MAKING IT IN AMERICA:

HIGH SCHOOL AND GED COMPLETION AMONG IMMIGRANT YOUTH*

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ABSTRACT

Using data from the National Longitudinal Study of Adolescent Health (Add Health), we find that high school completion decreases across immigrant generations and comes to resemble completion rates within the dominant native-born population. Among immigrants, those of Hispanic origin are more at risk of dropping out than immigrants of other ethnic heritages. Asian immigrants are the least likely to drop out. Immigrants who do drop out are much less likely than their 2nd and 3rd generation counterparts to subsequently complete a GED. Adjustments for individual, family, and neighborhood-level covariates diminish differences between ethnic groups but magnify differences between immigrant generations.

INTRODUCTION

Focusing almost entirely on adults, some immigration researchers have expressed growing concern over the declining educational and economic skills of recent immigrants to the United States and the prospects for their socioeconomic assimilation (Chiswick 1986; Borjas 1995, 1999). But it is not each new cohort of adults that will determine the socioeconomic outcomes of assimilation; it is the life choices and assimilation pathways undertaken by their children. For the children of immigrants, the process of fulfilling their parents' dreams and creating a better future for themselves begins at school. The completion of a high school degree opens doors to opportunities that their parents may never have had. But dropping out of school, puts their economic futures at risk. In 2000, American adults age 25 and older who dropped out of high school were twice as likely to be unemployed (6.4% vs. 3.5%) as high school graduates (National Center for Educational Statistics 2002). Moreover, the median income of those who did not complete high school was substantially less ($25,095 vs. $34,303 for men and $17,919 vs. $24,970 for women) than the median income of high school graduates with no college education (National Center for Educational Statistics 2002).

In this paper, we evaluate the educational assimilation of immigrant youth with a focus on high school completion. Adolescents can complete high school by either receiving a high school diploma upon graduation or by receiving an alternative certification, the General Educational Development (GED) credential. Most young adults receive the former but some drop out of high school and obtain a GED. Others will drop out and never obtain any high school credential.

Previous analyses of educational assimilation have not distinguished between high school and GED completion. However, evidence is mounting that high school graduates and GED

holders are not equivalent (Cameron and Heckman 1993; Tyler, Murnane, and Willet 2003; Murnane, Willet and Tyler 2000). In fact, GED holders have labor force participation rates and earnings that are more like high school dropouts than high school graduates (Cameron and Heckman 1993). Therefore, counting them as high school "completers" masks important differences in the educational assimilation patterns of immigrant adolescents.

Our research also extends the literature on the educational assimilation of immigrant youth by using data from the third wave of the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative study of adolescents in grades 7 through 12 in the United States in 1994-95 who have been followed into adulthood. The adolescents sampled for Add Health represent the most recent cohort of immigrant youth currently exiting high school. Previous research on immigrants and high school completion has relied on older datasets or data that were not as well suited to addressing questions of educational assimilation. The most recent versions of the decennial census do not allow the identification of the 2nd generation; the Current Population Survey (CPS) contains limited information on individual histories and family backgrounds; the National Education Longitudinal Study of 1988 (NELS:88) has sufficient numbers of Asian and Hispanic youth, but not enough to allow for much disaggregation within these panethnic groups. The only other dataset with significant variation by race-ethnicity and immigrant generation, the High School and Beyond (HSB) survey, excludes those who drop out before tenth grade. Moreover, analyses of these data pertain to a substantially earlier cohort of immigrant youth – those in high school in 1980.

Finally, we extend the scholarship on high school completion among immigrant youth by bringing this stream of research together with research on adolescent work. Investigators agree that adolescent employment is common and the effects of employment will depend on time spent

on the job (Donahoe and Tienda 1999; National Research Council 1998). However, there is no consensus regarding whether employment during high school displaces schooling and promotes adverse educational outcomes or complements schooling and facilitates transitions into the work force (Mortimer et al., 1996; Ruhm, 1995; Ruhm, 1997; Tienda and Ahtuv, 1996).

The paper proceeds as follows. We begin by reviewing theoretical perspectives on the assimilation of immigrants into the United States and the factors that affect educational attainment among young adults. We then describe our research design and present the results. The paper concludes with a discussion of the implications of our research for assimilation theory and policies and programs to promote high school completion.

THEORETICAL PERSPECTIVES

The theoretical and empirical literature on educational attainment among young adults draws on several disciplines, including developmental psychology, demography, economics, and sociology. While each of these perspectives has informed our analysis of high school and GED completion among immigrant youth, we rely on assimilation theory to guide our conceptual models and interpretation of results.

Assimilation and Schooling

Prior to 1965, classical assimilation theorists proposed that incorporation into a host society was a gradual process by which ethnic immigrants abandoned the cultures of their homelands and adopted the cultural and behavioral patterns of the "core" majority group (Gordon 1964). Recent studies on assimilation have challenged this classical perspective with findings that associate time in the United States and immigrant generation with outcomes that diverge from dominant U.S. norms (Zhou 1997; Rumbaut 1997). In some cases, this divergence is for the

better. Ethnic traits, ethnic enclaves, and an adherence to ethnic cultural norms may be protective and opportunity enhancing (Conzen 1991;Glazer and Moynihan 1970; Handlin 1973). Immigrant optimism and fortitude may forestall adaptation to potentially harmful U.S. norms of behavior and promote better outcomes among immigrants and their children than U.S.-born natives (Harris 1999; Kao and Tienda 1995; Rumbaut 1997). In other cases, this divergence reflects patterns of isolation, discrimination, or cultural inversion that create structural and psychological barriers to the Americanization of new immigrants (Landale and Opresa 1997; Portes and Zhou 1993; Portes and Rumbaut 1996). In this more pessimistic view, the health, education, and economic well-being of immigrants would decline across generations and with time in the U.S.

With respect to the educational attainment of immigrant youth, research has supported four assimilation hypotheses. The particular hypothesis supported appears to depend on the particular ethnic group considered and the cohort of immigrant youth evaluated. First, the *straight-line hypothesis* predicts that high school completion will increase across immigrant generations until it corresponds to educational attainment within the U.S.-born white population (Gans 1973; Neidert and Farley 1985; Rong and Grant 1992; White and Kauffman 1997; Wojtkiewicz and Donato 1995; Zsembik and Lanes 1996). This hypothesis presumes that 1st generation immigrant youth graduate high school at lower rates than U.S.-born natives. Accordingly, becoming American means becoming more highly educated. Second, the *accommodation or selective assimilation hypothesis* predicts that 1st generation children will graduate at higher rates than 2nd generation immigrants and 3rd generation natives due to the protective qualities of ethnic cultural norms instilled in them by their parents (Ogbu 1991). Third, the *optimism hypothesis* predicts that 2nd generation youth will perform better in school

than either their 1st generation or 3rd generation counterparts. The 2nd generation inherits the positive attitudes and determinism of their parents, yet is more proficient in English than them (Driscoll 1999; Kao and Tienda 1995; Landale, Oropesa, and Lanes 1998; Rong and Grant 1992). By the 3rd generation, optimism and aspirations decline and the disadvantages of minority status settle in. Fourth, the *segmented assimilation hypothesis* suggests that successive immigrant generations will be increasingly less likely to complete high school as they become more exposed to minority subcultures and disadvantaged social climates that lower their educational aspirations (Grant and Rong 1999; Hirschman 2001; Rong and Brown 2001; Velez 1989; White and Glick 2000).

By overlaying assimilation theory with theories of ethnic stratification (Shibutani and Kwan 1967), Alba and Nee (1987) help to reconcile these diverse hypotheses and the empirical research. They argue that assimilation takes place within a system of ethnic stratification that is more rigid and slow to change. Thus, ethnic identity and macrosociological conditions that shape the meaning of ethnicity over time will modify the assimilation pathways chosen by each new immigrant cohort. Because schooling is a basic agent of social stratification, the educational assimilation of the children of immigrants will have consequences for their labor market experiences, consumption patterns, and access to political power throughout adult life (Featherman and Hauser 1978; Mare and Winship 1988).

Adolescent Employment and Schooling

The literature on the educational assimilation of immigrant youth has not considered the effects of employment during high school on the dropout or high school completion rates of immigrant youth. Nevertheless, theory and previous empirical research suggest that employment effects should not be ignored.

According to economic theory, employment and schooling may be either substitutes or complements (Ruhm 1995, 1997). If they are substitutes, increased investments in work will lead to decreased investments in schooling. If they are complements, the skills and resources obtained through work experience will promote schooling. Sociological theory emphasizes the socialization effects of work. If work produces positive socialization experiences that "build character" and teach responsibility, then work may improve educational performance and attainment (Greenberger and Steinberg 1986). If work produces negative socialization experiences that lead to delinquent behavior and less positive orientations towards school, then work can worsen educational performance and increase the likelihood of dropping out.

On an empirical level, a number of studies suggest that high-intensity employment (typically > 20 hours per week) reduces the educational performance and attainment of youth (D'Amico 1994; Marsh 1991; McNeal; 1995; Mortimer and Johnson 1998) However, this effect varies by race-ethnicity (Tienda and Ahituv 1996). White youth seem to reap the most positive benefits from working whereas the effect of working on educational attainment is decidedly negative for African American youth (Steel 1991). High school employment can also affect educational assimilation indirectly through school performance and attachment. Employment during high school may reduce time available for extracurricular school activities and time available for studying. As a result, adolescents who work may become less attached to school and less able to perform in school to the best of their abilities. Though the evidence is inconsistent, several studies do find negative relationships between work and school performance or attachment (Mortimer and Finch 1986; Marsh 1991; Mihalic and Elliot 1997; Schoenhals, Tienda, and Schneider 1998).

Human, Social, and Cultural Capital as Determinants of Educational Attainment

In addition to high school employment, our analysis explores the effects of three other sets of factors that economics and sociology suggest will influence high school and GED completion (Glick and White 2003; White and Glick 2000). These include human capital, social capital, and cultural capital.

According to the human capital framework, parents' education, family structure, and the number of children in a family are important predictors of a child's educational attainment. The human capital framework views a family as a production unit where parents aim to maximize their well-being together with the well-being of their children (Becker and Tomes 1986; Browning 1992; Haveman and Wolfe 1995). Children begin life with genetic and cultural endowments transmitted to them through their parents. Given their preferences and incomes, parents make decisions regarding parenting investments (e.g., time spent with their children) and child-related expenditures on schooling, health, and other resources that will influence their child's development. Parents also make additional decisions about fertility (i.e. number of children), marital stability, and neighborhood of residence that will more indirectly influence their child's development by affecting the economic resources and services available to their children. Parents' own education, employment, and abilities in a number of dimensions also affect child development through their effects on income and parenting investment decisions.

Sociological theories of educational attainment emphasize the role that social capital and cultural capital play in engendering success and perseverance in the school system (Borudieu 1980; Coleman 1988, 1990; Lareau 1989). While social capital comes in many forms, we emphasize social capital as a source of family-mediated benefits and social control (Portes 2000). Families can promote the educational attainment of their children by affecting their children's

educational aspirations, monitoring their behavior and friendships, and developing close, supportive relationships with their children that facilitate communication. In immigrant communities these types of social capital may be particularly high and important in helping immigrant children adjust to life in the United States (Kibria 1994; Tienda 1980; White and Glick 2000; Zhou and Bankston 1999). For immigrant youth, English language proficiency is another important dimension of social capital that will affect their access to resources available outside of family networks. Immigrant youth with limited English proficiency have a hard time negotiating the U.S. school system (Kao and Tienda 1995). This can be counterbalanced by other resources available through the school and positive interactions with peers and teachers who introduce them to American culture. Thus, school attachment serves as an additional indicator of the social capital available to youth through school.

Two additional perspectives – the "working mother perspective" and the "economic deprivation perspective" – have also influenced research on educational attainment (Haveman and Wolfe 1995). According to the "working mother perspective," a mother's employment will reduce the time she has available for parenting and thereby reduce her child's educational attainment. According to the deprivation perspective, children who grow up in a culture of poverty will face enormous barriers to socioeconomic mobility net of the direct effects of income (Wilson 1987). Wilson (1987, 1996) has argued that joblessness and concentrated poverty in America's inner cities create a context in which there are no role models of employed adults, thereby reducing youth motivation to stay in school. The lack of job opportunities in these environments and the resulting social isolation from the world of work further diminishes the connection between education and work in the minds of inner-city youth. To evaluate these

perspectives, we include measures of mother's work participation and the disadvantaged character of each respondent's neighborhood.

STUDY DESIGN

Data

We use in-home questionnaire and contextual data from Waves 1 and 3 of the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative study of over 20,000 adolescents in grades 7 through 12 in the U.S. in 1995. Add Health is well suited for our analysis because it contains richer information on the race-ethnicity and immigrant generation of youth than any other dataset currently available, as well as detailed information on the individual characteristics and family, school, and neighborhood factors that potentially influence high school and GED completion.

Add Health in-home questionnaire data were collected from a random sample of middle and high school students in 80 communities. Within each middle-high school pair 200 students (100 of each gender) were selected to participate, irrespective of school size. A number of special over-samples were also selected using screeners from the in-school questionnaires, including physically disabled adolescents, black adolescents from highly educated families, several ethnic samples (Cuban, Puerto Rican, and Chinese adolescents), a genetic sample (identical and fraternal twins, full sibs, half sibs, and unrelated adolescents in the same household), and saturated samples in 14 schools. The in-home interviews were conducted between April and December 1995, yielding a sample size of 20,745 adolescents in Wave I. The one- to two-hour adolescent interview was interviewer assisted using a laptop computer and

audio-CASI for the more sensitive questions. Parental interviews (with mainly mothers) were also completed in Wave I.

Among the adolescents interviewed at Wave I, 19,962 were eligible for follow-up for the Wave III in-home survey administered 6 years later.[1] A total of 15,170 Wave I respondents completed interviews during the third wave of data collection. The response rate for Wave III was 75.6% for the probability sample and 79.6% for the genetic sample. A comprehensive analysis of non-response in Wave III of Add Health found some statistically significant differences in response rates by three school characteristics -- metropolitan area, percent white enrollment, and region of the country (Chantala, Kalsbeek, Andraca 2003). In addition, respondents at Wave III were more likely to be female, non-black, and enrolled in earlier grades at Wave I than non-respondents. When prevalence estimates are adjusted using the Wave III sampling weights, little bias in key outcomes remained (Chantala, Kalsbeek, Andraca 2003). Therefore, when final sampling weights are used, the Wave III sample adequately represents the same population as the Wave I sample.

In this analysis, data on neighborhood context were derived from the contextual data linked to adolescents' addresses at Waves I. These data are available at multiple spatial units, including state, county, census track and block group levels. We use measures of the demographic characteristics of a neighborhood and labor market conditions at the census-tract level.[2]

[1] Those ineligible for follow-up included 687 respondents who were not part of the probability sample or the genetic sample in Wave I and 96 respondents reported as deceased during the Wave III fieldwork (Chantala, Kalsbeek and Andraca 2003).
[2] See Harris and colleagues (2003) for a more detailed description of the Add Health study.

We estimate high school dropout rates and GED completion rates at Wave III, when nearly all of the Wave I respondents had completed high school.[3] This provides us with nationally representative data of dropout rates and GED completion rates among young adults ages 18-26 who were attending middle or high school in the United States in 1994. All other variables included in this analysis are measured at Wave I. Given our interest in immigrant youth, we excluded 848 youth from the analysis who were of Native American heritage or who had missing data on sampling weights and sampling cluster. An additional 1,684 youth were excluded because of missing data on independent variables of interest for this analysis.[4] For the analysis of high school completion, the final analytic sample included 12,638 youth ages 18-26 who were in high school in 1994. For the analysis of GED completion, the final analytic sample includes 1,678 respondents ages 18-26 who dropped out of high school. The vast majority of young adults in Add Health at Wave III are age 19-25. Those younger than 19 or older than 25 either entered school early or were held back during high school. In Table 1, we report the distribution of our sample on background characteristics used in both the analysis of dropout rates and the analysis of GED completion. These measures are described in more detail below.

[INSERT TABLE 1 HERE]

Measures of Dropouts and GED completion

We analyze separately those who do not obtain a high school degree (i.e. dropouts) and those who obtain a GED (i.e. dropouts with a GED). In Wave III of Add Health, respondents reported

[3] In Wave III, 108 respondents indicated that they were still in high school. These were primarily students who had been in 7th grade at the time of the Wave I interview had been held back. Except for a small handful (N=25) who were over age 21 in Wave III these students were included in the analysis as students who had *not* dropped out.

[4] Few respondents (N=10) had missing data on educational attainment. Item non-response was most common for immigrant generation and ethnicity (N=385) and parental closeness (N=962). Youth with missing data on parental closeness are typically among the 3rd+ generation and do not live with a biological parent or parental figure.

all degrees or diplomas that they had received. Those who had not received a high school diploma and who were not currently attending high school were identified as dropouts. Thus, dropouts include those who have completed a GED. GED completion was conditional upon dropping out of high school; a respondent could not have both received a high school diploma and completed a GED. However, small numbers of GED holders do go on to pursue higher education, especially through the junior college system. These individuals are still considered high school dropouts who have completed a GED.

Measures of Independent Variables

Socio-demographic Variables. We include controls for the respondent's age and sex but, given our interest in assimilation theory, we focus on the race-ethnic and immigrant generation status of our respondents.[5] Race-ethnicity was defined using the respondent's self-reported ethnic identity in combination with the country of origin for immigrant children or the country of parents' origin for children of immigrants (Harris 1999). A total of nine race-ethnic groups were identified: (1) African heritage, (2) Central or South American (3) Chinese, (4) Cuban, (5) Filipino, (6) Mexican, (7) Other Asian, (8) Puerto Rican, and (9) European-Canadian. As shown in Table 1, the majority of the sample (68%) was of European-Canadian heritage. Sixteen percent of the sample was of African heritage; 12% was Hispanic, primarily of Mexican origin; and 4% was Asian. For most of our analyses, white adolescents of European-Canadian heritage are treated as the reference group.

We defined immigrant generation with a three-category variable signifying that the adolescent is foreign-born to foreign-born parents (1st generation), U.S.-born to foreign-born

[5] Because Add Health samples students in middle and high school in 1994, the age of a respondent at wave 1 is generally a measure of time to expected high school completion. Those who were older in 1994 were generally in higher grades with fewer years of high school to complete. In addition, older students in

parents (2nd generation) and U.S.-born to U.S-born parents (3rd+generation or native) (Harris 1999). Foreign-born adolescents with foreign-born parents are those children who were not born in the United States nor were they born U.S. citizens abroad. They migrated to the U.S. as children (in most cases with their immigrant parents). Because of the theoretical importance of age of migration (Opresa and Landale 1997; Rumbaut 1997), we further subdivided these first generation youth into those who moved to the U.S. before age six and those who moved to the U.S. at age six or older.

For all of our analyses, the 3rd+ immigrant generation is the reference group. Adolescents included in this category have grandparents or great grandparents who were immigrants, but because the immigration experience is much further removed from the social context of their childhood and adolescent development, this category is considered the native population and the fundamental comparison group for immigrant children and the children of immigrants.[6] The majority (84%) of respondents were third-generation adolescents and few (5%) were first-generation immigrants (Table 1). Whereas most third-generation adolescents were either of European-Canadian (77%) or African (18%) heritage, the majority of first-generation immigrants were either Hispanic (51%) or Asian (38%).

Work and School-Related Characteristics. Based on theories of human and social capital, we expected work intensity during high school, school attachment, educational aspirations, and English language ability to mitigate ethnicity and nativity differences in high school completion. English language ability and educational aspirations will also mitigate

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1994 were students who had "survived" through the initial years of middle and high school. Thus, age is expected to be negatively related to dropout rates.

[6] Although all Puerto Ricans are U.S. citizens by birth, the Puerto Rican experience of moving from the islands to the U.S. mainland is similar to the immigrant experiences of many other Hispanic populations (Bean and Tienda 1990; Rivera-Batiz and Santiago 1996). Therefore, we define Puerto Rican children

differences in GED completion. We defined three levels of work participation during high school – no work, light work (1-20 hours per week), and heavy work (> 20 hours per week). With a minimum value of 3 and a maximum value of 15, we calculated school attachment as the sum of three 5-point Likert questions: (1) You feel close to people at your school, (2) You feel like you are a part of your school, and (3) You are happy to be at your school.[7] We measured educational aspirations using data on respondent's desire to go to college. On a scale of 1 to 5, those who reported a very high desire to go to college (WANTCLG=5) were defined as having high college aspirations.

To measure English Language ability or knowledge, we used data from the Add Health Picture Vocabulary Test (AH-PVT), an abbreviated version of the Peabody Picture Vocabulary Test with age-standardized scores for adolescents. Among the children of immigrants, facility with English also measures language acculturation and may capture a respondent's comfort in a predominantly English-speaking environment, such as school. AH-PVT scores were significantly correlated (.0261; $p<0.000$) with living in a home where English is the primary language spoken.[8] Among third generation children, AH-PVT scores may help to control for otherwise unobserved differences in educational ability.[9] Data on AH-PVT scores were missing for 579 respondents. To retain these respondents in our analysis, we introduced a mean substitution

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and first, second and third generation immigrants depending on whether they and their parents were born in Puerto Rico or on the U.S. mainland.

[7] The school attachment measure is based on a social cohesion construct originally developed by Bollen and Hoyle (1990). It has an internal reliability of .77.

[8] Add Health does not have data on the bilingual speaking abilities of children. Bilingual children would be expected to have higher AH-PVT scores than those who primarily speak a language other than English.

[9] In general, educational performance may be endogenous to educational attainment. We consider AH-PVT scores less endogenous than grades or standardized test scores that may directly affect grade retention. However, to account for the possibility of endogeneity, we estimate models with and without AH-PVT scores included. The primary affect of excluding AH-PVT scores is to lower the estimated effect of first-generation immigrant status on high school and GED completion.

based on the average test scores of those in the same race and immigrant generation. We also included a dummy variable indicating whether the test scores were missing for the respondent.[10]

Family Context. Our family background measures included indicators of family socio-economic status, family structure, parental monitoring, and parental closeness.[11] Family socio-economic background was measured using the educational attainment of the parent with the highest degree (< high school, high school graduate, some college, college graduate) and an indicator variable for whether the female caregiver in the family worked.[12] We categorized families as two-parent biological families, two-parent step families, single-mother households, single-father households, and other families including foster families, adolescents in group homes, and emancipated minors.

Parental control and parent-child closeness measures are based on well validated Add Health constructs (Harris and Ryan 2004). Parental control is measured by the total count of youth activities for which the parent makes all decisions. The index ranges from 0 to 7 where seven indicated that parents set weekday and weekend curfews, monitored the child's friendships, set limits for the amount and type of TV shows watched, and controlled the food choices and dress of their children. Parent-child closeness is measured by the mean response (ranging from 0=low to 4=high) of adolescent reports on the level of closeness, satisfaction, warmth, and satisfaction with communication in the parent-child relationship (Cronbach's alpha=.89). Parent-child closeness items are asked about both resident mothers and resident fathers. Adolescents who live with only one parent are assigned that parent-specific measure while youth who live with two parents are assigned the average of the mother and father scores.

[10] The dummy indicator was insignificant in all analyses.
[11] Fewer than 1% of the students in our sample were married or had children. Therefore, controlling for these characteristics of the adolescent would have no effect on our analyses.

Neighborhood Context. Due to the high correlation between various measures of neighborhood context, we included only two in our final analysis.[13] First, we measured the racial heterogeneity of a neighborhood using the racial dispersion index reported in the Census 1990. The racial dispersion index equals 0 when there is no racial variation in a community (i.e., perfectly homogenous) and 1 when equal numbers of all races live in the community (i.e. perfectly heterogeneous). In creating this index, only four race-ethnic groups were considered. These included non-Hispanic white, non-Hispanic black, non-Hispanic Asian, and Hispanic (Bureau of the Census, 1992). Second, we measure whether a respondent lived in a disadvantaged neighborhood. We defined a disadvantaged neighborhood at the census tract level as being racially homogeneous and having a below average percent of families who were married with children, an above average percent of families living below the 1989 federal poverty level, and an above average unemployment rate. Thus, by construction, living in a disadvantaged neighborhood was correlated with racial heterogeneity (ρ=-.17), the percent of families who were married with children (ρ=-.45), the percent of families living below the 1989 federal poverty level (ρ=.46), and the unemployment rate (ρ=.51). We constructed this measure to represent residence in a racially homogenous neighborhood (or highly segregated neighborhood) with high poverty, joblessness, and non-intact families. We argue that this measure captures the notion of social and economic isolation from mainstream norms of family and work, reducing the value of education among youth in such environments (Wilson 1996).

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[12] We chose not to use income in controlling for SES due to the large number of missing values on this variable. Income and education were highly correlated.

[13] Geographic identifiers are not publicly available for Add Health. Data from the 1990 census and many other extant data sources were added to data as part of the Add Health Program Project (Harris et al. 2003).

Analytic Approach

Our primary interest is in describing and explaining differences in dropout rates and GED completion by immigrant generation and ethnicity. The decision to drop out of high school is measured as an indicator variable (HSDROPOUT=1, 0 otherwise) and is best described using a logit model where the log odds of dropping out is estimated by:

$$\ln\left(\frac{P_{i3}}{1-P_{i3}}\right) = Z_{i3} = \alpha + \mathbf{X}_{i1}\beta + \mathbf{SW}_{i1}\gamma + \mathbf{F}_{i1}\lambda + \mathbf{N}_{i1}\delta + \varepsilon_i \quad (1)$$

The vector, **X**, refers to the individual demographic characteristics of the adolescents; the vector, **SW**, refers to individual school and work variables; the vector, **F**, refers to family-context variables; and the vector, **N**, refers to neighborhood demographic characteristics in the adolescent's census track. The error, ε, is distributed logistically.[14] Based on this equation, the odds that an adolescent drops out of high school is obtained by simply exponentiating the estimated coefficients and the probability that an adolescent drops out, P_i, is given by:

$$P_i = \frac{1}{1+e^{-Z_i}} \quad (2)$$

A positive coefficient on an independent variable translates into an odds ratio that is greater than one and indicates a corresponding increase in the probability of dropping out. A negative coefficient yields an odds ratio between 0 and 1 and indicates a corresponding decrease in the probability of dropping out. Our analysis of GED completion uses the same methodology but is

[14] Alternatively, we could use a probit model. Whereas logit models assume the cumulative distribution function of the dependent variable is a logistic function, probit models assume the cumulative distribution function is normal. Given that there is no theoretical basis to prefer one model over the other, we prefer the mathematical convenience of the logit model. In sensitivity analyses, we estimate our regressions using the probit model and find no meaningful difference.

estimated only among those who dropped out of high school (i.e. did not receive a high school diploma).

RESULTS

Demographic Trends in High School and GED Completion

While the majority of all students finish high school, 15% drop out.[15] These dropout rates vary only slightly by immigrant generation and age of arrival (Figure 1) but quite substantially by race-ethnicity (Figure 2). A far lower percentage of Asians dropped out of school between ages 18-26 than Hispanics, Whites, or persons of African heritage. Among Hispanics those of Mexican ancestry are the most likely to drop out.

[INSERT FIGURES 1 AND 2 HERE]

The data on dropout patterns by immigrant generation in Figure 1 suggest that the educational attainment of adolescents declines between the 1st and 2nd generation, as dropout rates in the gray bars are slightly higher in the 2nd generation. However, it is important to remember that immigrant generations are not equivalent to family generations. If we look at the dropout rates of youth in each generation relative to their parents, we see the 1st and 2nd generation children of immigrants make tremendous strides in educational attainment relative to their parents. But, this trend in upward socioeconomic mobility reverses by the 3rd+ generation. Looking across ethnic groups, we see that the children of Hispanic and Asian parents improve their educational outcomes on average. On the other hand, White and African American youth complete high school at lower rates than their parents.

[15] The dropout rates reported here correspond to status dropout rates reported by the National Center for Educational Statistics (NCES). Status dropout rates represent the proportion of adults in a give age range who are out of school and who have not earned a high school credential. The NCES also provides data on

In contrast to dropout rates, the rate of GED completion in the full sample varies significantly by both immigrant generation and race-ethnicity. The difference between the dropout rate (i.e. the gray bars) and the GED completion rate (i.e. the black bars) indicates the percentage of persons who dropout without completing a GED. Because those without either a high school diploma or a GED are substantially disadvantaged in the labor market, the burden of high school dropout rates is felt more in these populations. Our descriptive data show that among first-generation immigrants who arrived to the U.S. before age 6, Mexicans, Central South Americans, and persons of African heritage, adolescents are most likely to drop out without a GED than with a GED.

In comparison to estimates from NELS, the Add Health data suggest that dropout rates rose from 12% in 1998 to 15% in 2001 but the pattern of dropout rates by immigrant generation and race-ethnicity changed little (Kaufman, Kwon, and Klein 1999). In comparison to data from the Current Population Survey (CPS), the Add Health data suggest that GED completion rates fell from 10% in 1998 to 6% in 2001 (Kaufman, Kwon, and Klein 1999).[16] While these comparisons provide us with some confidence regarding the estimation of dropout rates and GED completion rates using the Add Health, our interest is in determining if immigrant and ethnic differences in high school and GED completion persist net of other background characteristics. To do this, we turn to modeling high school and GED completion as a function of individual, family, and neighborhood factors.

College Aspirations, English Language Proficiency, and Schooling

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high school completion rates. NCES data on high school completion rates include persons who have earned a GED and exclude persons who are still in high school.

[16] Data on GED completion are obtained from the Current Population Survey. CPS data on GED completion increased from 5% to 7% between 1993 and 1994. This increase coincided with the introduction of computer-assisted interviewing procedures (Kaufman, Kwon, and Klein, 1999). Due to

The first model in Table 2 indicates that after controlling for basic socio-demographic characteristics (i.e. race-ethnicity, age, and sex), there are no significant differences in dropout rates by immigrant generation. However, once we account for our respondents' attachment to school, college aspirations, and English Language Proficiency, the pattern of increasing dropout rates by generation becomes significant (Model 2, Table 2). Immigrant youth who arrive in the U.S. after they have begun schooling in their home countries (i.e. 6+ years old) drop out less than those who arrive at younger ages (i.e. < 6 years old) and significantly less than 2nd and 3rd generation native-born youth.

[INSERT TABLE 2 HERE]

On average, the 1st and 2nd generation children of immigrants in Add Health report stronger college aspirations and higher levels of attachment to their schools than their 3rd generation counterparts (results not shown). Sometimes characterized as immigrant optimism (Kao and Tienda 1995) their aspiration and school attachment remains high despite their struggles with learning to function in an English-speaking environment and relatively lower levels of English language proficiency. It also remains high despite the fact that they attend larger schools with average class sizes over 15% higher than classes attended by 3rd generation youth.[17]

Based on Model 2, high college aspirations are associated with a 56% reduction in the odds of dropping out of high school [OR=.46]; a 10 point increase in a student's English Language Proficiency is associated with a 34 % reduction in the odds of dropping out of high

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this and other changes, the CPS estimates of dropout rates may be artificially low and estimates of GED completion may be artificially high.

[17] After controlling for school attachment, school size and average class size had no direct effect on dropout rates. They affect dropout rates only indirectly through school attachment.

school [OR=.66]; and a 2 standard deviation increase (1 point) in school attachment is associated with an 9% reduction [OR=.91] in the odds of dropping out of high school.

Family and Neighborhood Influences on High School Completion

With the introduction of controls for family and neighborhood factors, we find that the size and significance of differences in dropout rates between young immigrant children (i.e. those who arrive before age 6), 2nd generation immigrant children, and 3rd generation youth increase but differences in dropout rates across ethnic groups diminish (Figure 3). Net of individual, family, and neighborhood factors, dropout rates significantly increase with each new U.S.-born generation. The children and grandchildren of immigrants lose their parent's optimism and attachment to school; they forgo the family structures and parenting practices that had supported high school completion; and they become more American. In this case, that means becoming more likely to leave school without a high school diploma.

[INSERT FIGURE 3 HERE]

Our results also show that adolescents, regardless of immigrant generation or race-ethnicity, whose parent(s) have completed high school will most likely complete high school. In fact, the association between parent's education and dropout rates is nearly linear. Moreover, children supported by a two-parent family drop out significantly less than children in any other type of family structure. For example, children living in a stepparent family have a 58% higher odds [OR=1.58] and children living in a female-headed household have a 46% higher odds [OR=1.46] of dropping out of high school. Emotional closeness between children and their parents can help to counteract the potentially negative effect of living in a single- or step-parent family. On our four-point scale, a one-point increase in parental closeness decreases the likelihood of dropping out by 11 percent [OR=.89]. After controlling for family structure,

parents' education, and parental closeness, the fact that a mother worked had no bearing on dropout rates.

Like family context, residence or neighborhood context was also strongly associated with high school completion. As anticipated by the ethnic enclave hypothesis (Portes and Rumbaut, 1996), adolescents who live in a racially homogeneous neighborhood drop out of high school less often. A small 1% decrease in racial heterogeneity decreases the odds of dropping out by 88 percent. However, the racial homogeneity of a neighborhood is not always protective. Consistent with notions of social isolation and the lack of connection between education and work, adolescents who grow up in relatively homogeneous communities that can be characterized as disadvantaged (i.e., communities with high poverty rates, high unemployment rates, and few two-parent families) also drop out at higher rates [OR=1.30].[18]

Work and High School Completion

Though researchers hotly debate the effects of work participation during high school on educational achievement, our initial analysis suggests that working during high school, even working over 20 hours per week, has no effect on high school completion (Table 2). The coefficients are near zero.[19]

[INSERT FIGURES 4 AND 5 HERE]

Because we suspected that the meaning of adolescent work and its relationship to education may vary by immigrant status of youth, we explored interaction effects between work

[18] These variables were too highly correlated to enter into the model together. In additional estimations, we evaluated their effects separately. A 1-percentage point increase in unemployment rates was associated with a 3.5 % increase in the odds of dropping out. A 1-percentage point increase in the poverty rate was associated with a .9% increase in the odds of dropping out. The number of two-parent families in the neighborhood was not significantly associated with dropping out.

[19] Unadjusted for other individual background characteristics, family context, and neighborhood context, youth who worked less than 20 hours per week were significantly less likely to dropout of high school

participation, immigrant generation, and race-ethnicity. We find an interesting interaction between generation and work suggesting that work during high school represents a different educational pathway for children of immigrants. Unadjusted for other covariates, working was significantly associated with a lower risk of dropping out among native-born youth (Figure 4). Among the 2nd generation children of immigrants, on the other hand, working was associated with a higher probability of dropping out of high school. Adjusting for other covariates diminished some of these differences (Figure 5).[20] All else equal, greater work intensity is still associated with lower high school dropout rates among the 3rd generation; but work has the opposite impact for children of immigrants, where work increases the likelihood of leaving high school without a diploma. This is especially true for 2nd generation youth and 1st generation youth who arrive in the U.S. before age 6.

[INSERT FIGURES 6 AND 7 HERE]

Turning to interactions between race-ethnicity and work, we find that the relationship between work intensity and dropout rates varies by ethnicity (Figures 6 and 7). Among adolescents of Hispanic heritage, heavy work participation is strongly associated with higher dropout rates but light work (<20 hours per week) complements schooling. For most Asians, work participation does not have any significant relation to dropout rates but for those of Southeast Asian heritage (i.e. most of the other Asian category), heavy work participation does increase the likelihood of dropping out.

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that their peers who never worked. In models using hours worked instead of the categorical variable, we also found a slight curvilinear U-shaped relationship between hours worked and drop out rates.

[20] All of the covariates reported in Table 2, Model 3 are included with the work interactions. These interactions had no effect on the size and significance of other covariates in the model. Work may be endogenous to high school completion if students who anticipate not completing high school are more likely to begin working during high school. The variables included in our model of dropout rates are among the most significant predictors of work participation during high school. Given this the remaining

Race and High School Completion

Given the significance of interactions between race-ethnicity and work, we estimate four separate equations for the panethnic groups, Hispanic, Asian, African, and EuroCanadian, to maximize the same size for each analysis, but continue to identify the specific race-ethnic identities within these broad groups. Evaluated at the 90% confidence level, we found several important differences across race-ethnic groups in the effects of immigrant generation, school and work factors, and family and neighborhood context shown in Table 3.[121]

[INSERT TABLE 3 HERE]

First, Asian youth who immigrate to the U.S. at an older age are less likely to drop out than their Hispanic counterparts. Second, adolescents of African heritage are more likely to drop out at older ages than adolescents in any other race-ethnic group. Third, school attachment has no effect on dropout rates among Asian youth but has a significantly negative effect within all other race-ethnicities. Fourth, growing up in a stepparent family has a larger negative effect on dropout rates for adolescents of African heritage than for whites. Fifth, growing up in a single parent family has a larger effect on dropout rates for adolescents of African or EuroCanadian heritage than for Hispanic adolescents. Sixth, Hispanic adolescents with a working mother are significantly more likely to drop out than white or Asian youths whose mothers work. Seventh, adolescents of African heritage who live in racially heterogeneous neighborhoods drop out more frequently than all other youth living in racially heterogeneous neighborhoods. Finally, the

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endogeneity would have to be on unobservable characteristics that varied by immigrant generation and ethnicity.

[21] Significant differences in the coefficients between models were evaluated by estimating the model as a single fully interacted model. Because of the smaller sample sizes for panethnic estimations, we chose a less conservative significance level at which to evaluate the coefficients.

disadvantaged climate of their neighborhoods has no effect on the probability of high school completion for Asian adolescents.[22]

GED Completion after Dropping Out

The same factors that promote high school completion do not always promote GED completion (Table 4). Although first generation youth who move to the U.S. after age 6 are significantly more likely to graduate from high school, they are significantly less likely (OR=.27) to complete a GED if they dropout. This suggests that for those who dropout, the GED is not viewed as an alternative route to high school completion.

[INSERT TABLE 4 HERE]

When we consider that limited English proficiency and having parents who have dropped out of high school are associated with both an increased likelihood of dropping out and a decreased likelihood of completing a GED, the GED does not look like a particularly promising alterative to high school graduation for immigrant youth. For the most part, immigrant youth are in double jeopardy of receiving neither a high school diploma nor an alternative certification. Without either degree, they and their children face worrisome economic futures. The two exceptions to this rule are immigrant youth from China or Central-South America. Among dropouts, Chinese and Central-South American youth are the most likely to complete their GEDs.

[22] Approximately, 7 % of Hispanics, <1 % of Asians, 47 % of Africans, and 41 % of Euro-Canadians lived in disadvantaged neighborhoods. Six percent of 1st generation, 6 % of second generation, and 88% of 3rd generation youth live in disadvantaged neighborhoods. Thus, the primary population group living in these neighborhoods is African American.

CONCLUSIONS

Our findings support aspects of all four assimilation hypotheses under consideration and suggest the interpretation of the assimilation patterns for our newest cohort of immigrant youth is more nuanced than anticipated by classic assimilation theorists. We find that relative to their parents and to the "core" native-born population (i.e. 3rd+ generation whites), the 1st and 2nd generation children of immigrants are far more likely to complete high school. As first suggested by Kao and Tienda (1995), optimism as measured by high school aspirations and school attachment drives this result. As suggested by Ogbu (1991), however, the protective qualities of ethnic cultural norms and, in this case optimism, are strongest in the 1st generation. The 2nd generation certainly improves its language skills. But their gains in English language proficiency do not compensate for declines in other aspects of human, social and cultural capital that facilitated the high school completion of their 1st generation peers.

Educational assimilation is evident among the second generation, and here our findings reaffirm the traditional straight-line assimilation model with a twist -- becoming more American means, regardless of ethnicity, becoming *more* likely to drop out. After initial gains over their parents, the children and grandchildren of immigrants lose ground. As suggested by the segmented assimilation hypothesis, the risks of Americanization are greatest for youth of Hispanic or African heritage. For these two groups, their family and neighborhood environments drive the differences between their dropout rates and the dropout rates of youth with EuroCanadian ancestry. Once we adjust for these contextual differences, only 3rd generation youth of Central-South American ancestry are more likely to dropout that their 3rd generation white counterparts.

In addition to providing an integrated view of educational assimilation in the U.S., our analysis also confirms previous findings on the importance of human capital, social capital, and cultural capital in determining high school completion. Adolescents with parents who have dropped out of high school and children growing up in larger families are more likely to drop out (Borjas 1992; Cheswick1988; Haveman, Wolfe, and Spaulding 1991). Adolescents from step-parent and single-parent families are more likely to drop out than those growing up in two-parent families (Krein and Beller 1988; Biblarz and Raftery 1999; Dawson 1991; Mclanahan and Sandefur 1994). Adolescents with closer bonds to their parents are less likely to dropout (Astone and McLanahan 1991). Finally, we find that adolescents with higher levels of proficiency in English are less likely to drop out. While we cannot measure biculturalism or bilingualism using Add Health, this result is consistent with previous research that finds a positive relationship between these aspects of cultural capital and high school completion (Feliciano 2001; White and Glick 2000; White and Kauffman 1997; Mouw and Xie 1999).

Our results fail to confirm the positive influence of parental control and monitoring (Anguiano 2004; White and Kaufman 1997) but they do suggest that maternal employment may have a negative influence on educational attainment for adolescents of African or Hispanic heritage (Krein and Beller 1988; Hill and Duncan 1987). This supports research that parental involvement may be more important to the academic success of minority youth than the additional family income obtained when both parents work (Anguiano 2004; Baum 2004).

Finally, our results on work intensity confirm the importance of disaggregating these effects by ethnicity and immigrant generation. Among the 3rd generation and white EuroCanadian adolescents, work appears to provide a positive socialization experience and to complement schooling. Among the children of immigrants and minorities work is associated

with higher dropout rates and may be viewed as a substitute for schooling, signaling a premature school-to-work transition. Due to potential selection effects, we are hesitant to conclude, however, that work actually *promotes* dropping out among immigrant and minority youth.

For those at risk of dropping out, the GED credential has been promoted as a viable alternative to a high school diploma. However, our research shows that immigrants, particularly those who move to the U.S. at older ages and those with limited English Proficiency, are much less likely than natives to take advantage of GED certification programs. Coupled with research suggesting that the GED has little labor market value and does not provide the same economic returns as a high school diploma (Cameron and Heckman 1993; Tyler, Murnane, and Willet 2003; Murnane, Willet and Tyler 2000), we reaffirm the need to develop dropout prevention programs that help all youth graduate from high school. Promoting GED completion for immigrant or limited English proficiency youth is not likely to help their economic futures.

By helping explain the educational assimilation process and differences in high school completion across immigrant generations and race-ethnicity, this research provides some insights into policies and programs that might promote high school completion. First, high school completion programs can benefit from targeting those most likely to drop out in every generation – youth of Hispanic (especially Mexican, Central-South American, and Puerto Rican), and African heritage. Second, programs should aim at improving high school attachment, raising college aspirations, and improving English language proficiency among Hispanic youth, especially those in the 1st generation. Promoting high school completion by children of immigrants will require teachers and administrators to capitalize on and support the attachment to school and college aspirations professed by these youth while working to improve their proficiency in English and their navigation of a predominantly English-speaking environment

(Coatsworth, Pantin, and Szapocznik 2002). Third, given the importance of family context in explaining race-ethnicity differences in high school completion, programs should be family-centered, involve parents, and help adolescents develop the social capital resources to overcome the challenges of living in a low-income family with parents who did not complete high school and/or living in a single- or step-parent family.

With the enactment of the No Child Left Behind Act (NCLB) in 2002 the urgency of improving high school graduation rates for all youth has increased. NCLB holds high schools accountable for maintaining or improving the "percentage of students who graduate from secondary school with a regular diploma in the standard number of years" (Swanson 2003). And students who complete high school through an alternative credentialing program such as the GED do not count as high school graduates according to NCLB standards. Therefore, school, state and federal policy makers must emphasize helping students obtain a regular diploma within 4 years of starting high school.

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Table 1. Descriptive Statistics Analytic Samples

	Full Sample (N=12,638)	Dropouts Only (N=1,678)
Demographic Characteristics		
1st Generation (6+ yrs)	3%	3%
1st Generation (<6 yrs)	2%	1%
2nd Generation	11%	11%
3rd+ Generation	85%	84%
European-Canadian	68%	61%
Mexican	7%	10%
Central-South American	3%	4%
Puerto Rican	1%	2%
Cuban	1%	1%
Chinese	1%	0.1%
Filipino	1%	1%
Other Asian	2%	1%
African	16%	20%
Female	49%	41%
Age (Mean)	15.87	15.64
School and Work Characteristics		
School Attachment (Mean)	11.30	10.56
English Language Proficiency[a] (Mean)	102.03	93.73
High College Aspirations	71%	49%
No Work Experience	46%	50%
Light Work Experience	36%	33%
Heavy Work Experience	18%	17%
Family Context		
Parent dropout	11%	24%
Parent high school grad.	30%	38%
Parent some college	21%	17%
Parent college graduate	35%	14%
Two-Parent Family	61%	45%
Step-Parent Family	12%	14%
Single Mother	20%	28%
Single Father	3%	6%
Other Family Structure[a]	3%	7%
Number of Siblings at Home (Mean)	1.41	1.52
Mother Works	81%	73%
No Working Mother at Home	19%	27%
Parental Control (Mean)	1.88	2.08
Parental Closeness (Mean)	3.24	3.17
Neighborhood Context		
Racial Heterogeneity (Mean of 0-1)	0.25	0.29
% Married with Children (Mean)	38.32	37.38
% Below 1989 Poverty Level (Mean)	11.61	15.23
Total Unemployment Rate (Mean)	7.35	8.85
Disadvantaged Neighborhood	9%	13%

[a]Missing values on Parents' education (N=440) and missing values on Add Health Picture Vocabulary Test (N=579).

Figure 1. Dropout Rates and GED Completion Rates, by Immigrant Generation (N=12,638)
(Weighted Percents)

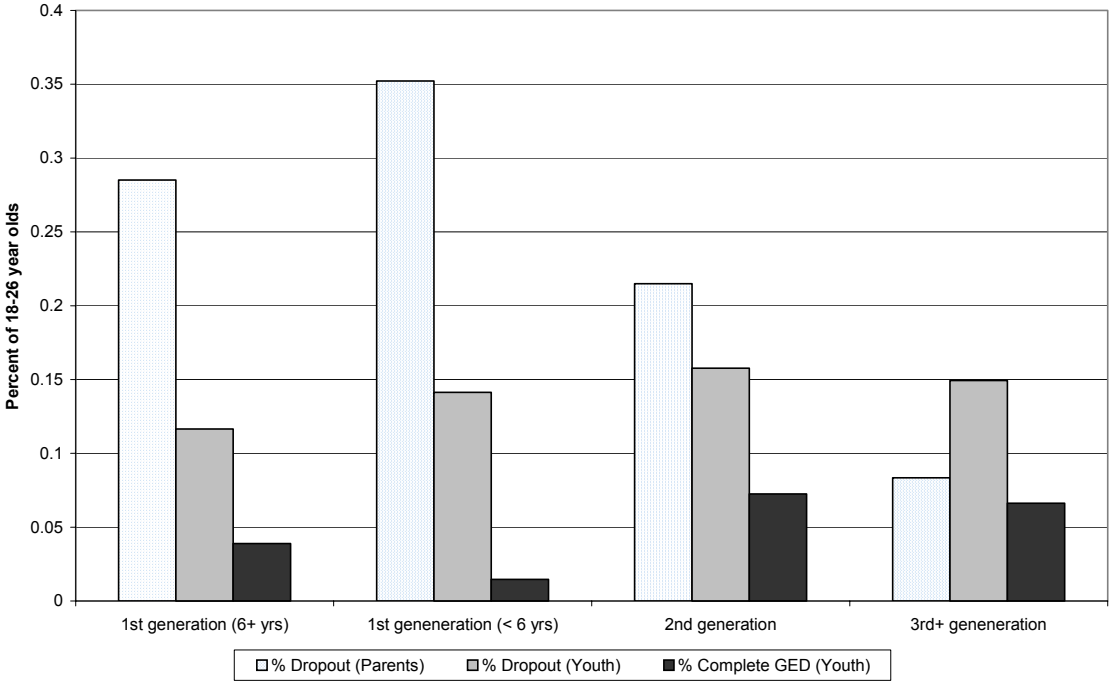


Figure 2. Dropout Rates and GED Completion, by Ethnicity-Race (N=12,638)
(Weighted Percents)

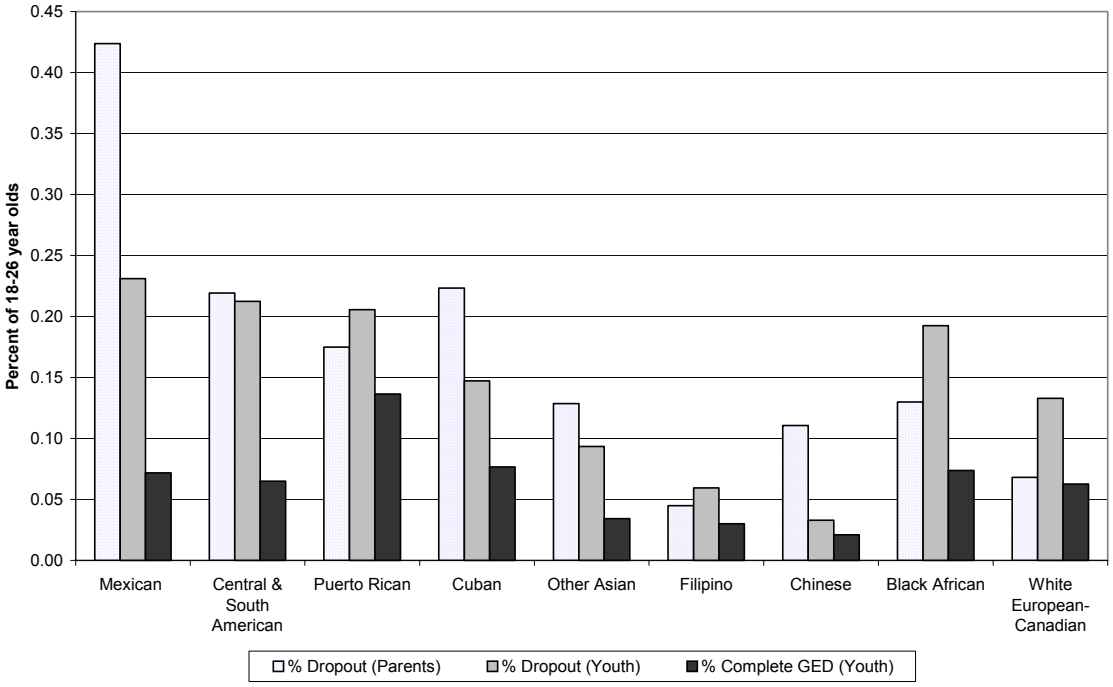


Table 2. Logit Regression on Dropout, N=12,638

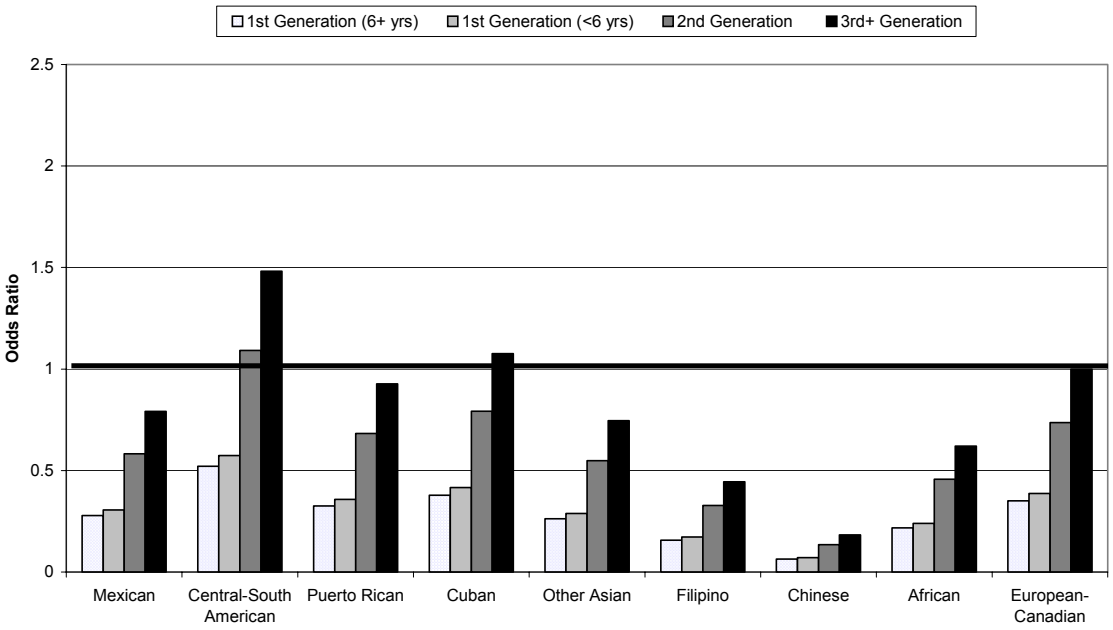
	Model 1		Model 2		Model 3	
SocioDemographic						
1st Generation (6+ yrs)	-0.20	(0.28)	-0.94	(0.33) ***	-1.05	(0.34) ***
1st Generation (<6 yrs)	-0.38	(0.38)	-0.73	(0.43) *	-0.95	(0.44) **
2nd Generation	-0.12	(0.14)	-0.24	(0.16)	-0.31	(0.17) *
3rd+ Generation	---	---	---	---	---	---
European-Canadian	---	---	---	---	---	---
Mexican	0.75	(0.15) ***	0.21	(0.14)	-0.23	(0.15)
Central-South American	0.72	(0.22) ***	0.57	(0.21) ***	0.39	(0.23) *
Puerto Rican	0.59	(0.26) **	0.18	(0.27)	-0.08	(0.28)
Cuban	0.29	(0.47)	0.20	(0.56)	0.07	(0.54)
Chinese	-1.42	(0.92)	-1.63	(0.99)	-1.70	(0.97) *
Filipino	-0.73	(0.45)	-0.76	(0.36) *	-0.81	(0.36) **
Other Asian	-0.24	(0.28)	-0.27	(0.32)	-0.29	(0.34)
African	0.47	(0.12) ***	-0.12	(0.12)	-0.48	(0.12) ***
Female	-0.42	(0.07) ***	-0.50	(0.07) ***	-0.54	(0.07) ***
Age	-0.10	(0.03) ***	-0.15	(0.03) ***	-0.18	(0.03) ***
School and Work						
School Attachment			-0.11	(0.01) ***	-0.10	(0.02) ***
English Language Proficiency[a]			-0.05	(0.00) ***	-0.04	(0.00) ***
High College Aspirations			-0.90	(0.08) ***	-0.77	(0.09) ***
No Work Experience			---	---	---	---
Light Work Experience			-0.05	(0.09)	-0.01	(0.10)
Heavy Work Experience			0.04	(0.11)	0.07	(0.12)
Family Context						
Parent dropout					---	---
Parent high school grad.					-0.51	(0.13) ***
Parent some college					-0.78	(0.14) ***
Parent college graduate					-1.33	(0.16) ***
Two-Parent Family					---	---
Step-Parent Family					0.46	(0.12) ***
Single Mother					0.38	(0.11) ***
Single Father					0.84	(0.20) ***
Other Family Structure[a]					0.86	(0.19) ***
Number of Siblings at Home					0.05	(0.03)
No Working Mother at Home					---	---
Mother Works					-0.05	(0.11)
Parental Control					-0.01	(0.03)
Parental Closeness					-0.12	(0.05) **
Neighborhood Context						
Racial Heterogeneity					0.63	(0.23) ***
Disadvantaged Neighborhood					0.26	(0.12) **
Constant	-0.18	0.43	7.81	0.58 ***	7.77	(0.65) ***
Fit Statistic	$F_{(13,116)}$ = 9.36	***	$F_{(19,110)}$ =25.28	***	$F_{(34,96)}$=18.82	***

Note: Numbers in parentheses are standard errors.

[a] Coefficients for missing values indicators on parents' education and English language proficiency not shown.

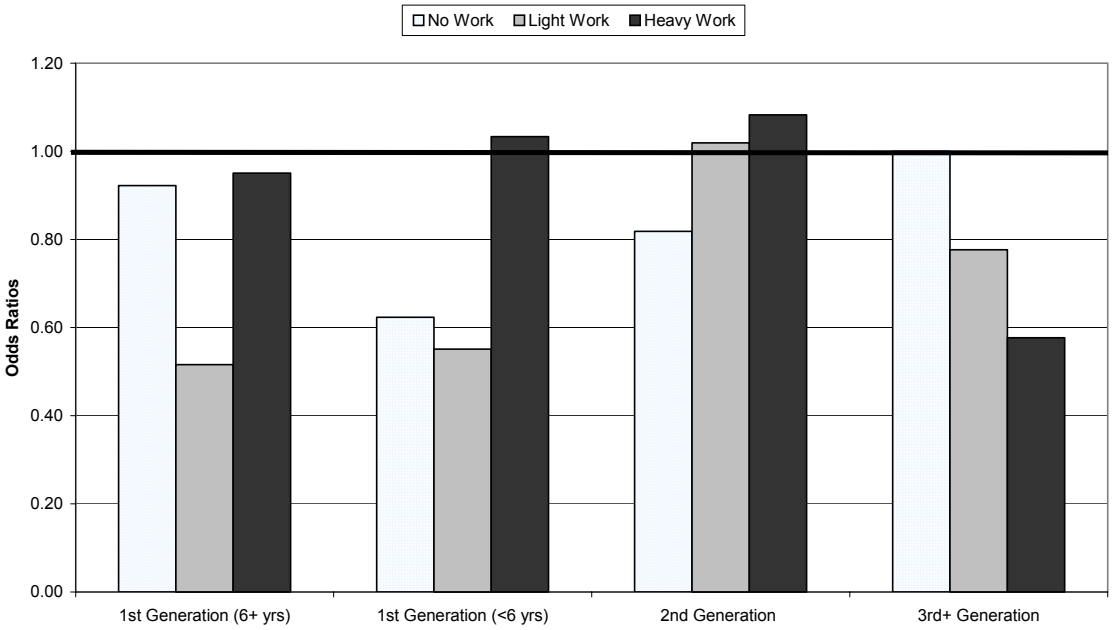
*** p-value<.01, ** p-value<.05, p-value<.1

Figure 3. Adjusted Odds Ratios of Dropping Out, by Immigrant Generation and Ethnicity



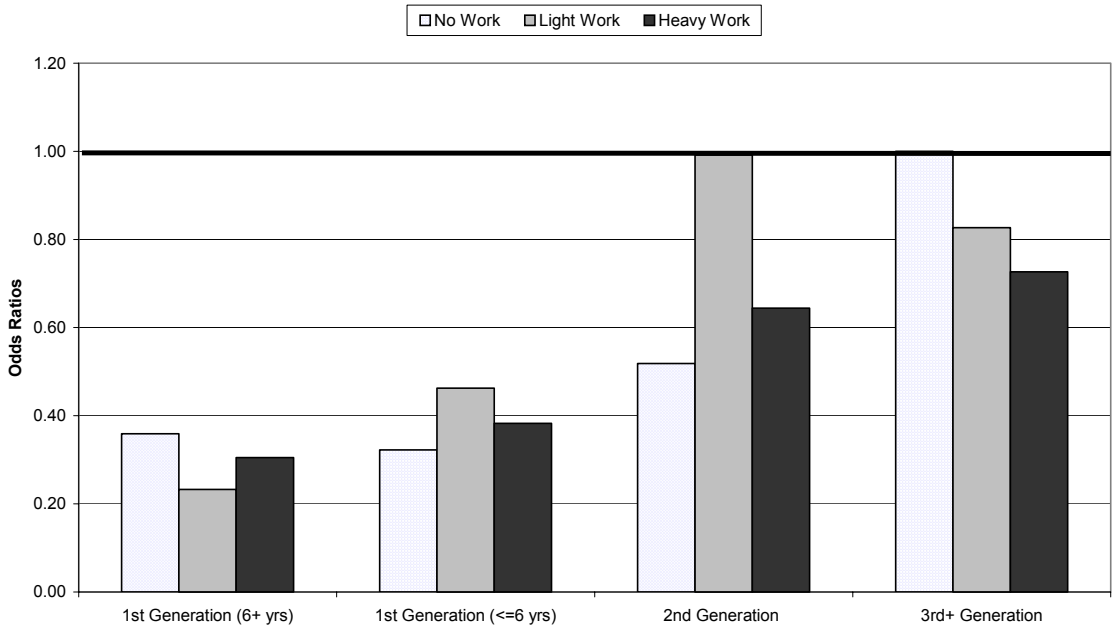
Note: Odds ratios are calculated from ethnicity and generation coefficients in Table 2, model 3.

Figure 4. Unadjusted Odds of Dropping Out of High School, by Work Intensity and Immigrant Generation (N=12,638)



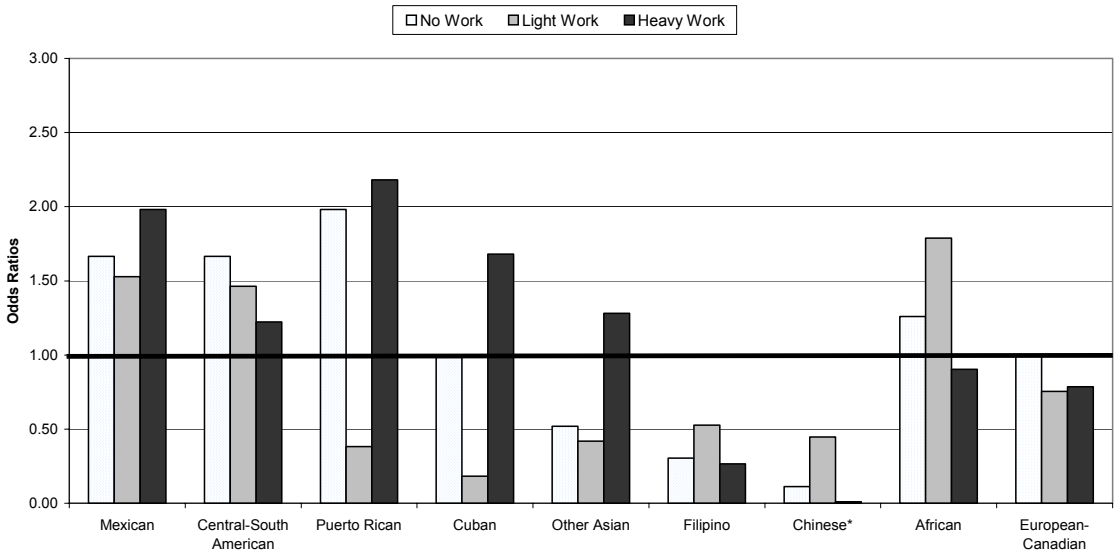
Note: Odds ratios are calculated from a logit model that includes only immigrant generation and the interactions of immigrant generation and work intensity.

Figure 5. Adjusted Odds Ratios of Dropping out of High School, by Immigrant Generation and Work Intensity (N=12,638)



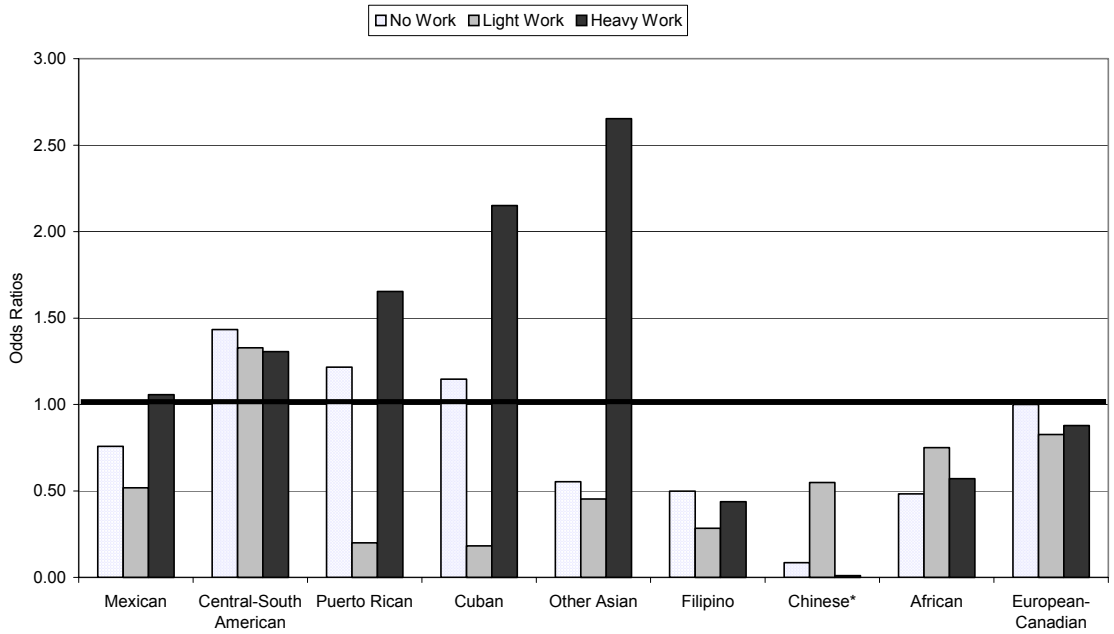
Note: Odds ratios are calculated from a logit model that includes interactions between work and immigrant generation and ethnicity and all other covariates included in Table 2, Model 3.

Figure 6. Unadjusted Odds of Dropping Out of High School, by Race-Ethnicity and Work Intensity (N=12,617)



Note: Heavy work predicted high school completion perfectly among Chinese. Therefore, these 21 cases were excluded for the logit esimation. Odds ratios are calculated from a logit model that includes ethnicity and interactions of ethnicity and work intensity.

Figure 7. Adjusted Odds Ratio of Dropping out of High School, by Race-Ethnicity (N=12,617)



Note: Heavy work predicted high school completion perfectly among Chinese. Therefore, these 21 cases were excluded for the logit esimation. Odds ratios are calculated from a logit model that includes all of the covariates reported in Table 2, Model 3.

Table 3. Logit Regression on Dropout, by Race-Ethnicity

	Hispanic (N=2,018)		Asian (N=1,048)		African[b] (N=2,658)		EuroCanadian (N=6,869)	
SocioDemographic								
1st Generation	---	---	---	---	---	---	-2.03	(1.01) **
1st Generation (6+ yrs)	-0.53	(0.42)	-2.36	(0.66) ***	---	---	---	---
1st Generation (<6 yrs)	-1.03	(0.53) *	0.38	(0.58)	---	---	---	---
2nd Generation	-0.26	(0.28)	0.49	(0.55)	-0.63	(0.39)	-0.09	(0.26)
3rd+ Generation	---	---	---	---	---	---	---	---
European-Canadian	---	---	---	---	---	---	---	---
Mexican	---	---	---	---	---	---	---	---
Central-South American	0.42	(0.24) *	---	---	---	---	---	---
Puerto Rican	0.18	(0.26)	---	---	---	---	---	---
Cuban	0.01	(0.56)	---	---	---	---	---	---
Chinese	---	---	---	---	---	---	---	---
Filipino	---	---	0.77	(0.71)	---	---	---	---
Other Asian	---	---	1.20	(0.90)	---	---	---	---
African	---	---	---	---	---	---	---	---
Female	-0.12	(0.17)	-0.48	(0.45)	-0.80	(0.14) ***	-0.58	(0.10) ***
Age	-0.18	(0.05) ***	-0.14	(0.14)	-0.09	(0.04) **	-0.21	(0.04) ***
School and Work								
School Attachment	-0.08	(0.04) **	0.20	(0.18)	-0.06	(0.03) *	-0.12	(0.02) ***
English Language Proficiency[a]	-0.04	(0.01) ***	-0.03	(0.02)	-0.03	(0.01) ***	-0.05	(0.00) ***
High College Aspirations	-0.82	(0.20) ***	-0.73	(0.45)	-0.79	(0.22) ***	-0.75	(0.11) ***
No Work Experience	---	---	---	---	---	---	---	---
Light Work Experience	-0.15	(0.26)	-0.01	(0.51)	0.39	(0.27)	-0.11	(0.11)
Heavy Work Experience	0.39	(0.25)	1.05	(0.58) *	-0.13	(0.32)	-0.02	(0.15)
Family Context								
Parent dropout	---	---	---	---	---	---	---	---
Parent high school grad.	0.04	(0.27)	-1.07	(0.63) *	-0.55	(0.25) **	-0.68	(0.17) ***
Parent some college	-0.71	(0.37) *	-0.80	(0.65)	-0.67	(0.26) **	-0.91	(0.18) ***
Parent college graduate	-1.31	(0.38) ***	-1.65	(0.86) *	-1.69	(0.33) ***	-1.34	(0.18) ***
Two-Parent Family	---	---	---	---	---	---	---	---
Step-Parent Family	0.51	(0.28) *	0.94	(0.54) *	0.95	(0.31) ***	0.36	(0.15) **
Single Mother	-0.04	(0.28)	1.26	(0.71) *	0.43	(0.22) **	0.44	(0.15) ***
Single Father	1.70	(0.55) ***	2.29	(0.86) ***	1.04	(0.50) **	0.51	(0.26) *
Other Family Structure[a]	1.11	(0.42) ***	1.62	(0.72) **	0.58	(0.41)	1.01	(0.27) ***
Number of Siblings	0.08	(0.07)	0.06	(0.18)	0.15	(0.06) **	-0.01	(0.04)
No Working Mother at Home	---	---	---	---	---	---	---	---
Mother Works	0.56	(0.19) ***	-0.48	(0.46)	0.38	(0.23) *	-0.28	(0.15) *
Parental Control	-0.06	(0.05)	0.09	(0.15)	-0.01	(0.06)	0.01	(0.03)
Parental Closeness	-0.01	(0.16)	0.11	(0.29)	-0.05	(0.10)	-0.18	(0.08) **
Neighborhood Context								
Racial Heterogeneity	0.34	(0.43)	-0.39	(1.21)	1.38	(0.52) **	0.52	(0.31) *
Disadvantaged Neighborhood	0.67	(0.33) **	-2.12	(1.44)	0.42	(0.29)	0.25	(0.14) *
Constant	6.05	(1.24) ***	0.15	(3.50)	3.02	(1.07) ***	10.06	(0.89) ***
Fit Statistics	$F_{(28,101)} = 9.12$ ***		$F_{(27,102)} = 13.94$ ***		$F_{(23,106)} = 8.24$ ***		$F_{(24,105)} = 20.87$ ***	

Note: Numbers in parentheses are standard errors.

[a] Coefficients for missing values indicators on parents' education and English language proficiency not shown.

[b] First generation status perfectly predicted high school completion among blacks.

*** p-value<.01, ** p-value<.05, *p-value<.1

Table 4. Logit Regression on GED Completion among Dropouts, N=1,678

	Model 1		Model 2		Model 3	
Demographic Characteristics						
1st Generation (6+ yrs)	-1.87	(0.44) ***	-1.31	(0.52) **	-1.31	(0.54) **
1st Generation (<6 yrs)	-0.32	(0.42)	0.09	(0.45)	0.20	(0.48)
2nd Generation	0.16	(0.27)	0.21	(0.28)	0.15	(0.28)
3rd+ Generation	---	---	---	---	---	---
European-Canadian	---	---	---	---	---	---
Mexican	-0.57	(0.27) **	-0.12	(0.28)	0.14	(0.31)
Central-South American	-0.26	(0.40)	0.10	(0.40)	0.03	(0.40)
Puerto Rican	0.72	(0.57)	1.22	(0.63) *	1.12	(0.59) *
Cuban	0.34	(0.62)	0.32	(0.72)	0.66	(0.85)
Chinese	0.89	(0.29) ***	1.28	(0.32) ***	1.53	(0.45) ***
Filipino	0.20	(0.64)	0.26	(0.75)	-0.05	(0.80)
Other Asian	-0.43	(0.58)	-0.68	(0.72)	-0.73	(0.74)
African	-0.39	(0.17) **	0.10	(0.17)	0.19	(0.23)
Female	-0.05	(0.12)	0.10	(0.14)	0.09	(0.14)
Age	0.10	(0.05) ***	0.12	(0.05) **	0.10	(0.05) **
Education: Abiliy & Aspirations						
English Language Proficiency[a]			0.05	(0.01) ***	0.05	(0.01) ***
High College Aspirations			0.20	(0.15)	0.15	(0.16)
Family Context						
Parent dropout					---	---
Parent high school grad.					0.55	(0.21) ***
Parent some college					1.18	(0.30) ***
Parent college graduate					1.59	(0.28) ***
Two-Parent Family					---	---
Step-Parent Family					-0.24	(0.23)
Single Mother					-0.14	(0.18)
Single Father					-0.43	(0.40)
Other Family Structure[a]					-0.38	(0.39)
Number of Siblings at Home					0.06	(0.06)
No Working Mother at Home					---	---
Mother Works					-0.02	(0.18)
Parental Control					-0.09	(0.04) *
Parental Closeness					-0.15	(0.10)
Neighborhood Context					0.08	(0.36)
Racial Heterogeneity					-0.11	(0.23)
Disadvantaged Neighborhood						
Constant	-1.73	0.76 **	-7.38	1.29 ***	-6.31	(1.47) ***
Fit Statistics	$F_{(13, 112)} = 4.64$ ***		$F_{(16,109)} = 5.00$ ***		$F_{(30,95)} = 6.29$ ***	

Note: Numbers in parentheses are standard errors.

[a] Coefficients for missing values indicators on parent's education and English language proficiency not shown.

*** p-value<.01, ** p-value<.05, *p-value<.1