

Choice of For-Profit College.

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Draft April 15, 2007

Draft, please do not cite.

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The author gratefully acknowledges the agencies which supported this research:
Association for Institutional Research and the National Postsecondary Education Cooperative;
American Educational Research Association which receives funds for its "AERA Grants Program" from the National Science Foundation and the National Center for Education Statistics of the Institute of Education Sciences (U.S. Department of Education) under NSF Grant #REC-0310268; National Association of Student Financial Aid Administrators.
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1. Introduction

1.1 A Choice Story

When it came to a job decision, Brooke Shoelberg, Chanee Thurston, and Amanda Harris knew they needed a college education to get ahead in life. The women shared interest in fashion, and even more so – a desire to get a viable job and a secure income of at least \$30,000 a year. Brooks College, a for-profit school owned by Career Education Corporation, offered these women a chance to fulfill their dream. Located in Long Beach, California, this proprietary¹ school has been enrolling students in its programs in Interior Design, Fashion Merchandising, Graphic Design and Animation, granting diplomas and associate degrees in these fields.

An associate degree later, the furious graduates appeared on the CBS News *60 minutes* program. None of the women got the kind of jobs they were promised. Brooke was getting by managing a telephone store; Chanee was selling T-shirts; Amanda was unemployed. As the unfortunate story of for-profit education disservice unfurled on the set of *60 minutes*, the topic of school choice never came up.² The story behind these students' choice, however, could have been as intriguing, if not more, as the much-discussed story of educational consumer fraud.

The truth was that any of the Long Beach inhabitants interested in fashion merchandising had a local choice of at least two non-proprietary programs. They could have chosen to enroll into Long Beach City College next-door and earn an associate degree in the same two years at about \$1,260 for the total course of study.³ Also, there was a possibility to apply to the Long Beach branch of California State University, also near-by, to pursue a BA in fashion merchandising at about a tuition “sticker price” of \$11,200 for the four years in the program.

¹ In what follows, I use “proprietary” and “for-profit” interchangeably.

² For a transcript of the program, see <http://www.cbsnews.com/stories/2005/01/31/60minutes/main670479.shtml>.

³ The prices quoted here cover tuition only (excluding books, transportation, room and board) and were for 2006 academic year.

Not a small sum of money, CSU's fees would not even compare to the yearly \$15,125 full-time tuition at Brooks College. The two years at "Crooks College" (as Brooks graduates nick-named their alma-mater) would produce a whooping tuition bill of over \$30,000, compared to a \$1,260 tuition charge at a comparable community college. Why would anybody choose Brooks?

1.2 What We Don't Know: the Question.

It may be more obvious why some students choose selective 4-year colleges instead of proprietary schools: coming from privileged middle- and upper-classes, these are students who are better prepared and have a chance to be accepted into selective schools. They and their parents can recognize education quality and are affluent enough to be able to pay for it. These select students possess higher human capital; they are well-informed about many choices available to them; they invest and benefit from the premium education obtaining expected returns from their educational investment. Their choices seem rational; they are well-documented and researched. Yet, these students are the minority in the total pool of post-secondary population. In the nationally-representative sample of 1992 8th-graders employed in this study, only about 3.7% of all students attended highly selective colleges, and about 11.3% -- selective colleges. The rest 85% went to non-selective, open-door or career schools.⁴

The surreal saga of Brooks enthusiasts is not that unusual. In 2003 - 04, about 6% of all post-secondary students enrolled in for-profit colleges all over United States (Snyder, Tan & Hoffman 2006). A minority in the national pool of post-secondary population, proprietary students received about 32% of all federal grants and raked up 51% in federal loans – not such

⁴ My calculation based on institutional selectivity variable in PETS:2000.

surprising figures, given high tuition charges and almost-absent institutional financial aid at for-profit schools.⁵

It is a puzzle, why these students choose expensive proprietary schools while much cheaper substitutes like public community colleges are available. There have been no studies up to date attempting to explain this phenomenon. A goal of this paper is to consider the unique context surrounding the issues of proprietary students and for-profit post-secondary training⁶ and to obtain the estimates of the factors significant for the student choice of for-profit post-secondary sector.

2. Data

2.1 Data Sources

This study employs multiple data sources. The primary datasets are National Education Longitudinal Study of 1988 (NELS:88) and the associated NELS:88/2000 Postsecondary Education Transcript Study (PETS:2000). Both surveys were carried out by the National Center for Education Statistics of U.S. Department of Education.

NELS:88 is a longitudinal survey of a nationally representative sample of eighth-graders in 1988, who were resurveyed through four follow-ups in 1990, 1992, 1994, and 2000. The students reported on a multitude of topics: school and home life, work, perceptions of life and aspirations. Students' interviews were complemented with surveys of students' parents, teachers and school administrators. In addition, the survey participants were subject to a battery of cognitive tests, which produced comparable scores on a range of subjects (reading, mathematics, social studies and science).

⁵ My calculation from Knapp et. al. (2005).

⁶ Most of proprietary students in the sample are enrolled in sub-baccalaureate for-profit institutions, which is representative of the national proprietary student population.

PETS:2000 data was reported by institutions – secondary and post-secondary schools. The survey provided transcript data reflecting students’ school experiences: dates of attendance, coursework taken and student performance.

In addition, I am utilizing data from: the Common Core of Data (CCD); the Integrated Postsecondary Education Data System (IPEDS); U.S. Census 2000; Environmental Systems Research Institute (ESRI) geographic information systems (GIS); Local Area Unemployment Statistics (LAUS); and Bureau of Economic Analysis (BEA) regional economic accounts.

CCD is used to obtain secondary school characteristics, as well as students’ geographical location. IPEDS identifies post-secondary institution characteristics, as well as their geographical location, and makes it possible to construct the variables related to the geographic concentration of colleges. Census data, in combination with ESRI GIS mapping files, make it possible to compute spatial variables. LAUS data supplies unemployment information and BEA regional economic accounts render occupational earnings data.

2.2 Sample

The student sample was drawn from NELS:88 and had to be contained to students with available secondary school transcripts in PETS:2000, as well as those who were participants in the second NELS survey follow-up of 1992.

Because the study’s aim was to identify the factors significant in students’ choice of for-profit post-secondary sector, the population of interest was the students who have either chosen proprietary schools, would have been likely to do so, or were indifferent between the choice of for-profit college and the alternatives. Even though this group of students was varied in their

characteristics, these students differed significantly from the often-thought as “conventional”⁷ group of students applying and entering selective public and private four-year institutions. The distributions of the observable characteristics between the students bound for proprietary and 2-year schools, as well as less-selective four-year colleges, and students bound for selective 4-year schools are generally very dissimilar, causing overestimates in OLS estimation of college choice and of returns on college education (Reynolds 2006).

In this context, it was appropriate to restrict the sample to the students bound for the less-selective 4-year schools, 2-year schools⁸, proprietary colleges or no post-secondary education (PSE). Even after eliminating highly selective- and selective-school-bound students from the top of the college-going distribution, I was left with a fairly large and heterogeneous population. In principle, less-selective four-year college students may be dissimilar from a marginal student choosing between no college and proprietary school. However, this greater heterogeneity among the students in the sample helped my model predictive ability. The same phenomenon resulted in the case with the model profiling unemployment insurance claimants in (Black, Smith, Plesca & Shannon 2003). This model’s predictive power was best during periods of high unemployment, when claimants were many and diverse.

One of the complications in defining the sample came from the fact that students, particularly those I was interested in, are known to be very “mobile” across the set of available choices. Upon high school completion, they are more likely to delay college, and then, upon enrollment, they are more likely to stop out⁹ of college, transfer, drop out and re-enter a different college. These behaviors, especially common for students in junior colleges, make it difficult to

⁷ This group of students often viewed as representative, comprised about 17% of all NELS students who chose to go to college.

⁸ From this point on, when I say “2-year schools”, technically I mean “non-proprietary less-than 4-year schools”.

⁹ “Stop-out” is a common term in education literature meaning leaving school for a period of time and then returning.

define college choice. For this reason, I narrowed down my investigation to the choice of first post-secondary institution.

Arguably, this may be problematic for the study of choice of for-profit colleges: after all, aren't career colleges frequently chosen after students experienced failures resulting from their previous choices? It is a common view that students choose proprietary colleges after having adverse experiences in non-proprietary 4-year or 2-year colleges. It could also be the case that labor market experience as a worker without any college training could be sobering and motivate an individual to commit to proprietary occupational training. A careful look at the data revealed an interesting fact: even though the above-described pathways to proprietary schools took place, for the majority of proprietary-bound students in NELS:88, for-profit college was a first choice. This is, in itself, is a remarkable finding, since it challenges the present views of how for-profit schools enter students' post-secondary choice sets.

3. Model and Framework

3.1 Choice Model

This investigation is based on a traditional empirical choice model (McFadden 1994), (Eide, Brewer & Ehrenberg 1998). An individual chooses among four outcomes (for-profit, non-profit 2-year and non-profit non-selective college vs. no post-secondary schooling) to maximize life-time utility. The utility for the i^{th} individual is a function of her demographic characteristics (D), her cognitive skills (C), her institutional experiences (I), her biography (B), a vector of geographic and exposure variables (G), economic determinants (E) and an error term:

$$U_i^j = D_i\alpha^j + C_i\beta^j + I_i\gamma^j + B_i\delta^j + G_i\zeta^j + E_i\eta^j + \varepsilon_i^j \quad (1)$$

The i^{th} student chooses outcome j ($j = 1, 2, 3, 4$) if $U_i^j > U_i^k$ for all k not equal to j . Then, individual's decision can be expressed as the log of the probabilities ratio of any two outcomes:

$$\ln\left(\frac{P_i^j}{P_i^k}\right) = (\alpha^j - \alpha^k)D_i + (\beta^j - \beta^k)C_i + (\gamma^j - \gamma^k)I_i + (\delta^j - \delta^k)B_i + (\zeta^j - \zeta^k)G_i + (\eta^j - \eta^k)E_i \quad (2)$$

Equation (2) can be estimated empirically with multinomial logit model, whose coefficients can help interpret how various factors in the model affect the log odds of student's choice of proprietary, non-proprietary 2-year and non-proprietary non-selective 4-year college relative to no college at all.¹⁰

3.2 Framework: Bringing In the Context

3.2.1 Demographic Variables and Cognitive Skills

It is customary to include demographic variables in the models of school choice. Sex, race and income play an important role in defining access to post-secondary education in the United States. On aggregate, there are more women in American post-secondary institutions. However, there are disproportionately more women in sub-baccalaureate education, including for-profit educational sector. Women are over-represented in certain low-paying vocations, such as beautician, health, secretarial, retail – professions, for which proprietary schools train students. Minority students are also over-represented in community colleges and for-profit schools. There are many disadvantages associated with being non-white (or non-Asian). One of them is having been subject to continuing housing segregation, which fosters further familial poverty, gives rise to deviant behaviors and deprives youth of basic entitlements and obtaining quality elementary and secondary education early in student's life. Being low-income poses not

¹⁰ Compared to modeling a choice including highly-selective or selective college, there is no complication of having to model the application to college before modeling choice of college. All 2-year and proprietary schools practice open-door admissions. Non-selective 4-year colleges may require additional effort from a student to apply (such as sending in an essay, college entrance exam scores, etc.), but de-facto, the admission standards are rather lax.

only financial barriers to college education, but is also associated with a distinctly smaller set of opportunities – social, financial and educational.

It is difficult to disentangle the effects of these factors on college choice from the effect of student's personal attributes, such as motivation and talent. A cognitive skill is the factor which is often difficult to account for in empirical investigations: it is non-trivial to measure, and is frequently derived from self-reported information. Responding truthfully on such a sensitive subject is often trying for respondents, and reported measures are hard to compare across the student population. PETS renders researchers unique opportunity to access students records reported by institutions (not students) and provides measures comparable across all cases. I used high school class rank (available for most students) to proxy for student cognitive skills.

3.2.2 Institutional Experience

Student's choice is by nature path-dependent and is, in part, a function of student's institutional experience. This experience provides an individual with important social skills which enable him to navigate through bureaucracy inherent to any application process, to sort through a multitude of confusing choices, and to seek and successfully utilize interactions beneficial to him. Sociologist Regina Deil-Amen calls these skills "social know-how". In their qualitative study of students in Chicago community colleges and proprietary schools, Deil-Amen and Rosenbaum investigated how these different schools addressed students' social know-how deficiencies (Deil-Amen & Rosenbaum 2003). The scholars found that proprietary schools were more successful in accommodating students' diverse background by "structuring out" the need "to navigate the complex college environment and its bureaucratic structures". It would be not surprising if, then, students lacking in these know-how skills would self-select into proprietary schools.

Among such students with low non-cognitive skills, GED recipients received a lot of attention (Heckman & Rubinstein 2001). I have included an indicator for students with non-regular high school diploma in the regression analyses. Other factors included math- and vocational course-taking.

3.2.3 Biography

Student's own set of life and institutional experiences generates the most powerful force shaping her choices. A fruitful area of research in sociology, student's biography¹¹ is largely over-looked in economics models of student choice. Assuming biography away in economics college choice models is an artifact of the underlying assumptions about a representative student. In fact, these assumptions do presume a particular biography, that of a student from a middle class. Careful attention to parental income and education in conventional economics models somewhat compensates for the absence of biography. These proxies are effective in the studies of students bound for highly selective and selective four-year post-secondary institutions. This is not surprising: in this student pool, variations in income and parents' education would successfully control for the disparities in students' social class.

However, these controls may not be as effective in the larger context of the entire post-secondary student population. Family income variations among students are telling, but may fail to proxy for the variety of choice factors faced by students with similar incomes considering post-secondary schooling or no schooling at all. It is essential to be able to control for individual's biography and institutional experiences to identify the significant factors underlining

¹¹ Here, I use the term "biography" loosely to refer to a set of individual's life and social circumstances which helped to shape her preferences, to develop her talents and abilities and defined her opportunity sets.

school choice. Accounting for students' biography is a prerequisite to modeling schooling choice when the goal is beyond comparisons of high-income vs. low-income students bound for highly-selective or selective four-year schools. It is challenging to single out pertinent biographical factors: first, because it's difficult to measure personal experiences; second, because it's hard to compare them. It is often problematic to obtain true biographical information in the first place. The impersonal nature of surveys often fails to elicit meaningful responses from their participants, and self-selected item non-response introduces measurement bias.

Ethnographic studies are perhaps best equipped to document and to understand personal biography. One of such studies performed by sociologist Annette Lareau has generated an effective theory of the impact of children's family life on their future institutional experiences (Lareau 2002), (Lareau 2003). According to Lareau, it is the social class (rather than race or income per se) which determines the primary mode of childrearing in a family – “concerted cultivation” or “natural growth”. Concerted cultivation, commonly practiced by middle-income parents, fosters children's talents through intensive schedule of organized leisure activities, thorough exposure to social and physical institutions (such as: participating in regular organized competitions, meeting professionals and utilizing their services, traveling to new places, meeting new people and collaborating with them) and extensive verbal and non-verbal reasoning. Natural growth, commonly pursued by working-class and poor parents, provides nurturing for children's physical and emotional growth, but leaves discretion over leisure to children themselves. These parents have minimal exposure to physical institutions involved with their children (such as schools, clubs, doctors' offices, enforcement agencies), are likely to use directives (rather than reasoning) and corporal punishment with their children, and less likely to engage in verbal exchanges with the kids. The resulting sense of entitlement as well as behavioral, social and institutional skills in children who were subject to concerted cultivation generate for them

significant advantages over children who are a product of natural growth.

This prized set of non-cognitive skills transmitted through concerted cultivation is significant for a range of students' outcomes -- high school course-taking and graduation, schooling decision, labor market performance – and explains a variety of students' behaviors (Heckman, Stixrud, and Urzua 2006). For example, non-cognitive deficiencies may raise the costs associated with institutional interactions (such as schooling), which could result in student's decision not to pursue college education (Carneiro & Heckman 2003), (Carneiro, Hansen & Heckman 2003). In the context of this study, Lareau's theory implies that the inequalities in non-cognitive skills are transmitted through the parental mode of childrearing, which is specific to parental social class. According to Lareau, a distinctive marker of concerted cultivation, the mode which fosters non-cognitive skills, are children's intensive involvement in organized activities and parental engagement in children's activities. With NELS data, it is possible to construct measures related to these facets. In particular, I can control for student's time spent in extracurricular activities in 8th grade and for direct parental involvement in high-school course-taking and college-going decision. I also include an indicator of parental nativity (whether they were foreign-born). This variable gages parents' familiarity with institutions, which is also a proxy for quality of children's interactions with institutions.

Other biographical controls include parents' education levels, student having her own children, and a number of hours student worked while in secondary school. Parents' education is informative of the informational and network resources available to student: highly-educated parents have a significant advantage in being able to direct their children when it comes to course-taking and school choice, while parents who never went to a 4-year college are not in the position to help their children navigate through the post-secondary institutional maze. For example, it is frequently the case that children of parents who never went to college do not

differentiate well among the colleges of vastly different quality and are not aware about the details of college admission requirements.¹² Teenager pregnancy controls for adolescent deviant behaviors, as well as students' exposure to adult role models and adolescents' access to economic resources (Brewster 1994). Hours worked while in school identify student's awareness of her own opportunities in the labor market and controls for her actual work experience.

3.2.4 Geographic Location and Exposure

It is a reasonable proposition that proximity to a post-secondary institution plays a role in student's decision to enroll. Proximity is a popular choice for an instrumental variable in the economic analyses of returns to schooling (Card 1993). One would presume that proximity would be a particularly important factor for a disadvantaged student choosing between school and work, since the mobility of this type of student would be much more limited than of his wealthier counterpart. Also, most students enrolling in community colleges hold jobs and continue working while attending school. If a student's workplace is close to her home, she will be more likely to choose a school located conveniently to her work and place of residence.

QUOTE HERE STATS ON COMMUTING FROM DIGEST. (Horn & Nevill 2006)

Keeping these arguments in mind, I calculate distances to proprietary, 2-year and non-selective 4-year schools closest to student's place of residence.¹³ I enter these distances in quartiles to allow for a more flexible (non-linear) relationship between these variables and the outcome.

A priori, it is not clear whether proximity is going to matter in students' choice of

¹² In his interviews of disadvantaged adolescent boys in Boston, David Harding noticed that children consistently viewed Harvard University and surrounding large or small public and proprietary colleges as equivalent and available educational opportunities (Harding 2007).

¹³ Students' home zip codes are not available in the survey (due to privacy concerns), so I use students' high school zip codes instead.

proprietary school: there are so many proprietary schools that most students are bound to be very close to one. In fact, what could provide a finer measure is the local concentration of proprietary schools. This variable can help control for a student's exposure to proprietary education sector, in particular to its aggressive advertising practices. Another useful concentration measure is the number of students in the locality enrolled in for-profit colleges. The more likely a student is to encounter a proprietary student, the more likely she may be to choose proprietary school herself. I am able to construct these measures with GIS software using school files from the Integrated Postsecondary Education Data System (IPEDS).

3.2.5 Economic Determinants

It is reasonable to consider that local economic forces affect college-going decisions (Fuller, Manski & Wise 1982): the model posits that individuals consider benefits and costs of investing in college education, and local labor market would determine these costs and benefits. To account for local labor market conditions, I calculated local unemployment rates and amounts of private earnings in retail industry. Average state tuition in public 2-year colleges served as a proxy for the cost of education.

4. Findings and Discussion

4.1 General Findings

Regression estimates of the model can be found in Tables 2-5. Overall, there are no counterintuitive results – coefficient signs and significance are within expected directions and ranges. There are a few intriguing findings resulting from the model estimates.

A first general finding is that contemporaneous factors represented by economic and geographic factors are not the main contributors in explaining the variance in students' school choice decisions. Rather, the combined set of variables controlling for cognitive and non-cognitive skills drive the model's predictive power. Conceptually, then, the college choice decision is not so much a product of current state (when a student graduates from high school), but inadvertently a result of predetermined state with respect to the time when the choice is exercised. To be precise, college choice is largely driven by a cumulative set of cognitive and non-cognitive achievement acquired throughout child's life.

The second general finding is that overall, there is a visible "skills continuum" among students across the four different pathways (no post-secondary education (PSE), proprietary, 2-year or non-selective 4-year schools). Consistently, students with lowest skills (both cognitive and non-cognitive) end up choosing not to pursue college; students with marginal skills choose proprietary schools; students in 2-year colleges display higher-order skills than students in proprietary schools; and students with highest skills end up in 4-year schools. Granted that all of these schooling choices are open-access, it is the case that students do, in fact, self-select into particular schooling option on the basis of their skill level. Even if we consider finances – the fact that attending 4-year and proprietary colleges is very costly and is prohibitive to many students – it is still the case that the latent costs emanating from gaps in students' skills are the main force behind college choice.

Third general finding uncovers the fact that the higher cognitive and non-cognitive skills occur in children from higher-income families with higher-educated parents. These children spent more time in extracurricular activities, experienced significantly higher parental involvement in decisions pertaining to high-school class-taking and college going, and their parents were least-likely to be foreign-born. In sociological terms, these children were most

likely a product of concerted growth practiced by middle-and upper-class parents, and hence had been consistently exposed to a wide range of opportunities rendering necessary non-cognitive skills (“social know-how”), which in turn contributed to students’ cognitive achievement. This marked inequality was a significant factor in shaping students’ skill gaps at the time of high school graduation.

Fourth, there were some interesting findings with regard to race and sex. In particular, non-Asian minority students (African-Americans and Latina) were significantly more likely to enroll in proprietary or non-selective 4-year schools, but not in 2-year schools or to enter labor market. Women were unambiguously more likely to self-select into proprietary schools with respect to all other alternatives. Both findings allude to presence of discrimination in society in and in the labor market. It is particularly noteworthy that the least-likely involvement of minority students was in environments where population was least likely to be college-educated and to experience lower civic engagement. These are also the environments where women’s educational aspirations would be the lowest and least encouraged, yet where a woman is mostly likely to have a responsibility of the sole caretaker of a household. If these realities – persistent racism and gender discrimination – were significant for minority and/or female students (and, as substantial literature suggests, this is very much the case), my findings reflect the role of these forces in shaping students’ college choices.

4.2 Specific Findings

There are also a few results illuminating the factors specific to for-profit college choice.

First, majority of students in NELS enrolled into proprietary colleges out of high school. This was an unexpected finding, since it is a common assumption that students pursue for-profit education after having experienced bad luck in the labor market or in non-proprietary school, 4-

year or 2-year. Of course, there were such students in the sample who came to for-profit colleges through more circuitous routes than out of high school, but for at least about 60% proprietary school was the first choice.

Second, in line with the above-mentioned general finding, students enrolling in proprietary schools possess a patently lower set of cognitive and non-cognitive skills compared to their counterparts in 2-year and 4-year colleges. They were more than 7 times (and 84%) more likely to have GED than 4-year students (and 2-year students accordingly). Compared to 4-year students (and 2-year students), proprietary students were 78% less likely to have taken higher-level mathematics courses, 56% (35%) less likely to be involved in extensive extracurricular activities, 31% (35%) less likely to experience parental involvement in their college-going decisions, and almost 3 times as likely to attain the lowest class rank in high school.

Third, proprietary students were also distinctly different from their counterparts pursuing no PSE. It is probable that their cognitive skills were higher, but it is not clear whether their non-cognitive skills were at higher levels. On one hand, compared to students who did not go to college, proprietary students were 56% less likely to hold GED and more likely to have taken higher-level math classes. On the other hand, there was no evidence that they had experienced significantly different parental or extracurricular involvement. A distinctive feature of proprietary students with respect to no PSE students was that they were much more likely – 48% – to have foreign-born parents. This could serve as indirect evidence that on average proprietary students may have had less access to the “social know-how” skills compared to students choosing no PSE. Of course, parents’ nativity might have been a factor associated with prevalence of minority students at for-profit institutions (such as Latina students having immigrant parents). Even then, having an immigrant parent could disadvantage a student in a way of developing skills necessary to navigate a foreign institutional culture.

Fourth, the assignment to proprietary school is not accidental. This may seem like an obvious finding, but the opinions offered by public and educational professionals suggest that students' choice of for-profit college is largely due to false advertising. In itself, this argument may very well reflect the truth, and advertising (false or not) could in fact play an important role in students' educational choices. However, this argument also presupposes that had the students not been swayed by false promises, they would have chosen a "real" college – say, 2-year school. This line of reasoning implies that there is this random component in choice of for-profit colleges – the degree of exposure to false advertising and of student's gullibility. Again, this theory is feasible, but then it is not clear any longer to what degree the choice of proprietary school is a result of student's random "bad luck" (believing what the school promises you) or of student's direct intent to attend for-profit institution with all of its defining characteristics. The findings in this paper cannot dispel the magnitude of this random component, but they offer evidence that students who enrolled in proprietary schools explicitly looked for vocational training, were keenly aware of their opportunity costs and were sensitive to tuition costs of their next best alternative – community college vocational training. Compared to all students, proprietary students were more likely to have taken vocational courses in high school. They were more likely to work more than half-time in high school than their counterparts in 4-year schools and students who chose no PSE. Finally, they were significantly more sensitive to higher tuition in community colleges compared to students entering labor market and students enrolling in 2-year schools.

Fifth, proximity to for-profit college does not appear to be a definitive reason for which students enroll in proprietary schools. This finding counters another popular opinion – that because economically disadvantaged students have a dominant preference of attending the school closest to home, close proximity of proprietary schools would be a major point of

attraction for such students. To be sure, proximity matters, and the estimates obtained for 2-year and 4-year schools supported that: the farther away was a 4-year school from a student, the less likely (49%) this student was to enroll in this school (Table 4). Likewise, a student was 38% less likely to enroll in a 2-year school if the latter was in 4th distance quintile (more than 0.32 miles away from student's home). However, the effect of proximity on proprietary school choice was unclear. One complication delivering this result could be that for-profit schools are so many and so well-distributed (see Figure 1) that most students in the sample were close to one, so that the variation in proximity was insufficient. Another potential reason could be that instead of a preference of having a school close to home, a student might have preferred instead to attend a school close to work, or a school within a convenient commute.¹⁴ These preferences would place a high premium on physical access rather than proximity. Another facet of physical access which was not captured in this paper is class scheduling and availability, which is a very important feature (and is prominent in advertising) of for-profit colleges. Certain practices of proprietary schools, such as setting their calendars on a rolling basis (a student can enter a program at various times throughout the year) and teaching classes at night at convenient venues like strip malls and buildings close to the highways (and providing abundant parking), make these schools appreciable more accessible than conventional colleges with their often isolated campuses and insensitivity to commuter needs.

Sixth, neither unemployment rate nor earnings had much effect on for-profit college-going. Although somewhat surprising, this finding is not counterintuitive in the light of the other findings described above. The expectation was that perhaps higher unemployment rates would induce proprietary training, and higher earnings (in retail industry, in this case, -- where many high school graduates end up working) would detract potential proprietary students. However, if

¹⁴ In private conversation, sociologist Regina Deil-Amen has confirmed that this theme has ran across her interviews with proprietary students.

a student perceives that higher unemployment may be of cyclical nature, this should not affect the choice of for-profit college. Most proprietary programs are very short in duration – even if a student intended to “wait out” higher unemployment spell and get the training in the meantime, a 3- to 12-months proprietary program would not be long enough for this purpose. Proprietary students may believe they are facing structural unemployment, yet this would be difficult to capture in the short term. Also, it is not clear to what extent a proprietary-bound student can discern the condition of the local labor market. As discussed above, she may be well-aware of her opportunity costs, but may not have good information (or be simply misled) about returns on her future proprietary credential and probability of her future employment.

5. Conclusion

The subject of for-profit post-secondary education is very controversial, yet little is known about who enrolls in for-profit colleges, and why students end up choosing these expensive schools when other cheaper, more conventional alternatives (like community colleges and non-selective 4-year colleges) exist. A few of the public opinions on this matter suggest that students often choose for-profit colleges by chance and out of gullibility, swayed by false advertising, or after having had adverse experiences in public schools and/or labor market. It is believed that these students are either similar to the students in community colleges, or just the other way around – comparable to high school dropouts or students who never aspire to post-secondary education. Finally, some are convinced that proprietary schools are convenient to go to because there are many of them, and their proximity is an important feature attracting less advantaged students who are not as mobile as their counterparts from richer families.

This study finds that students choosing for-profit colleges are a special group, different from the students selecting 2-year or non-selective 4-year schools or deciding to pursue no post-

secondary education. Majority of students end up in proprietary schools right after high school. They possess lower cognitive and non-cognitive skills than their counterparts choosing 2-year and 4-year colleges, yet they demonstrate higher cognitive skills than students choosing not to pursue college. Yet, proprietary students' non-cognitive skills are not significantly different from students with no college aspirations. In fact, students in proprietary schools are more likely to have immigrant parents than students with no PSE. In addition, students choosing for-profit colleges are significantly more likely (than students choosing any other options) to be female, and more likely (with exception of comparison to students choosing 4-year colleges) to be minority. The effect of proximity to proprietary school on the choice of for-profit college is unclear. However, what is evident is that students' choice of for-profit college is not accidental – students self-select into proprietary schools, and the resulting proprietary student body possesses unique characteristics.

There are more general findings generating conclusions pertaining to the nature of college choice made by (largely) less-privileged high school students who are bound for non-selective schools, community and proprietary colleges or no post-secondary education. The first conclusion is that college choice is in principle not a product of current state (current to the time when decision is exercised), but of a pre-determined state. In other words, college choice is too path-dependent, contingent on the prior accumulated set of cognitive and non-cognitive skills to be affected by the contemporaneous factors, such as the current state of local economy. The second conclusion is that there is, in fact, a “skill continuum” among students bound for non-selective schools to the extent that the existing gaps in these skills (both cognitive and non-cognitive) generate significant latent costs to investing in college education. The third observation is that the position on this “skills continuum” is a function of parents' income and their social class. Or, rather, parents' class standing is associated with transmission of critical

non-cognitive skills, which, in turn, increase probability of child's higher cognitive achievement. The third conclusion is that race and gender unmistakably shape student college choices regardless of differences in other student characteristics. The effects of race and gender are particularly visible among disadvantaged student population, and were meaningful factors in choice of for-profit college.

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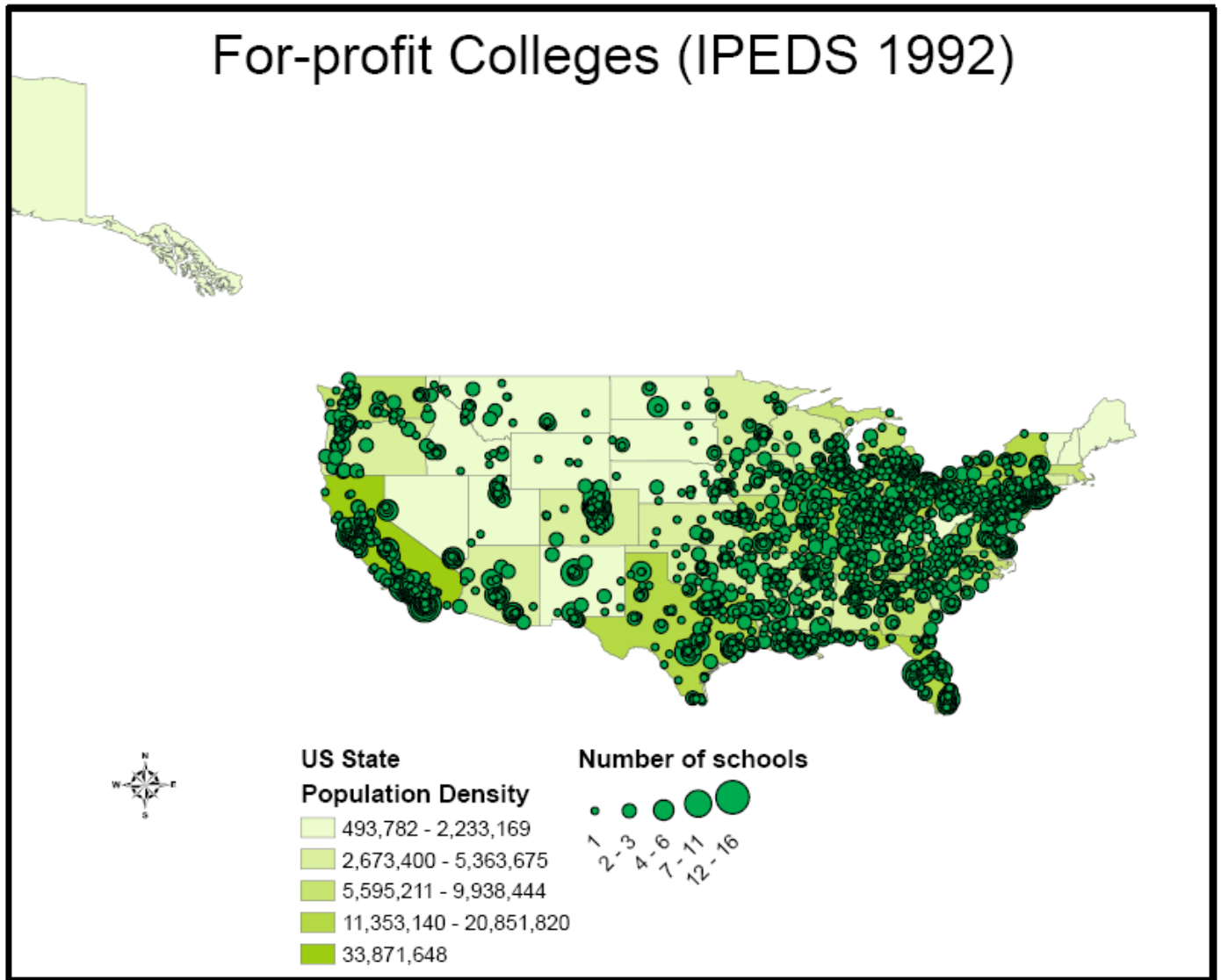
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Figure 1: A Map of For-Profit Colleges in the United States.



Source: IPEDS 1992, Census 2000.

Table 1: Descriptive Statistics: Students with No PSE, in Proprietary, 2-year or Non-selective 4-year College in the Final Regression Sample (using NELS:88-2000 and PETS:2000).

Variable	Categories	No PSE	Proprietary School	2yr School	Non-Selective 4yr School
		Count	Count	Count	Count
Sex	Male	1,083	119	1,408	1,359
Race	Non-Asian Minority	591	116	693	545
Income	Family income \$50k+	203	51	702	1,132
	Family income \$25k-<\$35k	304	46	423	364
	Family income \$15k-<\$25k	410	61	394	323
	Family income<\$15k	482	62	358	249
	Family income missing	345	50	467	350
HS Rank	HS class rank missing	887	88	471	303
	HS class rank 25% and lower	438	62	522	200
	HS class rank 26 - 50%	344	73	788	492
	HS class rank higher than 70%	110	39	602	1,367
HS Diploma	No standard high school diploma	719	53	183	29
Math Courses	Trigonometry and beyond	58	27	502	1,569
Vocational Courses	3 cr or fewer	950	180	1,618	1,586
	more than 3 cr	461	59	504	186
Plans for Military Service	Planned to enlist	257	30	292	188
Parents' Highest Education	Missing	181	29	286	179
	Less than HS grad	398	55	238	117
	Some college	669	131	1,316	1,142
	Bachelor's or higher	104	35	562	1,170
Parents' Nativity	Parents foreign-born	170	51	432	345
Extracurricular Activities	Spent 10 or more hrs. a week	143	33	551	915
Parents' Involvement	Joint college-going decision	352	86	1,152	1,494
	Joint HS class-taking decision	282	66	906	1,334
Hours Worked While in HS	Up to 20 hrs a week	428	96	1,230	1,474
	More than 20 hrs a week	436	89	695	451
High School	Private HS	33	13	199	540
	Urban HS	449	96	726	893
	Rural HS	838	82	990	953
Distance to closest Institution	Proprietary - 2nd quartile	196	56	418	361
	Proprietary - 3rd quartile	442	91	631	648
	Proprietary - 4th quartile	699	71	826	744
	2-year - 2nd quartile	326	72	629	488
	2-year- 3rd quartile	428	59	669	673
	2-year- 4th quartile	698	85	750	744
	Non-selective 4-year - 2nd quartile	407	83	588	571
	Non-selective 4-year - 3rd quartile	477	79	735	666
Non-selective 4-year - 4th quartile	624	64	859	596	
Local Unemployment Rate	Missing	456	51	459	695
	2nd quartile	396	78	633	569
	3rd quartile	390	59	640	533
	4th quartile	375	62	601	562
Local Private Earnings in Retail Industry (in \$1,000)	Missing	481	52	473	713
	2nd quartile	418	66	561	630
	3rd quartile	315	73	611	626
	4th quartile	325	78	682	457
State Public 2-yr College Tuition (in \$100)	Missing	463	53	469	708
	2nd quartile	473	47	647	576
	3rd quartile	398	59	624	719
	4th quartile	357	92	434	658
	Total	2,007	313	2,945	3,015

Table 2: Multinomial Logit: Student Choice of Proprietary, 2-year or Non-selective 4-year College compared to No PSE (using NELS:88-2000 and PETS:2000) – With Demographic and Cognitive Skills Factors.

Variable Groups		Demographic						+Ability					
Variable	Categories	Proprietary		2-year		Non-selective 4-year		Proprietary		2-year		Non-selective 4-year	
		Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Sex	Male	-0.671	***	-0.323	***	-0.475	***	-0.653	***	-0.258	***	-0.197	***
Race	Non-Asian Minority	0.453	***	-0.042		-0.240	***	0.535	***	0.112		0.036	
Income	Family income \$50k+	0.443	*	0.415	***	0.896	***	0.458	**	0.441	***	0.942	***
	Family income \$25k-<\$35k	-0.136		-0.511	***	-0.654	***	-0.137		-0.503	***	-0.632	***
	Family income \$15k-<\$25k	-0.206		-0.874	***	-1.043	***	-0.188		-0.845	***	-0.998	***
	Family income <\$15k	-0.465	**	-1.148	***	-1.464	***	-0.400	*	-1.036	***	-1.320	***
	Family income missing	-0.229		-0.534	***	-0.797	***	-0.191		-0.454	***	-0.648	***
HS Rank	HS class rank missing							-0.848	***	-1.478	***	-2.027	***
	HS class rank 25% and lower							-0.426	**	-0.718	***	-1.831	***
	HS class rank 26 - 50%							-0.021		-0.050		-0.662	***
	HS class rank higher than 70%							0.392		0.764	***	1.442	***
N		8,280						8,280					
Pseudo-R ²		0.045						0.130					

Comparison: female, white or Asian, public HS, suburban HS, family income \$35-<\$50k, standard high school diploma, HS class rank 51 - 70%.

Table 3: Multinomial Logit: Student Choice of Proprietary, 2-year or Non-selective 4-year College compared to No PSE (using NELS:88-2000 and PETS:2000) – With Institutional Experiences and Biography Variables Added.

Variable Groups		+Institutional Experiences						+Biography					
Variable	Categories	Proprietary		2-year		Non-selective 4-year		Proprietary		2-year		Non-selective 4-year	
		Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Sex	Male	-0.642 ***		-0.231 ***		-0.233 ***		-0.649 ***		-0.290 ***		-0.329 ***	
Race	Non-Asian Minority	0.541 ***		0.113		0.094		0.495 ***		0.149 *		0.294 ***	
Income	Family income \$50k+	0.369		0.292 **		0.667 ***		0.236		0.076		0.276 **	
	Family income \$25k-<\$35k	-0.129		-0.492 ***		-0.616 ***		-0.064		-0.393 ***		-0.471 ***	
	Family income \$15k-<\$25k	-0.145		-0.770 ***		-0.858 ***		-0.024		-0.560 ***		-0.523 ***	
	Family income<\$15k	-0.343		-0.926 ***		-1.068 ***		-0.174		-0.563 ***		-0.497 ***	
	Family income missing	-0.207		-0.466 ***		-0.636 ***		-0.183		-0.386 ***		-0.264	
HS Rank	HS class rank missing	-0.177		-0.473 ***		-0.722 ***		-0.131		-0.324 **		-0.595 ***	
	HS class rank 25% and lower	-0.379 *		-0.613 ***		-1.451 ***		-0.318		-0.505 ***		-1.312 ***	
	HS class rank 26 - 50%	0.011		0.016		-0.419 ***		0.022		0.037		-0.390 ***	
	HS class rank higher than 70%	0.278		0.574 ***		0.937 ***		0.277		0.557 ***		0.896 ***	
HS Diploma	No standard high school diploma	-0.941 ***		-1.788 ***		-3.298 ***		-0.747 ***		-1.441 ***		-2.805 ***	
Math Courses	Trigonometry and beyond	0.756 ***		1.123 ***		2.280 ***		0.602 **		0.912 ***		2.020 ***	
Vocational Courses	3 cr or fewer	0.177		-0.220 ***		-0.551 ***		0.189		-0.161 *		-0.423 ***	
	more than 3 cr	-0.257		-0.793 ***		-1.859 ***		-0.222		-0.646 ***		-1.564 ***	
Plans for Military Service	Planned to enlist							-0.343		-0.391 ***		-0.710 ***	
Parents' Highest Education	Missing							0.505		0.558 ***		0.278	
	Less than HS grad							0.370 *		-0.007		-0.211	
	Some college							0.641 ***		0.707 ***		0.704 ***	
	Bachelor's or higher							1.161 ***		1.450 ***		2.046 ***	
Parents' Nativity	Parents foreign-born							0.547 ***		0.583 ***		0.130	
Children	Had children							-0.056		-0.500 ***		-1.107 ***	
Extracurricular Activities	Spent 10 or more hrs. a week							0.314		0.673 ***		1.043 ***	
Parents' Involvement	Joint college-going decision							0.260		0.543 ***		0.550 ***	
	Joint HS class-taking decision							-0.062		-0.033		0.181	
Hours Worked While in HS	Up to 20 hrs a week							0.357 **		0.462 ***		0.372 ***	
	More than 20 hrs a week							0.432 ***		0.164 *		-0.225 **	
N		8,280						8,280					
Pseudo-R ²		0.202						0.239					

Comparison: female, white or Asian, public HS, suburban HS, family income \$35-<\$50k, standard high school diploma, HS class rank 51 - 70%, HS diploma, lower than trigonometry, no vocational credits, did not plan to enlist in military, parent is a high school graduate, parent is US-born, did not have children, spent fewer than 10 hrs. a week on extracurricular activities, college-going decision is not joint, HS class-taking decision is not joint, did not work

Table 4: Multinomial Logit: Student Choice of Proprietary, 2-year or Non-selective 4-year College compared to Non-PSE (using NELS:88-2000 and PETS:2000) - -With Geographic and Economic Variables Added.

Variable Groups		School Choice		
Variable	Categories	Proprietary	2-year	Non-selective 4-year
		Odds Ratio Sig.	Odds Ratio Sig.	Odds Ratio Sig.
Sex	Male	0.550 ***	0.798 ***	0.786 ***
Race	Non-Asian Minority	1.655 ***	1.026	1.536 ***
Income	Family income \$50k+	1.346	1.030	1.316 *
	Family income \$25k-<\$35k	0.944	0.646 ***	0.606 ***
	Family income \$15k-<\$25k	1.052	0.582 ***	0.616 ***
	Family income<\$15k	0.922	0.526 ***	0.601 ***
	Family income missing	0.861	0.618 ***	0.697 *
HS Rank	HS class rank missing	0.839	0.689 ***	0.522 ***
	HS class rank 25% and lower	0.681 *	0.633 ***	0.238 ***
	HS class rank 26 - 50%	0.973	1.045	0.640 ***
	HS class rank higher than 70%	1.337	1.741 ***	2.541 ***
HS Diploma	No standard high school diploma	0.439 ***	0.239 ***	0.061 ***
Math Courses	Trigonometry and beyond	1.724 *	2.527 ***	7.728 ***
Vocational Courses	3 cr or fewer	1.371 *	0.849 *	0.642 ***
	more than 3 cr	0.935	0.545 ***	0.220 ***
Plans for Military Service	Planned to enlist	0.665 *	0.669 ***	0.494 ***
Parents' Highest Education	Missing	1.606	1.830 ***	1.776 ***
	Less than HS grad	1.564 **	0.914	0.952
	Some college	1.914 ***	1.910 ***	1.977 ***
	Bachelor's or higher	2.765 ***	3.880 ***	6.857 ***
Parents' Nativity	Parents foreign-born	1.479 *	1.568 ***	1.201
Extracurricular Activities	Spent 10 or more hrs. a week	1.197	1.848 ***	2.747 ***
Parents' Involvement	Joint college-going decision	1.172	1.797 ***	1.702 ***
	Joint HS class-taking decision	1.025	0.959	1.241 *
Hours Worked While in HS	Up to 20 hrs a week	1.405 **	1.614 ***	1.422 ***
	More than 20 hrs a week	1.480 **	1.191 *	0.792 **
High School	Private HS	0.000	3.700	5.300 *
	Urban HS	1.092	0.933	1.095
	Rural HS	0.852	0.899	1.039
Distance to closest Institution	Proprietary - 2nd quartile	1.633 **	1.171	1.297 *
	Proprietary - 3rd quartile	1.545 **	1.001	1.087
	Proprietary - 4th quartile	0.962	0.989	1.080
	2-year - 2nd quartile	0.929	1.122	0.996
	2-year- 3rd quartile	0.643 **	0.854	0.980
	2-year- 4th quartile	0.868	0.624 ***	0.841
	Non-selective 4-year - 2nd quartile	0.899	0.863	0.670 ***
	Non-selective 4-year - 3rd quartile	1.013	1.178	0.738 **
Non-selective 4-year - 4th quartile	0.918	1.393 ***	0.514 ***	
Local Unemployment Rate	Missing	1.665	3.060 *	0.555
	2nd quartile	1.075	1.003	0.791 *
	3rd quartile	0.841	1.033	0.755 **
	4th quartile	1.040	1.116	0.978
Local Private Earnings in Retail Industry (in \$1,000)	Missing	0.372	0.450 **	0.489
	2nd quartile	1.190	0.966	0.862
	3rd quartile	1.185	1.143	0.801
	4th quartile	1.143	1.005	0.546 ***
State Public 2-yr College Tuition (in \$100)	Missing	1.759	0.404	1.269
	2nd quartile	0.762	0.694 ***	1.062
	3rd quartile	1.005	0.630 ***	1.325 **
	4th quartile	1.811 ***	0.538 ***	1.708 ***
N		7,160		
Pseudo-R ²		0.254		

Comparison: female, white or Asian, public HS, suburban HS, family income \$35-<\$50k, standard high school diploma, HS class rank 51 - 70%, HS diploma, lower than trigonometry, no vocational credits, did not plan to enlist in military, parent is a high school graduate, parent is US-born, did not have children, spent fewer than 10 hrs. a week on extracurricular activities, college-going decision is not joint, HS class-taking decision is not joint, public HS, suburban HS, did not work, public HS, suburban HS, 1st quartile for unemployment, earnings and tuition.

Table 5: Summary of Results from Multinomial Logit Regressions of Student Choice of No PSE, Proprietary, 2-year School or Non-selective 4-year College with Different Comparison Groups (using NELS:88-2000 and PETS:2000).

Variable Groups		Choice of Proprietary College					
Variable	Categories	compared to no PSE		compared to 2-year		compared to non-selective 4-year	
		Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.
Sex	Male	0.550 ***		0.689 ***		0.700 **	
Race	Non-Asian Minority	1.655 ***		1.613 ***		1.078	
Income	Family income \$50k+	1.346		1.307		1.023	
	Family income \$25k-<\$35k	0.944		1.462		1.557 *	
	Family income \$15k-<\$25k	1.052		1.807 ***		1.709 **	
	Family income<\$15k	0.922		1.753 **		1.533 *	
	Family income missing	0.861		1.392		1.235	
HS Rank	HS class rank missing	0.839		1.218		1.606 *	
	HS class rank 25% and lower	0.681 *		1.076		2.859 ***	
	HS class rank 26 - 50%	0.973		0.931		1.520 **	
	HS class rank higher than 70%	1.337		0.768		0.526 ***	
HS Diploma	No standard high school diploma	0.439 ***		1.838 **		7.232 ***	
Math Courses	Trigonometry and beyond	1.724 *		0.682		0.223 ***	
Vocational Courses	3 cr or fewer	1.371 *		1.614 ***		2.134 ***	
	more than 3 cr	0.935		1.715 **		4.248 ***	
Plans for Military Service	Planned to enlist	0.665 *		0.994		1.346	
Parents' Highest Education	Missing	1.606		0.878		0.905	
	Less than HS grad	1.564 **		1.711 **		1.642 **	
	Some college	1.914 ***		1.002		0.968	
	Bachelor's or higher	2.765 ***		0.713		0.403 ***	
Parents' Nativity	Parents foreign-born	1.479 *		0.943		1.231	
Extracurricular Activities	Spent 10 or more hrs. a week	1.197		0.648 **		0.436 ***	
Parents' Involvement	Joint college-going decision	1.172		0.652 **		0.688 **	
	Joint HS class-taking decision	1.025		1.069		0.826	
Hours Worked While in HS	Up to 20 hrs a week	1.405 **		0.871		0.988	
	More than 20 hrs a week	1.480 **		1.242		1.869 ***	
High School	Private HS	0.000		0.000		0.000	
	Urban HS	1.092		1.170		0.997	
	Rural HS	0.852		0.948		0.820	
Distance to closest Institution	Proprietary - 2nd quartile	1.633 **		1.394		1.259	
	Proprietary - 3rd quartile	1.545 **		1.544 **		1.422 *	
	Proprietary - 4th quartile	0.962		0.973		0.891	
	2-year - 2nd quartile	0.929		0.828		0.933	
	2-year- 3rd quartile	0.643 **		0.753		0.656 *	
	2-year- 4th quartile	0.868		1.391		1.031	
	Non-selective 4-year - 2nd quartile	0.899		1.042		1.343	
	Non-selective 4-year - 3rd quartile	1.013		0.860		1.373	
Non-selective 4-year - 4th quartile	0.918		0.659 *		1.785 **		
Local Unemployment Rate	Missing	1.665		0.544		3.002	
	2nd quartile	1.075		1.072		1.360	
	3rd quartile	0.841		0.814		1.115	
	4th quartile	1.040		0.932		1.063	
Local Private Earnings in Retail Industry (in \$1,000)	Missing	0.372		0.827		0.761	
	2nd quartile	1.190		1.232		1.381	
	3rd quartile	1.185		1.036		1.479	
	4th quartile	1.143		1.137		2.091 **	
State Public 2-yr College Tuition (in \$100)	Missing	1.759		4.357 *		1.385	
	2nd quartile	0.762		1.098		0.718	
	3rd quartile	1.005		1.595 **		0.759	
	4th quartile	1.811 ***		3.366 ***		1.060	
N		7,160					
Pseudo-R ²		0.254					

Comparison: female, white or Asian, public HS, suburban HS, family income \$35-<\$50k, standard high school diploma, HS class rank 51 - 70%, HS diploma, lower than trigonometry, no vocational credits, did not plan to enlist in military, parent is a high school graduate, parent is US-born, did not have children, spent fewer than 10 hrs. a week on extracurricular activities, college-going decision is not joint, HS class-taking decision is not joint, public HS, suburban HS, did not work, public HS, suburban HS, 1st quartile for unemployment, earnings and tuition.