# Texas Students' College Knowledge
# Do High School Counselors Matter?

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Abstract

This paper explores the association between Texas high school students' interactions with high school guidance counselors and their knowledge of essential college admissions information. Specifically, I examine whether students know about the top 10% plan and whether they know their class rank. By using refined measures of counselor interaction and controlling for other factors associated with both college knowledge and exposure to counselors, this paper extends previous work on if and how counselors influence students' college decisions. Utilizing data from the Texas Higher Education Opportunity Project and hierarchical logistic regression models, results suggest three important findings. First, interaction with and exposure to high school guidance counselors is related to higher levels of student college knowledge. Second, in addition to the effect of their own personal interactions with counselors, when more students within a school have obtained college information from counselors, students in that school are more likely to hold college knowledge as well. Finally, counselors are particularly important sources of college information for minority, first generation college, lower achieving, and poorer students.

## Introduction

In the 1996 *Hopwood vs. Texas* case, the US Fifth Circuit Court of Appeals banned the use of race as a factor in college admissions decisions. Attempting to mitigate the effects of *Hopwood*, the Texas legislature enacted HB 558, popularly known as the Top 10% Law, guaranteeing enrollment to the top 10% of each graduating class of high school seniors in any public institution of higher education, including either of the state's two university flagship schools, The University of Texas at Austin and Texas A&M. In the intervening years, the Top 10% Rule has acted to broaden the geographical representation of students and helped to maintain racial diversity at public universities (refs).

For Texas high school students, understanding the college application and enrollment context of their state is essential for making informed decisions regarding post-high school activities, especially for students expecting to complete a 4-year college degree, which includes almost 70% of Texas high school seniors (Frost, 2004). In particular, knowledge of two key pieces of information, both their individual high school rank and the specifics of the top 10% law, act to empower college bound students in their college search and decision making process. In this paper, I examine the distribution of knowledge regarding these valuable pieces of information about the college admissions process. Specifically, I consider how exposure to and interaction with high school guidance counselors is associated with college knowledge.

In order to assist students in their college searches, high schools have attempted to disseminate information about college through guidance counselors. Unfortunately, there is little quantitative and rigorous research examining how counselors' interactions with

students about college preparation and enrollment are associated with any academic outcomes, including high school students' knowledge about information important in the process of college enrollment. In this paper, I attempt to fill this gap by examination of how an individual Texas students' interactions with and exposure to high school guidance counselors influence students' college knowledge, the Top 10% Plan and their high school rank. Additionally, I assess whether the strength and focus of a high school's counseling department influence students' college knowledge above and beyond individual interactions with counselors.

Accordingly, my paper follows as outlined. I begin by reviewing literature to formulate hypotheses. I next review my source of data, The Texas Higher Educational Opportunity Project, and outline my analysis. Then, using results from hierarchical logistic regression, I present my findings, which suggest that higher levels of college knowledge are associated with greater exposure to and interaction with high school guidance counselors.

**Counselors and College Knowledge**

A major role for high school guidance counselors consists of encouraging and assisting students in their college plans, applications, and enrollment decisions. Because they are uniquely situated between the two spheres of secondary and university education, counselors have access to valuable information regarding college requirements and admissions standards, tuition and financial aid, and application and enrollment procedures, especially with regards to their particular geographical location that they can pass on to high school students. This specific college information and the amount

received, no matter what the source, is essential for students to obtain in order to make intelligent and purposive decisions about where they will attend college (Rowe 1989; Hamrick and Hossler 1996; Cabrera and LaNasa 2000; Venezia, Kirst et al. 2003). College counselors in high school are positioned to offer essential assistance and information to all students, and in particular to students without other sources of college information (Johnson and Stewart 1991; Fallon 1997; McDonough 1997; Corwin, Venegas et al. 2004).

However, most recent school reform has essentially ignored the influence of guidance counselors on high school students' academic outcomes, instead focusing energy on accountability for individual classroom teachers and schools. The media portrayal of counselors in public schools as overworked, inaccessible to large numbers of students, and with increasingly numerous school roles (Spielvogel 2002) is also reported in some qualitative research (McDonough 1997; Corwin, Venegas et al. 2004). The most often used measure of student access to counselors to support these claims is the number of students served by one counselor per school. In her qualitative study of Los Angeles schools, for example, McDonough (1997) reports public high school student counselor ratios greater than 1000. (See also Corwin, Venegas et al. 2004.) In different research, she claims that "public high schools have effectively divested themselves of any college advisement" (pg. 433) because of the large number of students each counselor oversees (McDonough 1994). National statistics show a slightly different picture than case studies of overcrowded urban schools: on average, there are 284 students for every guidance counselor in public high schools (Parsad, Alexander et al. 2003). In general, however, guidance counselor are considered by both popular media as well as researchers as

unsuccessful in fulfilling their role of college counseling, with little to no impact on the college decision making process (Hossler, Braxton et al. 1989; Paulsen 1990).

Although college counseling is a primary role for high school guidance counselors, they also perform a variety of functions in public high schools (Parsad, Alexander et al. 2003). In a 1998 survey, school counselors report that their responsibilities additionally include personal and academic counseling, course scheduling, and test related activities, with only 25% of their total working time devoted to college counseling (Lawton 1998). With specific kinds of social problems occurring among the teenage population, including depression, suicide, pregnancy, dropout, and drug abuse, the responsibilities of a guidance counselor are often split between college bound students and students with discipline and other problems, leaving a vast swath of students in the middle with little or no exposure to counselors (McDonough, Korn et al. 1997; Lawton 1998). However, in a recent national survey by the Department of Education, most counselors report spending the greatest amount of their time working with students on choice and scheduling of high school courses and postsecondary education admissions and selections (Parsad, Alexander et al. 2003).

Despite the primary responsibility to help students in college choice, very little rigorous quantitative research has examined how school counselors are associated with any college outcomes, including college knowledge. The little existing research is either qualitative in nature, providing the detailed innerworkings of counseling departments of very specific kinds of schools, usually overcrowded, poor, and urban (McDonough 1997; Corwin, Venegas et al. 2004) or provides only a descriptive portrait of counselors without appropriate statistical controls and methodology to separate out influences of counselors

from other associated factors (Tornatsky, Fallon, Johnson). Using the previous research available, I suggest several ways that high school counselors could impact students' knowledge of essential college information.

First, simple exposure to counselors in any kind of interaction might be associated with greater student knowledge. Because of their connections between secondary and higher education and their overall greater familiarity with the college application and enrollment process (ref here), increased exposure to counselors could lead to more shared knowledge about college applications and other necessary college information. This is particularly true in cases where students meet with counselors for any college related issues, including discussion of long term educational plans or college applications. It is less clear that interactions with counselors regarding other matters, such as personal problems, school discipline problems, or career objectives, would lead to a similar divulgence of information about college, but it is not an entirely unlikely scenario. Although a student's primary purpose to visit a counselor might be non-academic, counselors focused on academic achievement and college preparation might use any interaction to reinforce general knowledge about how the college applications process functions.

Second, counselor encouragement to attend college might also be associated with increased student college knowledge. Encouragement from a counselor to attend college is a signal that the counselor believes that the student can be successful in a university setting and should make the necessary preparations to attend. Thus, it is likely that counselor encouragement is accompanied by specific information from the counselor that is geared toward helping the student attend college. Conversely, when a counselor

implicitly encourages a student not to attend college by giving help and suggestions to take a job or seek an alternative path upon leaving high school, the divulgence of college knowledge is less probable.

Finally, an overall college guidance program could represent a larger college atmosphere found in schools (McDonough 1997; Corwin, Venegas et al. 2004). Thus, as noted by McDonough (1997) "counseling programs are molded by the emphasis placed on advisement and college oriented culture at each particular school." In her research of specific schools' guidance activities, she concludes that the culture of each school, as represented by the focus and strength of a counseling department, appeared to channel high school students toward different kinds of postsecondary destinations. It is also possible that college counselors can help shape the college climate of the school, not just reflect it, by the way in which they interact with students (Fallon 1997). Frequent encouragement of college attendance and information sharing with many students across the school could lead to a more strongly focused college going culture (Antonio, Venezia et al. 2004). Furthermore, as college information is dispersed to more students, a transmission of information and discussion of college plans between peers is more likely to occur.

Most available research focuses on how school counselors impact distinct groups of students, with a concern to those students who are underrepresented in college attendance. For example, King (1996) reports that for low income students, both exposure to counselors and encouragement by counselors are associated with a higher likelihood of attending a 4 year college. For Latinos, Tornatzky and colleagues (2002) find that at all levels of socioeconomic status, greater exposure to school counselors is

associated with college knowledge, but that language barriers can prevent the flow of information between counselors and parents and students. However, in these and other descriptive analyses, academic achievement and other relevant factors are not simultaneously taken into account, casting doubt upon the additional characteristics of these students who are both more likely to interact with a counselor as well as have higher knowledge and college enrollment. Thus, it is unclear if exposure to counselors is independently linked with positive college outcomes or if they are simply correlated with other factors, like academic achievement, that actually lead to college attendance and greater college knowledge.

Thus, I propose to examine a more complete picture of how exposure to and interaction with counselors is associated with students' college knowledge. In order to do this, it is necessary to consider other factors that could be related to students' knowledge of important information about college admissions and enrollment. All high school students have certain connections, characteristics, and experiences that shape their propensity to attain and hold valuable information about college prior to any exposure to school guidance counselors. Thus, McDonough (1997) suggests that families with high cultural capital possess not only more resources, but also a clearer understanding of the admissions process, both of which enable parents to help children obtain enrollment in a 4 year university. In particular, previous research has suggested that when parents have attended at least some college that not only do they place a higher value on their children's educational attainment, but they are also better situated to help their children obtain relevant information and assist them in the college selection process (ref). Similarly, students who are immigrants or who don't speak English as their primary

language are less likely to have parents who are knowledgeable about higher education in the United States and who can obtain and access college information from counselors, teachers, and other sources, such as the media (Tornatsky). Additionally, these factors are likely to inhibit the collection of college information by the students themselves.

Students also come to the college selection process with varying levels of scholastic achievement and differing educational experiences. Students who have taken honors and AP courses, who have achieved high grades, and who aspire to complete a 4 year university degree are often labeled as college bound, making them privy to college information distributed by their honors teachers, counselors, and other adults (Kirst and Bracco 2004; Venezia 2004). In contrast, recent research found that non-honors students in 2 Texas high school "had a clear understanding that they were being left out of the college policies information stream as compared to the honors students (p. 110) (Venezia 2004). High educational achievement and positive academic experiences are also related to student motivation to seek out college knowledge: thus, students with high achievement are more likely to take initiative to search out necessary college information from counselors and other sources.

Thus, my research questions are as follows. Once equalizing students on the basis of educational achievement and parental educational capital, how is individual interaction with and encouragement by counselors with counselors related to an individual student's knowledge of the top 10% plan and their own high school rank? Furthermore, is the strength of a school's college counseling associated with greater student knowledge? Finally, for whose college knowledge are counselors most important?

**Data, Measures, and Analytic Plan**

Data for this study are taken from the Texas Higher Education Opportunity Project (THEOP), an ongoing study designed to understand the consequences of Texas' replacement of a race sensitive college admission regime with a percent plan on minority students' college enrollment. The survey was based on a stratified random sample of 108 Texas public high schools with a student body consisting of at least 10 enrolled seniors, and which was further stratified on the basis of metropolitan area status and school racial/ethnic composition. Of the eligible schools selected, 93% participated in the study. Thus, 13,803 seniors and 19,969 sophomores were sampled in 96 and 97 high schools respectively. The sample was designed to be representative of students enrolled in Texas public high schools.

During the spring of 2002, baseline data were collected within sampled schools from high school sophomores and seniors using an in school paper and pencil survey. A random sample of the original senior cohort is being followed for a planned total of six years as these students continue from high school on to college and other post high school activities. The first follow up of the senior cohort took place during their senior year, in the spring of 2004. Additionally, the sophomore cohort was reinterviewed during their senior year, in the spring and summer of 2004. For the purposes of this study, I use baseline data only from the senior cohort.

The survey asked respondents about their course taking, extra-curricular activities, educational experiences, and knowledge and perceptions of college admissions. Essential for the purposes of our study, students were asked how much they knew about

the Top 10% Plan, if they knew what their high school rank was, and a series of questions about their interactions with high school counselors.

Because I have two dependent variables, I generated two slightly different sample study, upon which I imposed two constraints. First, I omit all cases that lack valid responses in the dependent variable, knowledge of the Top 10% Plan and knowledge of high school class rank. This excludes 10.61% of the cases in the Top 10% sample and 2.28% of the cases in the class rank sample. Second, because of the independent variable measuring racial status, I include only those students identifying themselves as white, black, Hispanic, or Asian. Other racial/ethnic groups had small sample sizes and I omit all students who report that they are Native American, "other" race, or multi-racial. Only a small additional proportion of the sample is dropped for this reason, 1.7% and 2.3%, so that the final analytic samples of senior students clustered in 96 schools consist of 11,992 for the top 10% analysis and 13,255 for the class rank analysis.

To address the other individual level missing data in my study samples, I used a form of hotdeck imputation. In order for the most missing to the least missing, I regressed each variable with missing values on all the other individual level variables used in the analyses, and then sorted the data based on predicted values for the variable of interest. I then divided my sample into bins of 50 respondents each to locate donors for missing values. Within each bin, I randomly selected a non-missing value to impute a value for missing cases. I repeated this process for each of the variables with missing data and flagged all instances where data were imputed. This process was completed separately for each of the two analytic samples.

Knowledge of the top 10% law was obtained from a survey questions asking students "How much have you heard about the Top 10% Rule?" In order to obtain a dichotomous variable measuring knowledge of the top 10% law, I combined answer categories of "none" and "a little" to represent no knowledge of the law and "some" and "a lot" to represent an understanding of the law. Students' knowledge of class rank was taken directly from a question asking "Do you know your class rank?" Table 1 shows that on average, only 44% of seniors knew at least a moderate amount of information about the top 10% law, and only 60% of seniors knew their class rank. Thus, college knowledge of seniors on the verge of high school graduation, among a group where almost 70% expected to attain a 4 year college degree, was remarkably low.

The key independent variables in my analysis measure student interaction with and exposure to counselors. I include 5 separate counselor variables, including two measures of counselor exposure for both specific college related matters and for any other reasons. In addition, I include whether students received information from counselors about both their high school rank and the top 10% rule and whether their counselor encouraged them to go to work directly after high school graduation. Other counselor measures were collected during the survey, but high degrees of multicollinearity necessitated selection of only a limited group. I include the variables above due to their theoretical and practical importance.

The exposure measures are taken from a series of questions asking students how many times during their senior year they spoke with guidance counselors about a variety of matters, ranging from personal and school discipline problems to college applications and letters of recommendation. I generated two additive indices, representing the

approximate number of times students have interacted with counselors over the course of the year regarding both specific college matters and all other issues. Possible student responses are top-coded at "three or more times", and I code these responses as 3 visits, thereby deflating somewhat the actual exposure that students have had with counselors. Table 1 shows that on average, students have seen counselors to discuss college plans and applications almost 5 times during the school year, and 3.5 times for other issues. Those that know their class rank and understand what the top 10% law is have higher levels of counselor interaction than their counterparts without this knowledge, but unsurprisingly, the difference between these two groups' exposure is not as large for counselor visits about non-collegiate matters as it is for college related interactions.

I additionally include measures of whether students have received information from counselors about the top 10% rule and about their high school rank. Somewhat surprisingly, a substantial proportion of students who have received information about these topics from their counselors report not having knowledge of these college factors. Furthermore, correlations between counselor dispersal of information and actual student knowledge are low, thus enabling their inclusion in my analysis. Not surprisingly, I expect that students who have received information from their counselors about these specific topics will be more knowledgeable than students who have not had similar encounters. However, I am more interested in the school aggregations of these variables to examine whether greater dispersal of information by counselors within schools about the top 10% law and class rank is associated with students' knowledge, above and beyond their individual exposure to counselors. Almost three quarters of students have discussed their college rank with a counselor, while only slightly more than 40% have

received information about the top 10% plan from counselors. Greater levels of college knowledge is additionally related to counselor contact about both these topics, as shown in Table 1.

Finally, I include a measure of whether during the senior year, a counselor encouraged a student to get a job directly after high school graduation. Slightly less than 20% of student report receiving this encouragement, but the proportion is higher among students reporting no knowledge of their high school rank and the top 10% law.

Simple bivariate associations shown in Table 1 between college knowledge and counselor variables distort the reality of counselors' influence on what high school seniors know about the college enrollment process and raise the issue of causality. Do counselors actually give out information about college enrollment in such way as to increase what students know about the process, or is it the case that students who are more likely to already know about the top 10% plan and their class rank are also the students that are more likely to be visiting counselors anyway? In a cross-sectional study, it is impossible to determine the true direction of association, but in order to reduce the possibility of reverse causality, it is necessary to include measures of student achievement, educational experience, and family socioeconomic status in the analysis that are linked with both college knowledge and counselor interaction in an attempt to control for student motivation.

Thus, I incorporate several additional measures into my analysis, including how much time the student spends on homework each week, attitudes about education, whether they had expectations very early in life to attend college, and a factored measure of overall educational achievement, including GPA, number of AP courses, enrollment in

a college preparatory curriculum, expectation to graduate from a 4-year university, and class rank, for the analysis of the knowledge of the top 10% plan. Table 1 shows averages for each variable and by college knowledge. Clear differentials exist in the educational achievement and background of students who do know about the top 10% plan and their class rank, as expected, compared to those who do not have this same knowledge.

Finally, I include measures of parental socioeconomic status, race and immigration status, language ability, and family structure as additional factors influencing students' college knowledge. Parents who have not attended any college, my measure of parental education, are not as able to access or provide their children with relevant college information and help their children in the college enrollment and application process. While overall, 34% of students' parents have no college experience, only 22% to 28% of students with a knowledge of HB 588 and their class rank have parents who never attended any college, compared to 42-44% of students that do not have this college knowledge. I include home ownership as another measure of individual socioeconomic status. Overall, home ownership by students' parents is high at more than 80%, and small differentials exist between those with and without college knowledge.

Some research has shown that minority students, specifically blacks and Hispanics, are less likely to have college knowledge (refs). However, it is uncertain whether this is due to their parents' under representation among the college educated, to their own under representation in honors classes and among high achieving students, or for some other reason. I control for racial/ethnic status of students to examine whether racial differences in college knowledge persist once adjusting for other relevant factors.

Table 1 shows that black and especially Hispanic students are underrepresented among those who have college knowledge, compared to their population share, while in a similar comparison, Asian students are overrepresented. Additionally, I include immigrant status and English language proficiency to capture familiarity with the United States system of higher education and ability to directly access information about college enrollment relayed through school sources and other venues. Small differentials exist between those with and without knowledge of the top 10% plans and class ranks by these two factors, as shown in Table 1. Finally, I include family structure, gender, and number of siblings as additional controls.

In order to assess school counseling strength, I aggregate several student variables to the school level, measuring the percentage of students in a school who received information from a counselor about the top 10% plan and their individual class rank and who were encouraged by a counselor to work directly after high school graduation. I additionally include the number of counselors per student, with data supplied by the Texas Education Agency, and the percentage of parents within a school with no college experience to measure the school socioeconomic status and overall school parental support for college. Overall, students within a school with broader dispersal of college information by counselors are more likely to hold college knowledge. For example, on average, 41% of students within schools have received information from their counselors about the top 10% plan; however, among students who understand what HB 588 is, the school average is 45%, while for those students without this knowledge, the school proportion of students who have received information about the top 10% plan from their counselor is 38%. Additionally, on average, students without college knowledge attend

schools with higher proportions of parents without college experience, compared to those with college knowledge. Finally, on average there are almost .60 counselors for every one hundred students (or around 170 students for every counselor) in Texas public high schools, with little school differences between those who do and don't hold college knowledge.

In order to obtain estimates of school level effects and to correct for student clustering in schools, I use multilevel models to analyze the influences of counselors on students' college knowledge. Because I do not focus on how the effects of individual covariates differ between schools, I fix all slopes and estimate hierarchical logistic random intercept models with a sixth order approximation of the likelihood based on a Laplace transform for Bernoulli models. I report $\tau_{00}$ , the estimate of the between school variance, for each model considered.

In order to estimate how school counselors are associated with students' college knowledge, I consider two separate series of nested models, one for knowledge of the top 10% law and one for knowledge of class rank. To begin my analysis, I model first the effects of students' educational, socioeconomic, and other background characteristics that shape their propensity to hold college knowledge, prior to any interaction with a school counselor. To these models, I add measures of counselor interaction and exposure to assess their association with college knowledge. Next, I introduce school variables measuring the overall dispersal of college information and encouragement within a school, testing whether the college climate fostered through a counseling department influences students' college knowledge, above and beyond their background characteristics and individual interactions with counselors. Finally, to understand for

which students counselors are most important, I consider multinomial logit models comparing counselors as the primary source of information about the top 10% plan to other sources of information, including family and friends.

**Results**

The central question of my analysis is whether and how high school students' interaction with and exposure to school guidance counselors and counseling departments is associated with their knowledge of information essential to the college search and application process. Specifically, I examine knowledge of the top 10% law, which guarantees any student graduating in the top decile of their high school class admittance into any public Texas institution of higher education, and knowledge of their class rank. The first model estimates the influence of students' background characteristics on their college knowledge and results are shown in the first columns of Tables 2 and 3. A student whose parents have not attended any college are less likely to know about HB 588—specifically, the odds of knowing are reduced by 30% (1-exp(-.339)) for these students. However, parental college experience is unrelated to students' knowledge of class rank. Descriptive statistics suggest that information about class rank is more widely dispersed, making parental education less important in accessing it. Not surprisingly, students' educational background is strongly related to both kinds of college knowledge examined here. With an increase of 1 standard deviation on the factor measuring educational achievement, the odds of knowing about the top 10% plan and class rank increase substantially by 260% and 380%. Interestingly, when a student resides with both parents, as compared to only living with one adult, the odds of holding both types

of college knowledge are increased, because two interested and invested adults can both act as conduits of information. Virtually no differences by race exists; the one exception is that for Hispanic students, the odds of knowing their individual class rank is reduced by 25% compared to their counterparts of other racial backgrounds.

In the second set of models, I include the 5 measures of counselor interaction and exposure and these results are shown in Model 2 in Tables 2 and 3. First, the largest effects are, as expected, present when students report that they received specific information from their counselors about the top 10% law and their class rank. For example, students whose counselors discussed HB 588 experience a 319% increase in the odds of knowing about the Top 10% plan compared to students who did not have a similar discussion. When counselors encourage students to work directly after high school graduation, the odds of having college knowledge decrease by 18% and 30% for the top 10% plan and class rank, respectively. Although it is likely that counselors encourage work for students who either may not be college bound, or whom they believe aren't college material, this effect is obtained when controlling for student achievement and educational background. It is possible that other relevant variables have been omitted, but given a specific level of scholastic achievement, counselor encouragement to work reduces the likelihood that a student holds college knowledge. College oriented exposure to counselors is positively related to college knowledge: for example, each additional counselor visit about college matters increases a student's odds of knowing their class rank by 5%. While exposure to counselors about non-college matters is positively related to students' knowledge of HB 588, it is negatively related to their

knowledge of class rank. Specifically, each additional visit to a counselor regarding any non-college matter is associated with a 5% decrease in the odds of knowing class rank.

In the third set of models, I introduce school characteristics, and these results are shown in model 3 of Tables 2 and 3. When a student attends a school with a greater dispersal of information about HB 588 by counselors, students are more likely themselves to have this knowledge. This is in addition to the positive individual influence of discussion with counselors about the top 10% law on knowledge. Thus, with a 10% increase in the school proportion of students who have discussed the top 10% plan with a counselor, the odds of holding knowledge about this increase by 30%. A similar result is obtained for the school percentage of students who received information from counselors about class rank on students' knowledge of their class rank.

Additionally, when more students in a school are encouraged to work directly after high school graduation, the average college knowledge declines. For example, the odds of knowing class rank decrease by 25% when an additional 10% of a senior class is encouraged to work. Although student composition is related to how often counselors encourage work in a school, this effect is obtained when controlling for students' individual educational achievement and socioeconomic status, suggesting an influence of academic climate on students' college knowledge. I find no influence of the number of students served per counselors, the most commonly cited measure of counselor ineffectiveness on students' college knowledge.

*For Whom are Counselors Most Important?*

The analysis to this point suggest that exposure to counselors is associated with higher levels of college knowledge. However, it is not clear if, in the absence of

counselors, students would have still obtained knowledge of the top 10% plan or their class ranks from other sources. In general, it is impossible to determine from the prior analysis how important guidance counselors are to students' knowledge , compared to other sources of information. In order to shed light on this question, I turn to a brief analysis examining students' first source of information about HB 588 to examine for which students counselors were particularly important. I utilize a multinomial logistic model to compare students who first learned about the top 10% plan from counselors to those who don't know about it and to those who learned about it from family, friends, and other sources. Results are shown in Table 4.

Among students who do know about the Top 10% plan, black, Hispanic, poorer, lower achieving, and first generation college students are more likely to first receive information about HB 588 from counselors rather than from family or friends, two other main sources of information, controlling for educational achievement. These are students who, on average, are traditionally underserved by the educational system and who are less connected to information and understanding of the educational system as a whole. For these kinds of students, counselors play a particular important role in providing information that they might not receive elsewhere. Full results from this model can be examined in Table 4.

**Discussion**

In contrast to most research and media portrayals of high school guidance counselors, in this analysis I find that counselors are associated with an important part of high school seniors' college preparation phase. Specifically, interaction with and

exposure to high school guidance counselors is related to higher levels of student knowledge that is essential to the college search and application process. Do counselors actually increase the knowledge that students have of their college search and application environment, or do students who have interactions with counselors already hold college knowledge? Because of the cross-sectional nature of the survey data, this question of causality cannot be definitively answered. It is possible that student characteristics related to their propensity to both have college knowledge and to interact with counselors were not accounted for in this analysis. Nevertheless, this study showed that net of individual differences in students' scholastic achievement and family socioeconomic status, higher levels of college knowledge are associated with exposure to and interaction with high school guidance counselors.

This study is unique among research regarding counselor efficacy on students' college preparation in its use of quantitative data and the simultaneous control for educational achievement and family socioeconomic status. Others investigating similar topics have mainly relied on the simple measure of the number of students served per counselor within a school, drawing conclusions of their effectiveness in helping students prepare for college based on this sole measure. In some sense, I obtain similar results: the student-counselor ratio is not related to students' college knowledge. However, this unidimensional measure obscures important information about counselor-student interaction, and the non-relationship doesn't necessarily mean that counselors have no effect on students' preparation for college. I utilize student reported measures of their exposure to counselors, the specific nature of their discussions with counselors, and the encouragement counselors have given them about various post-high school activities. I

find that interaction with and exposure to counselors is in fact associated with greater college knowledge.

Multinomial logistic results on students' primary source of information about HB 588 suggest that for certain groups of students, including minority, first generation college, lower achieving, and poorer students, counselors are particularly important sources of information about the context of higher education. The combination of these results with the rest of my analysis leads to a policy application. Counselors should make every effort to target underserved students, without many other forms of educational capital, in their discussions of college preparation. Although these students many not seek counselor advice and help of their own volition, the extra effort by counselors to meet with them can provide important information about college that may not be obtained through other sources. Furthermore, discussion of college plans and dispersal of specific college information can by relayed when students interact with counselors for non-college reasons, such as class schedules or personal issues.

Additionally, I find effects of school counseling focus. When more students within a school have obtained college information from counselors, students in that school have an increased likelihood of holding college knowledge as well, in addition to the effect of their own personal interactions with counselors. There are at least three explanations for this. First, students can disseminate college information received from counselors to peers. This seems to be particularly likely in the case of college knowledge like the top 10% plan, a fairly straightforward aspect of Texas' college application environment. Once students learn about it, they can relate this information to others, without the need of alterations for different individuals. This is not the case with class

rank—each student much obtain information specific to their individual circumstances, and so it is unlikely that class rank information can be relayed through peers. However, if information about class rank is distributed more broadly through a school, the school climate is impacted so as to encourage other students to actively pursue information of their own class rank. For example, when students discover how they rank in relation to their classmates, they are likely to share this information, as well as to seek it, from friends. Those without this knowledge might then be more likely to attempt to locate this information for themselves. It is also possible that school aggregations of student interactions with counselors, which I call school counseling strength, are correlated with other school characteristics related to a school's level of college knowledge, such as school socioeconomic status or school achievement. However, I find no evidence that these results of school counseling vary with the introduction of other school variables.

Although my analysis suggests that counselors do seem to influence students' knowledge about the college application context, the nature of the is between knowledge, counselors, and actually university application and enrollment is unclear. Future research is needed to understand how high school climate, and specifically guidance counselors, influence students' further steps that lead ultimately to attainment of a university degree.

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Table 1. Descriptive Statistics by College Knowledge
(Standard deviations)

| | Knowledge of Top 10% Plan | | | Knowledge of Class Rank | | |
|---|---|---|---|---|---|---|
| | Average | Know top 10% plan | Don't know top 10% plan | Average | Know class rank | Don't know class rank |
| College knowledge | 0.439 | | | 0.603 | | |
| *Counselor Interaction and Exposure* | | | | | | |
| Received information from counselor about high school rank | 0.732 | 0.847 | 0.642 | 0.723 | 0.860 | 0.516 |
| Received information from counselor about top 10% rule | 0.420 | 0.662 | 0.230 | 0.409 | 0.509 | 0.257 |
| Counselor encouraged work directly after high school | 0.189 | 0.152 | 0.217 | 0.198 | 0.161 | 0.253 |
| College oriented exposure to counselor | 4.90 | 6.15 | 3.92 | 4.83 | 5.59 | 3.67 |
| (Number of times in senior year) | 4.46 | 4.64 | 4.03 | 4.43 | 4.56 | 3.93 |
| Other exposure to counselor | 3.54 | 3.73 | 3.40 | 3.56 | 3.60 | 3.49 |
| (Number of times in senior year) | 2.84 | 2.96 | 2.73 | 2.87 | 2.83 | 2.93 |
| *Educational Experiences* | | | | | | |
| Had early expectations to attend college | 0.555 | 0.670 | 0.466 | 0.547 | 0.618 | 0.438 |
| Hours per week spent on homework | 5.64 | 6.57 | 4.91 | 5.61 | 6.24 | 4.66 |
| | 6.61 | 6.82 | 6.34 | 6.70 | 6.98 | 6.13 |
| Attitudes towards education | 2.70 | 2.75 | 2.67 | 2.70 | 2.73 | 2.64 |
| | 0.505 | 0.506 | 0.501 | 0.510 | 0.497 | 0.525 |
| Educational achievement factor | 0.017 | 0.459 | -0.329 | 0.007 | 0.279 | -0.406 |
| | 0.836 | 0.724 | 0.750 | 0.728 | 0.655 | 0.633 |
| *Background Characteristics* | | | | | | |
| Parents have no college experience | 0.332 | 0.216 | 0.422 | 0.345 | 0.280 | 0.442 |
| Parents own home | 0.834 | 0.865 | 0.810 | 0.832 | 0.844 | 0.814 |
| Black | 0.104 | 0.091 | 0.114 | 0.112 | 0.109 | 0.117 |
| Hispanic | 0.331 | 0.262 | 0.385 | 0.338 | 0.281 | 0.425 |
| Asian | 0.040 | 0.057 | 0.026 | 0.040 | 0.050 | 0.023 |
| Speak language other than English with friends | 0.042 | 0.027 | 0.053 | 0.042 | 0.034 | 0.055 |
| Foreign-born | 0.109 | 0.099 | 0.117 | 0.116 | 0.103 | 0.135 |
| Male | | | | | | |
| Live with both parents | 0.612 | 0.669 | 0.567 | 0.605 | 0.638 | 0.554 |
| Number of siblings | 2.51 | 2.24 | 2.71 | 2.53 | 2.36 | 2.78 |
| | 2.02 | 1.88 | 2.21 | 2.14 | 2.03 | 2.26 |
| *School characteristics* | | | | | | |
| Percentage students who received information | 0.410 | 0.450 | 0.379 | 0.408 | 0.425 | 0.381 |
| from counselor about top 10% plan | 0.140 | 0.145 | 0.128 | 0.139 | 0.142 | 0.129 |
| Percentage students who received information | 0.721 | 0.741 | 0.705 | 0.719 | 0.740 | 0.687 |
| from counselor about class rank | 0.143 | 0.144 | 0.139 | 0.142 | 0.140 | 0.139 |
| Percentage students encouraged by counselors | 0.199 | 0.182 | 0.211 | 0.200 | 0.194 | 0.210 |
| to work directly after high schools | 0.079 | 0.078 | 0.077 | 0.079 | 0.082 | 0.074 |
| Number of counselors per 100 students | 0.585 | 0.587 | 0.583 | 0.588 | 0.594 | 0.580 |
| | 0.192 | 0.180 | 0.201 | 0.194 | 0.198 | 0.188 |
| Percentage parents without college experience | 0.347 | 0.311 | 0.376 | 0.350 | 0.334 | 0.373 |
| | 0.173 | 0.173 | 0.168 | 0.172 | 0.172 | 0.170 |
| Sample Size | 11992 | 5355 | 6637 | 13255 | 8081 | 5174 |

Table 2. Hierarchical Logistic Regressions of Knowledge of the Top 10% Plan (Log Odds)
(standard errors)

| | 1 | 2 | 3 |
|---|---|---|---|
| Intercept | -0.639 *** | -0.686 *** | -0.694 *** |
| | 0.103 | 0.099 | 0.067 |
| *Individual Characteristics* | | | |
| Educational achievement factor | 1.286 *** | 1.158 *** | 1.185 *** |
| | 0.039 | 0.041 | 0.044 |
| Had early expectations to attend college | 0.199 *** | 0.107 | 0.108 |
| | 0.050 | 0.061 | 0.064 |
| Number of hours spent/week on homework | 0.014 ** | 0.013 * | 0.013 * |
| | 0.004 | 0.005 | 0.005 |
| Attitudes towards education | 0.093 | -0.069 | -0.055 |
| | 0.055 | 0.062 | 0.063 |
| Parents have no college experience | -0.339 *** | -0.329 *** | -0.318 *** |
| | 0.069 | 0.084 | 0.088 |
| Parents own home | -0.110 | -0.285 *** | -0.308 *** |
| | 0.071 | 0.074 | 0.076 |
| Black | 0.001 | -0.060 | -0.029 |
| | 0.107 | 0.121 | 0.122 |
| Hispanic | -0.085 | -0.062 | 0.001 |
| | 0.082 | 0.080 | 0.078 |
| Asian | -0.197 | -0.665 *** | -0.655 *** |
| | 0.126 | 0.099 | 0.101 |
| Speak language other than English | -0.237 * | -0.163 | -0.144 |
| with friends | 0.116 | 0.135 | 0.140 |
| Foreign-Born | -0.055 | 0.093 | 0.085 |
| | 0.080 | 0.087 | 0.087 |
| Lives with both parents | 0.144 * | 0.112 | 0.114 |
| | 0.057 | 0.064 | 0.064 |
| Male | 0.036 | -0.035 | -0.046 |
| | 0.051 | 0.059 | 0.064 |
| Number of siblings | -0.026 * | -0.023 * | -0.022 |
| | 0.012 | 0.012 | 0.012 |
| *Counselor interaction and exposure* | | | |
| Received information from counselor about high school rank | | -0.114 | -0.164 * |
| | | 0.076 | 0.077 |
| Received information from counselor about top 10% rule | | 1.432 *** | 1.398 *** |
| | | 0.049 | 0.053 |
| Counselor encouraged work directly after high school | | -0.194 * | -0.152 |
| high school | | 0.081 | 0.083 |
| College oriented exposure to counselor | | 0.033 ** | 0.029 ** |
| | | 0.011 | 0.011 |
| Other exposure to counselor | | 0.030 * | 0.035 * |
| | | 0.014 | 0.014 |
| *School Characteristics* | | | |
| Percentage students who received information from | | | 0.026 *** |
| counselor about top 10% plan | | | 0.005 |
| Percentage students encouraged by counselors to work | | | -0.027 *** |
| directly after high schools | | | 0.007 |
| Percentage parents without college experience | | | -0.009 * |
| | | | 0.005 |
| $\tau_{00}$ | 0.518 | 0.375 | 0.11 |
| | 0.131 | 0.117 | 0.054 |

Table 3. Hierarchical Logistic Regressions of Knowledge of Class Rank (Log Odds)
(standard error)

| | 1 | 2 | 3 |
|---|---|---|---|
| Intercept | 0.683 *** | 0.876 *** | 0.736 *** |
| | 0.106 | 0.129 | 0.108 |
| *Inidividual Characteristics* | | | |
| Educational achievement factor | 1.570 *** | 1.392 *** | 1.396 *** |
| | 0.038 | 0.046 | 0.045 |
| Had early expectations to attend college | 0.054 | 0.099 | 0.141 * |
| | 0.062 | 0.074 | 0.069 |
| Number of hours spent/week on homework | 0.010 ** | 0.011 ** | 0.011 * |
| | 0.004 | 0.004 | 0.004 |
| Attitudes towards education | 0.079 | -0.140 ** | -0.115 * |
| | 0.047 | 0.054 | 0.055 |
| Parents have no college experience | -0.050 | -0.058 | -0.038 |
| | 0.051 | 0.062 | 0.061 |
| Parents own home | -0.065 | -0.086 | -0.114 |
| | 0.066 | 0.083 | 0.084 |
| Black | -0.068 | -0.226 * | -0.241 * |
| | 0.087 | 0.096 | 0.097 |
| Hispanic | -0.296 *** | -0.221 * | -0.320 ** |
| | 0.079 | 0.095 | 0.099 |
| Asian | 0.033 | 0.006 | -0.023 |
| | 0.124 | 0.147 | 0.159 |
| Speak language other than English | -0.119 | -0.087 | 0.046 |
| with friends | 0.121 | 0.147 | 0.148 |
| Foreign-Born | -0.152 * | -0.115 | -0.098 |
| | 0.072 | 0.082 | 0.082 |
| Lives with both parents | 0.190 *** | -0.006 | 0.051 |
| | 0.054 | 0.071 | 0.075 |
| Male | -0.318 *** | -0.200 *** | -0.198 *** |
| | 0.052 | 0.047 | 0.053 |
| Number of siblings | -0.010 | -0.007 | -0.002 |
| | 0.010 | 0.011 | 0.012 |
| *Counselor interaction and exposure* | | | |
| Received information from counselor about high school rank | | 1.320 *** | 1.306 ** |
| | | 0.052 | 0.051 |
| Received information from counselor about top 10% rule | | 0.195 ** | 0.165 ** |
| | | 0.064 | 0.064 |
| Counselor encouraged work directly after high school | | -0.346 *** | -0.303 *** |
| high school | | 0.063 | 0.066 |
| College oriented exposure to counselor | | 0.048 *** | 0.042 *** |
| | | 0.010 | 0.010 |
| Other exposure to counselor | | -0.040 ** | -0.031 * |
| | | 0.014 | 0.014 |
| *School characteristics* | | | |
| Percentage students who received information from | | | 0.019 ** |
| counselor about class rank | | | 0.007 |
| Percentage students encouraged by counselors to work | | | -0.030 ** |
| directly after high schools | | | 0.010 |
| $\tau_{00}$ | 0.672 | 0.550 | 0.586 |
| | 0.134 | 0.151 | 0.103 |

Table 4. Multinomial Logistic Regression Results
(standard error)

| | Family vs. counselor | Friends vs. counselor | Other source vs. counselor | Don't know vs. counselor |
|---|---|---|---|---|
| Constant | -0.711 * | 0.768 | 0.409 | 1.077 ** |
| | (.286) | (.276) | (.268) | (0.236) |
| Educational achievement factor | 0.154 * | -0.064 | -0.243 ** | -1.184 ** |
| | (.066) | (.060) | (.057) | (.052) |
| Had early expectations to attend college | 0.183 ** | -0.039 | -0.014 | -0.247 ** |
| | (.077) | (-.066) | (.056) | (.053) |
| Number of hours spent/week on homework | 0.004 | 0.002 | -0.006 | -0.019 ** |
| | (007) | (.005) | (.004) | (.004) |
| Attitudes towards education | -0.309 ** | -0.39 ** | -0.302 ** | -0.243 ** |
| | (.083) | (.071) | (.067) | (.055) |
| Parents have no college experience | -0.706 ** | -0.088 | -0.175 * | 0.145 * |
| | (.129) | (.076) | (.089) | (.063) |
| Parents own home | 0.31 ** | 0.002 | -0.08 | 0.001 |
| | (.119) | (.094) | (.096) | (.097) |
| Black | -0.858 ** | -0.532 ** | -0.164 | -0.215 |
| | (.182) | (.149) | (.146) | (.145) |
| Hispanic | -0.66 ** | -0.309 * | -0.171 | 0.053 |
| | (.163) | (.150) | (.152) | (.146) |
| Asian | -0.287 | 0.65 ** | 0.121 | 0.029 |
| | (.230) | (.190) | (.163) | (.169) |
| Speak language other than English with friends | -0.002 | -0.009 | 0.135 | 0.168 |
| | (.272) | (.187) | (.177) | (.093) |
| Foreign-Born | -0.089 | 0.268 | 0.288 ** | 0.223 ** |
| | (.173) | (.086) ** | (.088) | (.079) |
| Lives with both parents | 0.286 ** | 0.005 | -0.055 | -0.205 ** |
| | (.102) | (.063) | (.063) | (.054) |
| Male | 0.2 | 0.099 | 0.132 * | 0.14 ** |
| | (.070) ** | (.053) | (.060) | (.048) |
| Number of siblings | 0.011 | -0.013 | 0.012 | 0.004 |
| | (-.023) | (.016) | (.017) | (.013) |
| Sample Size | 11992 | 11992 | 11992 | 11992 |