

**HISPANIC COLLEGE ATTENDANCE AND COMPLETION:
EVIDENCE FROM THE HIGH SCHOOL AND BEYOND SURVEYS**

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ABSTRACT

The problem of low high school completion rates among Hispanics has received considerable attention. Less is known however about the higher educational experiences of Hispanic high school graduates. This study uses the High School and Beyond Surveys of the 1980 senior class to examine the higher educational outcomes of Hispanics. Although Hispanic high school graduates are as likely as whites to attend college, differences in college completion are significant among those who attend college. As expected, socio-economic status and traditional academic measures such as grades were shown to be strong predictors of high educational outcomes. Differences in college completion between Hispanics and other students seem to arise more from their unique educational experiences such as delayed entry into college, attending 2-year colleges, and frequent transfers from full and part-time student status.

I. INTRODUCTION

According to the U. S. Bureau of the Census (1991, Tbl. 1), Hispanics in the United States totaled about 20.8 million in 1990. Hispanics are the fastest growing group in the work force and accounted for about one fifth of the employment growth between 1980 and 1987 (Cattan, 1988). Median earnings of Hispanic workers have, however, lagged behind those of other workers. In 1989 Hispanic males earned about 66 percent of the median earnings of all males workers (U.S. Bureau of the Census, 1991, Tbl. 2). Low educational attainment of Hispanics has been identified as a major factor in explaining their earnings and labor market status (Reimers, 1985). Indeed, it is well known that Hispanics are more likely than other students to leave high school without a degree. Among youth age 18-24 in 1990, 45 percent of Hispanics had left high school without graduating compared to 23

percent of blacks and 17 percent of whites (American Council on Education, 1991, Tbl. 1).¹

In much of the research and policy discussion about Hispanics, the focus has been on increasing their high school completion rates, yet the post-secondary education experiences of high school graduates is also of major concern. Success in the work force specifically rewards those with post-secondary education. In 1987 average monthly earnings of those with bachelor's degrees were over twice those of persons with only a high school diploma (U.S. Bureau of the Census, 1990, Tbl. 2). In addition, a recent study has concluded that the relative absence of college-educated Hispanics in a changing economy accounts for their unfavorable labor market status (Carnoy, *et. al*, 1990).

This paper examines college attendance and completion among Hispanic high school graduates. By focusing on high school graduates who attend college, admittedly a selective sample of Hispanic youth, our research is designed to augment those other studies that concentrate on high school dropouts, and those that do not attend college. Our study uses the post-high school experiences of seniors in the High School and Beyond (HSB) survey of 1980 to investigate the transition of Hispanic high school graduates into institutions of higher education. We are searching for those factors that are important in explaining the access and retention of Hispanics in higher education. The results presented in this paper should contribute to a better understanding of how Hispanic high school graduates fare in higher education.

1. The corresponding non-completion rates for the year 1980, the year in which the High School and Beyond senior cohort graduated, were 46 percent of Hispanics aged 18 to 24, 30 percent of

II. AN OVERVIEW OF HISPANICS IN HIGHER EDUCATION

blacks and 17 percent of whites (American Council on Education, 1991).

Although Hispanics are the least likely group to complete high school, those that graduate from high school are nearly as likely as whites to attend college. In 1992, of the Hispanic students who graduated from high school that year, about 55 percent enrolled in college by that October.² For whites, the proportion of that year's high school graduates who enrolled in college was 63 percent and for blacks, 48 percent (U.S. Dept. of Labor Newsletter, June 28, 1993).³ However, the majority of Hispanics who attended college were enrolled in two-year colleges while for whites and blacks, the majority were enrolled in four-year colleges or universities. In 1988, less than half (44 percent) of all Hispanic college students were enrolled in four-year institutions compared to 64 percent of white and 58 percent of black students (American Council on Education, 1991, Tbl. 3).

2. It is important to note that this enrolment rate is calculated using the population of students who graduated that year. Sometimes the graduation rate for a year is reported as the proportion of the population aged 18 to 24 that had completed a high school diploma (or the equivalent) in that year. The proportion of the smaller population reported here may be higher than the proportion of the other, much larger population.

3. The corresponding enrolment figures for 1980 are: 53 percent of Hispanics, 42 percent of blacks and 50 percent of whites (NCES, 1993).

Among students who attend four-year institutions of higher education, Hispanics and blacks are less likely than whites to obtain a Bachelor's degree. For example, of the high school graduates in 1980 who entered a four-year college, 44 percent of the whites obtained a Bachelor's degree by 1986 in comparison to 24 percent of blacks and 20 percent of Hispanics (Porter, 1990, Table 12). As for the causal factors driving these higher educational experiences of Hispanics, a detailed understanding of the process is far from complete. In addition to traditional factors such as family background and academic performance in high school, financial aid, mentorship, college tuition, minority faculty, and stress levels have been identified as critical to college completion for Hispanics.⁴ Furthermore, it has been suggested that minority students are more likely to defer entry into college and experience discontinuous periods of college attendance, factors which may be negatively correlated with college completion (Brown, 1987, p.11).

III. HISPANICS IN THE HIGH SCHOOL & BEYOND SURVEY 1980

The High School and Beyond surveys represent a significant improvement in the data available to study the transition from high school to post secondary education or the work force. The survey covers a period of six years from 1980 to 1986 and makes available new data, as well as data comparable to the National Longitudinal Survey of 1972. The HSB survey was initiated by the National Center for Education Statistics to

4. A broad, and comprehensive, discussion of these issues is presented by many of the authors in the volume edited by Olivas (1986). See also Nora (1987).

obtain longitudinal information on sophomores and seniors attending high school in 1980.⁵

5. For a detailed description of the HSB and subsequent follow-ups, refer to the technical user manuals provided by the National Center for Education Statistics. Neilsen (1986, p.71-103) provides a detailed introduction to the High School and Beyond data, however the discussion is limited to the base year survey only.

Our analysis concentrates on the senior cohort. Of the 11,995 seniors interviewed, our base population contains those 10,158 students for whom the 1980 base year data and all 3 follow-ups are available⁶. The racial-ethnic composition of the group is as follows: 1,939 Hispanics, 2,688 blacks, 4,960 whites, and 571 of other races or ethnic origins. Females comprise about 54 percent of the white and Hispanic sample and 58 percent of the black sample. For this study, we restrict the analysis to differences between whites, blacks, and Hispanics as well as highlighting gender differences where appropriate. We concentrate on Hispanics and at times on the differences within the Hispanic group with regard to their higher education experiences. Within the Hispanic group, there are 1,153 people self-identified as being of Mexican origin, 208 Cubans, 164 Puerto Ricans, and 414 of other Hispanic origins. Females comprise 54 percent of the Mexican origin group, 60 percent of the Cubans, 62 percent of the Puerto Ricans and 51 percent of the group with other Hispanic origins.

IV. ANALYSIS OF HISPANIC HIGHER EDUCATION PARTICIPATION

The HSB survey enables us to describe, and analyze, the six years following high school graduation for the class of 1980. By 1986, twice as many white high school graduates than minority graduates had obtained a four year or higher college degree: 12

6. The selected sample represents all observations for which the HSB variable PANELWT4 has non-missing values.

percent of Hispanics and 11 percent of blacks in comparison to 23 percent of whites.⁷ In attempting to explain these differences in educational outcomes, three research questions guide our analysis of Hispanic higher education participation:

1. What factors determine the decision to attend college?
2. What factors determine the likelihood of college completion?
3. How do educational patterns (e.g. number of semesters completed, enrollment time into college after high school graduation, periods of discontinuous attendance, full-versus part-time attendance, transfers between 2-year and 4-year colleges) affect college completion?

The empirical models estimated in this paper are derived, as reduced forms, from the theory of human capital formation developed by Becker (1975). The theory of human capital formation proposes, among other things, that an individual will undertake an investment in higher education if the rate of return expected from that investment exceeds the expected rate of return from any alternative investment. The expected rate of return to higher education, (for example, a college degree), will be determined by the discounted present value of the anticipated income stream with a college degree, net of the direct and indirect costs of obtaining that degree. The probability of attending college will be a positive function of the expected rate of return from the college degree. As a

7. These percentages are calculated as a proportion of the base HSB population, not just those students who attended a four year college, as is reported in Porter (1990, table 12).

consequence, an empirical specification of the decision to attend college equation will include those factors that measure expected earnings, direct and indirect costs and expectations.

In our empirical specifications, many of the variables measuring expected future earnings and costs cannot be directly observed, but proxies and covariates are available in the data that allow us to estimate the models. An individual's ability, and previous investments in human capital, will positively influence future earnings to the extent that these factors interact with additional human capital investments and on-the-job training to increase the productivity of the individual. To capture this effect we include variables in our equation for college attendance that proxy for ability (test scores) and existing human capital stocks (high school performance measures).

The direct costs of attending college will vary according to the particular institution attended, whether it is a 2-year or 4-year institution, a public or private college. Similarly the opportunity costs of attending college will vary, in part, according to individual ability and labor market opportunities. While many of these variables cannot be directly measured with the available data, the importance of costs to the decision to attend college can, to a large extent, be captured by the individual's, and family's, ability to finance the college education. To this end our specifications include the individual's family socio-economic status (SES), a composite index combining father's occupation, parent's education, income and household possessions. This variable is positively correlated with family income but more appropriately measures family wealth upon which the capacity to

afford to send a child to college is based. The financial burden of college attendance will be proportionately greater for single parent families, especially in this era of two-income families, and to capture this cost-effect we include variables to indicate the absence of a parent in the household.

Theoretical models developed by Willis (1974) and Becker (1981) to analyze the fertility and educational investment decisions of families propose that the size of the family and the amount of investment made in each child's education are inversely related. In recognition of this relationship we include, as an exogenous independent variable in the college attendance equation, the number of siblings in the respondent's family. In addition, Hanushek (1992) finds that family size captures many of the effects of family structure on achievement.⁸

Other variables that may be influential in determining educational investments, especially for minority families, are suggested by a review of the literature on Hispanic school to work transitions (see, for example, Santos and Seitz, 1992). Nativity, and attending a Catholic high school, are variables which can be used to assess cultural assimilation among Hispanics. Catholic schools have been associated with better serving the verbal needs of Hispanics in aculturation (Morgan, 1983). These variables, and an indicator to control for the Hispanic sub-group that the respondent belongs to, are included

8. Other family structure variables were such things as birth order, spacing of births and sex composition of the family.

for Hispanics only.

Probit analysis is used to estimate models specifying the probability of attending a college for at least one semester and, conditionally, completing a 4-year college program. The college attendance equation is specified to include, as explanatory variables, many of the factors described above that directly or indirectly measure the costs, benefits and expectations concerning educational investments. For those students who attended a post-secondary institution for at least one semester between 1980 and 1986, the college completion probability model is estimated. In this equation, many of the independent variables used in the college attendance equation reappear, but two other variables are included. One of these variables indicates whether the student entered a two-year, rather than a four year, program and the other variable indicates whether the student had interrupted college attendance, i.e. "stopped out", for any period. These additional variables are intended to reflect some of the characteristics of the student's college experience that impact upon completion.

V. FACTORS AFFECTING COLLEGE ATTENDANCE/COMPLETION

College Attendance

Table 1 presents selected summary statistics for those variables used in the college attendance equation. Of the sample, 70 percent of Hispanics, 68 percent of blacks,

and 75 percent of whites had attended at least one semester of college.⁹ In Table 1, statistics for the college attendance model data are provided in the columns titled Eqn 1. Comparing the data across groups highlights many of the well documented differences between white, black and Hispanic high school graduates. Although college attendance at any time percentages are similar for this sample, family background, high school grades and test score variables show statistically significant differences, mainly between whites and the two minority groups.

The results of estimating a probit model for the binary variable, attend college, for each of the three groups are given in Table 2. The performance of the models is strong as measured by the proportion of outcomes correctly predicted, being approximately 75 percent for all models. Almost all included variables have statistically significant estimated coefficients. In particular, measures of ability and human capital stock, test scores and high school GPA, have positive and statistically significant coefficients for all groups. The positive sign of these coefficients is consistent with the hypothesis that individuals with higher ability and human capital anticipate higher earnings from a college degree. Because of the non-linearity of the probit specification, individual coefficients

9. Note that these figures are higher than those reported in section II, for a different population. The earlier figures are enrolment rates for high school graduates in the year of graduation. The enrolment statistics reported here are for all six years following graduation, and will be higher because of delayed entry.

cannot be directly compared across variables, and the reader is cautioned not to draw any conclusions from the results presented in the tables as to the relative importance of certain factors. Coefficients can be compared across groups for specific variables so long as the assumption that the variables are measured at the same value is maintained in the comparisons. In light of this caution, no inference can be drawn, for example, that high school GPA is more important in determining college attendance than test scores, however, it is of interest to note that test score, as a measure of ability, is relatively more important for black students than it is for white or Hispanic students in determining college attendance.

In addition to the explanatory variables discussed above, a control for the sex of the respondent is included in the regression equation. The estimated coefficients on the male variable are negative and statistically significant for both whites and blacks, but not for Hispanics, indicating that for white and black groups, females have a higher probability of attending college, especially black females.

Variables hypothesized as proxies for costs have the expected signs, except for father absent, which although this variable indicates a single parent household, it does not have a statistically significant coefficient (at the 95 percent level) in any of the equations. Socioeconomic status, as a measure of family wealth and the ability to finance additional educational investments, has a strong positive effect on the probability of attending college, especially for white students. The marginal effect of a given change in SES can be

calculated from the information given in Tables 1 and 2.¹⁰ A one unit increase in SES would increase the probability of attending college, *ceteris paribus*, by 16.3 percent for whites, 9.3 percent for blacks and 9.4 percent for Hispanics. To the extent that financial aid offsets a family's financial constraints, and hence is equivalent to an increase in SES, this result is somewhat disturbing, since it suggests that non-targeted financial aid programs will not increase minority enrollments. In light of recent controversy relating to the targeting of financial aid to specific sub-populations, especially the allocation of aid to specific racial groups, this result indicates that financial aid programs should be targeted at minorities to avoid these groups being "pushed out" by non-minority candidates.

Not having a mother present in the household has a significant negative effect on the probability of attending college for all groups, whereas not having a father present does not have any statistically significant effect. Father absent households are primarily female headed, whereas mother absent households can be male headed or there may be some other arrangement. These results indicate that single parent, female headed households are just as successful at sending children to college as dual parent households, but single parent households in which the mother is absent are not as successful as other households in sending children to college.

10. As a consequence of the non-linearity of the probit specification, the estimated coefficients are not the partial derivatives, or marginal effects, as is the case in a linear specification such as ordinary least squares. The derivative is given by .

Number of siblings, a proxy for family size, is statistically significant and negatively related to college attendance for all race groups. This finding confirms the prediction of the economic model of the family in which family size and child quality, as reflected by educational investments, are inversely related.

Two models are estimated for the Hispanic group. One equation has the same specification as the white and black models, with the addition of the nativity and Catholic high school variables, and the other equation adds dummy variables for the Hispanic sub-groups. In this second equation, the reference group is Cuban. The two equations are not statistically different according to a likelihood ratio test, but this conclusion can also be drawn by considering the statistically insignificant coefficients on the sub-group dummies, and the very minimal changes in the other variable coefficients. The inability to identify different effects among the Hispanic sub-groups may be, in part, due to the relatively small sample sizes that result at this level of disaggregation. The two acculturation variables are statistically significant and exert a positive influence on the probability of attending a college for Hispanic high school graduates.

College Completion

Of the HSB sample students who attended at least one semester of college between 1980 and 1986, 31 percent of whites, 16 percent of blacks, and 17 percent of Hispanics had completed a four year or higher degree by mid-1986. Summary statistics for the variables used in estimating the college completion models for each group are given in the columns titled Eqn 2 in Table 1. The results of the probit estimation of the

college completion equations are presented in Table 3. The equations contain many of the variables included in the college attendance equations. The variables excluded are the number of siblings, and the acculturation variables for the Hispanic group. Exclusion is based both on theoretical and statistical grounds. While family size may have a negative effect on the decision of a family to send their child to college, there is no evidence to suggest that family size should effect completion, other than through ability, previous human capital investments or other variables that are controlled for separately. Equations including the number of siblings are, in fact, not statistically different, by a likelihood ratio test, from the specifications presented in Table 3. The same is true for nativity and Catholic high school, which do not have statistically significant effects upon college completion probabilities when included in the specification.

The performance of the estimated equations, measured in terms of the proportion of outcomes correctly predicted, is relatively high at approximately 85 percent for both blacks and Hispanics and 75 percent for whites. Many of the estimated coefficients are statistically significant, but sex is not found to be significant for any of the groups. Father absent from the household is significant only for Hispanics, whereas mother absent is significant for whites and blacks. Since these variables are included as proxies for the financial capacity of the family, measured at the time of high school graduation, they may not accurately reflect that capacity over the period required to graduate from college. Consequently, there is some difficulty in interpreting the different results across groups. We are unaware of any theoretical model that would predict that the absence of a mother

in the household should lower the probability of graduating for whites and blacks while having no effect for Hispanics, whereas the absence of a father lowers the probability of graduating for Hispanics but not for whites or blacks. Perhaps an explanation can be found in a study of the family structure and roles played by parents in the child achievement process.

Table 3 shows that ability measures, Test Scores and High School GPA, both increase the probability of graduating for all students, with similar size coefficients except for the larger coefficient on High School GPA for Hispanics. Wealth, as measured by the socio-economic status variable, as a proxy for the ability to finance the education investment, is a statistically significant positive influence on the probability of graduating. When the marginal effects are calculated a given change in SES will increase the probability of completing college substantially more for whites than for either blacks or Hispanics. A one unit increase in SES will increase the probability of graduating by 12.3 percent for whites, 3.5 percent for blacks and 5.5 percent for Hispanics. As was the case when discussing the impact of this variable on the probability of attending college, this result suggests that targeting financial aid to specific racial groups, to the extent that it is equivalent to an increase in the socio-economic status variable, would be superior to non-targeted financial aid. Among Hispanics, sub-groups have a lower probability of completing college than Cubans, with the effect for Mexican origin students statistically stronger than for the other groups.

The effects of initially attending a two-year community college or experiencing an

interruption in college attendance are negative and statistically significant for all groups. These variables indicate that completion of a four-year degree is hampered by entering a two-year program or interrupting studies. Since it is often argued that two-year colleges are used as a way of entering four-year colleges indirectly, it is interesting to note the results here. Even though, in the HSB sample, the majority of Hispanics have entered a two-year community college, for those students who eventually transfer to a four-year college the impact of starting off at a two-year school is lower than for the other groups. Entering a two year program and then transferring to a four year program, as opposed to entering the 4 year program initially, decreases the probability of graduating with a four year degree by 22.1 percent for whites, 13.1 percent for blacks and 10.3 percent for Hispanics. Discontinuous attendance has a similar effect on the probability of graduating, although the marginal effects are slightly smaller than for entering a two year program, and the differences across racial groups is not as great.

VI. THE POST-SECONDARY EDUCATIONAL EXPERIENCE OF HISPANICS

In this section, we present a more detailed description of the post-secondary educational experiences of the HSB senior cohort. Such an investigation of the pattern of educational experiences can, in part, explain differences in college completion rates across racial groups. As was noted earlier, a majority of high school graduates, irrespective of race, attend at least one semester of college during the six years after graduation from high school. In the analysis that follows, we represent the educational experiences of

students as a pattern of transitions between states such as full-time or part-time, two year or four year, measured each semester to a maximum of 12 periods (6 years, summer semesters excluded). The number of semesters of higher education attended is not directly elicited in the HSB survey, however it is possible to construct variables from the available data that provide a reasonable indication of the attendance record for each respondent.¹¹

Distribution of Semesters Attended. The cumulative empirical distributions, for those respondents who attended college, of the number of semesters attended is presented, by group, in Figure 1. The mean number of semesters attended is 6.10 for Hispanics, 6.45 for whites and 5.66 for blacks. A chi-squared test of the null hypothesis that the distributions are the same across racial groups is rejected. The difference between the distributions for each group is in the number of students attending 4 or fewer semesters. While 40 percent of Hispanics have 4 or fewer semesters this proportion is 45 percent for blacks and 35 percent for whites. The proportion of Hispanic students with more than 8 semesters is 28 percent compared to 21 percent for blacks and 28 percent for whites. Although the proportion of Hispanic students with more than 8 semesters is the same as that for white students, when this is combined with our previous finding that Hispanic students graduate with Bachelor's degrees at a much lower rate than whites, it appears that Hispanic

11. It is possible to construct activity indicators, at February and October of each year, from the college attendance data provided in HSB, that indicate the sector (public or private), program (2-year or 4-year) and attendance (full-time or part-time) status. Since February and October fall within the standard semesters of Spring and Fall, if any variable indicates a student status, the student is credited with attending that semester.

students are not as efficient as white students at converting college attendance into degree completion.

Delayed Entry and Attendance Persistence. Not all students enter college immediately after high school graduation or attend each semester on a continual basis. It has been argued that minority students show higher rates of deferred entry as well as higher stop-out and drop-out rates (Brown, 1987, p.11). The HSB data indicate that about a third of minority students (31 percent of Hispanics and 33 percent of blacks, see Table 4) who attend college defer entry to higher education in comparison to 22 percent of whites.

While these proportions are statistically different, the same is not true when the continuity of attendance is considered. The statistics presented in Table 4 show a very similar proportion of students of all races having continuous higher educational experiences (about 73 percent). About one quarter of students attend with one break of a semester or more, while only about 3 percent of students have two or more semesters "off" during their tenure in a higher education program.

Full-Time and Part-Time Status. Attendance for each of the semesters can be classified as either full-time or part-time. Hispanics students are the least likely to be enrolled as full-time students; 49 percent of the Hispanic cohort attended full-time compared to 64 percent for black students and 61 percent for white students. About 13 percent of Hispanic students attended all semesters on a part-time basis. Hispanics are also more likely to change their status between full- and part-time. Table 4 shows that 37 percent of Hispanics made one or more transfers of status during their college tenure compared to 26

percent of blacks and 29 percent of whites. While most students who change status, regardless of race, transfer from full-time to part-time, Hispanic students are more likely than others to have made the change from full-time to part-time. As was noted earlier, Hispanics are no more likely than other students to have a discontinuous attendance record, and so the relatively low college completion rates of Hispanics may be more a consequence of attending part-time rather than not attending at all. It is very possible that changing between full-time and part-time status is highly disruptive to a students' progress through the program.

Two-year verses Four-year Colleges. Table 4 also presents information relating to the type of program the students attended. A lower percentage of Hispanic students attend 4-year institutions for all semesters (33 percent) compared to either blacks (44 percent) or whites (45 percent). A previous study has shown that the rate of transfer from 2-year to 4-year institutions is not high (Brown, 1987, p.5). Our results support this claim and show that students who make one transition between 2-year and 4-year college status are a relatively small proportion of students who attended college during the six period under study: 14 percent of Hispanics, 12 percent of whites and 8 percent of blacks. Among students who started their higher education in a two-year program, the proportion who transferred to a four-year college was 27 percent for Hispanics, 29 percent for whites and 20 percent for blacks.

It has also been claimed that minority students are more likely to transfer from 4-year to 2-year institutions and that this direction of transfer represents a loss of

potential minority college graduates and applicants to graduate schools (Brown, 1987, p.5).

The HSB data, however, show that only about 10 percent of Hispanic students in post-secondary education make a transition from a 4-year to a 2-year college, which is not statistically different to the proportion of blacks and whites making this transition. Of those transfers between 2-year and 4-year programs (multiple transitions are relatively few in number), the predominant transition is from a 2-year to a 4-year program (60 percent of Hispanic transfers, 58 percent of white transfers and 42 percent of black transfers).

VII. CONCLUSIONS AND POLICY IMPLICATIONS

Six year after high school graduation, Hispanics in the High School and Beyond sample have fallen behind the educational achievement of white students, even though the sample group has already succeeded in graduating from high school. Hispanic completion and achievement rates in the sample could eventually match those of whites over sufficiently long a period, however this cannot be proven with this data because we are constrained to observe the 6 years after high school graduation only. But higher earnings favor college graduates, and post-secondary training is increasingly important in our economy. For Hispanics, failure to obtain post-secondary education represents a major obstacle to their economic improvement, and their increasing participation in the work force suggests a decline in the level of education among workers in the United States. It is therefore important that we understand the post-secondary experiences of Hispanics and

in particular their propensity to complete college programs.

Our regression results indicate that factors such as socioeconomic status (SES), composite test score on math and reading, and high school grades are strong predictors of educational outcomes. Variables that proxy for the benefits of additional education are found to increase the probability of enrolling in college and variables that proxy for the costs of education are found to decrease the probability of enrolling, for Hispanics as well as all other groups. Family background variables influence the decision to enrol in college more than they influence to chances of graduating with a four year degree. In fact, variables such as family size, sex of the student and aculturation proxies for Hispanics are not statistically significant in the degree completion equation.

The regression analysis does suggest that the chances of graduating with a four year college degree are increased by enrolling in a four year program directly after graduating high school. Delaying entry, and enrolling initially in a two year program will hinder a student in achieving a four year degree. Unfortunately many Hispanic high school graduates follow this path. The more detailed investigation of the educational experiences of Hispanic students who enrol in college support this finding. They are more likely than other groups to attend part-time and to delay entry. However, even though Hispanic students favor enrolment in two year over four year colleges, they are no more likely than other students to transfer to four year colleges, or make multiple transfers, or reverse (four year to two year) transfers between the systems.

One major finding of our study is that increasing the capacity of the individual or

the family to finance educational investments increases the probability of both enrolling in, and completing, college by a larger amount for Hispanics and blacks than for whites. This provides some support for targeted financial aid, in the sense that, with other factors held constant, a dollar of financial aid will increase minority enrolments by more than it will increase white enrolments. Of course, there are many other programs and policy that would increase minority, and especially Hispanic, enrolment and retention, but highlighting this conclusion is timely since recent events have placed the targeting of financial aid to minorities in potential conflict with the Constitution and laws of the U.S.

Our findings support efforts and policies that attract minority students directly from high school and monitor them during their progress through college programs to identify changing circumstances that may, if unaddressed, lead to a change in attendance status.

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Table 1

Summary Statistics for Variables Employed in Empirical Analysis

Variable:	Hispanic		Black		White	
	Eqn 1 ¹	Eqn 2 ²	Eqn 1	Eqn 2	Eqn 1	Eqn 2
Sample size	1939	1347	2688	1836	4960	3725
Attend College	.695		.683		.751	
Complete College		.172		.162		.311
Male	.455	.453	.420	.387	.467	.455
Father Absent	.260	.240	.485	.481	.198	.187
Mother Absent	.101	.086	.120	.103	.092	.075
Socio-Economic Status	-.571 (.734)	-.456 (.756)	-.523 (.709)	-.427 (.736)	.034 (.714)	.158 (.713)
Test Score	46.1 (7.43)	47.8 (7.44)	43.7 (6.96)	45.2 (7.15)	52.5 (8.05)	54.3 (7.45)
High School GPA	2.75 (.698)	2.88 (.680)	2.67 (.672)	2.78 (.661)	2.99 (.703)	3.13 (.653)
Number of Siblings	3.46 (1.83)		3.67 (1.85)		2.81 (1.60)	
Foreign Born	.190	.218				
Cuban	.106	.139				
Mexican	.595	.561				
Puerto Rican	.085	.080				
Other Hispanic	.214	.220				
Catholic High School	.135	.181				
Enrolled in 2 Year Program		.535		.415		.421
Non-Continuous Attendance		.287		.271		.259

Notes:

1. Equation 1 refers to the College Attendance probability model.
 2. Equation 2 refers to the 4year College Completion probability model.
 Numbers in parentheses are standard deviations where appropriate.

Table 2

College Attendance Probability Model

	White	Black	Hispanic - I	Hispanic - II
Variable:				
Male	-.097 (-2.13)	-.328 (-5.88)	-.060 (-.905)	-.062 (-.929)
Socio-Economic Status	.619 (17.4)	.277 (6.37)	.293 (5.61)	.294 (5.50)
Test Score	.049 (15.2)	.060 (12.1)	.043 (7.69)	.043 (7.68)
High School GPA	.438 (12.1)	.324 (7.39)	.361 (6.83)	.363 (6.84)
Father Absent	.109 (1.93)	.094 (1.67)	-.005 (-.065)	.004 (.052)
Mother Absent	-.289 (-3.96)	-.230 (-2.83)	-.113 (-1.04)	-.113 (-1.04)
Number of Siblings	-.069 (-5.10)	-.076 (-4.92)	-.084 (-4.50)	-.088 (-4.52)
Foriegn Born			.365 (4.03)	.387 (4.00)
Attend Catholic High Scl			.527 (3.86)	.550 (3.96)
Hispanic Sub-Group				
Mexican				.079 (.514)
Puerto Rican				-.063 (-.350)
Other Hispanic				.038 (.240)
Constant	-2.75 (-17.0)	-2.37 (-10.1)	-1.96 (-7.37)	-2.02 (-6.67)
Log Likelihood	2130.6	1427.6	986.7	985.8
Log Likelihood ($\beta=0$)	2783.7	1678.8	1193.1	1193.1
Proportion Correct Pred.	.79	.72	.75	.75

Note: Student-t statistics appear in parentheses.

Table 3
4 Year College Completion Probability Model

Variable:	White	Black	Hispanic - I	Hispanic - II
Male	.033 (.671)	.058 (.708)	.027 (.285)	.046 (.487)
Socio-Economic Status	.386 (11.0)	.188 (3.42)	.286 (4.48)	.256 (3.89)
Test Score	.028 (7.23)	.026 (4.50)	.024 (3.28)	.021 (2.85)
High School GPA	.460 (10.1)	.458 (6.98)	.681 (8.10)	.677 (8.01)
Father Absent	-.092 (-1.41)	-.020 (-.244)	-.269 (-2.15)	-.269 (-2.11)
Mother Absent	-.287 (-2.82)	-.318 (-2.08)	-.122 (-.630)	-.088 (-.452)
Entered 2-year Program	-.729 (-13.6)	-.758 (-7.99)	-.521 (-5.46)	-.545 (-5.59)
Discontinuous Attendance	-.393 (-6.95)	-.505 (-5.14)	-.388 (-3.65)	-.390 (-3.64)
Hispanic Sub-Group:				
Mexican				-.331 (-2.53)
Puerto Rican				-.293 (-1.42)
Other Hispanic				-.220 (-1.49)
Constant	-3.26 (-15.2)	-3.14 (-10.3)	-3.73 (-10.2)	-3.35 (-8.33)
Log Likelihood	1821.7	661.0	480.3	477.1
Log Likelihood ($\beta=0$)	2307.9	812.6	618.8	618.8
Proportion Correct Pred.	.75	.84	.84	.84

Table 4
Post-Secondary Educational Experiences, by Group

	Hispanic	Black	White
Mean No. of Semesters Attended	6.10	5.66	6.45
Deferred Entry	.307	.330	.219
Continuity of Attendance			
Continuous	.713	.729	.741
1 Break	.256	.237	.227
2 or more Breaks	.031	.033	.033
Total	1.00	1.00	1.00
Part-time or Full-time Status			
Part-time	.133	.094	.098
Full-time	.492	.644	.610
Change of Status	.375	.262	.292
Total	1.00	1.00	1.00
2 Year or 4 Year Program			
Two Year	.359	.320	.280
Four Year	.333	.440	.451
One or more transfers	.308	.240	.269
Total	1.00	1.00	1.00
One 2-yr to 4-yr transfer	.143	.078	.119