

## College Aspirations under the Top 10% Law

### Minority College Aspirations, Expectations and Applications under the Texas Top 10% Law

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*The Texas legislature passed the Top 10% Law in 1996 guaranteeing automatic admission to any Texas public college or university for seniors who graduate in the top decile of their high school class. Using data on a representative sample of seniors ( $N = 12,029$ ) enrolled in 96 Texas public high schools, we examine whether and how this law affects the educational aspirations and expectations of graduating seniors, as well as whether they apply to college. Hierarchical generalized linear models demonstrate that the knowledge of a percent plan has played an important role in raising the sights of students who might not otherwise consider college. This effect is particularly pronounced for minority students, although peer, family and high school context play pivotal roles.*

In its recent decision on affirmative action, the Supreme Court of the United States indicated that universities may use affirmative action in admissions in narrowly tailored ways (Gratz v. Bollinger et al. 2003; Grutter v. Bollinger et al. 2003). Narrow tailoring, said the court, requires "serious, good faith consideration of workable, race-neutral alternatives that will achieve the diversity the university seeks" (Grutter at 2344). The court also stated that schools "should draw on the most promising aspects" of race-neutral alternatives developed in other states. Because the continued use of affirmative action by universities in any state now requires good-faith consideration of race-neutral alternatives, scholarly evaluations of those alternatives take on urgent significance (Laycock 2004).

The best-known of the race-neutral policies are percent plans, which are used in some form in California, Florida and Texas, and have recently been proposed for Colorado. Percent plans guarantee admission to public universities for some proportion of a high schools' graduating senior class. The Texas Top 10% Law, which was passed as House Bill 588 in May 1998, is unique among these plans in its guarantee that high school students in the top decile of their graduating classes may attend any state-sponsored institution in Texas, including the most selective universities (Torres 2006). The Texas law, which is still in effect, thus completely eliminates a top-ranking students' uncertainty about whether they will be admitted to the colleges and universities of their choice.

This paper addresses one possible consequence of percent plans, namely their effect on the aspirations of high school students. We are especially interested in the potential impact of percent plans on minority students whose college attendance has historically been low in Texas. Texas has a large, young, and growing population of minority groups, and it is also a state with a relatively low rate of college attendance (Texas Higher Education Coordinating Board 2003; cf Fry 2005; Lloyd et al. 2001). Whatever the effects of the Top 10% Law in terms of diversifying the most selective college campuses in Texas, the law may potentially have an effect on high school students' college aspirations. Awareness of the provisions of the law may have changed students' perceptions of their personal opportunities for higher education in Texas. If higher aspirations lead to a diversified applicant pool, there may be greater effect on diversifying college populations than that created just by automatic admissions. This change could occur, however, only if students are conscious of the new college admissions policy.

Law and society scholars have noted for many years that there are differences between the intended effects of legislation and the actual behavioral changes that result. The Texas legislature plainly intended for the Top 10% Law to change the admissions decisions of the state's public universities and also apparently intended to change students' and their parents' behavior. The new law mandated: 1.) that all high schools post a sign explaining the law (normally posted outside of guidance counselors' offices) and 2.) that a letter from the Governor of Texas be sent to every parent of a qualifying student apprising them of their options and providing them with additional information. The state's flagship institutions (i.e., the University of Texas at Austin and Texas A&M University) made additional attempts to advertise the Top 10% Law and its workings to potential students and parents. These flagship university measures included: 1.) opening outreach centers in major cities and sponsoring meetings with the parents of qualifying students, 2.) having university officials visit high schools that were outside of the traditional feeder-school networks, 3.) creating freshman programs that emphasized smaller classes and more intensive tutoring for top-ten-percent students and 4.) reorienting scholarship programs from an emphasis on minority students to an emphasis on students outside of the traditional feeder-high-school network. In short, both the state legislature and the flagship universities in Texas went to extensive lengths to publicize and disseminate information about the law, with the clear intention of maintaining the racial and ethnic diversity of incoming college student cohorts given the constraints of the Hopwood decision (Montejano 1998; Torres 2006). However, such provisions alone are probably not sufficient to ensure an effect. For example, some students may pay attention to the sign posted in their high schools, but many may not. Some high schools undoubtedly take further measures to inform their students about the law and its effects, while others are probably less diligent.

To learn about possible student outcomes from the Top 10% Law we analyze data from the first wave of Texas Higher Education Opportunity Project. This survey of high school seniors comes from a representative sample of 96 Texas public high schools. The data were collected four years after the law was passed, making this the first graduating class that could have known about the possibility of automatic college admission from the first day they entered high school. We document the extent of high school seniors' self-reported knowledge of the law and examine how educational aspirations, expectations and college applications vary by seniors' level of knowledge.

Separate multilevel hierarchical models then examine the determinants of seniors' educational aspirations, expectations and college applications. We conduct separate analyses of each dependent variable because previous studies treat them as distinct phenomena (Hanson 1994; Kerckhoff 1976). Educational *aspirations* reflect

desired outcomes that individuals hope to achieve. Educational *expectations* take into account real-life perceptions of what is possible given students' location in the web of class and status relationships. College *application* is a measure of actual behavior directed toward post-secondary education.

Because the new educational policy grants automatic admission to students graduating in the top decile of their high school senior class, it is also important to examine the impact of students' high school rank. Accordingly, we document the relative likelihood that seniors will aspire, expect to go and apply to college depending on their knowledge of the law, high school rank, minority group membership, nativity status and gender, while simultaneously controlling for other important individual and school-level characteristics. Students who are both in the top decile of their cohort *and* know about the Top 10% Law may report higher aspirations than their counterparts who are unaware of the law and are not in the top decile of their graduating class. We use self-reported class rank because (presumably) the hypothesized effect of the law on student expectations is mediated by what students believe their class rank to be even if their perceptions are incorrect. Further, the commonly noted disparity between reported educational aspirations and expectations might be smaller for the students aware of the change in admission policy compared to students who are unaware of the change in admission policy. Therefore we also examine interactions among our key variables: knowledge of the Top 10% Law, students' class rank, race/ethnicity, gender and nativity status.

### **College Aspirations, Expectations and Applications**

Models of educational aspirations and expectations commonly take as a point of departure either the Wisconsin model of status attainment (Nora 2004; Sewell et al. 1970) or a rational choice perspective (Morgan 1998). The major difference between these two approaches is that the Wisconsin model focuses on the (real or implied) cognitive processes of *significant others* while the rational choice perspective highlights the (real or implied) cognitive processes of *students* themselves. The Wisconsin model assumes that students comply with the behavior expressed by peers and the educational expectations of adults (parents, teachers, etc.). Rational choice models evaluate these outside influences as potentially changing students' cost-benefit calculations of continuing their education. As Morgan (1998:137) states, "The primary difference between the status socialization theory of the Wisconsin model and the rational choice model...is a further shift in focus away from the cognitive evaluations of significant others toward the cognitive evaluations of students."

The approach taken here is closer to the rational choice approach because we focus on: 1.) the effects of students' perceptions of parental and peer support and 2.) the effects of an additional piece of information – students' knowledge of the Top 10% Law – on college aspirations, expectations and actual applications. Accordingly, our measures of parental and peer influences concentrate on the students' perceptions of these influences rather than actual peer and parental evaluations of the student.

### ***Knowledge of the Top 10% Law***

Following the rational choice perspective, knowledge of the law can be viewed as an additional piece of external information that can potentially influence educational aspirations, expectations and the process of college application. Students can learn about the new admissions policy through a number of different avenues (Olivas 1999; Torres 2006). Perhaps the primary sources of information are school counselors,

teachers, peers and parents. A number of agencies have also tried to publicize the admissions policy, although with predictably mixed results. The Texas Education Agency (TEA) requires every high school to display a poster explaining the provisions of the Top 10% Law. For several years the governor has written to students in the top decile of their high school senior class explaining the law and appending a list of all four-year public colleges and universities for which the student is entitled to automatic admission. Finally, the admissions policy has also received extensive media coverage.

The present analysis examines the effects of the law net of the traditional influences that previous research has shown to affect students' educational aspirations, expectations and college applications. We predict that knowledge of the law should have its greatest effect on the educational outcomes of students who rank in the top decile of their high school class because these are the students who gain automatic admission under the new education policy. Furthermore, the effect of being in the top decile may be more pronounced for minority students because, from a marginal utility standpoint of rational decision-making, those whose educational situations are relatively precarious should also be most affected by new knowledge. Work by Hanson (1994) supports this assertion. For example, she finds that minority students' evaluations of their educational prospects are more sensitive to outside contextual influences than are those of the Non-Hispanic white majority (hereafter referred to as simply white). Therefore, an important empirical question of our current analysis is whether minority students' knowledge of the Top 10% Law affects their college aspirations, expectations and the application process. By extension, we also examine nativity status and gender because of their possible impact on perceived potential for higher education (Oliva and Nora 2004).

Knowledge of the law, class rank, minority status, nativity status and gender constitute the primary determinants in the current analysis. Because previous research identifies additional factors as important determinants of students' college aspirations, expectations and applications we include them in the analysis as controls. We now turn to a brief discussion of these additional factors.

### ***Family and Peer Influences***

Prior research focuses on four sources of influence on educational aspirations, expectations and college applications – the *family*, *peers*, *individual student characteristics* and *high school context* (Coleman et al. 1982; Morgan and Sorensen 1999; Sewell et al. 1970). Theoretical models of education place great emphasis on parents' educational attainment and encouragement as a direct influence on students' educational outcomes. Similarly, students are believed to model the behavior of their peer group. The Wisconsin approach draws heavily from social psychological theories of modeling behavior that suggest that both parental and peer group expectations are incorporated into the individual's self-concept (Haller 1982). These expectations are then acted upon as a result of the desire to conform to the wishes and goals set forth by significant others.

Subsequent theories built on the Wisconsin model of status attainment by focusing on students' knowledge and perceptions of the opportunity structure as a significant contributor to their educational goals (see Kerckoff 1976 for an early formulation). Rational choice variants of educational aspiration models also focus on parental and peer influences. But, instead of focusing on the imitative aspects of socialization (i.e., students conforming to the expectations that parents and peers have of them), these models focus on the communication of rational expectations of support. They also examine the likelihood of the students' success. According to this perspective,

parents and, to a lesser extent, peers represent social resources. As such, they are sources of information that students can use when making decisions about their education. Expectations conveyed by parents and peers are both “rational” (e.g., based on an evaluation of the students’ potential) and “irrational” (e.g., they may reflect wishful thinking) (Schneider and Stevenson 1999).

Much of the current research regarding family influences on educational aspirations, expectations and college applications focuses on family structure (single vs. two-parent households) and number of siblings because both potentially affect the resources and social capital that can be devoted to a students’ education (Blake 1989; Hanson 1994; Morgan 1998). Current research on peer and significant other influences also focus on the attitudes and activities of classmates or friends (Cabrera et. al 1999; Hanson 1994), or the influence of parents’ educational attainment or educational aspirations for their child (Haller 1982; Morgan 1998).

### *Individual Student Characteristics*

Prior research also focuses on students’ individual characteristics such as academic behavior, cognitive ability, race/ethnicity and gender. These factors are believed to reflect the students’ intention to pursue higher education and their capacity to carry out educational plans (Hanson 1994; Schneider and Stevenson 1999). Dimensions of educational preparation include course selection in high school and time spent on homework. Students who aspire to college are likely to prepare cognitively by taking advanced placement courses, if available, and by concentrating on a college-preparatory curriculum. They are also likely to devote greater amounts of time to course work. These activities may indicate expectations to carry through with educational aspirations by attending college.

In addition to the effects of academic preparation and ability, individual educational aspirations, expectations and college applications may vary by race and gender. Non-Hispanic black (hereafter referred to as simply black) male adolescents have higher educational aspirations than Mexican Americans (Gorman-Smith et al. 2000). The aspirations and expectations of white males and black males appear to have converged during the 1990s (Schneider and Stevenson 1999). Because research demonstrates that educational aspirations are tied to changes in labor market returns to education, some have argued that the high level of educational expectations among minorities may partially represent post-Civil Rights improvements in socioeconomic status (Hout 1984; Morgan 1998). Interestingly, prior research also suggests that the aspirations of minority youth are relatively immune to poor academic performance (Mickelson 1990). Much of the racial difference between high aspirations and poor academic performance disappears once educational *expectations* are examined in place of *aspirations* (Hansen 1994). This suggests that the educational expectations of minority youth may in fact be more realistic. Furthermore, Cheng and Starks (2002) find that the aspirations of close relatives have a greater impact on the educational expectations of black and Hispanic students when compared to other ethnic groups.

To summarize, we can see no reason *a priori* to anticipate that the educational expectations of the seniors in Texas to be more or less realistic than those of the youth that have been the principal focus of prior research. This suggests that we may find larger racial differences in educational expectations than aspirations. By extension we may find even larger racial differences in behavior – such as actual college application. To our knowledge, ours is one of the first research papers to systematically compare differences in aspirations, expectations and college applications simultaneously for white, black, Hispanic and Asian males and females.

## *Contextual High School Influences*

Early research examining contextual effects on educational aspirations, expectations and college applications was limited because of a lack of data regarding high school characteristics or because information was only available through students' self-report (Sewell et al. 1970). Recently, the majority of research examining high school effects focuses on peer influences. The present analysis will advance this literature by controlling for the characteristics of students' high schools, which are reported by TEA and the National Center for Education Statistics (NCES).

We focus on the effects of the high school context on educational aspirations, expectations and college applications by formulating hypotheses based on Bourdieu (1973) and others who emphasize the status-stratifying dynamics of educational institutions. Bourdieu emphasized the social environment surrounding the school as both indicative and reinforcing of *habitus*, sets of taken-for-granted assumptions about appropriate social behavior, world views and expectations associated with status-segregated social environments (also see Nora 2004). We evaluate these characteristics through the lenses of rational choice conceptions of educational expectations (Morgan 1998). Students in environments where seniors typically go to college are expected to have relatively high educational expectations and high rates of college application. Students in environments where relatively few seniors go to college are expected to have relatively low educational expectations and low rates of college application. These environmental effects, then, are reflected in student cost-benefit analyses of college attendance. These predicted effects could also be interpreted from a role-modeling perspective as well (Sewell et al. 1970). Students conform to the expectations of others and mimic the behavior of peers in their social environment. The major difference is that the rational choice perspective views the evaluation of others' behavior as part of the rational calculations of the student; the role modeling perspective views role-modeling by students as pre-rational or non-rational in a symbolic interactionist framework.

The critical school characteristics that we examine are the high school's status as a *feeder school* for the University of Texas at Austin and Texas A&M University, the percentage of students in the high school with plans to *attend college*, the reported *dropout rate* for the high school,<sup>1</sup> the percentage of the senior class who have ever experienced *economic disadvantage since the 8<sup>th</sup> grade*<sup>2</sup> and *high school size*. "Feeder schools" are defined as those that have a significant presence within the student body at the two universities.<sup>3</sup> We infer that students from those high schools will have greater knowledge of university life and the application process. We predict that students from non-feeder schools, schools with relatively few seniors with college plans, relatively high concentrations of dropouts, and low SES high schools will have significantly lower educational expectations and incidence of college application than seniors from relatively advantaged high schools. However, because high school size per se may increase students' social networks and provide more varied educational opportunities than smaller schools, the chances of students having heard about the Top 10% Law presumably may increase. If so, we expect educational aspirations, expectations and application rates to be higher in large schools relative to small schools. Alternatively, predominantly minority high schools may be larger and less resource intensive than are predominantly white schools. Furthermore, once other factors associated with a college-going culture are controlled, the impact of high school size may be minimized.

Texas high schools differ greatly in their college-attending culture and socioeconomic status. These contexts may facilitate or impede the relationships between knowledge of the Top 10% Law and students' college aspirations, expectations

and application behavior. Further, controls for contextual high school effects are important because minority students may be more likely to report lower educational aspirations, expectations and applications to college simply because they are more likely to attend less affluent schools that often are less well connected to the State's system of higher education.

In summary, prior research on educational desires and decision-making has focused on the effects of family, peers, individual student characteristics, and, to a lesser extent, high school context. Our research models educational aspirations, expectations and college applications by examining the effects of knowledge of a new educational admissions policy in Texas, while holding the important predictors identified by previous research constant.

### **Data and Analytical Strategy**

Data from the first wave of the Texas Higher Education Opportunity Project are used to examine the consequences of knowledge of the Top 10% Law on high school seniors' educational aspirations and college application. The THEOP was designed to assess the consequences of the elimination of race sensitive college-admissions criteria (i.e., Affirmative Action) in the state of Texas following the Fifth Circuit Court's *Hopwood v. University of Texas* decision (5th Cir. 1996, 78 F.3d 932). A primary aim of the THEOP was to collect survey data on both seniors (N = 13,803) and sophomores (N = 19,969) enrolled in a representative sample of Texas public high schools during spring of 2002.<sup>4</sup> The present analysis focuses only on data gathered from seniors because this is the sub-sample for whom college application is relevant.<sup>5</sup> Furthermore, the Top 10% Law, formally known as HB 588, was passed in May, 1998 when the senior cohort of 2002 were still 8<sup>th</sup> graders. Therefore, the respondents analyzed in the current study represent the first cohort of students to complete their entire high school career under the provisions of the law.

The survey was administered to a two-stage probability sample of seniors enrolled in Texas public high schools. The selection of a stratified random sample of schools represented the first stage of sampling, while the selection of seniors within schools represented the second stage. A sampling frame of 1,258 eligible public schools, containing 210,000 seniors, was generated using data obtained from TEA for the 2000-2001 academic school year. This sampling universe excluded private schools, charter schools, schools primarily devoted to special education and schools with fewer than 10 enrolled seniors.<sup>6</sup> The latter were excluded because their students are not eligible for automatic admission under the provisions of the Top 10% Law due to the fact that the highest achieving student in a school containing fewer than 10 seniors technically represents more than 10 percent of their graduating cohort. Because the THEOP was particularly interested in assessing the consequences of changing admission regimes in Texas, it was important that data contain large enough sub-samples of underrepresented groups to support analysis. Therefore the principle stratification scheme incorporated measures of metropolitan area, school racial and ethnic composition, whether the high school was considered a traditional feeder to UT-Austin or Texas A&M,<sup>7</sup> and size (see Appendix A for detailed descriptions of these measures).

Participation at both the high school and student levels were high. Of the 102 eligible schools sampled 96 (i.e., 94.1 percent) participated.<sup>8</sup> More than 95 percent of students agreed to participate in the in-class survey which was administered during a regularly scheduled required course (typically English or ESL courses). However, because of absenteeism the overall in-class student response rate was 70.3 percent.<sup>9</sup> All

analyses incorporate analytical weights to correct for student and school level non-response as well as the differential probability of high school selection.

Machine-readable paper and pencil questionnaires were constructed. Integrated question-and-answer format was used to reduce the risk of response error. The survey instrument was pre-tested using cognitive testing of respondents' comprehension of individual items as well as students' process of response construction. The final instrument was 24 pages in length and took an average of 30 minutes to complete. Survey responses were electronically scanned to create a machine-readable data file. Scanning software automatically flagged items left blank, qualitative items and items the software could not otherwise discern. Trained survey personnel verified and hand coded all flagged items.

### *Analysis*

The analysis focuses on three dichotomous dependent variables: college *aspirations*, *expectations* of attending college and self-reported *applications* to college. College aspirations are obtained from the following question: "How far would you like to go in school?" A binary variable is constructed from responses to this question and coded 1 if the respondent aspires to finish college (4 or 5 year degree), obtain a master's degree or equivalent, or obtain a PhD, MD, or other professional degree, and coded 0 for respondents who do not aspire to earn a college degree. Educational expectations are obtained from the question: "Realistically speaking, how far do you think you will go in school?" A binary variable is constructed and coded 1 if the respondent anticipates finishing college (4 or 5 year degree), obtaining a master's degree or equivalent, or obtaining a PhD, MD, or other professional degree and is coded 0 otherwise. Finally, application to college is obtained from a question that asks: "Have you applied to a college or university?" This variable is coded 1 if the respondent indicates that they have applied to one or more colleges or universities, and coded 0 if they indicate that they have not applied to at least one college or university. After accounting for missing data on dependent variables, the sample used for analysis includes 12,029 seniors attending 96 public high schools in Texas.

The primary independent variable is *self-reported knowledge of the Top 10% Law*. This is obtained from a question that asks: "How much have you heard about the Top 10% Rule (guaranteeing automatic admission to the top 10% of a high school class to Texas public colleges and universities)?" A binary variable is constructed and coded 1 if respondents report knowing "some" or "a lot" about the Top Ten Percent Law and code 0 if they report knowing "none" or "a little."

Class rank also has important policy implications for the current analysis. The Top 10% Law stipulates that the top decile may be measured at any one of three points in time: at the end of the junior year, at the end of the first semester of the senior year and at high school graduation.<sup>10</sup> Being in the top decile at any one of these times is sufficient to guarantee automatic admission to the Texas public college or university of the student's choice. The multiple points of measurement result in both a fluctuation in the composition of the top decile during the 12 months that elapse from the first measurement to the second and for the legitimate possibility of more than 10 percent of the senior cohort to be ranked in the top 10 percent of their graduating class. While the law should be the most salient to the students in the top decile of their class, fluctuations in class rank over the three semesters also make the law's provisions important to students in the second decile. Students in lower deciles are not directly affected by the automatic admission offered by the law.

Information about class rank is obtained from a series of questions that asks respondents to indicate their *actual* or *estimated* class rank. Class rank is measured in terms of decile ranking, where smaller values represent higher-class rank (e.g., top 10 percent, bottom 100 percent, etc.). From this information, three dummy variables are constructed to represent students' class rank. The variables capture students in the top 10 percent of their high school class (= 1; non-top 10 percent students = 0), students in the second decile (i.e., ranked between 11 percent and 20 percent = 1; all others = 0) and everyone else (students ranked from the 21<sup>st</sup> percentile downward). Appendix A provides detailed descriptions and summary statistics of additional control variables included in the analysis, which represent demographic, academic, peer, parental and high school contextual characteristics.

We begin with a descriptive analysis of how knowledge of the Top 10% Law varies by class rank, ethnicity, nativity status, gender and college aspirations, expectations and applications. We then turn to separate multilevel hierarchical models to determine whether seniors who know about the law are more likely to aspire, expect to attend or apply to college than their peers who are unfamiliar with the law. Saturation sampling within schools facilitates this multilevel analytical approach. Because our educational outcomes are dichotomous, we estimate random intercept models using hierarchical generalized linear modeling techniques (Raudenbush and Bryk 2002). HGLM is similar to standard hierarchical linear modeling procedures used for continuous outcomes, but produces a nonlinear logit transformation of the predicted value thereby constraining it to lie in an interval of 0-1. HGLM allows for the simultaneous estimation of regression slopes and intercepts for both student- and high school-level models.

To address our hypotheses two sequential nested random intercept models are estimated for each of the three educational outcomes. Because the principal interest is to ascertain whether members of under-represented minority groups are more likely than their white peers to aspire, expect to attend, or apply to college, the first model compares racial/ethnic coefficients in equations that include the primary individual-level determinants while simultaneously controlling for the correlated error generated by the nesting of students within common high schools. To reduce the likelihood that knowledge of the Top 10% Law is merely a proxy for general information gathering regarding post-secondary educational options a second model is estimated that controls for the characteristics that previous research has shown to be associated with the probability that students will gather information on college (i.e., individual student academic preparation, peer influences, parental support measures and socioeconomic status, and school resources). These models also include a dummy variable control for whether the senior attends one of the nine high schools that completed a mail, as opposed to an in-class, survey. Adding the second set of controls further allows for the determination of whether indicators of academic preparation, peer and parental influences, and high school contexts increase or reduce educational differences between minorities and whites.

Level-1 outcomes take the form:

$$\text{Probability} \left( \text{College}_{ij} = 1 \right) = \phi_{ij} \quad (1)$$

where  $\text{College}_{ij}$  is one of three educational outcomes – aspiring, expecting to attend or applying to college;  $\phi_{ij}$  is the actual probability of this event and is constrained to be in the interval 0-1.

The level-1 structural model is represented by the equation:

$$\eta_{ij} = \text{Log} \left[ \frac{\phi_{ij}}{1 - \phi_{ij}} \right] = \beta_{0j} + \beta_{1j}(\text{knowledge of Top Ten Percent Law})_{ij} + \beta_{2j}(10\% \text{ class rank})_{ij} + \quad (2)$$

$$\beta_{3j}(20\% \text{ class rank})_{ij} + \beta_{4j}(\text{Asian})_{ij} + \beta_{5j}(\text{African American})_{ij} + \beta_{6j}(\text{Hispanic})_{ij} + \beta_{7j}(\text{Other})_{ij} +$$

$$\beta_{8j}(\text{female})_{ij} + \beta_{9j}(\text{foreign born})_{ij} + \beta_{10j}(\text{AP courses taken})_{ij} + \beta_{11j}(\text{hours on homework})_{ij} +$$

$$\beta_{12j}(\text{peer index})_{ij} + \beta_{13j}(\text{mom's education})_{ij} + \beta_{14j}(\text{parents encourage college})_{ij} +$$

$$\beta_{15j}(\text{biological parents})_{ij} + \beta_{16j}(\text{siblings})_{ij} + \beta_{17j}(\text{parent own home})_{ij} + \beta_{18j}(\text{childhood mobility})_{ij} + r_{ij}$$

Where every level-1 record corresponds to student  $j$ ;  $\eta_{ij}$  is the log odds that a senior will aspire, expect to attend or apply to college;  $b_{0j}$  is the intercept that can be interpreted as the expected log-odds of aspiring, expecting to attend, or applying to college when all dichotomous variables are equal to zero and all continuous variables are at the sample average; the coefficients  $b_{1j} \dots b_{18j}$  are the effects of a one-unit increase in each independent variable on the log odds that a senior will aspire, expect or apply to college; and  $r_{ij}$  is measurement error.

The final level-2 model takes the form:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{feeder high school})_{ij} + \gamma_{02}(\% \text{ with college plans})_{ij} + \gamma_{03}(\text{dropout rate})_{ij} + \quad (3)$$

$$\gamma_{04}(\% \text{ seniors economically disadvantaged})_{ij} + \gamma_{05}(\text{high school size})_{ij} + \gamma_{06}(\text{mail survey})_{ij} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\cdot$$

$$\cdot$$

$$\cdot$$

$$\beta_{18j} = \gamma_{180}$$

where every level-2 record corresponds to a high school;  $g_{00}$  is the level-2 intercept;  $\gamma_{01} \dots \gamma_{06}$  are the coefficients representing the impact of the characteristics of the Texas public high schools that seniors attend;  $u_{0j}$  is the random effect associated with a particular high school, and  $\gamma_{10} \dots \gamma_{180}$  are non-random level-1 coefficients that are treated as dependent variables at level-2 and regressed on school predictor variables.

The final analysis examines interactions between knowledge of the Top 10% Law, class rank, race/ethnicity and gender as these affect seniors' educational aspirations, expectations and college applications. We expect that students who are in the top decile of their senior cohort *and* know about the law will report higher educational expectations and rates of application to college than their counterparts who are unaware of the law or are not in the top decile of their graduating class. We further predict that this effect will decline as a student's class rank falls farther away from the top decile. It seems reasonable that differences in the interaction of knowledge of the Top 10% Law and class rank should be most salient for members of vulnerable minority groups. This assumption is tested by estimating separate interaction term models comparing the effects of knowledge of the law, class rank and gender between underrepresented groups (blacks and Hispanics) and whites.

Because respondents come into the sample with unequal probabilities all analyses incorporate analytical weights that reflect both the probability of school

selection and correct for student and school level non-response. Recent advancements in statistical software allow for the inclusion of analytical weights with binary Laplace estimation procedures in HGLM.

## **Results**

### ***Who Knows about the Top 10% Law?***

Table 1 presents weighted means and standard deviations on self-reported knowledge of the Top 10% Law by high school class rank, race/ethnicity, gender and our three dependent variables. Overall, only 43 percent of Texas high school seniors report that they know “a lot” or “some” about the law. This is important because students cannot take advantage of the policy if they are not aware of its provisions. Our analysis by class rank shows that roughly 19 percent of seniors graduating in the top decile of their high school class report not knowing about the state policy that guarantees them automatic admission to the Texas public college or university of their choice. Nearly one in every five of the intended beneficiaries of the law is unaware of its existence. Not surprisingly, knowledge of the Top 10% Law declines steadily as class rank increases.

### **Table 1: Texas Seniors Who Report Knowing about the Top 10% Law**

Knowledge of the Top 10% Law also varies significantly by race/ethnicity. Asian seniors report the greatest awareness of the law (64 percent), followed by whites, blacks and Hispanics (at only 34 percent). Women profess more knowledge of the law than men. But these numbers suggest that, at best, more than half of the Texas high school seniors have little or no knowledge of the law.

Knowledge of the law also varies depending on college aspirations, expectations and application behavior. The differences here are predictable. Those who aspire to a four-year college degree, expect to get a four-year college degree, and actually apply to a four-year college or university report greater knowledge of the law than students without college aspirations or plans. Still, almost half of those with college plans claim to know nothing or only a little about the law.

### ***Descriptive Analyses***

Table 2 presents a descriptive analysis of differences in college aspirations, expectations and applications for groups differing in their knowledge of the law, class rank, race/ethnicity and gender. Three-quarters of Texas seniors aspire to attend a four-year college or university. This proportion declines once students report whether they realistically think they will obtain this educational goal. An even smaller proportion of students, under two-thirds, have actually applied to at least one college or university by the middle-to-end of their high school senior year. These findings are consistent with previous work showing a relatively low rate of college aspirations, expectations and actual application among Texas high school seniors when compared to the national average (Texas Higher Education Coordinating Board 2003).

### **Table 2: Texas Seniors with College Aspirations, Expectations and Applications**

As expected, Table 2 demonstrates that on average seniors who know “a lot” or “some” about the Top 10% Law have significantly higher educational aspirations, expectations and rates of college application. When examining class rank, the proportion of students

who report college aspirations, expectations and application decline in a nearly monotonic fashion as the seniors' decile class rank increases. Finally, Asians are most likely, followed by whites, blacks, those of other race/ethnicity, and Hispanics, to aspire to college or expect to attend.<sup>11</sup> When examining college applications this pattern changes slightly. Blacks are somewhat more likely than whites, and Hispanics more likely than those of other race/ethnicity, to have applied to college by the spring of their senior year.<sup>12</sup>

### *Educational Effects of Knowledge of the Top 10% Law*

Texas high school seniors' college aspirations, expectations and applications are examined by estimating sequential nested Hierarchical Generalized Linear Models separately for each of the three outcomes. Baseline models include only our key variables of interest; namely, knowledge of the law, high school class rank, race and ethnicity, nativity status and gender. Full models then add important control variables to the policy and ascribed characteristics in the baseline models. Specifically, models 2, 4 and 6 in Table 3 also control for the student's academic behavior in high school, the attitudes and behaviors of the respondent's peers, parental and family characteristics, and high school characteristics. The pivotal nature of these control variables have been identified by previous studies of educational outcomes. Furthermore, by controlling for individual student academic preparation, peer influences, parental support, and school resources, we reduce the possibility that our measure of knowledge of the Top 10% Law is merely a proxy for general student information gathering regarding post-secondary educational options.

Models 1 and 2 in Table 3 present HGLM results for the impact of knowledge of the law on seniors' college aspirations. Model 1 demonstrates that seniors' greater knowledge of the Top 10% Law is strongly associated with aspiring to college, while decile class rank (measured in percentiles, with lower numbers representing higher class rank) is inversely associated with college aspirations. Texas high school seniors' educational aspirations also vary systematically by race and ethnicity. Compared with whites, Asian and black students are most likely to aspire to go to college, Hispanics are least likely, and the educational aspirations of those of other race/ethnicity are not significantly different from whites. Thus, without any additional controls, the typical association of race/ethnicity with college aspirations appears in model 1, but knowledge of the law appears to act as a strong, independent counterweight to this typical pattern, more than tripling the odds of college aspirations among Texas high school seniors.

### **Table 3: Models Predicting Texas Seniors' College Aspirations, Expectations and Applications**

Adding academic, peer, parental and contextual high school influences in model 2 of Table 3 diminishes the effect of knowledge of the Top 10% Law, but by no means eliminates it. Knowing about the policy remains a significant positive indicator of seniors' college aspirations. The controls do alter the effect of ethno-racial differences in educational aspirations. After controls are added, Hispanics' aspirations are statistically indistinguishable from those of white seniors. It is also worth noting that, unlike prior national studies, we find that young women in Texas are not more likely to aspire to college than young men after academic, peer, parental and contextual high school influences are controlled.

To summarize, the analysis of educational aspirations presented in Table 3 suggests that knowledge of the law, class rank and race/ethnicity play an important role

in affecting the college aspirations of Texas high school seniors. Individual academic, peer, parental and school influences play an important role in mediating college aspirations for Hispanic and female students. The relatively low college aspirations of Hispanic students, and the relatively high college aspirations of females, are accounted for by these influences. Control variables behave in a manner consistent with the findings of previous research.

Models 3 and 4 in Table 3 present parallel multilevel analyses for high school seniors' expectations of attending college. Most of the findings observed in the analysis of educational aspirations also hold for college expectations. The impacts of the policy variables are similar. Knowledge of the Top 10% Law positively influences college expectations regardless of the presence of controls, and high school class rank works in precisely the same way as we saw previously for educational aspirations in models 1 and 2.

There are both similarities and differences between the college aspirations and expectations of whites and members of other ethno-racial groups in Texas. The Asian/white differences in educational *expectations* in models 3 and 4 are about half of the observed Asian/white difference in educational *aspirations* in models 1 and 2. As with aspirations, Asian students have consistently higher expectations of attending college than do white seniors. The pattern for black and Hispanic students also differs slightly. There are no statistically significant differences between black and white students in college expectations regardless of the presence of controls (i.e., across models 3 and 4 in Table 3). Hispanic students report consistently lower educational expectations than white students, but this difference shrinks by about half when additional controls are added to the baseline model. Once again, Hispanic students' educational expectations appear to be sensitive to academic preparation, peer, parental and high school influences.

Models 5 and 6 in Table 3 present equivalent analyses for actual behavior; whether the senior applied to at least one college or university by the spring of his or her senior year in high school. Once more, the Top 10% Law acts as a strong positive influence, more than doubling a senior's odds of applying to college. Decile class rank also has the expected effect on college applications. Consistent with the findings for the previous two educational outcomes is the positive probability of college application for Asians when compared with white students but this difference is not statistically significant even when controls are added to Model 6 in Table 3. But the analyses reveal that blacks have consistently higher levels of college application relative to whites and this effect intensifies as additional controls are added to the model. Both black and Hispanic student college applications rise as we account for contextual influences, with black application rates surpassing whites by more than a factor of two. As we saw for aspirations and expectations, the lower probability of college application among Hispanics compared to whites declines in magnitude as academic preparation, peer, parental and high school characteristics are taken into account. Finally, the effect of gender on Texas high school seniors' probability of applying to college is now consistent with prior national research suggesting gender disparities in educational outcomes that favor women.

### **Ethno-racial Interactions**

The strong impact of knowledge of the Top 10% Law revealed in Table 3 may be particularly salient for educationally underrepresented groups, in this case blacks and Hispanics. To examine this possibility we add two-way interaction terms between race/ethnicity and knowledge of the law, class rank, gender and nativity status (one at a

time) to models 2, 4 and 6 in Table 3. The probabilities resulting from these interactions are presented in Table 4.

**Table 4: Interactions between Race/Ethnicity and Knowledge of the 10% Law, Class Rank, Gender and Nativity**

The results in Table 4 suggest a complex set of consequences of knowledge of the Top 10% Law, class rank and gender with regard to furthering the educational plans of underrepresented students, however, none of the interactions between ethnicity and foreign birth reach statistical significance. Black women have higher educational aspirations and expectations than their white counterparts. But blacks in the top 10 percent of their high school class are less likely to apply to college than are whites in the top 10 percent of their class. This is a significant finding that is net of knowledge of the law, student's academic preparation, parent, peer and high school influences. This finding is discouraging for college officials who would like to have a more diversified entering class, and it is not entirely clear why it is true. One possibility is that black students differentially intend to delay their initial college entry, perhaps for financial reasons. Another possibility is that relatively more of them intend to apply to community colleges, which in Texas accept applications quite late into the summer following high school graduation. Thus, they may still intend to apply, but know that the deadline for application is still in the future.

The results for Hispanic students are similar to those for black students with regard to college applications among top 10 percent students, but differ significantly in other ways. Like blacks, Hispanics in the top 10 percent of their high school classes have lower probabilities of applying for college than their white counterparts. Unlike blacks, Hispanic students with knowledge of the law have significantly lower educational aspirations and expectations than whites and Hispanic women have lower net educational aspirations than white women. These results suggest that Hispanic students in the best position to take advantage of the opportunities provided by the law are not doing so.

Significantly, none of the differences between racial and ethnic groups is due to foreign birth. None of the interactions between race/ethnicity and foreign birth reach statistical significance, and our models included additive controls for nativity. This suggests that the pervasive differences in college aspirations, expectations and aspirations for (especially) Hispanic students are not due to nativity even though a non-trivial percentage of Hispanic students are foreign born (see Table 1).<sup>13</sup>

In summary, our results suggest that general improvements in college expectations and applications are similar between whites and underrepresented groups who are highly qualified for college and have knowledge of the Top 10% Law. But the rising educational aspirations of highly qualified black students net of the controls in our models suggest that the law significantly increases the educational aspirations of one group of underrepresented minority students who are the intended beneficiaries of the law. The probability of college-level educational aspirations among highly qualified black students increases greatly with knowledge of the law. From the standpoint of increasing the representation of underrepresented students in four-year colleges and universities, there remains a serious contrast between increased aspirations with knowledge of the law for highly qualified students and relatively lower application rates for these same highly qualified students.

## Discussion

The social significance of this analysis resides in the high-stakes legal challenges to the constitutionality of affirmative action as interpreted by the Supreme Court's recent *Grutter* and *Gratz* decisions, which allow universities to use affirmative action in admissions in narrowly tailored ways (*Gratz v. Bollinger et al.* 2003; *Grutter v. Bollinger et al.* 2003). The court stated that universities "should draw on the most promising aspects" of race-neutral alternatives to developed in other states to achieve the diversity universities seek (*Grutter* at 2344). Percent plans have been proposed as an alternative to race-sensitive admission criteria, yet there has been no empirical evidence that such plans actually influence college aspirations, expectations or applications to college. As is often the case in social science, data do not permit a direct examination of college decision-making under these two alternative educational policy regimes. Instead, this study provides the first systematic evidence about how students' knowledge of percent plans influences their educational aspirations, expectations and probability of college application. The approach taken here is close to the rational choice approach because we focus on the effects of students' perceptions of parental and peer support and the effects of an additional piece of information – students' knowledge of the Top 10% Law – on college aspirations, expectations and actual applications.

We are able to show that, at least in Texas, just the knowledge of a percent plan has played a role in raising the sights of students who might not otherwise consider college. We also show that individual student academic preparation, families, peers and high school context play an important role, especially for minority students, but the law itself has an effect regardless of these other factors. Accordingly, our measures of parental and peer influences concentrate on the students' perceptions of these influences rather than actual peer and parental evaluations of the student.

Unlike high school attendance and attendance at many community colleges, attendance at four-year institutions requires an application process with an uncertain outcome for those who apply. Students who are the first in their families to consider college face even more uncertainty when trying to estimate whether their investment in an application fee is likely to pay off. By strongly reducing the uncertainty about applying to college, at least for the top decile of the senior high school class, the Top 10% Law may have the effect of improving diversity in colleges simply because a broader range of students becomes motivated to apply.

While knowledge of the law significantly affects college aspirations, expectations and applications regardless of race/ethnicity or class rank, the effects on college aspirations are especially pronounced for black students in the top decile of their senior class. But in terms of increasing minority application rates at Texas flagship institutions, our results suggest that knowledge of the law, by itself, does not increase college application rates of underrepresented students relative to whites. In fact, unlike blacks who know about the law, Hispanic students are less likely than whites who know about the law to expect to go to college. Further, both black and Hispanic students in the top 10 percent of their class have lower rates of college application. Hispanic students, in particular, seem especially sensitive to the larger context where high school decisions are made (see Table 3). Regardless of the controls we use in the present study, knowledge of the Top 10% Law, by itself, appears to be associated with aspiring to college, expecting to go to college and actually applying to college. The effects are sizable and they remain significant even after we control for a variety of characteristics

that researchers have previously used to predict educational aspirations and expectations.

There is a weakness to our study that needs to be mentioned, as well as several useful extensions of the present analysis. We cannot tell with absolute certainty what the effects of the Top 10% Law are for college aspirations, expectations and applications because we do not know what these characteristics looked like prior to the enactment of the new admissions policy in Texas. It is possible (but not likely) that our measure of knowledge of the law is a proxy for general information gathering regarding post-secondary educational options and that controlling for this information gathering would negate the effect of specific knowledge of the Top 10% Law. This is possible, but unlikely, because we control for many of the characteristics (e.g., class rank, individual student academic preparation, peer influences, parental support and school resources) that are associated with this kind of information gathering.

Overall, our analysis suggests that the Top 10% Law, and knowledge of it, significantly alter the educational plans of high school seniors in Texas. Further research is necessary to determine the exact mechanisms that produce this policy outcome. An additional extension of the present analysis is to examine whether high school contexts differ in their effects for students from different racial and ethnic groups in a manner similar to our analysis of the effects of knowledge of the Top 10% Law and high school class rank. This entails a complex analysis that is beyond the purview of our present paper, but the significant overall effects of high school contexts in our present analysis suggest that there may be significant contextual effects driving educational plans and that members of different ethnic groups may be differentially sensitive to this broader school context. This, therefore, is an important public policy issue that should be a target for future study.

## Notes

1. As is true with high schools in other states, the dropout rate of students in Texas appears to be consistently under reported (Greene and Forster 2003). There are many reasons for this, but fortunately the reasons are not particularly relevant for the present analysis because the procedures used to calculate the dropout rate are applied consistently across Texas public high schools.
2. Because participation in the federal free and reduced lunch program declines sharply for students in the upper grades, the Texas Higher Education Agency was commissioned to construct an indicator that captures whether or not a senior *has ever* participated in the program since he or she was in 8<sup>th</sup> grade. This measure helps to reduce the potential bias in older students' under-participation in such programs.
3. Feeder high schools are defined as one of the top 20 high schools to receive the greatest number of offers for student admission to UT-Austin and Texas A&M. Twenty-seven of the 28 identified feeder high schools are public institutions.
4. In-class self-administered surveys were collected from March 4, 2002 through May 27, 2002. Applications for four-year colleges in Texas are typically due before March 1, although community college deadlines may be later.
5. Students who have dropped out of high school prior to spring of their senior year are not included in the sample. Because the primary focus of the analysis is the impact of the knowledge of the new admissions policy on seniors' aspirations and expectations to

attend college as well as their actual college application, high school dropouts are less relevant. Additionally, there are no theoretical or common-sense ways to link knowledge of the new college admissions policy with dropping out of high school. However, because Hispanic and black students are less likely to graduate (Greene and Forster 2003), the minority students in our sample may represent a more select subgroup of students who are differentially invested in their education and therefore, more interested in attending college.

6. TEA provides relatively limited information on private schools, many of which are not held to the same level of public monitoring. According to TEA, Texas charter schools have a relatively high rate of turnover with a shorter lifespan than public high schools. This makes the historical *universe* of Texas charter schools more difficult to identify. TEA estimates there were approximately 45 charter schools and 62 magnet schools in Texas in 1998. Public magnet schools are included in the sampling frame.

7. Using Fall 2000 admission data from UT-Austin and Texas A&M, a *feeder* high school is defined as one of the top 20 high schools to receive the greatest number of offers for student admission. Although the top 20 high schools are identified separately for each institution, 12 high schools overlap – feeding both UT-Austin and Texas A&M. Of the 28 feeder high schools, only one (The Texas Academy of Mathematics and Science) is outside of the sampling frame.

8. In-class questionnaires were given to a saturation sample of all enrolled seniors using passive parental consent and written student assent in 87 high schools. Parental refusal in these schools was negligible, averaging 2.5 per school. Two schools required written parental consent, while nine schools required the questionnaires be mailed to seniors directly. Under the latter circumstances a probability sample of up to 400 seniors were drawn from high school directories. To eliminate the possible introduction of bias, analyses include a dummy variable representing whether the survey was completed in class or collected by mail. Mail surveys represent 5 percent of the final sample (15 percent of the weighted sample).

9. Surveys were conducted on multiple days within the same school to reduce missing data resulting from student absenteeism. Non-response to the nine schools requiring a mail survey and the two schools requiring written parental consent is included in the 70.3 percent overall student response rate.

10. Respondents did not yet know their class rank at high school graduation.

11. An additional 15 percent of high school students aspire to two-year or vocational colleges and 20 percent expect this to be their highest level of attainment. Not surprisingly, significant differences exist by race and ethnicity. Specifically, Hispanics and blacks are significantly more likely to aspire and expect to attain a two-year or vocational degree than are white or Asian students.

12. Difference in means tests reveal that minority students are significantly more like to attend high schools that are large, have a larger proportion of students who drop out or experience economic disadvantage, and fewer students who report plans to attend college.

13. We also examined three-way interaction terms among race/ethnicity, knowledge of the Top 10% Law, class rank, nativity status and gender. We focus on educationally underrepresented groups of students (blacks and Hispanics) in comparison to the majority (whites). None of these three-way interaction terms were statistically significant. This suggests that the effects of knowledge of the law and class rank combined, the law and gender combined, or class rank and gender combined do not vary significantly between black and white, and Hispanic and white, students.

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**Table 1: Texas Seniors Who Report Knowing about the Top 10% Law\***

	<b>Mean</b>	<b>Standard Deviation</b>
<b>Total Sample</b>	.43	.50
<b>Class Rank (decile):</b>		
Top 10%	.81	.39
20%	.60	.49
30% +	.32	.47
<b>Ascribed Characteristics:</b>		
Race/Ethnicity		
White	.50	.50
Asian	.64	.48
Black	.37	.48
Hispanic	.34	.47
Other	.42	.49
Female	.46	.50
Male	.42	.49
Foreign Born	.39	.49
Native Born	.45	.50
<b>Dependent Variables:</b>		
College Aspirations?		
Yes	.51	.50
No	.19	.39
College Expectations?		
Yes	.53	.50
No	.20	.40
College Application(s)?		
Yes	.58	.49
No	.21	.41

Source: THEOP, Spring 2002.

\* This includes students who report they knew “A Lot” or “Some” about the law.

Note: Statistics are weighted. All group differences are statistically significant at the .01 level (2-tailed tests) except for the difference between blacks’ and Others’ self-reported knowledge of the Top 10% Law.

**Table 2: Texas Seniors with College Aspirations, Expectations and Applications**

<b>Characteristics</b>	<b>Aspirations</b>	<b>Expectations</b>	<b>Applications</b>
<b>Total Sample</b>	.75	.70	.60
<b>Policy</b>			
Knowledge of Top 10% Law			
A Lot - Some	.89	.86	.81
A Little - None	.65	.57	.45
Class Rank (percent)			
Top 10	.93	.92	.91
20	.86	.82	.75
30+	.70	.63	.51
<b>Ascribed Characteristics</b>			
Race/Ethnicity			
White	.79	.76	.64
Asian	.89	.84	.76
Black	.74	.68	.65
Hispanic	.69	.60	.54
Other	.71	.64	.51
Female	.78	.72	.66
Male	.74	.69	.56
Foreign Born	.71	.64	.53
Native Born	.77	.71	.62

Source: THEOP, Spring 2002.  
 Note: Proportions are weighted.

**Table 3: Models Predicting Texas Seniors' College Aspirations, Expectations and Applications<sup>a</sup>**

Variable	Aspirations						Expectations						Applications					
	Model 1			Model 2 <sup>b</sup>			Model 3			Model 4 <sup>b</sup>			Model 5			Model 6 <sup>b</sup>		
	$\gamma$	se	odds	$\gamma$	se	odds	$\gamma$	se	odds	$\gamma$	se	odds	$\gamma$	se	odds	$\gamma$	se	odds
<b>Policy</b>																		
Knowledge of Top 10% Law	1.10**	.07	3.01	.83**	.11	2.28	1.07**	.05	2.92	.78**	.08	2.19	1.07**	.05	2.92	.80**	.06	2.23
Class Rank (decile)																		
Top 10%	1.03**	.10	2.82	.68**	.14	1.98	1.29**	.11	3.63	.90**	.17	2.46	1.80**	.09	6.07	1.32**	.12	3.76
20%	.91**	.09	2.47	.69**	.14	1.99	.93**	.10	2.54	.70**	.14	2.01	1.10**	.06	3.02	.83**	.09	2.30
30% + (reference)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Ascribed Characteristics</b>																		
Race/Ethnicity:																		
White (reference)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Asian	.64**	.11	1.90	.75**	.18	2.13	.33**	.13	1.40	.43*	.20	1.53	.28	.16	1.33	.29	.23	1.33
Black	.16*	.07	1.18	.28**	.11	1.33	.07	.08	1.07	.20	.11	1.22	.66**	.07	1.93	.82**	.11	2.27
Hispanic	-.30**	.06	.74	-.02	.09	.98	-.48**	.07	.62	-.20*	.10	.82	-.38**	.06	.69	-.23*	.10	.80
Other	-.10	.11	.90	.18	.15	1.19	-.10	.11	.90	.20	.15	1.22	-.26**	.10	.77	-.07	.16	.93
Female	.14**	.05	1.15	.06	.08	1.07	.05	.05	1.05	-.03	.07	.97	.24**	.04	1.27	.20**	.06	1.22
Foreign Born	-.21**	.07	.81	-.03	.10	.97	-.21*	.09	.81	-.02	.11	.98	-.45**	.08	.64	-.31**	.11	.73
<b>Student Characteristics</b>																		
AP Courses Taken	—	—	—	.14**	.03	1.15	—	—	—	.16**	.03	1.18	—	—	—	.21**	.02	1.23
Hours Doing Homework	—	—	—	.04*	.02	1.04	—	—	—	.04*	.02	1.05	—	—	—	.05*	.02	1.05
Peer Index	—	—	—	.10**	.01	1.11	—	—	—	.11**	.01	1.11	—	—	—	.08**	.01	1.09
Mother's Education	—	—	—	.08**	.01	1.08	—	—	—	.08**	.01	1.09	—	—	—	.05**	.01	1.05
Encourage College	—	—	—	.87**	.13	2.38	—	—	—	.93**	.14	2.52	—	—	—	.61**	.17	1.85
Biological Parents	—	—	—	.10	.10	1.11	—	—	—	.11	.07	1.12	—	—	—	.21**	.08	1.24
Siblings	—	—	—	-.02	.02	.98	—	—	—	-.03	.02	.97	—	—	—	-.02	.02	.98
Parents Own Home	—	—	—	.20	.11	1.22	—	—	—	.22*	.11	1.25	—	—	—	.22*	.10	1.25
Childhood Mobility	—	—	—	.02	.01	1.02	—	—	—	-.00	.01	1.00	—	—	—	-.02	.02	.98
<b>High School</b>																		

<b>Characteristics</b>																		
Feeder High School	—	—	—	.26	.54	1.30	—	—	—	.30	.46	1.35	—	—	—	.67	1.85	1.95
Dropout Rate	—	—	—	-.03	.05	.97	—	—	—	-.02	.06	.98	—	—	—	-.01	.09	.99
% w/ College Plans <sup>c</sup>	—	—	—	.59	.35	1.01	—	—	—	.37	.37	1.00	—	—	—	.30	.47	1.00
% Seniors Economically Disadvantaged <sup>c</sup>	—	—	—	-.38	.27	1.00	—	—	—	-.45	.31	.99	—	—	—	.63	.51	1.01
Size <sup>c</sup>	—	—	—	.02**	.00	1.00	—	—	—	.02**	.00	1.00	—	—	—	-.00	.01	1.00
Intercept	.53	.09	—	-.42	.20	—	.33	.09	—	-.72	.21	—	-.31	.10	—	-1.13	.28	—
Deviance	33,540.97			32,818.70			34,493.71			33,655.46			35,293.74			34,689.59		
Change in Deviance	—			722.27**			—			838.25**			—			604.15**		

Note: N = 12,029 seniors, 96 high schools. Coefficients represent Hierarchical Generalized Linear Modeling estimates.

Source: THEOP, Spring 2002.

<sup>a</sup>All models contain dummy variable controls for missing data and incorporate analytical weights that reflect both the probability of school selection and correct for student and school level non-response.

<sup>b</sup>Models 2, 4 and 6 add additional controls for student being foreign born, number of AP courses taken, hours spent on homework, peer index, mother's education, parental college encouragement, intact family, number of siblings, parental home ownership, childhood mobility, and high school characteristics (i.e., feeder high school, percent students with college plans, dropout rate, percent seniors ever economically disadvantaged, high school size and whether it was one of nine high schools where students received questionnaires by mail as opposed to in-class). Coefficients, standard errors, and odds ratios are not shown for these variables but are available from the authors upon request.

<sup>c</sup>Coefficient and standard error multiplied by 100 to show significant digits.

\*p , .05    \*\*p , .01 (2 tailed tests).

**Table 4: Interactions between Race/Ethnicity and Knowledge of the 10% Law, Class Rank, Gender and Nativity**

<b>Two-Way Interactions</b>	<b>Aspirations</b>	<b>Expectation</b>	<b>Application</b>
<b>Blacks vs. Whites</b>			
<i>Knowledge of Top 10%</i>			
Blacks	2.23	1.32	1.18
Whites	1.65	1.08	.50
<i>In Top 10% of Class</i>			
Blacks	1.78	1.36	.95**
Whites	1.45	1.36	1.12
<i>In Next 20% of Class</i>			
Blacks	3.18**	.79	1.08
Whites	1.09	.79	.50
<i>Female</i>			
Blacks	.81*	.52*	.58
Whites	.56	.38	.26
<i>Foreign Born</i>			
Blacks	2.92	1.76	1.51
Whites	2.08	1.45	.67
<b>Hispanics vs. Whites</b>			
<i>Knowledge of Top 10%</i>			
Hispanics	1.18*	.82**	.47*
Whites	1.65	1.17	.62
<i>In Top 10% of Class</i>			
Hispanics	1.08	.76*	.59**
Whites	1.08	1.49	1.26
<i>In Next 20% of Class</i>			
Hispanics	1.25	.71	.51
Whites	1.25	.87	.60
<i>Female</i>			
Hispanics	.78**	.35	.27
Whites	.67	.48	.32
<i>Foreign Born</i>			
Hispanics	.75	.55	.30
Whites	.75	.55	.37

Source: THEOP, Spring 2002.

Hierarchical Generalized Linear Modeling estimates. Statistical significance refers to two-way interaction terms reflecting differences in racial and ethnic groups. Probabilities are calculated for each racial/ethnic group from the interaction-term equation controlling for knowledge of the Top 10% Law, class rank, gender, foreign born status, number of AP courses taken, hours spent on homework, peer index, mother's education, parental college encouragement, intact family, number of siblings, parental home ownership, childhood mobility and high school characteristics, per models 2, 4 and 6 in Table 3. Coefficients and standard errors are not shown but are available from the authors. Equal probabilities imply that the race-specific coefficients were not statistically significant.

\*p < .05 \*\*p < .01 (two-tailed tests).

**Appendix A. Summary of Variables Included in the Analysis of Texas Seniors' College Aspirations, Expectations and Applications**

Variable	Description	Seniors	
		$\bar{x}$	s.d.
<i>Dependent Variables:</i>			
Aspirations	Binary variable coded 1 if respondent aspires to finish college (4 or 5 year degree), obtain a master's degree or equivalent, or obtain a PhD, MD, or other professional degree and coded 0 otherwise. Obtained from the question: "How fare would you <u>like</u> to go in school?"	.75	.43
Expectations	Binary variable coded 1 if respondent anticipates finishing college (4 or 5 year degree), obtaining a master's degree or equivalent, or obtaining a PhD, MD, or other professional degree and coded 0 otherwise. Obtained from the question: "Realistically speaking, how fare do you <u>think</u> you will go in school?"	.70	.46
Applications	Binary variable coded 1 if respondent has applied to one or more colleges or universities and coded 0 otherwise. Obtained from the question: "Have you applied to a college or university?"	.60	.49
<i>Policy:</i>			
Knowledge of Top Ten Percent Law	Binary variable coded 1 if respondent reports knowing "some" or "a lot" about the Top 10% Law and coded 0 if the respondent reports knowing "none" or "a little." Obtained from the question: "How much have you heard about the Top 10% Rule (guaranteeing automatic admission to the top 10% of a high school class to Texas public colleges and universities)?"	.43	.50
Class Rank	3 category dummy variable representing students' decile class rank (i.e., top 10%, 20%, bottom 30% and below). Obtained from a series of questions asking the respondent to indicate their <i>actual</i> or <i>estimated</i> decile class ranking.		
Top 10%		.15	.36
20%		.17	.38
30% and Below		.67	.47
<i>Ascribed Characteristics:</i>			
Race/Ethnicity:	Five-category dummy variable representing respondents' racial/ethnic self-identification. Obtained from the question: "What term best describes your racial and ethnic origin?"		
White		.48	.50
Asian		.03	.18
Black		.10	.30
Hispanic		.30	.46
Other		.09	.28
Female	Binary variable coded 1 if respondent indicates female and 0 if male. Obtained from the question: "Are you male or female?"	.53	.50
Foreign Born	Binary variable coded 1 if respondent was born in a foreign country and 0 if born in the United States. Obtained from the question: "Were you born in the United States?"	.11	.31
<i>Student Characteristics:</i>			
AP Courses Taken	Number of advance placement (AP) courses the respondent has taken or is currently taking. Obtained from a series of questions.	1.10	1.56
Hours Doing Homework	Number of hours per day the respondent typically spends doing homework, both in and out of school. Obtained from the question: "On a <i>typical day</i> during your senior year, how much time on average do you spend on homework in school and out of school?"	2.11	1.63

Peer Index	Constructed from the answers to four components of a primary question regarding the academic behavior/beliefs of the respondents' friends. The primary question reads: "About how many friends that you spend time with ... a. Do well in school?; b. Plan to go to college?; c. Think it's important to work hard on school work?; d. Participate in extra curricular activities?" For each of the 4 items, respondents choose one of the following response categories: "none," "only one," "two or three," "more than three." Response categories are recoded to: 0, 1, 2.5, 3.5, respectively. Values are then summed to create an academic <i>peer index</i> that ranges from 0 to 14. Cronbach's $\alpha$ for scale reliability is .7929, indicating that the estimated correlation between the <i>peer index</i> and the underlying factor it measures is .89.	11.65	3.01
Mother's Education	Number of completed years of education by respondents' mother. Obtained from the question: "What was the highest degree or level of school that your <i>mother</i> or female guardian has <i>completed</i> ?" The nine possible response categories are recoded to their mid-points as follows: "no schooling" = 0; "elementary school (1 <sup>st</sup> – 8 <sup>th</sup> grade)" = 4.5; "some high school (9 <sup>th</sup> – 11 <sup>th</sup> grade)" = 10; "high school graduate or GED" = 12; "some college, no degree" = 13; "2-year or community college degree" = 14; "4-year college degree" = 16; "masters degree or equivalent" = 18; "Ph.D., M.D., or other professional degree" = 20.	13.00	3.58
Encourage College	Binary variable coded 1 if parents' encourage respondent to attend college and 0 otherwise. Obtained from the question: "During your senior year, have your parents or guardians encouraged you or discouraged you about going to college?"	.94	.23
Biological Parents	Binary variable coded 1 if respondent lived with both biological parents at time of interview and 0 otherwise. Obtained from the question: "Which of the following people live in the same household with you?"	.60	.49
Siblings	Number of siblings. Obtained from the sum of 2 questions: "How many <u>older</u> ( <u>younger</u> ) brothers and sisters do you have (including adopted, step-, or half-)"	2.56	2.13
Parents Own Home	Binary variable coded 1 if parents' own the home that the respondent lives in and 0 otherwise. Obtained from the question: "Does your family own or rent the home you live in?"	.83	.37
Childhood Mobility	Number of times respondent has had to change schools because parents moved. Obtained from the question: "Since you were 5 years old, how many times have you had to change schools because your family moved?"	1.68	2.49
<i>High School Characteristics:</i>			
Feeder High School	Binary variable coded 1 if respondent attends 1 of 20 high schools considered a "feeder" to the 2 public flagship universities (i.e., UT-Austin and Texas A&M) and 0 otherwise. Based on Fall 2000 admissions cohort.	.09	.29
% w/ College Plans	Percent of senior class (2000) with self-reported plans to attend college. Obtained from TEA.	72.83	23.01
Dropout Rate	Total high school dropout rate for all students in 2000. Obtained from TEA.	1.55	1.18
% Seniors Economically Disadvantaged	Percent of senior class (2000) ever identified as economically disadvantaged since the 8 <sup>th</sup> grade. Obtained from TEA.	39.13	25.65
Size	Total school enrollment in grades 9-12 (2000). Obtained from NCES.	1756.81	1051.10
Mail Survey	Binary variable coded 1 if respondent attends one of the 9 schools to receive a mail survey and 0 if the senior attends one of the 87 schools to receive an in-class survey.	.15	.36
Number of Seniors		12,029	
Number of High Schools			96

Source: THEOP, Spring 2002.