High School Pathways to Postsecondary Education Destinations: Integrated Multilevel Analyses of NELS, ELS and NCES-Barron's Datasets

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Abstract

This study explores high school pathways to postsecondary institutions under conditions of large-scale expansion of higher education (herein termed massification). Through descriptive analyses of NELS:88 and ELS, the study details changes over time in postsecondary entrance patterns by high school type and location. Through multilevel analyses of NELS:88 and ELS datasets, the study examines changes in postsecondary destinations between NELS and ELS by high school type and location, as well as the impact of high school type and location on students' transition into postsecondary education. Specifically, we find that students from more privileged high school sectors are, with notable exceptions, by and large able to maximize attendance at more privileged postsecondary destinations over time, and that structural location of secondary school both as hierarchically ranked and as providing varied opportunities (course-taking, AP, SAT/ACT, achievement) for later access to various kinds and levels of attainment is a key factor in overall pathways to differentially positioned postsecondary destinations (based on Barron's selectivity index). Implications for research and policy are discussed.

Arum, Gamoran and Shavit (2007) argue that the most important question regarding educational expansion is "whether it reduces inequality by providing more opportunities for persons from disadvantaged strata, or magnifies inequality by expanding opportunities disproportionately for those who are already privileged" (p.1). Focusing on the relationship between forms of higher education expansion and social stratification in fifteen nations, including the United States, Korea, and Israel, among others, the volume constitutes an important contribution to the literature on the extent to which educational expansion is linked to democratization of access. Given the purposively selected nations that comprise the study, the authors further probe the extent to which conditions of tertiary level institutional differentiation and market structure mediate outcomes of interest.

At the secondary school level, we have a more long standing body of research on the extent to which educational expansion reduces or magnifies inequality in academic achievement, generally measured by secondary school test scores (Campbell, Hombo & Mazzeo, 2000; Gamoran, 1987, 2001; Hout, Raftery & Bell,1993; Lucas, 2001; Raftery & Hout, 1993;). Although this latter body of literature tends to focus on race and social class inequalities with specific attention to the extent to which policies designed to ameliorate race based inequalities, in particular, play a role in "closing the achievement gap" (Gamoran, 2008; Lee, 2002; Orfield & Lee, 2006), more recent research by Reardon (2011) investigates the extent to which the relationship between family socioeconomic status characteristics and measured academic achievement has changed over the past fifty years. Using data from nineteen nationally representative studies, Reardon concludes as follows: "The answer, in brief, is yes, The achievement gap between children from high-

and low-income families is roughly 30 to 40 percent larger among children born in 2001 than among those born twenty-five years earlier. In fact, it appears that the income achievement gap has been growing for at least fifty years, though the data are less certain for cohorts of children born before 1970". (p. 91). Reardon further notes that not only has the achievement gap between children from high-and low-income families grown substantially over past recent decades, but that "(t)he income achievement gap is now considerably larger than the black-white gap, a reversal of the pattern fifty years ago" (p. 110).

Much, although not all of this literature on both the secondary school "achievement gap" and college entrance patterns, pays specific attention to testing hypotheses related to "maximally maintained inequality" and "effectively maintained inequality" (see, for example, Bailey and Dynarski, 2011, who, although not paying specific attention to issues of "maximally maintained inequality" in their recent investigation of postsecondary access patterns, nevertheless contribute important research in this area), thereby addressing the question posed by Arum et al. (2007) regarding the extent to which educational expansion "reduces inequality by providing more opportunities for persons from disadvantaged strata, or magnifies inequality by expanding opportunities disproportionately for those who are already privileged" (p.1).

Given the centrality of these two strands of research (one on postsecondary access and the other on secondary school academic achievement) to this broader theoretically driven question, surprisingly little attention has been paid to the secondary to postsecondary pipeline. Where research on the secondary to postsecondary pipeline does exist, researchers generally employ a set of individually measured background

characteristics (SES and race) coupled, at times, with some measure of secondary educational experience (usually test scores) as predictors of attaining *any* postsecondary education, and/or entering/attending baccalaureate-granting, highly selective and/or two year institutions (Roksa, Grodsky, Arum & Gamoran, 2007). By focusing specifically on the secondary to postsecondary pipeline over time, this report contributes to our understanding of the "effects" of educational expansion, with specific attention to the role of secondary schools in relation to these processes, a topic that has received little attention in the literature to date. In addition, by employing the Barron's Selectivity Index rather than the traditionally employed two-versus four-year institutional designation as measure of tertiary level selectivity, we go well beyond prior important work in the area (Bowen, Chingos and MacPherson, 2009; Roksa, et al., 2007).

Over a decade ago, Kerckhoff (1995, 2001) posed an important question regarding the extent to which *where* students are located in the structure of educational opportunities at each stage limits their possible locations at the next stage. Reflecting upon the then current status of status attainment research, he states:

> Our growing knowledge of the role of institutional arrangements in shaping stratification processes suggests two kinds of modifications of the status attainment approach to modeling social stratification processes. One of these is to conceptualize intergenerational mobility as a series of moves through structural locations in social organizations (e.g., schools, firms). The other is to view these structural locations both as hierarchically ranked and as providing varied opportunities for later moves and access to various kinds and levels of attainment. (1995, p. 324)

Here we take Kerckhoff's observation as our starting point, with specific attention to the extent to which *where* students are located in the structure of educational opportunities in secondary schools, both as hierarchically ranked and as providing varied opportunities for later moves and access to various kinds and levels of attainment, empirically limits their possible locations at the postsecondary level. By engaging a longitudinal design, we link two critical scholarly areas—1) structural location of opportunities, and 2) linkages between massification and democratization of access and outcomes, while simultaneously contributing to both.

Although others engage this topic, none duplicate it. Roksa et al. (2007), for example, explore postsecondary entrance patterns in the United States, but do not investigate the secondary school sector as hierarchically organized and/or as predictor of postsecondary opportunities, nor do they employ PS institutional selectivity as enabled by the Barron's Selectivity Index, as this database was only recently released. Important research has also been conducted on factors related to the changes within the postsecondary sector itself (e.g., changes in financial aid policies; increased marketization of higher education) that press towards particular patterns of college attendance and, in some cases, outcomes. However, this body of research rarely addresses empirical connections between secondary schools and postsecondary destinations (Avery & Kane, 2004; Heller, 2001; Hoxby, 1997). Although Bowen et al. (2009) evidence targeted attention to type of secondary school as predictor of postsecondary opportunities, they concentrate solely on public colleges/universities rather than examine a range of postsecondary destinations as we do here.

There is also a rich literature on the myriad ways that SES and race stratification in families and educational institutions *potentially* affect postsecondary attendance patterns (Aaronson, et al., 2007; Burkam & Lee, 2003; Gamoran, 1987; Gamoran & Mare, 1989; Haney et.al., 2005; Hoogstra, 2000; Kelly, 2008; Lareau, 1989, 2003; Lee & Bryk, 1988; Lucas, 2001; Ma & McIntyre, 2005; Nichols & Berliner, 2007; Oakes, 1985, 1990; Oakes, Joseph & Muir, 2003; Orfield & Lee, 2006; Riegle-Crumb, 2006; Wimberly & Noeth, 2005). However, this voluminous and impressive body of literature largely focuses on predictors of academic achievement at the secondary level, rather than empirically linking what goes on in secondary school with postsecondary destinations.

Few studies, in fact, analyze secondary school level effects on what Hill (2008) calls the "college linking process," and Hill's research on institutional secondary school arrangements as predictor of postsecondary entrance patterns informs the proposed research. However, Hill focuses exclusively on college counseling at the secondary school level rather than on a broad range of factors that press towards analysis of secondary schools as hierarchically ranked and as providing varied opportunities for later moves and access to various kinds and levels of attainment.

In sum, much research remains to be done in light of Kerckhoff's important comments. Although we have excellent research on the ways in which and the extent to which secondary school arrangements/opportunities are related to academic achievement, we know relatively little when we conceptualize secondary school location as hierarchically ranked and as providing varied opportunities for access to varying type and level of attainment. In the case at hand, there is relatively little research on the ways in which and extent to which variations across secondary school serve to limit possible

locations with regard to PS destination (type, prestige etc., with serious potential implications for PS persistence, graduation, and access to post-graduate study).

Arum et al.'s (2007) volume, for example, does not specifically address secondary school opportunity structure as linked to postsecondary destinations. Although the volume focuses on nature of eligibility for postsecondary attendance in worldwide context, thereby invoking the secondary school sector, authors do not specifically or uniformly address the empirical links between secondary school arrangements and postsecondary opportunities. On the other hand, work by Bowen et al. (2009) on persistence and postsecondary completion patterns evidences more targeted attention to type of high school (size of senior class; racial/ethnic mix; urban/suburban/rural location; neighborhood wealth; and academic standing as measured by SAT/ACT test-taking behavior and average scores, and percentage of students who took at least one AP examination) as predictor of postsecondary possibilities. As they take as their starting point the analysis of 1999 cohort students who enrolled at public colleges and universities (including public flagships, less selective publics, and HBCU's), it was never their intention to consider linkages between type of high school (as defined here) and a wide range of PS destinations (publics and privates of varying selectivity; two versus four year institutions and the like).

Although important work has been done on the extent to which educational expansion reduces or magnifies inequality, there has been remarkably little exploration of the pathways through which students of varying backgrounds end up in differentially positioned institutions of higher education as the higher education system itself expands. Where such work has been done, the focus is generally on a set of background

characteristics (race, SES, gender) coupled with some measure of educational experience (usually achievement test scores) as predictors of attaining *any* postsecondary education. More recently, scholars have started to model the chances of entering/attending baccalaureate granting, highly selective and/or two-year institutions based on these same individually driven predictor variables. In contrast, a central hypothesis of our work is that secondary school institutional arrangements play a *key* role in shaping stratification processes, in this case postsecondary destinations. Specifically, we hypothesize that structural location of secondary school both as hierarchically ranked and as providing varied opportunities (e.g., achievement test scores, AP/IB examinations, SAT/ACT scores, GPA) for later moves and access to various kinds and levels of attainment will be an important factor (above and beyond the entering characteristics of students) in pathways to differentially positioned postsecondary destinations.

Our research is linked to critical policy concerns regarding meaningful access to postsecondary institutions. Although the rhetoric of "higher education for all" and "increased access to higher education" sounds promising, and indeed, must be understood as a "positive" turn in light of embedded advocacy for historically disenfranchised groups in the population, we need further analyses that empirically assess what happens with regard to postsecondary access patterns as the postsecondary system itself undergoes major expansion. In other words, in spite of rhetoric to the contrary, we must take more seriously the "access to what" question in light of postsecondary massification. Additionally, we need empirically driven and nuanced analyses of the pathways to varying type and selectivity of postsecondary institution, and specifically the role of the secondary school opportunity structure in positioning students for postsecondary entrance

to differentially positioned tertiary level destinations. This will enable a more informed discussion about policy matters related to access to higher education, as well the specific contribution of secondary school opportunity structure to outcomes of interest.

In this regard, the effects of school location (conventionally operationalized as urban, suburban, rural) on student performance have often been mixed, and may be better understood when we take into account demographic and organizational contexts in which schools work (Brooks-Gunn, Duncan & Aber, 1997; Hallinan, 1988; Jencks & Mayer, 1990; Khattri , Riley & Kane, 1997; Lippman, Burns & McArthur, 1996; Wong & Lee, 1998). Likewise, the effects of school type (public vs. private) on academic achievement and educational attainment, has also produced mixed results, with attendant controversies (Braun, Jenkins &Grigg, 2006; Bryk, Lee & Holland, 1993; Chubb & Moe, 1990; Coleman, Hoffer & Kilgore, 1982; Gamoran, 1987, 1996; Hoffer, Greeley & Colemam, 1985; Lubienski & Lubienski, 2006). These mixed results from two separate lines of research have confused educators and policymakers as to important variables that might be addressed in order to improve student's academic achievement and subsequent transition into the postsecondary sector. Gamoran's research (1996) on the effects of type of school attended on academic achievement, with specific attention to magnet schools, is particularly germane to our study. However, Gamoran does not link the variables of interest to postsecondary destination. Our study builds on this important body of prior research so as to combine both school location and type effects to develop a more refined categorization of school setting. Additionally, by exploring the impact of type and location of secondary school on postsecondary destination patterns, the research enters

critical intellectual and policy-related territory in our increasingly global knowledge economy.

Methods

We use two NCES national longitudinal datasets, the National Education Longitudinal Study (NELS) and the Educational Longitudinal Study (ELS), both of which provide information on transition from high school to postsecondary education along with student, family and school characteristics. The study uses descriptive and multilevel analysis methods to explore the impact of high school type and location on students' transition into postsecondary education.

First, we cross-classify students in both NELS and ELS samples based on their high school origin (by type/location) and PSE institution destination (by type/selectivity), refining the Location variable by focusing on variation within the suburban category to include High SES, Low Minority; Mixed SES and Minority; and Low SES, Low Minority (constructed by using norm-referenced quartiles rather than by employing criterion-referenced benchmarks). Results suggest that this is an important analytical/methodological move, as variation within the suburban category is notable (see Tables 1 and 2).

We additionally refine type of institution by including varying measures of Urban Magnet and Independent (NAIS versus Catholic Independent), while retaining Catholic Parish as a separate category. For PSE institutional type, we consider public vs. private distinction on top of a 2-year vs. 4-year distinction, and selectivity classifications as per Barron's (see Appendix). We also complete cross-breaks for New Basics and AP/IB coursework, as well as ACT/SAT scores.

The frequency and percentage of NELS: 88 high school graduates and ELS: 2002 high school graduates who attended 4-year postsecondary institutions are compared by Barron's admissions competitiveness rating (1992 ratings for NELS and 2004 ratings for ELS). Because both of the NCES datasets employed comparable sampling and assessment/survey designs, cross-cohort comparison of the results enhance our understanding of any changes in the nature and type of student transition from high schools to PSE institutions over the past two decades.

Data collected under both NELS and ELS are hierarchical in nature because students are nested within schools. Hierarchical linear models (HLM) address the problem of students nested within schools. The use of HLM on NELS and ELS data enable us to cope with sampling error resulting from the multi-stage sampling. The data are weighted at the student and school levels. The selectivity of PSE institutions as measured by Barron's rating of institution admissions competitiveness, as well as the distinction between 4-year and 2-year colleges, is used as the dependent variable. We therefore use "hierarchical generalized linear model" (HGLM) by specifying a nonlinear analysis appropriate for multinomial dependent variable (Raudenbush & Bryk, 2002). Based on prior research, we build multilevel models to "explain" variation in postsecondary education destinations based on key school settings (location and type) and other variables.

The outcome, Yij, takes on different values according to the chance that student i in school j enters different type of PSE institution, including 4-year colleges/universities with differential level of selectivity (i.e., high competitive, middle competitive, low competitive) and 2-year colleges. We test the hypothesis about the effects of high school

location and type on different PSE destination. In addition, student and family characteristics as covariates are important both in their own right and as controls for estimating unique effects of school location/type. We follow the sequence of testing multilevel mediation effects as proposed by Krull and MacKinnon (2001). We hypothesize that the independent variable, school location/type at the school level (level 2), influences the mediators such as advanced course offering and academic learning climate at the school level (level 2) and advanced course-taking and academic achievement/aptitude at the student level (level 1) and that those mediators in turn influence the dependent variable, the odds of differential PSE destination at the student level (level 1).

One HLM model that regresses the dependent variable (Y) on the independent variable (Z) along with mediators (M) and control variables (X and C) is shown below.

Level-1 model (Student Level):

$$Y_{mij} = b0j + b1jX1ij + b2jX2ij + b3jM1ij + b4jM2ij + eij$$

Y_{mij} is the log-odds of falling into category *m* relative to category *M (the reference group/category) regarding* postsecondary educational institution destination for student i in school j; $Y_{mij} = \log(P_{mij} / P_{Mij})$. In this case the reference group is those who did not attend any PSE institutions. The six categories of 4-year colleges/universities and one category of 2-year colleges are then compared to the non-PSE category.

b0j is the intercept for school j, that is, adjusted school mean score;

X1ij is the indicator of student i's race, which is a dummy variable for white student in school j;

X2ij is the indicator of student i's family SES (a factor composite of parental education and income level, availability of reading materials at home, etc.) in school j;

M1ij is a set of indicators of student i's taking advanced English and math courses (honors or AP courses) in school j;

M2ij is a set of measures of student i's academic achievement/aptitude (SAT/ACT, high school GPA, standardized reading and math test scores at 12^{th} grade) in school j;

eij is a Level-1 random effect that represents the deviation of student ij's score from the predicted log odds based on student-level model.

Level-2 model (School Level):

$$b\ 0j = g00 + g01Zj + r0j$$

b 0j represents the school j's average log odds of students' PSE destination (m) adjusted for its composition of students' academic, racial, and social backgrounds.

Zj is a set of dummy variables for the location/type of high school j, including Urban Public Test-in; Urban Magnet Test-in; Urban Magnet Open; Urban Catholic; Urban Other Private; Suburban Public High SES Low Minority; Suburban Public Mixed SES Minority; Suburban Public Low SES High Minority; Suburban Catholic; Suburban Other Private; Rural Public; Rural Private; NAIS. Reference group is Urban Public Comprehensive.

While these eight different categories of PSE destination can be treated as hierarchically ordered, the student and school-level factors that predict competitive four-year colleges can be different from those that predict noncompetitive four-year colleges or 2-year colleges. Thus, we examined each category separately so that information about the differential processes and contexts leading to different postsecondary destinations can be fully captured. We then checked model fits and computed a proportion of the reduction in college access gaps among different high school types/locations.

Findings

Descriptive Analysis

Overall patterns of postsecondary education attendance

Table 1 shows the distribution of high school students' postsecondary education attendance as cross-classified by high school type and PSE institution type based on ELS

data. Among all high school types, NAIS (National Association of Independent Schools) institutions perform best in terms of proportion of students entering more selective PSE institutions. NAIS is followed by Catholic schools, which in turn, surpass suburban public High SES/Low minority schools and public magnet test-in schools. Test-in urban public magnet schools tend to perform as well as High-SES/Low-minority suburban public counterparts. Further, both open magnets and test-in magnets have proportionally more students entering PSE institutions as compared to remaining urban publics.

Students from NAIS institutions are most likely to end up in high-competitive 4-year colleges and universities as compared to students from all other institutional types/locations. Only 2 percent of NAIS students fall into the No PSE category; 5 percent enter 2-year institutions; 1 percent enter public or private 4 -year low-competitive institutions respectively; and 29 and 17 percent enter middle-competitive public and private postsecondary colleges and universities respectively. Notably, 35 percent of NAIS students enter 4-year high-competitive private institutions as compared with 22 percent of those from High SES/Low Minority suburban institutions that enter comparable postsecondary sector. 9 percent of NAIS students enter the 4-year high-competitive public sector versus 4 percent of those who attend High SES/Low Minority suburban schools.

Among all types of PSE institutions considered in this study, magnet school students are most likely to go to four-year middle-competitive publics (37 percent of test–in as compared to 17 percent of open) and competitive privates (23 percent versus 10 percent of test-in and open respectively). As the level of PSE selectivity increases, their

entrance rate drops, but both test-in and open magnet schools tend to maintain relative competitive edge over regular public schools.

There also exist notable differences within the comprehensive public school suburban sector. The percentage of students who do not enter PSE varies by racial and socioeconomic composition among the three subcategories of suburban schools:

High SES/Low Minority: 11 percent

Mixed SES and Minority: 25 percent

Low SES/High Minority: 42 percent.

Looking at the comprehensive suburban sector as a whole, 27 percent of students do not attend PSE. This compares with 33 percent in the open comprehensive urban public sector who do not attend PSE. Nineteen percent of those in open magnets and 10 percent in test-in urban magnets do not attend PSE. This compares with 42 percent in Low SES/High Minority suburban publics that do not attend PSE within two years of graduating high school, a finding, among others, that we find worthy of note.

Changes in postsecondary education attendance

To what extent are the aforementioned patterns in PSE attendance based on the ELS cohort different from past results based on the NELS cohort? Significant changes have occurred during the 1990s when access to higher education expanded considerably, accompanying by increasing institutional differentiation. In light of this national trend, we examine differences in postsecondary attendance patterns between NELS (Table 2) and ELS (Table 1).

Compared to NELS, ELS students are more likely to enter postsecondary education, but such differences are not statistically significant. For example, results for "No PSE" in Table 3 indicate that the only significant results are for urban public magnet test-in high schools (gap=-39.8, t=-2.50, $p<0.05$) and rural public comprehensive schools (gap=-9.2,

t=-3.43, $p<0.001$). In other words, ELS students who attend public magnet test-in high schools are more likely to receive postsecondary education than NELS students who attend comparably located high schools. In addition, ELS students who attend rural public comprehensive high schools are more likely to enter postsecondary education than NELS students who attend the same type of institution. For the other non-statistically significant results, it can be said that ELS students are statistically neither more likely nor less likely to enter postsecondary education than NELS students.

With regard to the 2-year sector in Table 3, most of the results are statistically significant; it can be concluded that ELS students are less likely to enter 2-year institutions than NELS students. Results for entrance into 4-year colleges/universities indicate that ELS students are also more likely to obtain 4-year education than NELS students, and that ELS students are less likely to enter 4-year low competitive private institutions than NELS students. Overall, the increase from NELS to ELS in the 4-year sector is due to increased attendance at 4-year public universities rather than 4-year privates. For example, for urban public comprehensive open high schools, though ELS students are statistically more likely to enter both high-competitive public (gap=2.9, t=6.02, $p<0.001$), and high-competitive private (gap=1.8, t=4.85, $p<0.001$) institutions than NELS students, the gain in the high-competitive public sector is larger than in the high-competitive private sector (Table 3).

Under the 4-year low-competitive private education column, ELS students from urban public magnet open (gap=1.5, t=2.08, $p<0.05$) and suburban Catholic (gap=1.3, t=2.01, $p<0.05$) schools are statistically more likely to enter low-competitive private institutions than NELS students from comparably located schools. However, ELS students from urban Catholic publics (gap=-1.1, t=-2.42, $p<0.05$) are statistically less likely to enter 4-year low-competitive private institutions than NELS students. For the other results under the 4-year low-competitive private

education column, no statistically significant differences are found between ELS and NELS students. Though ELS students are, in general, more likely to enter the 4-year sector than NELS students, ELS students from urban public comprehensive open schools exhibit increased chance of entering the 4-year postsecondary sector relative to NELS students at all levels (most of the results in this row are significant at 0.001 level), followed by ELS students from rural public high schools.

Data in Table 3 suggest that ELS and NELS students in urban public comprehensives, urban public magnets, and suburban public comprehensives have statistically similar chance to obtain postsecondary education. Additionally, ELS students in these three high school sectors are less likely to enter the 2-year sector than NELS students, and more likely to enter 4-year postsecondary institutions. The increased entrance to 4-year institutions from NELS to ELS is greater in the public 4-year university/college sector than the private. For both urban public comprehensive and urban public magnet schools, ELS students are more likely to enter 4-year institutions at all selectivity levels. Suburban public comprehensive ELS students, in contrast, are more likely to enter middle and high-competitive 4-year institutions than NELS students.

Results suggest that at the most generalized level—attendance at postsecondary institutions—only students who attend public magnet test-in schools and rural public comprehensive schools are statistically more likely to enter postsecondary education than NELS students who attend comparably located high schools. In other words, increased access at the most general level benefits students from these high school sectors, in particular. When assessed by high school type over time, there is increased movement for students from all school types into the 4-year versus 2-year sector. Other than this movement from the 2 to the 4-year sector,

data indicate that the increase from NELS to ELS with regard to postsecondary entrance is largely in 4-year public as opposed to 4-year private universities.

With regard to differentiation over time, the increase of 4-year education attendance for ELS students from urban high schools occurs largely at middle-competitive 4-year institutions, followed by low-competitive institutions. In contrast, the increase in attendance at 4-year schools for ELS students from suburban high schools largely occurs at middle and high-competitive institutions. ELS students from suburban Mixed SES & Minority high schools, in particular, are more likely to enter middle and high-competitive postsecondary institutions than NELS students from comparably located high schools. ELS students from suburban Catholic schools are more likely to enter high-competitive institutions than NELS students from similar locations.

Descriptive data suggest a mixed pattern of changes in attendance at postsecondary institutions from NELS to ELS, with students from more privileged high schools (suburban Catholic and NAIS, for example) being able to capture an increased share of places in high-competitive postsecondary institutions, although NAIS students now enter low-competitive 4-year publics to a greater degree than they did 20 years ago. In general, suburban public comprehensive students from High SES/Low Minority and Mixed SES and Minority high schools have collectively been able to maximize their attendance at middle and high-competitive 4-year postsecondary institutions, while both urban public magnet and urban public comprehensive students have been able to maximize their attendance at 4-year institutions at a more general level.

Multilevel Analysis

The effects of high school type/location on PSE entry

Which type of high school is more or less successful in college entrance (including both 2-year and 4-year)? The results of the “baseline” model (Model 1 in

Tables 4-11)- including only school type/location as predictors without any control variables or mediators—confirm the patterns of gaps from the descriptive analysis reported above. As far as students' general access to postsecondary education (i.e., entrance into any level and type of colleges and universities) is concerned, urban comprehensive, regular public high schools tend to perform worse than any other type of high schools. An important (and surprising) exception to this pattern is the disadvantaged suburban high school (Low-SES/High Minority) that shows even lower chance of PSE entrance than the typical regular urban public high school counterpart. Among all high school types, the best performer is NAIS school, and their students' average odds of PSE entrance is 27 times higher than the odds of PSE entrance for urban public schools. The next best performer is suburban Catholic high school, for which their odds of PSE entrance is 10 times higher than urban public schools. Among schools within the same urban location, Catholic schools and magnet test-in schools also surpass regular public schools substantially; the odds of PSE entrance is about eleven times higher for urban Catholic schools and four times higher for test-in magnet schools.

The results of the "background" model (Model 2 in Tables 4-11)—including school type/location along with control for student and family background characteristics (gender, race, and SES)—show that the initial gaps in student access to PSE among different locations/types of high schools are reduced to some extent. Female students, higher SES students, and Asian students tend to have significantly higher chance of attending colleges and universities than their counterparts. The differences among high schools in terms of these demographic composition factors tend to explain some part of the PSE access gaps, but many still remain significant. For example, NAIS schools still

have eight times higher odds of PSE entrance than regular public schools even after matching their students by relevant targeted background factors. The same can be said of suburban or urban Catholic schools that still maintain significant advantage over regular public schools.

The results of the "merit" model (Model 3 in Tables 4-11)—with the addition of academic aptitude, achievement and course-taking variables as possible mediators of school type/location effects—largely explain away the remainder of the gaps. For example, NAIS schools turn out to have only 1.6 times higher odds of PSE entrance than regular public schools after matching students by both background and academic factors, and the gap is no longer statistically significant. The relative advantages for suburban or urban Catholic schools remain, but the gaps also are reduced substantially. This suggests that most of the private school advantages with regard to generalized postsecondary entrance come from a combination of family-related and school-related factors. Similar patterns are found for High SES/Low Minority suburban public schools, for which PSE advantages largely disappear after controlling both background and academic factors. At the same time, disadvantages for Low SES/High Minority suburban schools also disappear. These results suggest that schools can reduce half or more of the gaps in PSE access by improving students' academic merits such as course-taking history and achievement outcomes above and beyond the influences of student and family background characteristics.

The effects of high school type/location on different levels and types of PSE entry

Subsequent analyses separate 2-year and 4-year PSE institutions and further differentiate the competitiveness and sector among four-year colleges and universities. For example, which type of students and their high schools are more or less successful in entrance to the most competitive 4-year public college and university sector? The results show that the effects of some background variables including SES and race as well as academic factors are prevalent, but their effects tend to get stronger as we move up the ladder of PSE institutions in terms of hierarchy of student selectivity.

While there is no disadvantage for Blacks and Hispanics in terms of access to 2-year colleges, their gaps relative to Whites become more noticeable for both high-competitive 4-year public and private institutions. The opposite pattern of even stronger advantage at the more competitive PSE institutions is found for the Asian group. The same can be said of family SES effect. On the other hand, the gender gap (with male disadvantage) tends to be largely constant across all layers. At the same time, the effects of course-taking and achievement variables also get stronger at the top tier of colleges and universities.

While the above patterns are highly expected for the current SES-blind (particularly at the most highly competitive levels) and merit-based admission process, the analysis shows that high schools of different types and locations are more or less successful in capitalizing on this system to place their students into hierarchically structured PSE institutions.

Summary and Conclusion

Our study examines changes from early 1990s (NELS) to mid 2000s (ELS) in the transition from high school to PSE entrance patterns. By and large, there is only slight

expansion of higher education access in our sample population, while there was mostly reallocation between 2-year and 4-year sectors. The overall size of the PSE pie in our sample population did not get much larger, but a portion of the high school student population who attend 2-year colleges in NELS has shifted to 4-year colleges. In general, most of the shift occurs from the 2-year college sector to the 4-year middle-competitive public sector. However, we find that different types of high schools send students to different types of colleges and universities, thereby gaining access to a different niche of the higher education marketplace. For urban public schools, most of the gain in PSE entry occurred in low and middle-competitive 4-year institutions. Among urban public schools, regular public comprehensives only increased access to public colleges, whereas magnet public schools--open and test-in-- gained more access to both public and private colleges. For suburban public schools, most of the gain occurred in middle and high competitive 4-year colleges. For Catholic and NAIS schools, the relatively larger gain occurred in high competitive 4-year colleges. This pattern of change suggests that although the postsecondary system expanded in terms of numbers of students who attend PS institutions nation-wide, inequality in access has been "effectively maintained" (Lucas, 2001) as a result of differential high school matching to different types of 4-year colleges and universities. One caveat for this comparison is difference between two datasets in terms of time frame for data collection.

The effects of student background variables varied. Gender gap is consistent across all types of PSE. SES effect tends to increase incrementally at the more competitive colleges. Blacks showed advantages for the low-competitive sector, but disadvantages for middle or high-competitive sector. Hispanics showed disadvantages for

all categories except the 2-year college. Asians showed advantages for all categories, but relatively more for public than private. This may reflect the group's cost-conscious (and thus private-averse) selection mechanism. Controlling for these background factors, some portion of the gaps among different high school types in terms of PSE enrollment odds is gone, but still most of the gaps remain significant.

The effects of academic merit variables also varied. New Basics refers to minimum coursework in core subjects, 4-years of English and 3 years of math, social sciences and sciences. New Basics helped improve access predominantly for 4-year low and middle-competitive colleges. The odds of entry into these 4-year college sectors for students with New Basics are twice as large as the odds for students without Basics. Math pipeline refers to the highest level of math course taken during high school: the lowest level is no math, and the highest level is calculus. One step increase in the math pipeline and one unit increase in AP/IB courses both raise the odds of entry, particularly for the high-competitive 4-year college sector. Achievement is a composite factor of GPA, ELS test scores, and college entrance exam scores. Increase in achievement raises the odds of student entry for middle and high-competitive 4-year colleges; particularly for high-competitive private colleges, the odds of entry are raised dramatically by improving achievement. This pattern shows that different merit factors weigh more or less heavily in college admissions processes depending on which types and levels of colleges and universities students enter. After controlling for both background and merit factors, most of the gaps among different high school types in terms of PSE enrollment odds disappear, and many of the initial differences become no longer significant.

However, for magnet (test-in) schools, Catholic and NAIS schools, some of the gaps remain significant. This suggests that there may be some other (unobserved) factors beyond measured academic achievement and course-taking variables wherein specific types of high schools are able to maximize success in the college admissions process while simultaneously encouraging the personal and financial wherewithal (such as comfort level at more selective institutions coupled with increased knowledge of viable financial aid) that enable otherwise qualified students to attend the best postsecondary institution to which they can conceivably gain entrance. While this finding suggests a competitive advantage of certain high schools, in that select high school types "out perform" what might otherwise be expected of them based on variables under consideration here, it is unclear how much of this apparent extra advantage is due to more effective signaling to the colleges themselves (e.g., college admissions office's perception of high school reputations) or direct and enhanced preparation with regard to the increasingly challenging and complex postsecondary admissions process (e.g., direct college counseling with students and their parents/guardians, enhanced extracurricular activities with clearer focus on "college desirable" activities , specific information on financial aid, and so forth).

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Appendix

Table A1. 4-Year College/University Competitiveness Classification based on Student Selectivity in 1992—*NELS*

	4-Year		
Admission Criteria	Low Competitive	Middle Competitive	High Competitive
Grade Average	Below C or Graduation from accredited high school; may require completion of specified numbers of high school units	B- or above or C to B-	B+ to A or B to B+
Class Rank	Top 65% or N/A	Top 35 to 50% or Top 50 to 65%	Top 10 to 20% or Top 20 to 35%
Median SAT	Below 450 or Some require an entrance exam for placement purposes or for graduates of unaccredited high schools or for out-of state students	525 to 575 or 450 to 525	625 to 800 or 575 to 625
Median ACT	Below 21 or Some require an entrance exam for placement purposes or for graduates of unaccredited high schools or for out-of-state students	24 to 26 or 21 to 23	29 or higher or 27 to 28
Applicants Admitted	Top 85% or 98% of applicants; admit all state residents with some requirements for nonresidents	Less than 33% or 75 to 85%	Less than 33% or 33 to 50%
Examples of Institutions	*Public—* ●Alabama State University ●Armstrong State College ●Delta State University ●Kansas State University ●University of Toledo ●Wright State University *Private—* ●Ashland University ●Chapman University ●Cleary College ●Oakwood College	*Public—* ●Castleton State College ●Florida State University ●Iowa State University ●Salem State College ●University of Connecticut ●University of Washington *Private—* ●Aquinas College	*Public—* ●College of William and Mary ●Cornell University ●James Madison University ●Trenton State College ●United States Air Force Academy ●University of North Carolina at Chapel Hill *Private—*

	●University of Mary ●Walla Walla College	●Coe College ●Calvin College ●Knox College ●Niagara University ●Yeshiva University	●Duke Univesity ●Bucknell University ●Rice University ●Syracuse University ●University of Chicago ●Wheaton College

Table A2. 4-Year College/University Competitiveness Classification based on Student Selectivity in 2004—*ELS*

	4-Year		
Admissions Criteria	Low Competitive	Middle Competitive	High Competitive
Grade Average	Below C or Graduation from accredited high school; may require completion of specified numbers of high school units	B- or above or C to B-	B+ to A or B to B+
Class Rank	Top 65% or N/A	Top 35 to 50% or Top 50 to 65%	Top 10 to 20% or Top 20 to 35%
Median SAT	Below 500 or Some require an entrance exam for placement purposes or for graduates of unaccredited high schools or for out-of state students	573 to 619 or 500 to 572	655 to 800 or 620 to 654
Median ACT	Below 21 or Some require an entrance exam for placement purposes or for graduates of unaccredited high schools or for out-of-state students	24 to 26 or 21 to 23	29 or higher or 27 to 28
Applicants Admitted	Top 85% or 98% of applicants and all state residents (may have requirements for nonresidents)	50 to 66% or 75 to 85%	Less than 33% or 33 to 50%
Examples of Institutions	*Public—* ●Angelo State University ●Boise State University ●Cleveland State University ●Pittsburg State University ●Texas Southern University ●University of Southern Mississippi *Private—* ●Allen University ●Berkeley College	*Public—* ●Arizona State University ●California State University, Long Beach ●Florida International University ●Georgia State University ●Michigan State University ●University of Oregon *Private—* ●Barton College	*Public—* ●Clemson University ●University of Pittsburgh ●University of California at Berkeley ●University of Florida ●University of Texas at Austin ●University of Virginia *Private—* ●Amherst College ●Bard College

●Calvin College	●Clark University	●Boston University
●DeVry University/Chicago	●Columbia College	●Davidson College
●Southeastern College	●Cornell College	●Middlebury College
●Wilmington College	●University of Denver	●University of Miami
	●University of New Haven	

Note. This Table has been reconstructed from Appendix A Table A-1 in Schmitt, C. M. (2009). *Documentation for the Restricted-Use NCES-Barron's Admissions Competitiveness Index Data Files: 1972, 1982, 1992, 2004 and 2008* (NCES 2010-330). National Center for Education Statistics, Institute of Education Sciences. U.S. Department of Education. Washington, DC. For the sake of efficient analysis with sufficient sample size, the original 6 categories in Barron's classification scheme (excluding special category) were collapsed into 3 categories: "High" competitive category combines "most competitive" and "highly competitive" from Barron's; "Middle" category combines "very competitive" and "competitive" from Barron's; "Low" category combines "less competitive" and "noncompetitive" from Barron's.

Table A3. Variable Description and Descriptive Statistics—ELS

Independent Variables

Name	Description	Postsecondary Enrollment	2-Year	4-Year					
				Low Competitive		Middle Competitive		High Competitive	
				Public	Private	Public	Private	Public	Private
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Level 1 Variables									
Weighted N		1830051	747559	124758	38927	534306	202802	91757	89943
Male	Dummy coded 1 as male	0.46 (0.498)	0.47 (0.499)	0.46 (0.498)	0.50 (0.500)	0.44 (0.497)	0.43 (0.495)	0.49 (0.500)	0.44 (0.496)
SES	12th grade family socioeconomic status	0.16 (0.967)	-0.18 (0.872)	-0.07 (0.869)	-0.09 (0.892)	0.37 (0.919)	0.49 (0.903)	0.78 (0.915)	1.05 (0.936)
White (Reference)	Dummy coded 1 as White	0.67 (0.470)	0.60 (0.489)	0.54 (0.498)	0.51 (0.500)	0.74 (0.438)	0.79 (0.407)	0.74 (0.438)	0.78 (0.415)
Asian	Dummy coded 1 as Asian	0.05 (0.222)	0.04 (0.196)	0.03 (0.166)	0.02 (0.129)	0.06 (0.242)	0.03 (0.181)	0.14 (0.349)	0.10 (0.297)
Hispanic	Dummy coded 1 as Hispanic	0.13 (0.340)	0.20 (0.402)	0.13 (0.340)	0.12 (0.328)	0.07 (0.260)	0.07 (0.258)	0.07 (0.256)	0.08 (0.276)
Black	Dummy coded 1 as Black	0.14 (0.343)	0.14 (0.351)	0.29 (0.455)	0.34 (0.474)	0.12 (0.321)	0.10 (0.300)	0.05 (0.208)	0.04 (0.184)
American Indian	Dummy coded 1 as American Indian	0.01 (0.082)	0.01 (0.095)	0.00 (0.024)	0.01 (0.081)	0.01 (0.082)	0.00 (0.064)	0.00 (0.044)	0.00 (0.070)
Achievement	This is the mean of standardized SAT, 12th math test, and GPA for all courses.	0.11 (0.844)	-0.37 (0.729)	-0.10 (0.682)	-0.32 (0.785)	0.42 (0.657)	0.49 (0.673)	0.98 (0.556)	1.22 (0.537)
New Basics	This is a dummy coding variable composed by at least 3 units in math, science, and social science; at least 4 units in English; and at least 2 units in non-English language. 0=Fail to meet requirements; 1= Meet requirements	0.49 (0.500)	0.30 (0.459)	0.54 (0.498)	0.51 (0.500)	0.61 (0.488)	0.66 (0.473)	0.70 (0.457)	0.73 (0.446)
Self-expectation	How far in school respondent thinks will get?	Proportion: 1=0.1%	Proportion: 1=0.2%	Proportion: 1=0.0%	Proportion: 1=0.0%	Proportion: 1=0.0%	Proportion: 1=0.0%	Proportion: 1=0.0%	Proportion: 1=0.0%

	1=Less than high school graduation 2=High school or equivalency only 3=Get into college/university 4=Graduate from college/university 5=Graduate education	2=2.1% 3=14.1% 4=38.9% 5=44.8%	2=4.3% 3=29.6% 4=39.0% 5=26.9%	2=1.2% 3=7.4% 4=47.7% 5=43.7%	2=2.6% 3=11.0% 4=45.5% 5=41.0%	2=0.6% 3=3.0% 4=41.8% 5=54.5%	2=0.1% 3=2.8% 4=38.1% 5=59.0%	2=0.0% 3=1.8% 4=25.7% 5=72.5%	2=0.4% 3=0.1% 4=21.3% 5=78.2%
AP/IB Total	This is the sum of AP math, science, social science, and English	0.90 (1.675)	0.23 (0.746)	0.48 (1.027)	0.34 (0.952)	1.12 (1.670)	1.12 (1.620)	3.13 (2.609)	3.48 (2.390)
Science Pipeline	Science course taking pipeline 1=No science 2=Primary physical science 3=Secondary physical science and basic biology 4=General biology 5=Chemistry 1 or physics 1 6=Chemistry 1 and physics 1 7=Chemistry 2 or physics 2 or adv biology 8=Chemistry and physics and level 7	Proportion: 1=0.6% 2=2.0% 3=2.3% 4=21.2% 5=34.1% 6=19.5% 7=10.0% 8=10.2%	Proportion: 1=1.2% 2=4.2% 3=4.2% 4=34.9% 5=34.3% 6=10.8% 7=7.6% 8=2.7%	Proportion: 1=0.6% 2=0.1% 3=1.5% 4=22.9% 5=39.4% 6=21.0% 7=9.6% 8=4.8%	Proportion: 1=2.1% 2=0.0% 3=6.8% 4=20.2% 5=42.9% 6=12.2% 7=7.3% 8=8.3%	Proportion: 1=0.2% 2=0.5% 3=0.6% 4=11.1% 5=37.9% 6=25.4% 7=11.8% 8=12.4%	Proportion: 1=0.1% 2=0.9% 3=0.6% 4=8.9% 5=32.9% 6=30.5% 7=11.8% 8=14.4%	Proportion: 1=0.0% 2=0.3% 3=0.3% 4=5.5% 5=18.4% 6=27.7% 7=13.1% 8=34.7%	Proportion: 1=0.0% 2=0.0% 3=1.2% 4=3.4% 5=15.6% 6=28.4% 7=14.6% 8=36.9%
Math Pipeline	Math course taking pipeline 1=No math 2=Non-academic 3=Low academic 4=Middle academic 5=Middle academic II 6=Advanced I 7=Advanced II/Pre-calculus 8=Advanced III/Calculus	Proportion: 1=0.5% 2=1.1% 3=2.1% 4=15.4% 5=24.1% 6=19.2% 7=21.0% 8=16.6%	Proportion: 1=0.8% 2=2.2% 3=4.1% 4=29.3% 5=31.8% 6=16.8% 7=10.9% 8=4.0%	Proportion: 1=0.8% 2=0.4% 3=1.7% 4=9.6% 5=33.0% 6=20.7% 7=23.6% 8=10.2%	Proportion: 1=0.2% 2=0.0% 3=3.2% 4=20.6% 5=29.2% 6=25.2% 7=12.9% 8=8.7%	Proportion: 1=0.3% 2=0.0% 3=0.5% 4=4.7% 5=19.7% 6=24.5% 7=30.2% 8=20.1%	Proportion: 1=0.5% 2=0.1% 3=0.1% 4=4.3% 5=17.3% 6=20.8% 7=32.0% 8=24.9%	Proportion: 1=0.0% 2=0.0% 3=0.0% 4=2.0% 5=5.5% 6=11.6% 7=26.7% 8=54.2%	Proportion: 1=0.0% 2=0.1% 3=0.0% 4=1.0% 5=2.6% 6=9.5% 7=24.8% 8=62.0%
Level 2 Variables									
Weighted N		2116759	900277	145766	45683	594178	226036	102952	101867

Unweighted N		10016	3920	692	218	2810	1211	558	607
Urban Public Open (*Reference*)	Dummy coded 1 as Urban Public Open	0.23 (0.423)	0.25 (0.433)	0.31 (0.461)	0.31 (0.461)	0.23 (0.422)	0.17 (0.371)	0.21 (0.405)	0.15 (0.354)
Urban Public Testin	Dummy coded 1 as Urban Public Testing	0.02 (0.130)	0.02 (0.122)	0.05 (0.211)	0.02 (0.150)	0.02 (0.124)	0.02 (0.140)	0.01 (0.094)	0.00 (0.055)
Urban Magnet Testin	Dummy coded 1 as Urban Magnet Testin	0.01 (0.85)	0.00 (0.040)	0.01 (0.101)	0.00 (0.066)	0.01 (0.104)	0.02 (0.130)	0.01 (0.098)	0.01 (0.098)
Urban Magnet Open	Dummy coded 1 as Urban Magnet Open	0.02 (0.145)	0.02 (0.147)	0.02 (0.152)	0.02 (0.137)	0.02 (0.126)	0.03 (0.157)	0.02 (0.133)	0.04 (0.199)
Urban Catholic	Dummy coded 1 as Urban Catholic	0.03 (0.177)	0.02 (0.124)	0.03 (0.157)	0.03 (0.164)	0.04 (0.201)	0.06 (0.232)	0.06 (0.232)	0.06 (0.229)
Urban Other Private	Dummy coded 1 as Urban Other Private	0.01 (0.079)	0.01 (0.079)	0.01 (0.073)	0.04 (0.203)	0.01 (0.071)	0.01 (0.079)	0.00 (0.056)	0.00 (0.021)
Suburban Public High SES Low Minority	Dummy coded 1 as Suburban Public High SES Low Minority	0.01 (0.091)	0.00 (0.042)	0.00 (0.000)	0.01 (0.113)	0.01 (0.096)	0.02 (0.141)	0.01 (0.092)	0.04 (0.202)
Suburban Public Mixed SES Minority	Dummy coded 1 as Suburban Public Mixed SES Minority	0.39 (0.487)	0.39 (0.487)	0.32 (0.467)	0.36 (0.479)	0.40 (0.490)	0.38 (0.484)	0.46 (0.498)	0.37 (0.482)
Suburban Public Low SES High Minority	Dummy coded 1 as Suburban Public Low SES High Minority	0.04 (0.207)	0.07 (0.257)	0.04 (0.195)	0.02 (0.141)	0.03 (0.167)	0.02 (0.133)	0.02 (0.128)	0.02 (0.130)
Suburban Catholic	Dummy coded 1 as Suburban Catholic	0.02 (0.140)	0.01 (0.100)	0.02 (0.148)	0.02 (0.129)	0.02 (0.140)	0.05 (0.212)	0.03 (0.164)	0.04 (0.185)
Suburban Other Private	Dummy coded 1 as Suburban Other Private	0.01 (0.111)	0.01 (0.115)	0.00 (0.064)	0.01 (0.101)	0.01 (0.101)	0.02 (0.131)	0.01 (0.102)	0.02 (0.140)
Rural Public	Dummy coded 1 as Rural Public	0.18 (0.385)	0.20 (0.399)	0.19 (0.392)	0.14 (0.345)	0.18 (0.385)	0.18 (0.382)	0.13 (0.332)	0.10 (0.295)
Rural Private	Dummy coded 1 as Rural Private	0.00 (0.064)	0.00 (0.059)	0.00 (0.000)	0.00 (0.024)	0.00 (0.048)	0.01 (0.121)	0.00 (0.050)	0.00 (0.067)
NAIS	Dummy coded 1 as NAIS	0.02 (0.145)	0.00 (0.052)	0.00 (0.049)	0.01 (0.113)	0.02 (0.148)	0.04 (0.185)	0.04 (0.201)	0.16 (0.365)

Dependent Variables

Name	Description	Mean (SD)
Postsecondary Enrollment	0=No postsecondary education 1=Postsecondary education	0.73 (0.444)
2-Year	0=No postsecondary education 1=2-year	0.53 (0.499)

4-Year, Public Low Competitive	0=No postsecondary education 1=4-year, public low competitive	0.16 (0.363)
4-Year, Private Low Competitive	0=No postsecondary education 1=4-year, private low competitive	0.06 (0.229)
4-Year, Public Middle Competitive	0=No postsecondary education 1=4-year, public middle competitive	0.43 (0.495)
4-Year, Private Middle Competitive	0=No postsecondary education 1=4-year, private middle competitive	0.23 (0.418)
4-Year, Public High Competitive	0=No postsecondary education 1=4-year, public high competitive	0.12 (0.322)
4-Year, Private High Competitive	0=No postsecondary education 1=4-year, private high competitive	0.11 (0.318)

Table A4. Variable Description and Descriptive Statistics—NELS

Independent Variables

Name	Description	Postsecondary Enrollment	2-Year	4-Year					
				Low Competitive		Middle Competitive		High Competitive	
				Public	Private	Public	Private	Public	Private
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Level 1 Variables									
Weighted N		725399	562812	27026	23243	43921	57809	2785	7804
Male	Dummy coded 1 as male	0.50 (0.500)	0.50 (0.500)	0.40 (0.490)	0.49 (0.500)	0.58 (0.494)	0.49 (0.500)	0.39 (0.488)	0.55 (0.498)
SES	12th grade family socioeconomic status	-0.02 (0.870)	-0.12 (0.833)	0.13 (0.856)	0.18 (0.909)	0.32 (0.815)	0.49 (0.886)	1.17 (0.590)	1.13 (0.921)
White (*Reference*)	Dummy coded 1 as White	0.71 (0.452)	0.71 (0.455)	0.57 (0.496)	0.59 (0.492)	0.87 (0.338)	0.82 (0.384)	0.93 (0.260)	0.84 (0.366)
Asian	Dummy coded 1 as Asian	0.04 (0.200)	0.04 (0.205)	0.02 (0.143)	0.02 (0.133)	0.03 (0.175)	0.04 (0.191)	0.06 (0.244)	0.09 (0.290)
Hispanic	Dummy coded 1 as Hispanic	0.11 (0.315)	0.13 (0.334)	0.03 (0.181)	0.06 (0.238)	0.03 (0.168)	0.07 (0.248)	0.01 (0.097)	0.03 (0.159)
Black	Dummy coded 1 as Black	0.12 (0.329)	0.11 (0.315)	0.37 (0.483)	0.32 (0.467)	0.07 (0.257)	0.07 (0.262)	0.00 (0.000)	0.04 (0.198)
American Indian	Dummy coded 1 as American Indian	0.01 (0.093)	0.01 (0.099)	0.01 (0.093)	0.01 (0.112)	0.00 (0.000)	0.00 (0.048)	0.00 (0.000)	0.00 (0.000)
Achievement	This is the mean of standardized SAT, 12th math test, and GPA for all courses.	-0.24 (0.798)	-0.39 (0.730)	0.09 (0.681)	-0.10 (0.870)	0.34 (0.646)	0.48 (0.786)	1.07 (0.660)	1.21 (0.553)
New Basics	This is a dummy coding variable composed by at least 3 units in math, science, and social science; at least 4 units in English; and at least 2 units in non-English language. 0=Fail to meet requirements; 1= Meet requirements	0.27 (0.443)	0.20 (0.401)	0.39 (0.488)	0.40 (0.489)	0.59 (0.492)	0.57 (0.495)	0.67 (0.472)	0.77 (0.419)

Self-expectation	How far in school respondent thinks will get? 1=Less than high school graduation 2=High school or equivalency only 3=Get into college/university 4=Graduate from college/university 5=Graduate education	Proportion: 1=0.1% 2=3.0% 3=29.9% 4=39.6% 5=27.4%	Proportion: 1=0.1% 2=3.7% 3=35.4% 4=37.7% 5=23.2%	Proportion: 1=0.4% 2=0.6% 3=30.1% 4=36.2% 5=32.7%	Proportion: 1=0.0% 2=3.1% 3=9.8% 4=55.0% 5=32.0%	Proportion: 1=0.0% 2=0.2% 3=5.4% 4=53.9% 5=40.5%	Proportion: 1=0.0% 2=0.2% 3=3.3% 4=48.3% 5=48.2%	Proportion: 1=0.0% 2=0.0% 3=0.0% 4=18.5% 5=81.5%	Proportion: 1=0.0% 2=0.0% 3=1.7% 4=24.0% 5=74.3%
Level 2 Variables									
Weighted N		853700	662962	43018	26854	47370	61190	3529	8778
Unweighted		3627	2777	146	122	201	294	22	65
Urban Public Open (*Reference*)	Dummy coded 1 as Urban Public Open	0.06 (0.245)	0.07 (0.250)	0.05 (0.225)	0.08 (0.265)	0.06 (0.232)	0.04 (0.203)	0.01 (0.104)	0.02 (0.153)
Urban Public Testin	Dummy coded 1 as Urban Public Testin	0.02 (0.129)	0.01 (0.115)	0.02 (0.143)	0.00 (0.055)	0.01 (0.109)	0.06 (0.239)	0.06 (0.241)	0.01 (0.112)
Urban Magnet Testin	Dummy coded 1 as Urban Magnet Testin	0.00 (0.067)	0.00 (0.065)	0.00 (0.060)	0.01 (0.113)	0.01 (0.103)	0.00 (0.000)	0.01 (0.117)	0.00 (0.000)
Urban Magnet Open	Dummy coded 1 as Urban Magnet Open	0.02 (0.141)	0.03 (0.158)	0.00 (0.049)	0.00 (0.000)	0.01 (0.076)	0.00 (0.036)	0.00 (0.000)	0.00 (0.000)
Urban Catholic	Dummy coded 1 as Urban Catholic	0.04 (0.203)	0.04 (0.184)	0.02 (0.153)	0.11 (0.309)	0.07 (0.252)	0.07 (0.263)	0.09 (0.280)	0.19 (0.391)
Urban Other Private	Dummy coded 1 as Urban Other Private	0.01 (0.115)	0.01 (0.118)	0.01 (0.073)	0.02 (0.148)	0.00 (0.058)	0.01 (0.119)	0.00 (0.000)	0.01 (0.101)
Suburban Public High SES Low Minority	Dummy coded 1 as Suburban Public High SES Low Minority	0.01 (0.121)	0.01 (0.107)	0.01 (0.108)	0.02 (0.134)	0.01 (0.108)	0.05 (0.211)	0.00 (0.000)	0.06 (0.238)
Suburban Public Mixed SES Minority	Dummy coded 1 as Suburban Public Mixed SES Minority	0.42 (0.494)	0.43 (0.495)	0.52 (0.500)	0.31 (0.462)	0.46 (0.498)	0.32 (0.466)	0.61 (0.488)	0.22 (0.413)
Suburban Public Low SES High Minority	Dummy coded 1 as Suburban Public Low SES High Minority	0.02 (0.130)	0.02 (0.140)	0.00 (0.060)	0.01 (0.078)	0.01 (0.102)	0.01 (0.098)	0.00 (0.000)	0.00 (0.000)
Suburban Catholic	Dummy coded 1 as Suburban Catholic	0.01 (0.105)	0.01 (0.076)	0.00 (0.046)	0.00 (0.043)	0.05 (0.219)	0.05 (0.218)	0.00 (0.000)	0.01 (0.105)
Suburban Other Private	Dummy coded 1 as Suburban Other Private	0.01 (0.086)	0.01 (0.071)	0.01 (0.087)	0.02 (0.139)	0.02 (0.130)	0.02 (0.131)	0.00 (0.000)	0.04 (0.193)
Rural Public	Dummy coded 1 as Rural	0.33 (0.470)	0.34 (0.472)	0.34	0.39	0.26 (0.440)	0.30	0.19	0.28 (0.449)

	Public			(0.473)	(0.489)		(0.458)	(0.395)	
Rural Private	Dummy coded 1 as Rural Private	0.00 (0.059)	0.00 (0.038)	0.00 (0.050)	0.00 (0.000)	0.01 (0.074)	0.03 (0.162)	0.00 (0.000)	0.00 (0.000)
NAIS	Dummy coded 1 as NAIS	0.01 (0.072)	0.00 (0.033)	0.00 (0.000)	0.00 (0.054)	0.01 (0.119)	0.03 (0.158)	0.02 (0.145)	0.15 (0.356)

Dependent Variables

Name	Description	Mean (SD)
Postsecondary Enrollment	0=No postsecondary education 1=Postsecondary education	0.60 (0.489)
2-Year	0=No postsecondary education 1=2-year	0.55 (0.498)
4-Year, Public Low Competitive	0=No postsecondary education 1=4-year, public low competitive	0.06 (0.237)
4-Year, Private Low Competitive	0=No postsecondary education 1=4-year, private low competitive	0.04 (0.206)
4-Year, Public Middle Competitive	0=No postsecondary education 1=4-year, public middle competitive	0.07 (0.254)
4-Year, Private Middle Competitive	0=No postsecondary education 1=4-year, private middle competitive	0.09 (0.281)
4-Year, Public High Competitive	0=No postsecondary education 1=4-year, public high competitive	0.01 (0.074)
4-Year, Private High Competitive	0=No postsecondary education 1=4-year, private high competitive	0.01 (0.118)

Table1. Percent ELS cohort students in different types of high schools who entered different types of PSE institutions (in row %)

High School Origin			PSE Institution Destination							
					4-Year					
					Low Competitive		Middle Competitive		High Competitive	
Location	Type	Subtype	No PSE	2-Year	Public	Private	Public	Private	Public	Private
Urban	Public	Comprehensive	32.6	30.1	6.5	1.9	18.8	5.3	2.8	1.9
		1. Test-in	23.6	28.4	14.2	2.2	19.5	9.5	1.9	0.6
		2. Open	33.2	30.2	6.0	1.9	18.7	5.1	2.9	2.0
	Public	Magnet (stand-alone)	17.3	28.9	6.7	1.4	21.8	13.0	3.9	7.1
		1. Test-in	10.3	8.4	8.7	1.1	37.4	22.5	5.8	5.8
		2. Open	19.4	35.2	6.1	1.5	17.0	10.0	3.3	7.4
	Private	Catholic	4.6	19.7	5.1	1.8	34.9	17.9	8.2	7.9
		1. Independent	3.4	17.4	2.7	3.9	30.2	27.0	3.4	11.9
		2. Non-independent	4.7	20.0	5.4	1.5	35.6	16.6	8.8	7.3
	Private	Other	9.7	38.5	5.3	13.5	20.5	9.9	2.2	0.3
Suburban	Public	Comprehensive	27.1	32.4	4.1	1.4	20.3	7.3	3.9	3.4
		1. High SES & Low Minority	10.9	8.1	0.0	3.0	28.2	23.3	4.4	22.1
		2. Mixed SES & Minority	25.3	31.8	4.3	1.5	21.7	7.8	4.3	3.4
		3. Low SES & High Minority	41.5	39.3	3.5	0.6	10.5	2.5	1.0	1.1
	Private	Catholic	2.8	21.1	7.5	1.8	27.4	24.5	6.6	8.4
		1. Independent	2.7	22.8	5.3	2.7	17.3	31.7	9.6	7.9
		2. Non-independent	2.9	20.7	8.0	1.5	30.0	22.6	5.8	8.5
	Private	Other	7.0	42.8	2.1	1.7	21.4	14.0	3.8	7.1
Rural	Public	Comprehensive	29.3	33.0	5.1	1.2	19.9	7.4	2.4	1.8
	Private		3.0	35.7	0.0	0.3	15.5	37.5	2.9	5.1
NAIS			1.9	5.3	0.8	1.3	28.9	17.4	9.4	35.1
Total			27.1	31.0	5.0	1.6	20.5	7.8	3.5	3.5

Table2. Percent NELS cohort students in different types of high schools who entered different types of PSE institutions (in row %)

High School Origin			PSE Institution Destination							
					4-Year					
					Low Competitive		Middle Competitive		High Competitive	
Location	Type	Subtype	No PSE	2-Year	Public	Private	Public	Private	Public	Private
Urban	Public	Comprehensive	35.9	51.5	2.5	2.0	2.8	4.9	0.2	0.3
		1. Test-in	39.9	36.9	3.7	0.3	2.4	15.4	0.9	0.5
		2. Open	35.1	54.4	2.3	2.4	2.8	2.7	0.0	0.2
	Public	Magnet (stand-alone)	27.0	67.8	0.9	1.2	2.7	0.3	0.2	0.0
		1. Test-in	50.1	36.3	2.0	4.4	6.5	0.0	0.6	0.0
		2. Open	18.5	79.3	0.5	0.0	1.3	0.4	0.0	0.0
	Private	Catholic	5.9	59.2	2.6	7.3	8.3	11.7	0.8	4.2
	Private	Other	0.7	82.1	2.0	5.3	1.4	7.7	0.0	0.8
Suburban	Public	Comprehensive	26.0	58.4	4.4	1.7	4.3	4.4	0.4	0.5
		1. High SES & Low Minority	9.4	55.0	3.6	3.5	4.0	20.6	0.0	3.8
		2. Mixed SES & Minority	24.8	59.5	4.6	1.7	4.5	4.1	0.4	0.4
		3. Low SES & High Minority	52.4	43.0	0.5	0.5	1.6	1.9	0.0	0.0
	Private	Catholic	2.4	39.2	1.0	0.5	24.5	31.4	0.0	1.0
	Private	Other	11.9	45.7	4.5	7.3	11.2	14.7	0.0	4.7
Rural	Public	Comprehensive	38.5	48.6	3.2	2.3	2.7	4.0	0.1	0.5
	Private		12.3	27.7	3.2	0.0	7.7	49.0	0.0	0.0
NAIS			2.6	15.9	0.0	1.7	15.0	34.4	1.7	28.8
Total			30.5	53.9	3.5	2.2	3.9	5.0	0.3	0.7

Table 3. Differences between ELS and NELS in percent high school students with different PSE destinations—*ELS* minus *NELS*

High School Origin					PSE Institution Destination					
					4-Year					
					Low Competitive		Middle Competitive		High Competitive	
Location	Type	Subtype	No PSE	2-Year	public	private	public	private	public	private
Urban	Public	Comprehensive	-3.3	-21.4***	4.0***	-0.1	16***	0.4	2.6***	1.6***
		1. Test-in	-16.3	-8.5	10.5*	1.9	17.1**	-5.9	1.0	0.1
		2. Open	-1.9	-24.2***	3.7***	-0.5	15.9***	2.4**	2.9***	1.8***
	Public	Magnet (stand-alone)	-9.7	-38.9***	5.8**	0.2	19.1***	12.7***	3.7**	7.1
		1. Test-in	-39.8*	-27.9	6.7**	-3.3	30.9**	22.5***	5.2	5.8*
		2. Open	0.9	-44.1***	5.6*	1.5*	15.7***	9.6***	3.3*	7.4
	Private	Catholic	-1.3	-39.5***	2.5	-5.5*	26.6***	6.2*	7.4**	3.7
	Private	Other	9.0	-43.6***	3.3	8.2	19.1*	2.2	2.2	-0.5
Suburban	Public	Comprehensive	1.1	-26.0***	-0.3	-0.3	16.0***	2.9**	3.5***	2.9***
		1. High SES & Low Minority	1.5	-46.9***	-3.6	-0.5	24.2**	2.7	4.4	18.3
		2. Mixed SES & Minority	0.5	-27.7***	-0.3	-0.2	17.2***	3.7***	3.9***	3.0***
		3. Low SES & High Minority	-10.9	-3.7	3.0**	0.1	8.9***	0.6	1.0*	1.1*
	Private	Catholic	0.4	-18.1	6.5**	1.3*	2.9	-6.9	6.6***	7.4***
	Private	Other	-4.9	-2.9	-2.4	-5.6	10.2	-0.7	3.8**	2.4
Rural	Public	Comprehensive	-9.2***	-15.6***	1.9*	-1.1*	17.2***	3.4**	2.3***	1.3***
	Private		-9.3	8.0	-3.2	0.3	7.8	-11.5	2.9	5.1
NAIS			-0.7	-10.6*	0.8***	-0.4	13.9	-17.0	7.7***	6.3
Total			-3.4*	-22.9***	1.5	-0.6*	16.6***	2.8***	3.2***	2.8***

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

Table 4. HLM Logistic Regression Results on Postsecondary Enrollment Prediction

		Postsecondary Enrollment		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	0.51*	0.51	0.39
		(1.66)	(1.66)	(1.48)
	Urban Magnet Testin	1.44*	1.06	0.90*
		(4.21)	(2.89)	(2.45)
	Urban Magnet Open	0.71**	0.73**	0.52
		(2.04)	(2.08)	(1.69)
	Urban Catholic	2.38***	1.86***	1.06***
		(10.82)	(6.41)	(2.90)
	Urban Other Private	1.27	0.88	0.75
		(3.56)	(2.41)	(2.12)
	Suburban Public High SES Low Minority	1.32***	0.81***	0.38
		(3.76)	(2.25)	(1.46)
	Suburban Public Mixed SES Minority	0.41***	0.22*	0.20
		(1.51)	(1.24)	(1.22)
	Suburban Public Low SES High Minority	-0.38**	0.07	0.15
		(0.68)	(1.07)	(1.17)
	Suburban Catholic	2.89***	2.26***	1.58***
		(18.07)	(9.54)	(4.85)
	Suburban Other Private	1.75***	1.19***	0.58
		(5.73)	(3.29)	(1.79)
	Rural Public	0.19	0.19	0.25*
		(1.21)	(1.20)	(1.29)
	Rural Private	2.74***	2.21**	1.75*
		(15.44)	(9.08)	(5.73)
	NAIS	3.29***	2.07***	0.47
		(26.95)	(7.92)	(1.60)
Male			-0.64***	-0.31***
			(0.52)	(0.73)
SES			0.90***	0.53***
			(2.46)	(1.70)
RACE (vs. White)	Asian		0.99***	0.63**
			(2.69)	(1.87)
	Hispanic		-0.15	0.18
			(0.86)	(1.20)
	Black		0.04	0.60***
			(1.04)	(1.83)
	American Indian		-0.91**	-0.16
			(0.40)	(0.85)
Achievement				0.66***
				(1.94)
New Basics				0.60***
				(1.82)
Self-expectation				0.66***
				(1.94)
AP/IB Total				0.35***
				(1.42)
Science Pipeline				0.07

			(1.08)
Math Pipeline			0.32***
			(1.37)
R Square	0.23	0.48	0.35

*p<0.05; **p<0.01; ***p<0.001

Table 5. HLM Logistic Regression Results on 2-Year College Entrance Prediction

		2-Year		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	0.35	0.23	-0.04
		(1.42)	(1.26)	(0.96)
	Urban Magnet Testin	-0.04	-0.15	0.04
		(0.96)	(0.86)	(1.04)
	Urban Magnet Open	0.71**	0.79**	0.57
		(2.04)	(2.20)	(1.76)
	Urban Catholic	1.60***	1.27***	0.87**
		(4.96)	(3.56)	(2.38)
	Urban Other Private	1.33	0.90	0.65
		(3.79)	(2.46)	(1.91)
	Suburban Public High SES Low Minority	-0.43	-0.67	-0.32
		(0.65)	(0.51)	(0.73)
	Suburban Public Mixed SES Minority	0.38***	0.30**	0.25*
		(1.47)	(1.35)	(1.28)
	Suburban Public Low SES High Minority	0.08	0.30	0.30
		(1.08)	(1.34)	(1.35)
	Suburban Catholic	2.15***	1.77***	1.39**
		(8.62)	(5.87)	(4.00)
	Suburban Other Private	1.81***	1.34***	0.68*
		(6.10)	(3.81)	(1.96)
	Rural Public	0.24*	0.24*	0.26*
		(1.27)	(1.28)	(1.30)
	Rural Private	2.62**	2.34**	1.69
		(13.76)	(10.38)	(5.39)
	NAIS	1.25**	0.45	-0.41
		(3.49)	(1.56)	(0.67)
Male			-0.60***	-0.36***
			(0.55)	(0.70)
SES			0.63***	0.46***
			(1.88)	(1.58)
RACE (vs. White)	Asian		0.73***	0.62**
			(2.08)	(1.87)
	Hispanic		0.04	0.22
			(1.04)	(1.24)
	Black		-0.02	0.33**
			(0.98)	(1.40)
	American Indian		-0.73*	-0.18
			(0.48)	(0.83)
Achievement				0.50***
				(1.66)
New Basics				0.44***
				(1.56)
Self-expectation				0.51***
				(1.67)
AP/IB Total				0.14
				(1.15)
Science Pipeline				0.06
				(1.07)

Math Pipeline			0.24***
			(1.28)
R Square	0.08	0.16	0.08

*p<0.05; **p<0.01; ***p<0.001

Table 6. HLM Logistic Regression Results on 4-Year Low Competitive Public College/University Entrance Prediction

		Public Low Competitive		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	1.26**	1.13*	1.25
		(3.51)	(3.10)	(3.50)
	Urban Magnet Testin	1.96*	1.75	2.43*
		(7.11)	(5.77)	(11.32)
	Urban Magnet Open	0.57	0.30	-0.29
		(1.76)	(1.36)	(0.75)
	Urban Catholic	2.00**	1.69*	1.14
		(7.35)	(5.40)	(3.11)
	Urban Other Private	1.19	0.68	0.94
		(3.27)	(1.97)	(2.56)
	Suburban Public High SES Low Minority			
	Suburban Public Mixed SES Minority	-0.09	-0.19	-0.46
		(0.91)	(0.83)	(0.63)
	Suburban Public Low SES High Minority	-0.71*	-0.44	-1.25*
		(0.49)	(0.64)	(0.29)
	Suburban Catholic	2.92**	2.45**	1.76
		(18.46)	(11.58)	(5.81)
	Suburban Other Private	0.30	-0.08	-0.64
		(1.34)	(0.92)	(0.53)
	Rural Public	-0.09	-0.02	0.05
		(0.92)	(0.98)	(1.06)
	Rural Private			
	NAIS	1.22	0.42	-0.83
		(3.40)	(1.52)	(0.44)
Male			-0.58***	-0.29
			(0.56)	(0.74)
SES			0.85***	0.49***
			(2.34)	(1.64)
RACE (vs. White)	Asian		0.55	0.27
			(1.73)	(1.31)
	Hispanic		-0.29	-0.34
			(0.75)	(0.71)
	Black		0.83***	1.33***
			(2.29)	(3.77)
	American Indian		-3.26	
			(0.04)	
Achievement				0.69***
				(1.99)
New Basics				0.68**
				(1.98)
Self-expectation				1.07***
				(2.92)
AP/IB Total				0.13
				(1.14)

Science Pipeline			0.26**
			(1.29)
Math Pipeline			0.51***
			(1.67)
R Square	0.09	0.06	0.09

*p<0.05; **p<0.01; ***p<0.001

Table 7. HLM Logistic Regression Results on 4-Year Low Competitive Private College/University Entrance Prediction

		Private Low Competitive		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	0.55	0.41	0.59
		(1.74)	(1.50)	(1.81)
	Urban Magnet Testin	0.72	1.02	0.79
		(2.05)	(2.78)	(2.21)
	Urban Magnet Open	0.31	-0.03	-0.03
		(1.37)	(0.97)	(0.97)
	Urban Catholic	1.95***	2.09***	1.66**
		(7.05)	(8.07)	(5.27)
	Urban Other Private	3.04**	2.83**	3.15**
		(20.87)	(16.97)	(23.37)
	Suburban Public High SES Low Minority	1.45	1.06	1.71**
		(4.27)	(2.90)	(5.51)
	Suburban Public Mixed SES Minority	0.06	0.11	-0.09
		(1.06)	(1.12)	(0.91)
	Suburban Public Low SES High Minority	-1.35*	-1.15	-1.66*
		(0.26)	(0.32)	(0.19)
	Suburban Catholic	2.43***	2.06***	1.41*
		(11.31)	(7.87)	(4.11)
	Suburban Other Private	1.31	1.34	0.91
		(3.69)	(3.83)	(2.49)
	Rural Public	-0.36	-0.11	0.15
		(0.70)	(0.90)	(1.16)
	Rural Private	0.56	0.72	0.06
		(1.75)	(2.05)	(1.06)
	NAIS	2.49**	1.75*	0.95
		(12.08)	(5.73)	(2.59)
Male			-0.41*	-0.06
			(0.67)	(0.95)
SES			0.72***	0.53***
			(2.06)	(1.70)
RACE (vs. White)	Asian		0.01	-0.09
			(1.01)	(0.92)
	Hispanic		-0.08	-0.28
			(0.92)	(0.76)
	Black		1.13***	1.34***
			(3.11)	(3.84)
	American Indian		-0.66	-0.57
			(0.52)	(0.57)
Achievement				0.19
				(1.21)
New Basics				0.90**
				(2.47)
Self-expectation				0.84***
				(2.31)
AP/IB Total				0.26

			(1.30)
Science Pipeline			0.14
			(1.16)
Math Pipeline			0.37**
			(1.45)
R Square	0.55	0.59	0.83

*p<0.05; **p<0.01; ***p<0.001

Table 8. HLM Logistic Regression Results on 4-Year Middle Competitive Public College/University Entrance Prediction

		Public Middle Competitive		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	0.34	0.71	0.79
		(1.40)	(2.04)	(2.21)
	Urban Magnet Testin	1.86*	1.58*	1.63*
		(6.39)	(4.84)	(5.08)
	Urban Magnet Open	0.46	0.48	-0.24
		(1.58)	(1.62)	(0.79)
	Urban Catholic	2.72***	2.14***	1.24***
		(15.14)	(8.53)	(3.44)
	Urban Other Private	1.03	0.67	1.10
		(2.79)	(1.95)	(3.01)
	Suburban Public High SES Low Minority	1.45**	0.85*	1.03
		(4.26)	(2.34)	(2.81)
	Suburban Public Mixed SES Minority	0.50**	0.22	-0.08
		(1.64)	(1.25)	(0.92)
	Suburban Public Low SES High Minority	-0.83***	-0.30	-0.40
		(0.44)	(0.74)	(0.67)
	Suburban Catholic	3.07***	2.35***	1.48**
		(21.50)	(10.45)	(4.41)
	Suburban Other Private	1.42**	0.70	-0.20
		(4.12)	(2.01)	(0.82)
	Rural Public	0.21	0.14	0.14
		(1.23)	(1.15)	(1.15)
	Rural Private	2.48***	1.86**	2.13
		(11.96)	(6.40)	(8.43)
	NAIS	3.50***	2.12***	0.50
		(33.02)	(8.34)	(1.65)
Male			-0.73***	-0.30*
			(0.48)	(0.74)
SES			1.20***	0.73***
			(3.32)	(2.08)
RACE (vs. White)	Asian		1.25***	0.91**
			(3.50)	(2.47)
	Hispanic		-0.68***	-0.37
			(0.51)	(0.69)
	Black		-0.12	0.92***
			(0.89)	(2.50)
	American Indian		-0.84*	-0.07
			(0.43)	(0.94)
Achievement				1.26***
				(3.51)
New Basics				0.66***
				(1.93)
Self-expectation				1.13***
				(3.10)

AP/IB Total			0.40***
			(1.49)
Science Pipeline			0.20**
			(1.22)
Math Pipeline			0.48***
			(1.62)
R Square	0.19	0.52	0.40

*p<0.05; **p<0.01; ***p<0.001

Table 9. HLM Logistic Regression Results on 4-Year Middle Competitive Private College/University Entrance Prediction

		Private Middle Competitive		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	0.92*	1.08*	1.11
		(2.50)	(2.95)	(3.02)
	Urban Magnet Testin	2.87***	2.00**	2.19***
		(17.66)	(7.37)	(8.98)
	Urban Magnet Open	1.05**	1.09**	1.46*
		(2.84)	(2.98)	(4.30)
	Urban Catholic	3.46***	2.76***	2.10***
		(31.84)	(15.83)	(8.15)
	Urban Other Private	1.81*	0.87	1.10*
		(6.13)	(2.39)	(3.01)
	Suburban Public High SES Low Minority	2.69***	1.41***	1.33***
		(14.72)	(4.08)	(3.77)
	Suburban Public Mixed SES Minority	0.71***	0.30	0.01
		(2.03)	(1.35)	(1.01)
	Suburban Public Low SES High Minority	-0.82*	-0.36	-0.46
		(0.44)	(0.70)	(0.63)
	Suburban Catholic	4.22***	3.35***	2.17***
		(67.84)	(28.49)	(8.79)
	Suburban Other Private	2.43***	1.55***	0.71
		(11.39)	(4.70)	(2.03)
	Rural Public	0.45*	0.28	0.34
		(1.57)	(1.33)	(1.41)
	Rural Private	4.33***	3.38***	2.52
		(76.14)	(29.27)	(12.38)
	NAIS	4.33***	2.82***	1.24
		(76.17)	(16.70)	(3.45)
Male			-0.84***	-0.47*
			(0.43)	(0.63)
SES			1.35***	0.91***
			(3.88)	(2.48)
RACE (vs. White)	Asian		0.37	0.23
			(1.45)	(1.26)
	Hispanic		0.88***	-1.02**
			(0.41)	(0.36)
	Black		-0.35	0.41
			(0.71)	(1.50)
	American Indian		-0.95	0.35
			(0.39)	(1.41)
Achievement				1.03***
				(2.81)
New Basics				0.72**
				(2.05)
Self-expectation				1.18***
				(3.25)

AP/IB Total			0.41**
			(1.50)
Science Pipeline			0.23*
			(1.26)
Math Pipeline			0.58***
			(1.78)
R Square	0.32	0.55	0.52

*p<0.05; **p<0.01; ***p<0.001

Table 10. HLM Logistic Regression Results on 4-Year High Competitive Public College/University Entrance Prediction

		Public High Competitive		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	-0.17	0.26	2.86*
		(0.85)	(1.29)	(17.43)
	Urban Magnet Testin	1.91*	2.11**	2.61**
		(6.77)	(8.27)	(13.62)
	Urban Magnet Open	0.55	-0.01	1.73
		(1.73)	(0.99)	(5.66)
	Urban Catholic	2.93***	2.22***	2.49**
		(18.74)	(9.24)	(12.09)
	Urban Other Private	0.64	-0.58	0.59
		(1.90)	(0.56)	(1.80)
	Suburban Public High SES Low Minority	1.55	0.25	0.00
		(4.71)	(1.28)	(1.00)
	Suburban Public Mixed SES Minority	0.72**	0.31	0.33
		(2.05)	(1.36)	(1.39)
	Suburban Public Low SES High Minority	-1.20**	-0.64	-2.76
		(0.30)	(0.53)	(0.06)
	Suburban Catholic	3.59***	2.52***	1.91*
		(36.14)	(12.46)	(6.77)
	Suburban Other Private	1.69**	0.90	1.77
		(5.42)	(2.45)	(5.86)
	Rural Public	-0.05	-0.18	-0.30
		(0.95)	(0.84)	(0.74)
	Rural Private	2.82*	2.33*	1.14
		(16.76)	(10.29)	(3.13)
	NAIS	4.18***	2.11**	0.11
		(65.64)	(8.29)	(1.11)
Male			-0.63***	-0.58
			(0.53)	(0.56)
SES			1.62***	1.18***
			(5.07)	(3.25)
RACE (vs. White)	Asian		1.90***	0.80
			(6.72)	(2.23)
	Hispanic		-0.86**	-0.06
			(0.42)	(0.94)
	Black		-0.99**	0.12
			(0.37)	(1.13)
	American Indian		-1.53	1.23
			(0.22)	(3.41)
Achievement				1.35***
				(3.87)
New Basics				0.34
				(1.41)
Self-expectation				1.24***
				(3.44)
AP/IB Total				0.96***

			(2.61)
Science Pipeline			0.04
			(1.04)
Math Pipeline			0.77***
			(2.16)
R Square	0.22	0.43	0.72

*p<0.05; **p<0.01; ***p<0.001

Table 11. HLM Logistic Regression Results on 4-Year High Competitive Private College/University Entrance Prediction

		Private High Competitive		
		Model1	Model2	Model3
SCHOOL TYPE (vs. Urban Public Open)	Urban Public Testin	-0.69	0.23	5.75**
		(0.5)	(1.26)	(315.12)
	Urban Magnet Testin	2.25*	2.27**	4.62***
		(9.45)	(9.72)	(101.70)
	Urban Magnet Open	1.60*	1.32	1.46
		(4.96)	(3.75)	(4.32)
	Urban Catholic	3.54***	2.75***	4.07***
		(34.3)	(15.59)	(58.60)
	Urban Other Private	-0.61	-2.24	-4.00**
		(0.54)	(0.11)	(0.02)
	Suburban Public High SES Low Minority	3.25***	1.68	2.50**
		(25.73)	(5.36)	(12.19)
	Suburban Public Mixed SES Minority	0.75**	0.21	-0.39
		(2.12)	(1.23)	(0.67)
	Suburban Public Low SES High Minority	-0.76	-0.06	-0.14
		(0.47)	(0.94)	(0.87)
	Suburban Catholic	4.20***	3.12***	3.04**
		(66.69)	(22.60)	(20.81)
	Suburban Other Private	2.71***	1.72***	2.49*
		(15.1)	(5.57)	(12.07)
	Rural Public	0.06	-0.18	0.22
		(1.06)	(0.84)	(1.25)
	Rural Private	3.42*	3.09**	2.75*
		(30.45)	(21.99)	(15.65)
	NAIS	6.03***	4.28***	2.47*
		(415.87)	(72.46)	(11.84)
Male			-0.92***	-0.48
			(0.40)	(0.62)
SES			1.87***	1.36***
			(6.46)	(3.91)
RACE (vs. White)	Asian		1.55***	2.30**
			(4.71)	(9.99)
	Hispanic		-0.11	0.86
			(0.90)	(2.35)
	Black		-1.23***	0.79
			(0.29)	(2.21)
	American Indian		-1.46*	-1.55*
			(0.23)	(0.21)
Achievement				2.65***
				(14.14)
New Basics				-0.14
				(0.87)
Self-expectation				1.51***
				(4.52)

AP/IB Total			1.28***
			(3.61)
Science Pipeline			0.06
			(1.06)
Math Pipeline			0.69**
			(1.99)
R Square	0.33	0.55	0.82

*p<0.05; **p<0.01; ***p<0.001