visible only in earlier models of regression analysis, lend partial support to immigrant aspiration theory and provide a measure of support for cultural ecological theory. The significance of the first and the second generation advantage, however, witnessed through GPA and the mathematics, science, and social studies regression model, was altered when the other variables were introduced. Generation was ultimately found to have no impact on school performance. Sensitivity analysis revealed, too, that even earlier models had no significance concerning generation and school performance.

For Cubans, Puerto Ricans, and Other Hispanics the impact of generation on GPA and overall test scores also proved hard to discern. I argued that different theories would help predict the generational trajectories of specific sub-groups. In this way, assimilation theory seemed best suited for Cuban students, cultural ecological theory seemed best for Puerto Rican students, and immigrant aspiration theory seemed best for Other Hispanic students. When statistical analysis was applied to Cuban students it did expose a second

generation advantage in mathematics scores, but revealed no significant generational difference in GPA or standardized test scores of subjects other than from mathematics. It should be noted that this result was based on a rather small sample size and on fewer, more reduced regression models. Among Puerto Ricans, while multivariate analysis revealed a third generation advantage in mathematics and social studies scores, no other generational effect appeared in other areas of study. But again, the small Puerto Rican sample size allowed only reduced, simpler regression models. Based on these results, then, the research hypotheses are not confirmed. Analysis of the Other Hispanic eighth graders, meanwhile, exposed a second generation decline in GPA and science score, and a third generation decline in social studies score. Overall, one could argue that generational differences did not operate in a consistent manner for almost any group. In the end, generational differences did not have a large effect on school performance.

Finally, this study identified some common determinants of school performance among Hispanics and members of different Hispanic sub-groups. A good number of student variables, and some parental and family variables included in the regression models, proved good predictors of school performance. Having especially positive attitudes towards high school graduation, and having high educational expectation had a significant effect on school performance among almost all groups. Number of homework hours per week and certainty about high school graduation also had a significant effect on school performance for Hispanics and members of different Hispanic sub-groups. Father's education had a consistent positive effect on school performance for all

Hispanics, Mexicans, and Other Hispanics. This was an important finding and it should be explored further. It may be that the higher the father's education, the higher the likelihood that the household is benefiting financially from it, since fathers may have more earning power than mothers (Morales and Trotman 2004). This kind of household may therefore be in a more favorable monetary situation. Conversely, the lower a father's education, the more children might have to contribute extra money to the household budget due to insufficient income. Their schoolwork therefore suffers. The family income variable, however, had significant impact only on Other Hispanic school performance.

SEARCHING FOR AN ANSWER

If this study set out to find how different generations of Hispanic students differ in their school performance, and how major Hispanic sub-groups vary in trajectories of cross-generation school performance, then it must address why there appear to be no clear answers to these lines of inquiry. It becomes necessary to ask why Hispanics and Hispanic sub-groups show no consistent generational differences in school performance. But this question begs a more basic question: Who are we studying, and how?

As this dissertation has tried to make clear, to speak of "Hispanics" is to impute a range of characteristics upon a social group that sees itself as anything but unitary. Mexican people in this country typically have very little overlap in the labor force with Cubans, who in turn live urban lives parallel to, but largely separate from Puerto Ricans. Not only does each group represent hundreds of years of separate development, they can each claim very distinct Spanish dialects, family structure, recreational lives, and

relationships with authority. Needless to say, immense differences in phenotypes also exist, with the concomitant challenges this creates in a racially-conscious United States. The separateness of their ethnic identities, though, and the depths of each one is not appreciated as often as they could be by researchers, especially by those with a stake in identifying patterns within groups that are themselves very heterogeneous, dynamic, and rapidly changing. These cultural groups are not easy to get to know, and this may be why researchers have not yet developed the best approaches to discerning what patterns might indeed be in place in the lived life of these groups.

Our observations are only as accurate as our methodologies. And until research methodologies can mitigate the effects of over-representing populous ethnic groups of lower-class status, like Mexicans, and account for less-populous higher class ethnic groups, like Cubans, we are not likely to build a complete picture of possible generational differences and their effects in these groups. This is a problem with NELS 1988. In addition, having limited emic knowledge of specific cultural groups will create effects as limiting, if not more, than having small or disproportionate sample sizes for surveys. Getting to know the subject group is therefore of utmost importance. That much of this remains to be done may explain why the NELS 1988 instrument, and perhaps others like it, have yet to assemble a more revealing portrait of the ethnic groups it covers. To do this it must ask questions that go beyond conventional markers of success and advancement. Until this happens, we may remain underequipped for mapping the likely real role of generation in conditioning changes in formal education experiences.

Having said this, researchers can still try to refine their approach to identifying generational factors in different ethnic groups. Lessons from groups as different from Hispanics as Asians or Africans can offer a starting point. With respect to Asians, for example, Yang (2005) identified generational differences in school performance. He (ibid) attributed some of their school success to the emphasis on school instilled upon students by their immigrant parents of professional background. If it is the case that factors such as highly educated parents make the most significant difference in their children's school performance, then we can conclude that Hispanic immigrants are, on the whole, at a great disadvantage. But caution is necessary. The lower socioeconomic status of most Hispanic immigrants may overshadow the rather small proportion of these immigrants with professional backgrounds, making it difficult to see whether some Hispanic sub-groups (i.e. Cubans) exhibit Asian educational success patterns. Here again, however, it is crucial to remember that each cluster of ethnicities that gets represented as one of these groups requires very thoughtful analysis in order to frame the questions that will work best with that group. It may be that this framing of questions has not yet reached the state necessary to discern generational influences upon education in Hispanic groups.

IMPLICATIONS OF THE FINDINGS

An important implication of these results is that Hispanic sub-groups are quite distinct from one another, and therefore analyses that do not distinguish between them can give very misleading impressions of Hispanics, overall, as we have seen in previous

research. It is also important to assert that, in order to turn around the low educational achievement of Hispanics in the U.S., we need to understand the conditions faced by the different Hispanic ethnic groups and see how they affect student performance.

The variability in subject test scores by Hispanics of different backgrounds signals the need to identify subject strengths among more recent immigrants. Glick and White's (2003) analysis of NELS 1990 identified uneven levels of achievement in different subject areas among Hispanics, making this a somewhat daunting task. The present study shows, likewise, that some groups excel in some subject areas and not others. Neither do we see clear generational differences at work upon school performance. Nevertheless, the varied educational trajectories that different generations of Hispanics of different sub-groups take, including trajectories that show neither significant declines or improvements, present challenges not only for U.S education but also for our nation's ability to compete worldwide.

Hispanic students, in fact, seem to be approaching the threshold of high school with rather low baseline abilities in certain subject areas. These are the very students that, whether they graduate from high school or not, will form a sizeable part of the workforce in the 21st century, and their subject competence trends seem to indicate a worsening under-equipping for the advanced technology jobs of the future. As the most sizeable Hispanic demographic group in the country, Mexican Americans, who also have the lowest socioeconomic status, will showcase trends that will affect all other Hispanics in

some ways, even if members of other Hispanic sub-groups achieve, on the whole, more in the classroom.

This does not mean that Puerto Rican Americans and Cuban Americans face no challenges in the classroom, or that they are positioned to reap all the benefits of the current and future job market. An ample scholarly literature has discussed the problems of Puerto Rican academic underachievement, and has often blamed it on their culture, limited English proficiency, poverty, and even allegedly poor parenting. Studies of Cuban students, while portraying their high level of educational attainment as a result of their successful structural assimilation, downplay the social disadvantages that many of them face as Hispanics. With the current research in mind, the explanation for one of these groups' relative success over the other cannot be reduced to generational advantages, because no clear generationally-aligned achievement trends have emerged. Other dimensions of their educational trajectories should be examined, perhaps centering on the role of ethnic enclaves, gender differences, and effectiveness of schools and teachers to shed light on likely Puerto Rican and Cuban educational and social outcomes. Differences in current and future conditions between these and other Hispanic sub-groups must, again, be addressed by the education system to ensure that Hispanic children from different backgrounds do not fall behind. But the data to do this are not always as abundant as one would like.

This brings us to a number of limitations facing this study. The first of these surfaces in relation to sample sizes. As previously indicated the sample sizes for Cubans

and Puerto Ricans were very small and became even smaller when broken down into generations. This made it necessary to limit the range of regression models applied to data from these ethnic groups, with possible limiting effects on the findings they could reveal. Great care must therefore be taken to recognize patterns and differences among Hispanic sub-groups of vastly different size, especially if these size differentials are likely to persist. Despite this study's limitations, it underlines the need to examine generational differences in school performance and it provides important insights into sub-group academic trajectories. This reflects a need to further study group variations in academic trajectory.

FUTURE DIRECTIONS

If future studies into generational differences in school performance confirm that school performance does not vary appreciably by generational status, as this study has found, this could bolster the argument that progress through the U.S. educational system is linked more to factors other than generational status per se. This possibility would invite, among other approaches, renewed exploration of how Hispanic sub-groups vary in their overall socioeconomic attainment by generation, as measured by income, occupation, acculturation, personal satisfaction, etc., rather than by strictly looking for variation in academic achievement by generation. It could take the form of more closely examining differences in a group like Mexicans and identifying how sizeable social class differences cross-cut this group. The achievement outcomes of these different intra-group social classes might reveal some different patterns. They could point to the effects of

segmented assimilation, wherein immigrants of Mexican upper class background would identify more readily with a North American middle- or upper class and witness upward mobility. Conversely, the great majority of Mexican immigrants, of lower class status, would find their upward mobility options to be very limited, if not absent altogether.

It would be beneficial, also, to pursue similar analyses using more current and larger data sets. Updated efforts like these could, for example, draw attention to a large number of student cases collectively said to represent the 1.5 generation. These are students, many of whom are Hispanic, who were born outside the U.S but who started formal schooling in the U.S. Their life conditions could reveal generational factors in school performance of a sort not closely examined before, such as the effects of dual citizenship and having lifelong access to digital tools. Analyses of changing demographics like these could inform the creation of education policies aimed at bringing some urgent social goals to fruition.

One of these goals, without a doubt, must be to increase Hispanic females' access to the classroom. But for this to happen, assertive efforts must first be made to launch discussions about Hispanic females' experiences in general. Since their voices and lives have often been subsumed beneath a general Hispanic identifier, not enough is known about the effects of personal aspirations, family dynamics, and a disinterested society upon their possibilities for educational advancement. It may be that the generational factors that have been so unevenly expressed among different Hispanic sub-groups may actually encase great predictive power in the case of Hispanic girls and women. This kind

of study could reveal unappreciated research vectors in the lives of Latinas and the many generations they make possible.

REFERENCES

Alba, Richard and Victor Nee. 1997. "Rethinking Assimilation Theory for a New Era of Immigration." *International Migration Review* 31(4):826-874.

_____. 2003. *Remaking the American Mainstream: Assimilation and Contemporary Immigration.* Massachusetts: Harvard University Press.

Bean, Frank and Marta Tienda. 1987. *The Hispanic Population of the United States* New York: Russell Sage Foundation.

Bean, Frank, Jorge Chapa, Ruth Berg, and Katherine Sowards. 1994. "Educational and sociodemographic incorporation among Hispanic immigrant to the United States." Pp. 73-100 in *Immigrant and Ethnicity: The Integration of America's Newest Arrivals*, edited by B. Edmonston and J. S. Passel. Washington, D.C.: Urban Institute Press.

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

Buriel, Raymond and Desdemona Cardoza. 1988. "Sociocultural Correlates of Achievement among Three Generations of Mexican American High School Seniors." *American Educational Research Journal* 25:177-192.

Chapa, Jorge. 1988. "The question of Mexican American Assimilation: Socioeconomic Parity or Underclass Formation?" *Public Affairs Comment* 35(1):1-14.

Census Bureau. 2010. "Hispanic" retrieved June 10, 2011(http://www.census.gov)

Coltrane, Scott, Ross D. Parke and Michele, Adams. 2004. "Complexity of Father Involvement in Low-Income Mexican American Families." *Family Relations* 53 (2):179-189.

Current Population Survey. 2009. "Annual Social and Economic Supplement." Retrieved June 10, 2011(http://www.census.gov).

Driscoll, Anne K. 1999. "Risk of High School Dropout among Immigrant and Native Hispanic Youth." *International Migration Review* 33:857-876.

Duncan, Brian, Joseph Hotz, and Stephen Trejo. 2006. "Hispanics in the U.S. Labor Market." Pp.228-290 in *Hispanics and the Future of America* edited by M.Tienda, and F. Mitchell. Washington: The National Academic Press.

Feliciano, Cynthia. 2006. "Beyond the Family: The influence of Premigration Group Status on the Educational Expectations of Immigrants'Children." *Sociology of Education* 79:281-303.

Gandara, Patricia.1995. *Over the Ivy Wall: The Educational Mobility of Chicanos.* Albany: SUNY press.

Gans, Herbert. 1992. "Second Generation Decline: Scenarios for the Economic and Ethnic Futures of Post-1965 American Immigrants." *Ethnic and Racial Studies* 15(2):173-193.

_____.1997. "Toward a Reconciliation of "Assimilation" and "Pluralism" The Interplay of Acculturation and Ethnic Retention." *International Migration Review* 31(4):875-892.

Gibson, Margaret. 1991 "Ethnicity, Gender and Social class: the School Adaptation Patterns of West Indian Youths" Pp. 169–439 in *Minority Status and Schooling: a Comparative Study of Immigrant and Involuntary Minorities,* edited by M. Gibson and J. Ogbu. New York: Garland.

Glazer, Nathan. 1993. "Is Assimilation Dead?" *The Annals of American Academy of Social and Political Sciences* 530:122-136.

Glick, Jennifer and Michael White. 2003. "The Academic Trajectories of Immigrant Youths: Analysis within and across Cohorts." *Demography* 40(4):759-783.

Gordon, Milton. 1964. *Assimilation in American Life: The Role of Race, Religion, National Origins.* New York: Oxford University Press.

_____.1999. "Assimilation in America: Theory and Reality." Pp. 261-282 in *Majority and Minority,* edited by N. Yetman. Massachusetts: Allyn and Bacon.

Gonzalez, Gabriella C. 2004. "The Effects of Family Background, Immigration Status, and Social Context on Latino Children's Educational Attainment." Pp. 157-194 in *Creating Alternative Discourses in the Education of Latinos and Latinas,* edited by R. Ybarra and N. Lopez. New York: Peter Lang Publishing.

_____.2005. *Educational Attainment in Immigrant Families: Community Context and Family Background.* New York: LFB Scholarly Publishing.

Goyette, Kimberly and Yu Xie. 1999. "Educational Expectations of Asian American Youths: Determinants and Ethnic Differences." *Sociology of Education* 71(1):24-38.

Greenman, Emily and Yu Xie. 2008. "Is Assimilation Theory Dead? The Effect of Assimilation on Adolescent Well-Being." *Social Science Research* 37:109-137.

Grogger, Jeffrey and Stephen Trejo. 2002. "Falling Behind or Moving Up? The Intergenerational Progress of Mexican Americans." Public Policy Institute of California. Retrieved March 16, 2011 (http://www.ppic.org/content/pubs/report/R_502JGR.pdf).

Gutierrez, Ramon. 2004. "Ethnic Mexicans in Historical and Social Science Scholarship" Pp.261-281 in *Handbook of Research on Multicultural Education,* edited by J. A. Banks and C.A. Banks. San Francisco: Jossey-Bass.

Hansen, Marcus L. 1996. "The Problem of the Third Generation Immigrant" Pp.202-216 in *Theories of Ethnicity: A Classical Reader,* edited by W. Sollors. NY: New York University Press.

Hanson, Sandra. 1994. "Lost Talent: Unrealized Educational Aspirations and Expectations Among U.S Youth." *Sociology of Education* 67(3):159-183.

Hirschman, Charles and Morrison Wong. 1984. "Socioeconomic Gains of Asian Americans, Blacks and Hispanics: 1960-1976." *The American Journal of Sociology* 90 (3):584-607.

Ibarra, Roberto. 2004. "Academic Success and the Latino Family." Pp. 113-132 in *Creating Alternative Discourses in the Education of Latinos and Latinas,* edited by R. Ybarra and N. Lopez. New York: Peter Lang Publishing.

Kalogrides, Demetra. 2009. "Generational Status and Academic Achievement Among Latino High School Students: Evaluating the Segmented Assimilation Theory." *Sociological Perspectives* 52 (2):159-183.

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

_____. 1998. "Educational Aspirations of Minority Youth." *American Journal of Education* 106:349–384.

Kao, Grace, Martha Tienda, and Barbara Schneider. 1996. "Racial and Ethnic Variation in Academic Performance." *Research in Sociology of Education and Socialization* 11:263-297.

Kao, Grace. 2004. "Parental Influences on the Educational Outcomes of Immigrant Youth." *International Migration Review* 38:427-449.

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

Kaufman, Phillip, Lisa Chavez, and Douglas Lauen. 1998 "Generational Status and Educational Outcomes among Asians and Hispanic 1988 Eight Graders." Office of Educational Research and Improvement. Retrieved June 10, 2010 (http:// nces.ed.gov).

Lopez, David and Ricardo Stanton-Salazar. 2001. "Mexican Americans: Second Generation at Risk" Pp. 57-90 in *Ethnicities: Children of Immigrants in America*, edited by R. Rumbaut and A. Portes. Berkeley: University of California Press.

NCES 2008. U.S. Department of Education. The Condition of Education 2008. Retrieved May 20, 2010 (http:// nces.ed.gov/pubs2008).

NELS 1990. National Center for Educational Statistics. Base Year Sample Design Report. Retrieved March 16, 2011 (http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=90463).

Nielsen, Francois and Fernandez Roberto. 1981. *Hispanic students in American High Schools: Background Characteristics and Achievement.* Washington, DC: US Government Printing Office.

Marrow, Helen. 2007. "South America: Ecuador, Peru, Brazil, Argentina,Venezuela." Pp. 593-611 in *The New Americans: A Guide to Immigration Since 1965*, edited by M.C. Waters and R. Ueda. Cambridge: Harvard University Press.

Matute-Bianchi, Maria Eugenia. 1986. "Ethnic Identities and Patterns of School Success and Failure among Mexican-Descent and Japanese American Students in California high School: An Ethnographic Analysis." *American Journal of Education* 95(1):233-255.

Morales, Erik and Frances Trotman. 2004. *Promoting Academic resilience in Multicultural America: Factors Affecting Student Success.* New York: Peter Lang Publishing.

Ogbu, John. 1987. Variability in Minority School Performance: A Problem in Search of an Explanation." Anthropology & Education Quarterly 18(4):312-334.

_____.1991. *Minority Status and Schooling.* New York: Garland Publishing.

_____.1992. "Understanding Cultural Diversity and Learning." *Educational Researcher* 21(8):5–14.

Park, Robert. 1950. *Race and Culture.* New York: Knickerbocker Printing Corporation.

Pedraza- Bailey, Silvia. 1985. *Political and Economic Migrants in America: Cubans and Mexicans.* Austin: University of Austin.

Portes, Alejandro. 1995. "Children of Immigrants: Segmented Assimilation and its Determinants." Pp. 248-280 in *The Economic Sociology of Immigration,* edited by A. Portes. New York: Russell Sage.

Portes, Alejandro and Alex Stepick. 1994. *City on the Edge: Transformation of Miami.* Los Angeles: University of California Press.

Portes, Alejandro and Ruben Rumbaut. 1996. *Immigrant America: A Portrait.* 2nd edition Berkeley: University of California Press.

_____. 2001. *Legacies: The Story of the Second Generation.* Berkeley: University of California Press.

Portes, Alejandro and Min 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* 530:74-98.

Portes, Alejandro and Min Zhou. 1996. "Self-employment and the Earnings of Immigrants." *American Sociological Review* 61 (2):219-230.

Portes, Alejandro and Robert Bach. 1985. *Latin Journey: Cuban and Mexican Immigrants in the United States.* Berkeley: University of California Press.

Provasnik, Stephen, Angelina Kewal Ramani, Lauren Gilbertson, and Mary Ann Fox. 2007. "The Status and Trends in the Education of Racial and Ethnic Minorities." National Center for Educational Statistics.

Reardon, Sean and Claudia Galindo. 2009. "The Hispanic-White Achievement Gap in Math and Reading in Elementary Grades." *American Educational Research Journal* 46 (3):853-891.

Reed, Deborah, Laura Hill, Christopher Jepsen, and Hans Johnson. 2005. "Educational Progress across Immigrant Generations in California." San Francisco: Public Policy Institute of California.

Rong, Xue Lan and Linda Grant. 1992. "Ethnicity, Generation, and School Attainment of Asians, Hispanics, and Non-Hispanic Whites." *The Sociological Quarterly* 33(4): 625-636.

Rumbaut, Ruben. 1994. "The Crucible within: Ethnic identity, Self esteem and Segmented Assimilation among Children of Immigrants." *International Migration Review* 28(4):748-794.

_____. 1995. "The New Californians: Comparative Research Findings on the Educational Progress of Immigrant Children." Pp.17-69 in *California's Immigrant Children: Theory, Research, and Implications for Educational Policy* edited by R. Rumbaut and W. Cornelius San Diego: Center for U.S.-Mexican Studies, UC San Diego.

_____. 1997. "Assimilation and Its Discontents: Between Rhetoric and Reality." *International Migration Review* 31(4):923-960.

_____. 2006. "The Making of a People." Pp .16-65 in *Hispanic and the Future of America* edited by M. Tienda and F. Mitchell. Washington D.C. National Academic Press.

Rumberger, Russell. 1995. "Dropping out of Middle School: A Multilevel Analysis of Students and Schools." *American Educational Research Journal* 32:583-625.

Rumberger, Russell and Katherine Larson. 1998. "Toward Explaining Differences in Education Achievement among Mexican-American Language Minority Students." *Sociology of Education* 71(1):68-92.

San Miguel, Guadalupe. 2003. "Contested Learning: Latino Education in the United States from 1500s to the Present." Pp.1-18 in *Latino Students in American Schools*, edited by V. Kloosterman. Connecticut: Praeger Publisher.

Schmid, Carol. 2001. "Educational Achievement, Language Minority Students and the New Second Generation." *Sociology of Education* 75:71-87.

Smith, James. 2003. "Assimilation across the Latino Population." *American Economic Review* 93(2): 315-319.

Suarez-Orozco, Carola and Marcelo Suarez-Orozco. 1995. *Transformations: Migration, Family Life, and Achievement Motivation among Latino Adolescents*. CA: Stanford University Press.

Suarez-Orozco, Carola, Marcelo Suarez-Orozco, and Fabienne Doucet. 2004. "The Academic Engagement and Achievement of Latino Youth" Pp.420-437 in *Handbook of Research on Multicultural Education,* edited by J. A. Banks and C. Banks. San Francisco: Jossey-Bass.

Suarez-Orozco, Marcelo. 1991. "Hispanic Immigrant Adaptation to Schooling." `Pp. 37-58 in *Minority Status and Schooling: A Comparative Study of Immigrant and Involuntary Minorities,* edited by M. Gibson and J. Ogbu. New York: Garland Publishing.

Suarez-Orozco, Marcelo. 2000. "Everything You Ever Wanted to Know about Assimilation But were Afraid to Ask." *Deadalus* 129(4):1-30.

Taggart, Lindsay and Grace Kao. 2003. "Effects of Social Capital on Minority and Immigrant Students: School Achievement." Paper presented at the annual meeting of American Sociological Association meeting of the 2009.05.26. Retrieved May 5, 2010 (http://www.allacademic.com/meta/p107112_index.html).

Tapa, Javier. 2000. "Schooling and Learning in U.S. –Mexican Families: A Case Study of Households."*The Urban Review* 32(1):25-44.

Valencia, Richard. 2002. *Chicano School Failure and Success: Past, Present and Future.* New York: Routledge publishing.

Valenzuela, Angela. 1999. *Subtractive Schooling: U.S. - Mexican Youth and the Politics of Caring*. New York: State University of New York Press.

Valverde, Sylvia. 1987. "A comparative Study of Hispanic High School Dropouts and Graduates: Why Do Some Leave School early and Some Finish?" *Education and Urban Society* 19 (3):320-329.

Warner, Lloyd and Leo Srole. 1945. *The Social Systems of American Ethnic Groups.* New Haven: Yale University Press.

White, Michael and Jennifer Glick. 2000. "Generation, Social Capital and Routes Out of High School." *Social Forum* 15(4):671-91.

Wojtkiewicz, Roger and Katherine Donato. 1995. "Hispanic Educational Attainment: The Effects of Family Background and Nativity." *Social Forces* 74:559-74.

Yang, Philip. 2000. *Ethnic Studies: Issues and Approaches.* New York: State University of New York press.

_____.2005. "The Educational Attainment of Asian Americans: A generational Approach." Final Report submitted to the Research on Learning and Education program. The National Science Foundation.

Yetman, Norman. 1999. *Majority and Minority.* Massachusetts: Allyn and Bacon.

Zhou, Min. 1997. "Segmented Assimilation: Issues, Controversies, and Recent Research on the New Second Generation." *International Migration Review* 31(4):975-1008.

_____.1997. "Growing up American: The Challenge Confronting Immigrant Children and Children of Immigrant." *Annual Review of Sociology* 23:63-95.

Zsembik, Barbara and Daniel Llanes. 1996. "Generational Differences in Educational Attainment among Mexican Americans." *Social Science Quarterly* 77:363-74.

APPENDIX A

IRB Approval Letter

TWU
TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON

Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378 Fax 940-898-3416
e-mail: IRB@twu.edu

December 13, 2010

Ms. Nihan Kayaardi
7100 North 26th Street
McAllen, TX 78504

Dear Ms. Kayaardi:

Re: The School Performance of Hispanic Students: A Generational Approach (Protocol #: 16356).

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and was determined to be exempt from further review.

If applicable, agency approval letters must be submitted to the IRB upon receipt PRIOR to any data collection at that agency. Because a signed consent form is not required for exempt studies, the filing of signatures of participants with the TWU IRB is not necessary.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

Sincerely,

Kathy DeOrnellas, PhD.

Dr. Kathy DeOrnellas, Chair
Institutional Review Board - Denton

cc. Dr. James Williams, Department of Sociology & Social Work
Dr. Philip Q. Yang, Department of Sociology & Social Work
Graduate School