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The Effects of College Savings on Postsecondary School Enrollment Rates of Students with Disabilities

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The Effects of College Savings on Postsecondary School Enrollment Rates of Students with Disabilities

This is the first study to examine whether parents' college savings is positively associated with special education students' enrollment in postsecondary school. In addition to examining postsecondary school enrollment among students with disabilities, we also examine whether students' and parents' college expectations act as a mediator between parents' college savings and postsecondary school enrollment. We find that while not all types of college savings are associated with postsecondary enrollment, college bonds are a consistent and strong statistically significant predictor of postsecondary enrollment for students with disabilities. Further, we find evidence students' and parents' college expectations act as a partial mediator between college bonds and enrollment in postsecondary school. An implication of this study is that programs that encourage some types of asset accumulation are likely to improve postsecondary school attendance rates among students with disabilities by providing them with money to pay for college and by making postsecondary school appear within reach.

Key words: *Assets, college savings, special education, disability, postsecondary school, college*

Increasing numbers of students with disabilities in the US are attending post-secondary education (US Census Bureau, 2009). Federal legislation such as the Education for All Handicapped Children Act (PL 94-142) from 1975, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 (PL 101-336) has resulted in the number of college students reporting a disability increasingly dramatically (Horn & Berktold, 1999; Newman, Wagner, Cameto, Knokey, & Shaver, 2010; Stodden & Whelley, 2004).

Despite this dramatic increase in college enrollment, students with disabilities are still far less likely to enroll than their counterparts without disabilities (Morningstar et al., 2010). Newman et al. (2010) find that in 2005 about 46% of students with disabilities enrolled in college, up from about 23% in 1990. Conversely, in the general population in 2005 about 63% of young adults enrolled in college, up from 54% in 1990 (Newman et al., 2010). While we have seen a narrowing of the college enrollment gap between students with and without disabilities, the gap remains large at about 17% (Erickson, Lee, & von Schrader, 2010). Given this, finding ways to continue to narrow the gap remains important.

Participation in higher education may address an enduring challenge for individuals with disabilities and their families—reducing high unemployment rates. Research indicates that having a four-year degree or some college is associated with higher employment rates among adults with disabilities (Getzel, Stodden and Briel, 2001). Adults with disabilities who participate in postsecondary education but have less than a four-year degree are employed at a rate about double that of adults

without disabilities who have only a high school degree (Getzel, Stodden and Briel, 2001). The news is even better for disabled adults with a four-year degree. Getzel, Stodden and Briel (2001) find that approximately 50% of disabled adults with a four-year degree are employed. Employment rates of people with a disability have a stronger positive correlation between level of education and rate of employment than is found in the general population (Stodden, 1998). Further, employment rates and salaries of individuals with disabilities who graduate from college are very similar to those of college graduates without disabilities (Horn & Berktold, 1999; Shaw & Scott, 2003).

Given these findings, the value of a college degree in terms of quality of life including potential for financial gain is evident and is a strong rationale for adults with disabilities to participate in higher education. However, low-income families are far more likely to have a child with a disability (Lee, Sills, & Oh, 2002), and poor adults with disabilities are less likely to enroll in college or other types of postsecondary schooling than higher income disabled adults (Wagner and Blackorby, 1996). This makes it very hard for disabled students to break out of poverty using the education path.

In addition to income, student race, ethnicity, and native language are also relevant to individuals having a disability and participating in higher education programs. In particular, African American and Native American students are disproportionately labeled as having a disability during primary and secondary school (Hosp & Reschly, 2004; US Department of Education, 2010). Similarly, individuals who are considered English language learners are overrepresented within K-12 special education programs (Artiles, Rueda, Salazar, Higareda, 2005; Sullivan, 2011). Moreover, individuals from diverse cultural and linguistic backgrounds face many financial challenges regarding paying for post-secondary education (Donovan & Cross, 2002; Kanno & Varghese, 2010).

Quality of life for families and individuals with disabilities may be influenced by interplay with many factors, such as family characteristics (e.g., demographics, characteristics, and beliefs) (Zuna et al., 2011). In particular, family finances can play a role in family quality of life (Park, Turnbull, & Turnbull, 2002). Increasingly, quality of life can be linked to attaining a college degree. However, many students with disabilities and their families see high college costs as a significant barrier to higher education (Burke, 1995). Some researchers have suggested that saving for college may be one way to help bring college within reach for low-income and minority students (Elliott, 2012; Sherraden, 1991).

It is clear that having savings can help students pay for college. Maybe an equally important or perhaps even more important effect of having savings is its potential for promoting positive expectations among students. This may be particularly important in the case of disabled students. Students with disabilities and their parents have lower college expectations than students without disabilities and their parents. For example, in this study we find that 89% of students without disabilities expect to attend college while only 70% of disabled students expect to attend college. We find even larger expectation differences for parents. Among parents of students without a disability, 80% expect their child to attend college. Conversely, only 56% of parents with disabled students

expect their child to attend college. Low expectations for attending and graduating college result in less engagement in school and ultimately poorer performance (Marjoribanks, 1984; Mau, 1995). From this perspective, students with disabilities whose parents have college savings for them should have more positive expectations for attending and graduating college and be more likely to have enrolled in college than disabled young adults who do not have parents with college savings for them. In the next section we review research on the savings/college enrollment relationship as well as the savings/expectation relationship.

Review of Research

Schools

Some researchers who reject individual-level explanations for why students decide to attend college point to differences in the quality and resources schools provide students as the problem. Recent studies have shown that high school context (private or public) may structurally determine students' academic orientations and educational choices, and that these effects may differ by socioeconomic group. Kim and & Schneider (2005) find that attendance at a private high school is significantly related to whether students enroll in a four-year college but not whether they attend any college (either a two-year or four-year college). One explanation for why attending private high schools may reduce students' chances of attending any college is that high grades and high class rank are harder to obtain at private high schools than they are at many public schools (Wolniak & Engberg, 2010).

Another structural factor that can affect student's decisions to attend college is the number of guidance counselors at their high school. McDonough (1997) finds that low-income students are more likely to attend schools with fewer guidance counselors at their school. This is important because Terenzini, Cabrera, and Bernal (2001) find that low-income students are more likely to rely on counselors to discuss financial aid (72%) than their higher-income peers (34%). Findings suggest that students who have access to high school guidance counselors receive information about college and help with college admissions requirements that make them more likely to enroll in college (Perna & Titus, 2005; Stanton-Salazar, 1997).

Additionally, schools' academic climate has been shown to be an important predictor of academic achievement (Goddard, Sweetland, & Hoy, 2000; Lee & Loeb, 2000; Philips, 1997). School academic climate is about how much schools emphasize education. A positive school climate can affect students' academic achievement in a number of ways. One important way is through more positive behavior while in school. For example, Kuperminc, Leadbeater, Emmons, and Blatt (1997) find that a positive school climate is associated with fewer behavioral and emotional problems for students.

Assets research

Asset researchers draw a distinction between income and assets. They suggest that while income is represents flows of resources in a period of time, assets represent resources kept through time

(Schreiner & Sherraden, 2007). College choice research by scholars in education, economics, and sociology has largely ignored the role of financial assets. For example, in their review of 24 seminal studies on college choice research, Cabrera and La Nasa (2001) find that 14 studies relied on family income as a wealth measure, while the remaining studies used socioeconomic status (SES). In these studies, SES is usually a composite of parental education, parental occupation, and family income. This ignores the potentially unique effects that financial assets may have on postsecondary and college enrollment.

This study examines whether students with disabilities whose parents have college savings for them are more likely to enroll in college than when they do not have parents with college savings for them. If they are more likely, it suggests that there is a need to create programs and policies that will better encourage parents of students with disabilities to save for their child's college education. There is a growing body of evidence examining the relationship between parents' college savings or assets more broadly defined (to include such things as household net worth or students' account ownership) and students' college enrollment. However, this research has not yet examined the assets/education relationship in regards to students with disabilities. In the remainder of this section we review some of the research that examines the effects of parents' college savings on enrollment. For a comprehensive review of research on different types of assets (e.g., household net worth, financial assets, and students' own assets) and student education outcomes, please see Elliott, Destin, and Friedline (2011).

Assets and college enrollment

We identified five studies that control for some form of parents' savings for their child and college enrollment (Charles, Rosciogno, & Torres, 2007; Elliott & Beverly, 2011a-b; Elliott & Nam, 2012; O'Connor, Hammack & Scott, 2010). Charles, Rosciogno, and Torres (2007) uses data from the National Educational Longitudinal Survey (NELS: 88) to test the effects of parents' college savings on two-year college and four-year college enrollment. They find that parents' college savings is a significant predictor of both types of enrollment, but it is stronger for four-year college enrollment. Elliott and Beverly (2011a) use the Panel Study of Income Dynamics (PSID) and its supplements, the Child Development Supplement (CDS) and the Transition into Adulthood (TA) Supplement, to test the effects of parents' college savings on what they call college progress. College progress refers to being currently enrolled in college (two-year or four-year) or having already graduated from college. They also find that parents' college savings is statistically significant with college progress. O'Connor, Hammack, and Scott (2010) use data from NELS:88–2000 with a sample of white and Hispanic students. They find that Hispanic students suffer a statistically significant higher penalty than White students if their parents do not have college savings for them.

The remaining two studies find that parents' college savings is not a significant predictor of college enrollment (Elliott & Beverly, 2011b; Elliott & Nam, 2011). Elliott and Beverly (2011b) use the PSID and its supplements. This study finds that parents' college savings is not a significant

predictor; however, it differs from other studies in that it restricts the sample to students who expect to graduate from a four-year college prior to leaving high school. Elliott and Nam (2011) also finds that parents' college savings is not significant. However, they restrict the sample by race (white students and black students only). Differences in how the sample is defined may explain non-significant findings.

In sum, very few studies have tested the relationship between parents' college savings and college enrollment. Findings that do exist are mixed. Moreover, none of the existing studies examine whether parents' college savings is an effective strategy for increasing college enrollment rates among students with disabilities.

How the Asset/College Enrollment Relationship May Work

Researchers are increasingly looking to students' college expectations as a way to explain the indirect effects assets might have on college outcomes; more theory development and testing is needed to help explain this part of the asset/education relationship. Beyond the asset field, research consistently shows that higher college expectations lead to increased academic efforts and achievement (e.g., Cook, et al., 1996; Marjoribanks, 1984; Mau, 1995; Mickelson, 1990). In this section, we review research on the relationship between assets and expectations as well as the role of expectations in explaining asset effects on students' academic outcomes.

Using a path analytic technique with 1968 and 1972 data from the PSID, Yadama and Sherraden (1996) simultaneously test whether assets (household savings and home equity) increase the chance of heads of households having more positive attitudes and behaviors (prudence, efficacy, horizons, connectedness, and effort) or whether attitudes and behaviors increase the chance of having assets. They find evidence of what they call a "virtuous circle," where assets increase the chance of having more positive attitudes and behavior, and attitudes and behavior, in turn, increase the chance of having assets (Yadama & Sherraden, 1996, p. 11).

Elliott, Choi, Destin, and Kim (2011) conduct a simultaneous test of whether students' savings predicts students' college expectations or whether college expectations predict students' savings using path analytic technique using SEM. They find that students' savings has a slightly stronger relationship with students' expectations than students' expectations have with savings. They suggest that a pattern of two-way causation might exist between assets and expectations; that is, assets may affect expectations and expectations may also affect accumulation of assets. Zhan and Sherraden (2003) also find evidence that two-way causation may be present. Overall, research findings provide evidence that assets and expectations are correlated and that expectations may help explain the assets/education relationship. In the next section, we lay out the theoretical framework used in this study.

A more psychologically grounded perspective on college expectations focuses on visions students have of themselves in a future state— i.e., a possible self or more specifically a college-bound identity (Markus & Nurius, 1986). When students envision their futures, Destin & Oyserman (2010) showed that they tend to express either an education-dependent future identity (i.e., imagine themselves in a career that requires post-secondary education) or an education-independent future identity (i.e., imagine themselves in a career that does not require post-secondary education), and students who envision a future that requires education spend more time on schoolwork and earn higher grades. We posit that students are more likely to hold an education-dependent or college-bound identity if the costs of college feel manageable and the benefits feel salient. This is not to suggest that students make rational judgments about costs and benefits similar to some traditional economic models (Becker, 1962; Sunstein, 1997). Instead, both explicit and subtle environmental messages (potentially derived from the presence of savings and assets) inform students' judgments of the cost and return on college.

Recently, possible-selves or Identity-Based Motivation (IBM) theory has been proposed as a way to explain assets' psychological effects (Elliott, Choi et al., 2011; Elliott, Nam, & Johnson, 2011) or what might be called a college savings theory of college choice. IBM has three core principles: 1) identity salience, 2) congruence with group identity, and 3) interpretation of difficulty (Oyserman & Destin, 2010). Identity salience states that abstract conceptions of the self are most likely to guide everyday behaviors when the thoughts are more readily accessible or salient above other social and cognitive stimuli. Stated otherwise, people are more likely to work towards a goal when images of their own future are "on the mind." Another important factor in the connection between context, college-bound identities, and behaviors is a link to group identity. When an image of the self feels tied to ideas about relevant social groups (e.g., friends, classmates, family, cultural groups), the congruent personal identity becomes reinforced. A final key insight from IBM highlights the importance of a means for interpreting and overcoming difficulty as normative. These principles have been shown to be important predictors of students' school behaviors (Oyserman et al., 2010). Only one study tests the IBM approach for explaining the psychological effects of assets (Elliott, Nam et al., 2011).

Elliott, Nam et al. (2011) extend Identity-Based Motivation theory in an important way. They suggest that in order for an identity, such as a college-bound identity, to be salient, it must not only be on the mind, and students must not only have strategies for carrying it out, but they must also have power over resources that are required for successful performance in the first place. According to the World Bank (2002), empowerment is "the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives" (p. 11).[1] Similarly, it is suggested when students' parents own college savings for them, students might be more inclined to take control over their educational experiences. For example,

[1] The World Bank (2002) defines assets as in a similar way to how it is being used in this report, "material assets, both physical and financial" (p. 11).

students who feel empowered may feel more comfortable about asking teachers, counselors, and school administrators for information about their education options and related resources such as financial aid. They may also be more likely to take college preparatory classes and the SAT/ACT and apply to four-year colleges instead of two-year colleges.

In line with Paulsen's and St. John's (2002) financial nexus model, the college savings perspective takes into account the fact that many low-income and minority students do not have "unimpeded access to and opportunities for postsecondary advancement" (p.191). Therefore, while the dominant college choice theories—student development theory (Pascarella & Terenzini, 1991) and change theory (Austin, 1993)—are better equipped to explain the behavior of traditional students (Paulsen et al., 2002), we suggest that the college savings model might be better equipped to explain low-income and minority students' behavior to include disabled students.

In this study we hypothesize that parents' college savings will have a statistically significant, positive association with both types of enrollment (postsecondary enrollment and four-year college enrollment) for students with disabilities. We also hypothesize that college costs will have a negative association with college enrollment of students with disabilities.

Methods

Dataset

This study used longitudinal data from the Educational Longitudinal Survey (ELS): 2002, a publically available dataset by the National Center for Education Statistics (NCES). The ELS: 2002 began in 2002 when students were in 10th grade. Follow-up waves took place in 2004 and 2006. ELS's purpose was to follow students as they progressed through high school and transitioned to postsecondary education or the labor market, making it an ideal dataset to test whether early experiences or resources predicted students' later outcomes. The ELS: 2002 aimed to present a holistic picture of student achievement by gathering information from multiple sources. Students, their parents, teachers, librarians, and principals provided information regarding students' average grades, math achievement, and educational expectations, school resources and curriculum, teacher experience, student and parent work/employment, and student post-high school enrollment in college. The dependent variables in this study came from the 2006 wave, and independent variables came from the 2002 and 2004 waves.

Study sample

The final sample was restricted by whether or not students were in the 10th grade cohort during the 2001-2002 academic year, students' follow-up questionnaire status, high school graduation status, and special education status. We designated this as the special education (SE) sample. For comparison purposes only, a separate sample was drawn of students who never participated in special education programs. It was also restricted by whether or not students were in the 10th grade

cohort during the 2001-2002 academic year, students' follow-up questionnaire status, and high school graduation status. We designated this as the no SE sample. In addition, American Indian and biracial students were eliminated from both samples for the analysis due to small sample sizes. Further, a few schools contained less than five students. These schools were removed from the analysis. After these restrictions were applied, the non-weighted SE sample included 756 students; the weighted sample included 1,151,994 students. The no SE non-weighted sample included 10,090 students; the no SE weighted sample included 2,337,189 students.

Outcome variables

We separate out four-year college enrollment from postsecondary schooling because some research suggests that students with disabilities' have even higher employment rates if they have a four-year degree than if they have less than a four-year degree (Getzel, Stodden, & Briel, 2001).

Postsecondary schooling. This variable is drawn from the ELS: 2006 follow-up. Students are asked whether they had ever attended a postsecondary school (1= yes; 0 = no).

Four-year college enrollment. This variable is drawn from the ELS: 2006 follow-up. Education levels are categorized as follows: some high school, GED recipient, high school diploma recipient, less than two-year school, two-year community college enrollment, and four-year college or university enrollment. For the purposes of this study, a dichotomous variable is created (1 = four-year college; 0 = less than a four-year college).

Mediators

Student college expectations. Students were asked how far they expected to go in school. A dichotomous variable was created based on their responses (1 = expects to graduate from a four-year college; 0 = does not expect to graduate from a four-year college).

Parent college expectations. Parents were asked how far they think their child would go in school. A dichotomous variable was created based on their responses (1 = expect child to graduate from a four-year college; 0 = do not expect child to graduate from a four-year college).

Variables of interest (college assets)

Variables of interest came from questions asking parents what they were doing to financially prepare for their child to attend college. These variables represented the types of assets available to students to pay for college costs. The following college assets variables were included: started a savings account; bought U.S. savings bonds; invested in stock/real estate; opened a college investment fund

(i.e., mutual fund); planned to take out a home equity loan; and state college savings plan. All variables were dichotomous (1 = yes; 0 = no).

Student variables

Student gender. Student gender was dichotomous (male = 1; female = 0).

Student race. The variable representing race/ethnicity included seven categories: (1) American Indian or Alaska Native; (2) Asian or Pacific Islander (including Native Hawaiian); (3) black or African American; (4) Latino/Hispanic (no race specified); (5) Latino/Hispanic (race specified); (6) More than one race/ethnicity; and (7) white or Caucasian. Categories 1, 2, 3, 6, and 7 excluded students of Hispanic or Latino origin. Categories 4 and 5 were combined to represent students of Latino or Hispanic origin and Categories 1 and 2 were excluded from the analysis due to small sample sizes. There were four categories in the final analysis (white = 0; Asian = 1; Latino/Hispanic = 2; and African American/black = 3).

English not first language. Students are asked if English is their first language (0 = yes; 1 = no).

Student GPA. Students' grade point average (GPA) was a categorical variable that averaged grades for all coursework in 9th through 12th grades. There were seven categories (0 = 0.00-1.00; 1 = 1.01-1.50; 2 = 1.51-2.00; 3 = 2.01-2.50; 4 = 2.51-3.00; 5 = 3.01-3.50; and 6 = 3.51-4.00). A commonly used grade scale was used to convert the scores to letter grades: is 0 = F, 1 = D, 2 – 3 = C, 4 – 5 = B, and 6 = A. Students' GPA was divided at the median for descriptive purposes.

College costs very important. Students were asked how important low costs (such as tuition, books, room and board) are for choosing a school, with response options including not important, somewhat important, or very important. The variable was made into a dichotomous variable (0 = not very important; 1 = very important).

Financial aid very important. Students were asked how important the availability of financial aid was for choosing a school, with responses including not important, somewhat important, or very important. Responses were dichotomized (0 = not very important; 1 = very important).

Parent/household variables

Parents' education level. Parents' education level was equivalent to mother's highest level of education or father's highest level of education, whichever was higher. Parents' level of education was composed of eight distinct levels: (1) Did not finish high school; (2) Graduated from high school or GED; (3) Attended two-year school, no degree; (4) Graduated from two-year school; (5) Attended college, no four-year degree; (6) Graduated from college; (7) Completed master's degree or equivalent; and (8) Completed PhD, MD, or other advanced degree. The eight levels were collapsed

into three for the final analysis (0 = High school diploma or less; 1 = Some college; and 2 = four-year college degree or higher).

Household income. In the ELS:2002, household income was composed of 13 distinct levels: (1) None; (2) $1,000 or less; (3) $1,001-$5,000; (4) $5,001-$10,000; (5) $10,001-$15,000; (6) $15,001-$20,000; (7) $20,001-$25,000; (8) $25,001-$35,000; (9) $35,001-$50,000; (10) $50,001-$75,000; (11) $75,001-$100,000; (12) $100,001-$200,000; and (13) $200,001 or more. For the purposes of this study, the levels of household income were combined into four levels (0 = Low-income [$0-$20,000]; 1 = Moderate-income [$20,001-$50,000]; 2 = Middle-income [$50,001-$100,000]; and 3 = High-income [$100,001 or higher].

School variables

School climate. Principals are asked to describe their school's climate using a Likert Scale (1 = not accurate at all to 5 = very accurate). They are asked to rate such statements as "student morale is high," "teachers at this school press students to achieve academically," and "students are expected to do homework."

Number of guidance counselors. This is the number of full-time guidance counselors in a particular school.

Private school attendance. This variable indicates the type of school attended by the respondent in the base-year interview: (1) public, (2) Catholic school, or (3) other private. For the purposes of this study, a dichotomous variable was created (0 = public; 1 = Catholic or other private).

Analysis plan

Missing data. Missing data among the variables might result in limitations regarding generalizability of the findings as well as reduced power (Rubin, 1987). Missing data were assumed to be missing at random, and handled by expectation-maximization imputation (Dempster, Laird, & Rubin, 1977). This method estimates unmeasured data and is based on iterating through two alternating steps (i.e., the expectation and maximization steps). A value is calculated for the missing data based on the observed data and its distribution in the expectation step, and calculated based on the current updated dataset in the maximization step. These two steps are alternated numerous times until a better model can be specified to estimate more accurate missing values.

Logistic regression. The second step in the analysis was to conduct logistic regression with STATA (version 11) to predict the ways students pay for college: student, parent/household, school characteristics and parents' college assets. Because ELS:2002 randomly selects approximately 26 students within each school, standard errors were adjusted by clustering them into the same school unit. Further, the McFadden's r-square was reported in this study. Both the descriptive and logistic regression analyses were weighted using the ELS: 2002 second follow-up base year panel weight.

Sixteen logistic regressions were estimated. Models 1–4 predict postsecondary schooling among students with disabilities. Model 1 included student variables; Model 2 added parent/household variables (parents' level of education, family income, and parents' college expectations for their child); Model 3 added school variables (school climate, number of guidance counselors, and private school attendance); and Model 4 added parents' college assets (savings account, bonds, stocks, child investment fund, plan to mortgage home and state college savings plan) were added to the model. Models 5–8 predict four-year college attendance in a stepwise fashion as in Models 1–4. Models 1-8 are included in Appendices A and B.

Test of Mediation. A mediating variable is a variable that helps explain the relationship between an independent and dependent variable (Baron & Kenny, 1986). Mediation suggests that an independent variable causes a mediator, which in turn causes a dependent variable—an indirect effect (Baron & Kenny, 1986).

The section of this paper on "how the asset/college enrollment relationship may work," presents evidence that suggests college expectations help explain the relationship between college assets and students' college enrollment. According to Baron and Kenny (1986), statistical evidence of mediation can be established using a series of logistic regressions testing whether (a) the intervention is related to the outcome variable, (b) the intervention is related to the proposed mediator, and (c) the mediator is related to outcome in a model controlling for the effects of the intervention. Models 9–14 test for mediation using the Baron and Kenny (1986) method for both students' expectations and parents' expectations in regards to postsecondary as well as four-year college enrollment. However, it was tested only with respect to parents' college bonds to limit space and because it was the only significant college savings variable.

Results

Study characteristics

Table 1 provides sample characteristics for both the no SE sample and the SE sample. Among the SE sample, there were slightly more males (56%) than females (44%). The majority of students were white (55%) and smaller percentages were Asian (9%), Latino/Hispanic (21%), and African American/black (15%). Students with disabilities' mean GPA of 3.56 is equivalent to a strong C or a weak B using a 4.00 scale.[2] Less than half of parents (35%) had a college degree or higher, 33% had some college, and 32% had a high school diploma or less. A majority of students (70%) and their parents (56%) expected the student to attend college. It is worth noting, that the no SE sample of students (89%) and their parents (80) were far more likely to expect the student to attend college than not. The majority of students with disabilities (61%) reported that the availability of financial

[2] There were seven categories of GPA: (0 = 0.00-1.00; 1 = 1.01-1.50; 2 = 1.51-2.00; 3 = 2.01-2.50; 4 = 2.51-3.00; 5 = 3.01-3.50; and 6 = 3.51-4.00). To convert this into letter grades, a commonly used grade scale is 0 = F, 1 = D, 2 – 3 = C, 4 – 5 = B, and 6 = A.

aid was very important when selecting a college compared to 38% who reported low college costs were very important.

Parents' college assets for students with disabilities

Among the six assets examined, parents most commonly held is a savings account. This held true whether parents have a SE (31%) student or not (39%). Not surprisingly, parents with more education (SE 43; no SE 52) and higher incomes (SE 53; no SE 62) are most likely to have opened a savings account for their child's education. Overall, parents are least likely to plan to mortgage their home (SE 8%; no SE 6%) or to have a state college savings account (SE 7%; no SE 6%). However, this is not the case for high-income parents of students without disabilities. Among high-income parents of students without disabilities, 52% plan to mortgage their home to help pay for their child's education. Further, in general, a higher percentage of parents of students with disabilities have college assets for their child if they have a four-year degree or more or if they are high-income. Conversely, in general, a lower percentage of low-income parents with students with disabilities have assets for their child's education than any other group.

Postsecondary attendance status for students with disabilities

A lower percentage of students with disabilities enroll in postsecondary schooling (61%) than other students (81%) (see Table 3). As is the case with Asian students without disabilities (88%), a higher percentage of Asian students with disabilities (75%) enroll in some type of postsecondary schooling than any other racial/ethnic group. The only other student characteristics associated with 70% or more of students with disabilities enrolling in postsecondary schooling are above-average GPA (72%) and students' college expectations (70%).

The vast majority of students with disabilities whose parents have a four-year degree or more (79%) enroll in postsecondary schooling. Moreover, as expected, a higher percentage of high-income students with disabilities (86%) enroll in college than all other groups of students with disabilities, while low-income students (45%) and students with disabilities with parents who have a high school degree or less (46%) are the least likely to enroll in a postsecondary school of any group.

Table 1. Sample characteristics for students who never were in special education and students who were in special education

Item	Percent/($\bar{x}$) SE	Percent/($\bar{x}$) Non SE
Student		
Male	56	48
Female	44	52
White	55	59
Asian	09	10
Hispanic	21	18
Black	15	13
English is not first language	19	19
Grade point average (GPA)	(3.56)	(4.20)
Cost of college very important	38	35
Financial aid very important	61	58
Expects to attend college	70	89
Parent/Household		
High school degree or less	32	24
Some college	33	32
Four-year degree or more	35	44
Low-income ($0 to $20,000)	20	13
Moderate-income ($20,001 to $50,000)	40	36
Middle-income ($50,001 to $100,000)	30	35
High-income ($100,001 or higher)	10	16
Expects student to attend college	56	80
School		
School climate	(-.013)	(.143)
Number of guidance counselors	(3.73)	(3.78)
Private school attendance	14	24

Source: Educational Longitudinal Study (ELS): 2002/2006. Missing data are replaced using Expectation-Maximization imputation.

Notes: Table results are rounded to the nearest percent. Row columns are reported. Sample size for no special education = (not weighted 10,090; weighted 2,337,189) for special education = (not weighted 756; weighted 1,151,994). SE = Special education. Non SE = students who have responded that they were never in a special education program.

In regards to school characteristics, private school attendance appears to matter. Eighty-five percent of students with disabilities who attend a private school attend postsecondary schools after leaving high school. Parents' college savings also appears to matter. Among students with disabilities with parents who have college assets set aside for them, 80% or more attend a postsecondary school. One exception is state college savings plans. Among students with disabilities with parents who have a state college savings plan for them, 66% attend a postsecondary school

Table 2. Percent of college assets by student, parent, household, and school characteristics among parents of students who never were in special education and those who report having been in special education at some point

	Savings Account		Bonds		Stocks		Child Investment Fund		Plan Mortgage Home		State College Savings Plan	
	SE	Non SE	SE	Non SE	SE	Non SE	SE	Non SE	SE	Non SE	SE	Non SE
Full Sample	31	39	16	20	19	29	13	19	06	08	07	06
Student												
Male	29	40	17	20	19	30	12	19	07	08	06	06
Female	32	39	15	19	19	28	14	18	03	08	08	06
White	33	42	20	23	24	34	17	22	04	08	07	06
Asian	32	43	08	16	19	28	09	18	11	10	08	08
Hispanic	27	30	11	13	11	19	03	12	07	08	06	06
Black	26	39	12	16	11	20	13	13	04	07	08	07
English is first language	27	41	19	22	20	31	14	20	05	08	07	07
GPA above mean	36	46	20	24	24	36	15	25	06	09	07	07
Cost of college very important	27	33	15	16	12	20	08	12	06	07	06	05
Financial aid very important	30	34	16	16	16	21	11	13	06	08	07	06
Expects to attend college	34	42	19	21	22	31	15	20	06	09	07	07
Parent/Household												
High school degree or less	14	22	06	08	04	11	03	05	01	04	03	03
Some college	33	35	13	18	17	23	08	14	09	09	07	06
Four-year degree or more	43	52	28	27	35	43	25	30	07	10	10	09
Low-income	12	18	03	04	02	05	06	04	02	03	04	04
Moderate-income	27	31	11	13	12	16	07	09	05	06	04	04
Middle-income	41	46	25	27	27	36	15	22	09	11	10	07
High-income	53	62	35	31	56	61	39	43	06	52	14	11
Expects student to attend college	39	44	21	22	25	32	17	21	07	09	09	07
School												
School climate, Above mean	37	44	20	23	25	34	14	24	06	09	08	07
Guidance counselors, above mean	31	40	17	20	20	30	13	20	07	09	09	07
Private school attendance	37	49	21	26	33	43	24	31	04	11	11	08

Source: Educational Longitudinal Study (ELS): 2002/2006. Missing data are replaced using Expectation-Maximization imputation.

Notes: Table results are rounded to the nearest percent. Row columns are reported. Sample size for no special education = (not weighted 10,090; weighted 2,337,189) for special education = (not weighted 756; weighted 1,151,994). SE = Special education. Non SE = students who have responded that they were never in a special education program. Low-income ($0 to $20,000); Moderate-income ($20,001 to $50,000); Middle-Income ($50,001 to $100,000); High-Income ($100,001 or higher).

Four-year college attendance status for students with disabilities

As expected, a lower percentage of students with disabilities (27%) attend a four-year college than students without disabilities (54%) (see Table 3). A higher percentage of Asian students with disabilities (46%) attend some type of postsecondary schooling than any other racial/ethnic group. The only other student characteristic associated with 40% or more of students with disabilities attending a postsecondary school is above-average GPA (40%). It is also worth noting that Hispanic students with disabilities are one of the least likely (15%) to attend a four-year college. Only students

with disabilities whose parents have a high school degree or less (14%) and low-income students with disabilities (14%) are less likely to attend a four-year college.

While 45% of students with disabilities whose parents have a four-year degree or more attend a four-year college, students without disabilities whose parents have a four-year degree are far more likely to attend a four-year college (71%). Consistent with postsecondary attendance patterns, a higher percentage of high-income students with disabilities (58%) attend a four-year college than all other groups of students with disabilities while, as stated, low-income students with disabilities are among the least likely.

In regards to school characteristics, students with disabilities who attend a four-year college are most likely to have attended a private school (54%). Bonds (48%), stocks (43%), and child investment funds (46%) appear to matter the most among college asset variables. State college savings plans have the lowest percentage of students with disabilities who attend a four-year college (20%) among the college asset variables.

Logistic regression results – Postsecondary enrollment

Models 1-8 are reported in Appendices A and B, Tables 4 and 5. They are not discussed here to save space. They provide evidence of the independent effects of college savings on students with disabilities postsecondary and four-year college enrollment patterns.

Table 6, Models 9-12 present logistic regression results estimating the effects of student, head/household, school, and parents' college savings bonds for their child on postsecondary school attendance among students with disabilities. Table 7, Models 13-16 present logistic regression results for four-year college attendance among students with disabilities.

Model 9. In this model, GPA, cost of college, head has a four-year degree or more, school climate, number of guidance counselors, and private school attendance are all statistically significant predictors of students with disabilities enrolling in postsecondary school (see Table 6). For each one-point increase in GPA, students with disabilities are approximately 52% more likely to attend a postsecondary school after controlling for all other variables. Students who report that college costs are very important for picking a school are about 48% less likely to enroll in postsecondary school than students who report college costs are not very important. Students with disabilities who live in households where the head has a four-year degree or more are over two times more likely to attend postsecondary school than students with disabilities who do not live in households with a head who has a four-year degree or more after controlling for all other factors.

Table 3. Percent of postsecondary schooling, two-year or four-year college, and four-year college enrollment by student, parent, household, school, and college assets among special education students

	Postsecondary Schooling		Four-Year College Enrollment	
	SE	Non SE	SE	Non SE
Full Sample	61	81	27	54
Student				
Male	59	78	29	51
Female	63	84	25	56
White	62	83	29	58
Asian	75	88	46	62
Hispanic	53	72	15	40
Black	61	76	27	47
English is not first language	63	81	27	55
Grade point average (GPA), above mean	72	94	40	78
Cost of college very important	54	76	20	42
Financial aid very important	63	79	27	50
Expects to attend college	70	85	36	59
Parent/Household				
High school degree or less	46	65	14	33
Some college	57	78	22	45
Four-year degree or more	79	91	45	71
Low-income ($0 to $20,000)	45	66	14	34
Moderate-income ($20,001 to $50,000)	56	75	21	43
Middle-income ($50,001 to $100,000)	69	86	34	60
High-income ($100,001 or higher)	86	95	58	81
Expects student to attend college	73	87	39	63
School				
School climate, Above mean	68	86	36	63
Number of guidance counselors, above mean	65	81	31	55
Private school attendance	85	95	54	76
College Assets				
Savings account	80	89	38	64
Bonds	81	91	48	68
Stocks	80	92	43	72
Child investment fund	80	94	46	75
Plan to mortgage home	85	91	31	67
State college savings plan	66	91	20	65

Source: Educational Longitudinal Study (ELS): 2002. Missing data are replaced using Expectation-Maximization imputation.

Notes: Table results are rounded to the nearest percent. Row columns are reported. Sample size for no special education = (not weighted 10,090; weighted 2,337,189); for special education postsecondary school = (not weighted 756; weighted 1,151,994); for special education four-year sample = (not weighted 754; weighted 1,151,994). SE = Special education. Non SE = students who have responded that they were never in a special education program.

In regards to school characteristics, for each one point increase in school climate, students are nearly four times more likely to enroll in some type of postsecondary school than their counterparts who attend schools with a poorer climate. Further, for each additional guidance counselor, students with disabilities are about 11% more likely to attend postsecondary school than their peers attending high schools with fewer guidance counselors. Students with disabilities who attend a private school are about four times more likely to enroll in postsecondary school than students who never attend a private school prior to leaving high school.

Lastly, parents' college bonds are also a statistically significant predictor of college enrollment among students with disabilities. Students with parents who have college bonds are approximately three times more likely to enroll in a postsecondary school than students with parents who do not have college bonds to help them pay for college.

Model 10. GPA, four years of college or more, moderate-, middle-, and high-income, number of guidance counselors, and private school attendance are statistically significant (see Table 6). For each one-point increase in grade point average, students with disabilities are close to 35% more likely to expect to graduate from a four-year college than their peers. Students with disabilities who live in households where the head has a four-year degree or more are about two times more likely to expect to graduate from a four-year college than those who do not. Low- (51%), moderate- (40%), and middle-income (32%) students with disabilities are all less likely to expect to graduate from college than high-income students with disabilities. For each additional high school guidance counselor, students with disabilities are approximately 29% more likely to expect to graduate from a four-year college. Students with disabilities who attend a private school prior to leaving high school are about eight times more likely to expect to graduate from a four-year college than students who do not attend a private school prior to leaving high school. In regards to parents' college bonds, students with disabilities who live with parents who have college bounds for them are more than two times as likely to expect to graduate from a four-your college than their counterparts.

Model 11. White, Asian, and Hispanic students with disabilities are all more than three times as likely to expect to graduate from college than black students with disabilities. Students with disabilities for whom English is not their first language are approximately 51% less likely to expect to graduate from college when compared to students with disabilities for whom English is their first language. GPA remains an important predictor. For each one-point increase in GPA, students with disabilities are approximately 33% more likely to expect to graduate from a four-year college. Moreover, for each additional guidance counselor, students with disabilities are nearly 19% more likely to expect to graduate from college than their counterparts after controlling for all other factors. Students with disabilities who attend private school before leaving high school are about six times more likely to expect to graduate from a four-year college than their counterparts who do not attend a private school prior to leaving high school.

Model 12 is the same as Model 9 but students' and parents' college expectations are added. To save space, only differences between Models 9 and 12 will be discussed here (for complete details see Table 6). GPA, cost of college, heads who attend a four-year college, and school climate remain statistically significant in Model 12. Number of guidance counselors and private school attendance are no longer significant. Further, students with disabilities who expect to graduate from a four-year college are more than two times as likely to be enrolled in postsecondary school than student who do not expect to graduate from a four-year college after controlling for other factors, including college bonds. Similarly, SE student who have parents who expect them to graduate from a four-year college are close to two times as likely to expect to graduate from a four-year college. College bonds also remain statistically significant after controlling for both types of expectations.

Summary of Baron and Kenny Test of Mediation for postsecondary enrollment

Results from the Baron and Kenny (1986) test suggest that parents' college bonds for their children significantly predict postsecondary enrollment among students with disabilities (see Table 6). The second and third regressions indicate that college bonds significantly predict both students' and parents' college expectations (see Table 6). The third regression indicates that both types of college expectations significantly predict postsecondary enrollment when controlling for college bonds (see Table 6). The first three regressions provide evidence of mediation.

The fourth regression indicates that there is a significant relationship between college bonds and postsecondary enrollment after controlling for both types of college expectations (see Table 6). Further, when testing whether college bonds significantly predict postsecondary enrollment the unstandardized coefficient is 1.002; however, when testing, whether college bonds significantly predict postsecondary enrollment when controlling for both types of college expectations, the unstandardized coefficient decreases to .771. This suggests that college expectations act as a partial mediator between parents' college bonds and students' postsecondary enrollment.

Logistic regression results – Four-year college enrollment

Model 13. From Model 9, GPA, cost of college, school climate, and private school attendance remain statistically significant predictors of students with disabilities' enrollment in Model 13 (see Table 7). College bonds also remain a positive significant predictor. Head's educational level and number of guidance counselors are not significant predictors of four-year college enrollment among students with disabilities.

Table 6. Logistic regression predicting postsecondary enrollment among all special education students (weighted N = 1,151,994)

Item	Model 9 Savings → Enrollment *b*	S.E.	Model 10 Savings → Students' Expectations *b*	S.E.	Model 11 Savings → Parents' Expectations *b*	S.E.	Model 12 Savings & Expectations → Enrollment *b*	S.E.
Student								
Male	-.016	.194	.106	.218	.208	.196	-.067	.196
White	.102	.464	.329	.488	1.252*	.504	-.016	.483
Asian	-.033	.261	.361	.308	.559*	.278	-.217	.278
Hispanic	.560	.311	.448	.314	1.251***	.321	.329	.305
English is not first language	-.285	.328	.250	.335	-.672*	.310	-.234	.324
Grade point average	.421***	.077	.301**	.089	.285**	.094	.340***	.078
Cost of college very important	-.728**	.422	-.150	.290	-.220	.224	-.738**	.265
Financial aid very important	.422	.240	.656	.286	.177	.258	.329	.246
Head/Household								
Head has some college	.307	.224	.202	.244	-.316	.236	.295	.226
Head has four-year degree or more	.778**	.262	.693*	.325	-.023	.261	.678*	.267
Low-income ($0 to $20,000)	.027	.269	-.762*	.302	.048	.258	.098	.270
Moderate-income ($20,001 to $50,000)	.118	.302	-.921*	.362	.391	.283	.217	.306
Middle-income ($50,001 to $100,000)	.712	.459	-1.13*	.510	.270	.433	.886	.458
School								
School climate	1.319*	.649	-.099	.744	-.424	.697	1.405*	.667
Number of guidance counselors	.103*	.044	.256***	.055	.174**	.056	.046	.046
Private school attendance	1.364*	.434	2.046***	.424	1.768**	.380	.901	.463
Mediators								
Students' college expectations	---	---	---	---	---	---	.834***	.236
Parents' college expectations	---	---	---	---	---	---	.506*	.239
College Assets								
Parent has college bonds	1.002**	.324	.942*	.387	1.058**	.349	.771*	.330
McFadden's R^2		.155		.124		.130		.185

Source: Educational Longitudinal Study (ELS): 2002/2006. Missing data are replaced using Expectation-Maximization imputation. Data are weighted. Estimates are adjusted for clustering in schools.

Notes: S.E. = robust standard error. Odds rations for significant variables: Model 9 – GPA = 1.52; college cost = .48; head has four-years of college = 2.18; school climate = 3.74; number of guidance counselors = 1.11; private school attendance = 3.91; parent has college bonds = 2.72; Model 10 – GPA = 1.35; head has four-year degree = 2.00; moderate-income = .51; middle-income = .40; high-income = .32; number of guidance counselors = 1.29; private school attendance = 7.74; parent has college bonds = 2.57; Model 11 – White = 3.49; Asian = 1.75; Hispanic = 3.49: English is not first language = .51; GPA = 1.33; number of guidance counselors = 1.19; private school attendance = 5.86; parent has college bonds = 2.88; Model 12 – GPA = 1.40; cost of college = .48; head has four-years of college = 1.97; school climate = 4.07; students' college expectations = 2.30; parents' college expectations = 1.66; parent has college bonds = 2.16.

* $p < .05$; **p < .01; ***p<.001.

In addition, gender and race are significant predictors of four-year college enrollment; however, they are not significant predictors of postsecondary enrollment among students with disabilities. SE females are about 57% less likely to enroll in a four-year college than SE males. Moreover, white and Hispanic students with disabilities are about three times more likely to enroll in a four-year college than black students with disabilities.

Model 14 is the same as Model 13 but students' and parents' college expectations are added. Gender, GPA, cost of college, and school climate remain statistically significant, yep. Private school attendance is no longer significant. Further, students with disabilities who expect to graduate from a four-year college are more than three times as likely to be enrolled in postsecondary school than students with disabilities who do not expect to graduate from a four-year college after controlling for other factors to include college bonds. This relationship appears to be stronger in the case of four-year college enrollment than it is for postsecondary school enrollment. Unlike in the case of postsecondary enrollment, having parents who expect SE students to graduate from a four-year college is not a significant predictor of four-year college enrollment. Parents' college bonds remain a strong statistically significant predictor for four-year college enrollment after controlling for both students' and parents' college expectations.

Summary of Baron and Kenny Test of Mediation for four-year enrollment

Results from the Baron and Kenny (1986) test suggest that parents' college bonds for their children significantly predict four-year college enrollment among students with disabilities (see Table 7). The second and third regressions indicate that college bonds significantly predict both students' and parents' college expectations (see Table 7). Models 10 and 11 indicate that both students' and parents' college expectations significantly predict four-year college enrollment when controlling for college bonds (see Table 7). The first three regressions provide evidence of mediation.

The fourth regression indicates that there is a significant relationship between college bonds and four-year college enrollment after controlling for both types of college expectations (see Table 7). Further, when testing whether college bonds significantly predict college enrollment, the unstandardized coefficients is 1.040; however, when testing whether college bonds significantly predict postsecondary enrollment when controlling for both types of college expectations, the coefficient decreases to .791. This suggests that college expectations act as a partial mediator between parents' college bonds and students' postsecondary enrollment.

Table 7. Logistic regression predicting four-year college enrollment among all special education students (weighted N = 1,151,994)

	Model 13		Model 14	
	Savings → Enrollment		Savings & Expectations → Enrollment	
Item	*b*	S.E.	*b*	S.E.
Student				
Male	-.565*	.235	-.663**	.246
White	1.04*	.512	.971	.542
Asian	-.199	.369	-.336	.368
Hispanic	1.120**	.380	.857*	.388
English is not first language	.291	.457	.395	.474
Grade point average	.682***	.107	.584***	.109
Cost of college very important	-.648*	.301	-.620*	.299
Financial aid very important	.159	.311	.082	.300
Head/Household				
Head has some college	.097	.294	.098	.308
Head has four-year degree or more	.618	.318	.411	.355
Low-income ($0 to $20,000)	.236	.387	.331	.401
Moderate-income ($20,001 to $50,000)	.081	.408	.123	.444
Middle-income ($50,001 to $100,000)	.666	.510	.824	.536
School				
School climate	1.939*	.887	2.071*	.880
Number of guidance counselors	.063	.047	.002	.048
Private school attendance	.932*	.423	.459	.432
Mediators				
Students' college expectations	---	---	1.245**	.408
Parents' college expectations	---	---	.571	.342
College Assets				
Parent has college bonds	1.040**	.350	.791*	.356
McFadden's R^2		.231		.267

Source: Educational Longitudinal Study (ELS): 2002/2006. Missing data are replaced using Expectation-Maximization imputation. Data are weighted. Estimates are adjusted for clustering in schools.

Notes: S.E. = robust standard error. Odds rations for significant variables: Model 13 – female = .57; White = 2.84; Hispanic = 3.06; GPA = 1.979; college cost = .52; school climate = 6.95; private school attendance = 2.54; parent has college bonds = 2.82; Model 14 – GPA = 1.35; financial aid = 1.93; head has four-years = 2.00; moderate-income = .51; middle-income = .40; high-income = .32; number of guidance counselors = 1.29; private school attendance = 7.74; parent has college bonds = 2.57; Model 15 – White = 3.50; Asian = 1.75; Hispanic = 3.49: GPA = 1.33; number of guidance counselors = 1.19; private school attendance = 5.86; parent has college bonds = 2.88; Model 16 – female = .52; Black = 2.36; GPA = 1.80; cost of college = .54; school climate = 7.93; students' college expectations = 3.47; parent has college bonds = 2.20.

* $p < .05$; **p < .01; ***p<.001.

Discussion

Students with disabilities are far less likely to enroll in postsecondary schools (i.e., trade school, two-year college, or four-year college) (Newman et al., 2010), although it can help reduce unemployment rates among students with disabilities (Getzel, Stodden, & Briel, 2001). Low enrollment rates among students with disabilities are due in part to fears about being able to pay for (Burke, 1995). Saving and asset accumulation have been proposed as a way to alleviate these fears in addition to actually providing money to pay for college (Elliott 2012; Sherraden, 1991). This study examines whether parents' college savings is positively associated with students with disabilities' enrollment in postsecondary schools. We also separate out four-year college attendance and look at it separately. Research has shown that having a four-year degree may result in even better employment outcomes for students with disabilities than other types of postsecondary schooling (Getzel, Stodden and Briel, 2001). In addition, we examine whether students' and parents' expectations act as a mediator between parents' college savings and enrollment among students with disabilities.

Assets

One of the main questions this study examines is whether or not students with disabilities whose parents' have college assets for them are more likely to have enrolled in postsecondary school shortly after high school than students with disabilities whose parents do not have such assets. Our findings are mixed. In the case of parents' savings accounts, stocks, child investment funds, whether parents' plan to mortgage their home, and state college savings plans we find little evidence to suggest that parents' college assets are related to college enrollment among students with disabilities. However, college bonds are a consistent and strong predictor of college enrollment in this population. It may be that a higher percentage of parents of students with disabilities who invest in college savings for their children invest in savings bonds. While we have no data to test this theory in this study, it may be that parents of students with disabilities, who are disproportionately low-income, gain more *psychologically* from bonds, which do not come with the same kinds of regressive costs, for example, that savings accounts come with (Aizcorbe, Kennickell, & Moore, 2003; Chan, 2011). Moreover, bonds are a more trustworthy type of investment than stocks or even a home, for example. That is, savings bonds may be a better-designed savings mechanism for lower income groups than other types of college assets examined in this study.

We also theorize that students with disabilities whose parents' have college savings for them would have more positive expectations for graduating from a four-year college than if they did not. We find evidence to support this hypothesis with respect to college bonds. This finding is consistent with previous research using a general population of students (Elliott and Beverly, 2011a; Zhan & Sherraden, 2011). This is the only study we know of that investigates the question among students with disabilities. We also find evidence to suggest that college bonds may have an indirect effect on postsecondary school enrollment for students with disabilities. That is, part of the effect of assets like college bonds is that they help to change how students with disabilities and their parents think

about the attainability of college. This is in line with the idea that having college savings makes the college-bound identity more salient for students with disabilities. This finding remains true when we separate out four-year college attendance from postsecondary schooling.

There are a number of other notable findings beyond findings on assets. In regards to race/ethnicity, though black students are disproportionately identified as having a disability (Hosp & Reschly, 2004; US Department of Education, 2010), they are no less likely than white, Asian or Hispanic students with disabilities to enroll in a postsecondary school; however, they are less likely to enroll in a four-year college than Hispanic students with disabilities when four-year college attendance is separated out. This is in line with research that suggests that black students disproportionately enroll in other postsecondary schools (Horn, Peter, & Rooney, 2002). Further, while there are not statistical differences in students' expectations by race, Black students with disabilities are less likely to have parents who expect them to graduate from a four-year college than any other racial group.

In this study, student's first language does not have a statistical relationship with postsecondary enrollment or four-year college enrollment when it is separated out among students with disabilities. This might be because students with disabilities are already less likely to enroll in college than the general population. Previous research suggests, however, that not having English as the first language increases the probability that a student is identified as a student with a disability in the first place (Artiles, Rueda, Salazar, Higareda, 2005; Sullivan, 2011). So, while being an English language learner may have no direct effects, it might have an indirect effect that works through being labeled as an SE student during or prior to 10th grade. Additionally, being an English language learner has a negative relationship with parents' college expectations. This means that being an English language learner may also have an indirect effect on postsecondary enrollment that works through parents' expectations.

Interestingly, among students with disabilities, family income is not a significant predictor of students with disabilities enrollment in either postsecondary schools or four-year colleges when it is separated out from postsecondary school. It does have a statistically significant relationship with students' college expectations. Not surprisingly, high-income students are more likely to expect to graduate from a four-year college than low-, moderate-, or middle-income students.

With respect to school controls, school climate is a consistent and strong predictor of college enrollment among students with disabilities. This is consistent with research examining the relationship between school climate and academic achievement among students in the general population (Goddard, Sweetland, & Hoy, 2000; Lee & Loeb, 2000; Philips, 1997). It is not related to either students' or parents' expectations. Maybe the fact that school climate is not related to expectations but is related to enrollment is not all that surprising: Past research indicates that school climate affects students' academic achievement by affecting their behavior in school (Kuperminc, Leadbeater, Emmons, & Blatt, 1997). Given this, it might be that school climate has more to do

with preparedness and not about whether or not students perceive that they will or will not graduate from college.

Lastly, the number of guidance counselors and private school attendance both have strong statistically significant relationships with both students' and parents' college expectations. Private school attendance has a strong relationship with students' postsecondary enrollment while number of guidance counselors has a weak relationship with postsecondary enrollment prior to expectations being added to the model for students with disabilities. Once expectations are added to the model neither private school attendance nor the number of guidance counselors is associated with postsecondary enrollment. This suggests that students' and parents' expectations explain all of the relationship between these variables and enrollment in postsecondary school for students with disabilities. This is in line with Kim's and Schneider's (2005) finding that private school attendance is associated with students' academic orientations.

Thus, it is good to interpret findings as suggesting that it is not assets alone that matter, but rather, that assets should be seen as part of a strategy for helping increase postsecondary and four-year college enrollment rates for students with disabilities. However, as Zhan and Sherraden (2011) state, "Because saving and asset building has straightforward and doable policy implications, this is a strategy that should not be ignored" (p. 852).

Limitations

There are several notable limitations that should be mentioned before interpreting the study results. First, while each school was supposed to include 26 randomly selected students, there was considerable variation in the number of students whose data were collected throughout the 2004 and 2006 waves, which reduces the representativeness of the population. Second, missing data varied across the different items contained in the surveys, and many of the later items in the student questionnaire were not missing at random. Steps were taken to counter this potential threat by using multiple imputations to replace missing data. Nevertheless, estimates may contain a degree of missing data bias. Third, assets potentially predictive of the ways students pay for college, such as whether or not students have their own savings or bank account and household net worth, are not available from the ELS: 2002. This means that assets included in previous research examining students' financial and educational outcomes were excluded from the analysis in this study (Elliott & Beverly, 2011a, 2011b; Friedline, Elliott, & Nam, 2011; Huang, Beverly, Clancy, Lassar & Sherraden, 2011).

Implications

Increasing parents' assets for college, particularly college bonds, may be an effective strategy for increasing postsecondary enrollment rates among students with disabilities, including four-year college enrollment rates. Moreover, programs that increase parents' college assets for their children

may have the indirect effect of improving both students' and parents' outlooks on the ability to attain a four-year college degree for students with disabilities. This is important because previous research on students' and parents' expectations indicate that positive expectations are an important predictor of students' educational outcomes (Marjoribanks, 1984; Mau, 1995). Moreover, our descriptive findings reveal that students with disabilities and their parents have lower expectations than the general public.

Conclusion

It is worth noting that low-income families of students with disabilities face many more challenges than families without students with disabilities when it comes to saving. For example, to meet the immediate needs of a child with a disability (e.g., special diet), families often make drastic life changes, such as working fewer hours or quitting a job to provide care (Turnbull, Turnbull, Wehmeyer, & Park, 2003). Others are forced to take on more work responsibilities to make ends meet, such as taking on another job (Sharpe & Baker, 2007). Given this, some families of students with disabilities may no longer have resources to save, including saving for college (Sharpe & Baker, 2007). Moreover, in some states, having financial assets, such as a college fund, prevents students with disabilities from receiving other financial supports, such as state-level Medicaid and SSI (Dahlem, 2010). This can be a disincentive for saving.

Despite this, finding ways to facilitate saving among students with disabilities and their families may be particularly important given the unique challenges that students with disabilities face in meeting eligibility requirements for work-study, grants, loans, and scholarships and retention of aid once they receive it (Burke, 1995). If having college savings among parents of students with disabilities is found to be a predictor of college enrollment and students with disabilities are less likely to have parents with college savings, this might suggest alternative savings vehicles are required to facilitate saving among families of students with disabilities. Children's savings accounts (CSAs) have been proposed as savings vehicle specifically designed for encouraging saving among families from low income backgrounds (Boshara, 2003; Elliott 2012; Goldberg and Cohen, 2000; Sherraden, 1991). CSAs leverage investments by families as well as students with investments from the federal government (e.g., initial deposits, incentives, matches).

An example of such a policy is the proposed ASPIRE Act (American Savings for Personal Investment, Retirement, and Education). The ASPIRE Act would establish an account for every newborn, seeding the accounts with initial contributions of $500 or more for families facing the greatest challenges, as well as providing opportunities for financial education and incentives for additional savings. When account holders turn 18 years old, they would be permitted to make tax-free withdrawals for costs associated with post-secondary education, first-time home purchase, and retirement security.

References

Aizcorbe, A. M., Kennickell, A. B., & Moore, K. B. (2003). Recent changes in U.S. family finances: Evidence from the 1998 and 2001 Survey of Consumer Finance. *Federal Reserve Bulletin, 89*(1), 1-32.

Artiles, A. J., Rueda, R. Salazar, J. J., Higareda, I. (2005). Within group diversity in minority disproportionate representation: English language learners in urban school districts. *Exceptional Children, 71*, 283-300.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy, 70*, 9-49.

Boshara, R. (2003). Federal policy and asset building. *Social Development Issues, 25*(1&2), 130-141.

Burke, E. P. (1995). *Improving the implementation of the individuals with disabilities education act: Making schools work for all of America's Children*. Washington, DC: National Council on Disability.

Cabrera, A. F., & La Nasa, S. M. (2001). On the path to college: Three critical tasks facing America's disadvantaged. *Research in Higher Education, 42*(2), 119-149.

Chan, P. (2011). *Beyond barriers: Designing attractive savings accounts for lower-income consumers*. Washington, DC: New America Foundation. Retrieved from http://assets.newamerica.net/sites/newamerica.net/files/policydocs/chan_beyondbarriers_workingpaper_1.pdf.

Charles, C., Roscigno, V. J., & Torres, K. (2007). Racial inequality and college attendance: The mediating role of parental investments. *Social Science Research, 36*, 329-352.

Cook, T. D., Church, M. B., Ajanaku, S., Shadish, W. R. J., Kim, J., Ran, & Cohen, R. (1996). The development of occupational aspirations and expectations among inner-city boys. *Child Development, 67*(3368-3385).

Dahlem, K. A. (2010). *Attitudes to savings and financial education among disability-related population groups: Findings from the Financial Literacy Focus Groups* (Working Paper WP 10-8). Madison, WI: University of Wisconsin-Madison Center for Financial Security. Retrieved from http://cfs.wisc.edu/Working_Papers/Attitudes_to_Savings_and_Financial_Education_Among_Disability-Related_Population_Groups_WP_10-8.pdf

Dempster, A. P., Laird, N. M., & Rubin, D. B. (1977). Maximum likelihood from incomplete data via the EM algorithm. *Journal of the Royal Statistical Society. Series B (Methodological), 39*(1), 1-38.

Destin, M., & Oyserman, D. (2010). Incentivizing education: Seeing schoolwork as an investment, not a chore. *Journal of Experimental Psychology, 46*, 846-849.

Donovan, M. S., & Cross, C. T. (2002). (Eds.) *Minority students in special and gifted education.* Washington, DC: National Academy Press; National Research Council Committee on Minority Representation in Special Education.

Elliott, W. (2012). *Why policy makers should care about children's savings* (Creating a Financial Stake in College, Report III) (pp. 1-18). Washington, DC: New America Foundation: St. Louis, MO: Washington University, Center for Social Development.

Elliott, W., & Beverly, S. (2011a). Staying on course: The effects of savings and assets on the college progress of young adults. *American Journal of Education*, *117*(3), 343-374.

Elliott, W., & Beverly, S. (2011b). The role of savings and wealth in reducing "wilt" between expectations and college attendance. *Journal of Children & Poverty*, *17*(2), 165-185.

Elliott, W., Choi, E. H., Destin, M., & Kim, K. (2011). The age old question, which comes first? A simultaneous test of young adult's savings and expectations. *Children & Youth Services Review, 33*(7), 1101-1111.

Elliott, W., Destin, M., & Friedline, T. (2011). Taking stock of ten years of research on the relationship between assets and children's educational outcomes: Implications for theory, policy and intervention. *Children and Youth Services Review, 33*(11), 2312-2328.

Elliott, W., & Nam, I. (2012). Direct effects of assets and savings on the college progress of Black young adults. *Educational Evaluation and Policy Analysis, 34*(1), 89-108.

Elliott, W., Nam, I., & Johnson, T. (2011). *A process model of children's savings indirect effects on college progres*s (CSD Working Paper 11-30). St. Louis, MO: Washington University, Center for Social Development. Available at: http://csd.wustl.edu/Publications/Documents/WP11-30.pdf

Erickson, W., Lee, C., & von Schrader, S. (2010). *2008 Disability Status Report: the United States*. Ithaca, NY: Cornell University Rehabilitation Research and Training Center on Disability Demographics and Statistics.

Friedline, T., Elliott, W., & Nam, I. (2011). Predicting savings in young adulthood: The role of adolescent savings. *Journal of the Society for Social Work and Research, 2*(1), *1-22*.

Getzel, E. E., Stodden, R. A., & Briel, L. W. (2001). Pursuing postsecondary education opportunities for individuals with disabilities. In P. Wehman (Ed.), *Life beyond the classroom: Transition strategies for young people with disabilities* (pp. 247-259). Baltimore: Paul H. Brookes.

Goddard, R. D., Sweetland, S. R., & Hoy, W. K. (2000). Academic emphasis of urban elementary schools and student achievement in middle schools: A multilevel analysis. *Educational Administration Quarterly*, *36*, 683-702.

Goldberg, F. T. J., & Cohen, J. B. (2000). *The universal piggy bank: Designing and implementing a system of savings accounts for children* (CSD Policy Report 00-30). St. Louis, MO: Washington University, Center for Social Development.

Huang, J., Beverly, S., Clancy, M., Lassar, T., & Sherraden, M. (2011). *Early enrollment in a statewide child development account program* (CSD Working Paper 11-23). St. Louis, MO: Washington University, Center for Social Development.

Horn, L., & Berktold, J. (1999). *Students with disabilities in postsecondary education: A profile of preparation, participation, and outcomes* (National Center for Education Statistics, U.S. Department of Education, Statistical Analysis Report No. 1999-187). Washington, DC: US Government Printing Office.

Horn, L., Peter, K., & Rooney, K. (2002). *Profile of undergraduates in U.S. postsecondary institutions: 1999–2000* (NCES 2002-168). Washington, DC: U.S. Department of Education.

Hosp, J. L., & Reschly, D. J. (2004). Disproportionate representation of minority students in special education: Academic, demographic, and economic predictors. *Exceptional Children, 70*, 185-199.

Kanno, Y., & Varghese, M. M. (2010). Immigrant English language learners' challenges to accessing four-year college education: From language policy to educational policy. *Journal of Language, Identity, and Education, 9*, 310-328.

Kim, D. H., & Schneider, B. L. (2005). Social capital in action: Alignment of parental support in adolescents' transition to postsecondary education, *Social Forces, 84*(2), 1181-1206.

Kuperminc, G. P., Leadbeater, B. J., Emmons, C., & Blatt, S. J. (1997). Perceived school climate and difficulties in the social adjustment of middle school students. *Applied Developmental Science*, *1*(2), 76-88.

Lee, V. E., & Loeb, S. (2000). School size in Chicago elementary schools: Effects on teachers' attitudes and students' achievement. *American Educational Research Journal, 37*, 3-31.

Lee, S., M. Sills, et al. (2002). *Disabilities among children and mothers in low-income families* (Research in Brief, IWPR Publication #D449). Washington, DC: Institute for Women's Policy Research.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*(9), 954-969.

Marjoribanks, K. (1984). Ethnicity, family environment and adolescents' aspirations: A follow-up study. *Journal of Educational Research*, *77*(3), 166-171.

Mau, W. C. (1995). Educational planning and academic achievement of middle school students: A racial and cultural comparison. *Journal of Counseling & Development*, *73*(5), 518-526.

McDonough, P. M. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany: State University of New York Press.

Mickelson, R. A. (1990). The attitude-achievement paradox among black adolescents. *Sociology of Education, 63*, 44-61.

Morningstar, M. E., Frey, B. B., Noonan, P. M., Ng, J., Clavenna-Deane, B., Graves, P, et al. (2010). A preliminary investigation of the relationship of transition preparation and self-determination for students with disabilities in postsecondary educational settings. *Career Development for Exceptional Individuals, 33*, 80-94.

Newman, L., Wagner, M., Cameto, R., Knokey, A. M., & Shaver, D. (2010). Comparisons across time of the outcomes of youth with disabilities up to 4 years after high school. *A report of findings from the National Longitudinal Transition Study-2 (NLTS2).* Menlo Park, CA: SRI International. Available at www. nlts2.org/reports/2010_09/nlts2_report_2010_09_complete.pdf.

O'Connor, N., Hammack, F. M., & Scott, M. A. (2010). Social capital, financial knowledge, and Hispanic student college choices. *Research in Higher Education*, *51*, 195-219.

Oyserman, D., & Destin, M. (2010). Identity-based motivation: Implications for intervention. *The Counseling Psychologist*, *38*(7), 1001-1043.

Park, J., Turnbull, A. P., & Turnbull, H. R. (2002). Impacts of poverty on quality of life in families of children with disabilities. *Exceptional Children, 68*, 151-170.

Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. San Francisco, CA: Jossey-Bass.

Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *Journal of Higher Education*, *76*, 486-518.

Paulsen, M. B., & St. John, E. P. (2002). Social class and college costs: Examining the financial nexus between college choice and persistence. *Journal of Higher Education, 73*(3), 189-236.

Philips, M. (1997). What makes schools effective? A comparison of the relationships of the communitarian climate and academic climate to mathematics achievement and attendance during middle school. *American Educational Research Journal, 34*, 633-662.

Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys*. New York, NY: John Wiley & Sons.

Schreiner, M., & Sherraden, M. (2007). *Can the poor save? Saving and asset building in individual development accounts*. New Brunswick, NJ: Transaction Publishers.

Sharpe, D. L., & Baker, D. L. (2007). Financial issues associated with having a child with Autism. *Journal of Family and Economic Issues, 28*, 247-264.

Shaw, S. F., & Scott, S. S. (2003). New directions in faculty development. *Journal of Postsecondary Education and Disability, 17*(1), 3-9.

Sherraden, M. (1991). *Assets and the poor: A new American welfare policy*. Armonk, NY: M. E. Sharpe.

Stanton-Salazar, R. D. (1997). A social capital framework for understanding the socialization of racial minority children and youth. *Harvard Educational Review, 67*(1), 1-40.

Stodden, R. A. (1998). School-to-work transition: Overview of disability legislation. In F. Rusch & J. Chadsey (Eds.), *Beyond high school: Transition from school to work* (pp. 60-76). Belmont, CA: Wadsworth Publishing.

Stodden, R. A., & Whelley, T. (2004). Postsecondary education and persons with intellectual disabilities: An introduction. *Education and Training in Developmental Disabilities, 39*, 6-15.

Sullivan, A. L. (2011). Disproportionality in special education: Identification and placement of English language learners. *Exceptional Children, 77*, 314-334.

Sunstein, C. (1997). *Free markets and social justice*. New York, NY: Oxford University Press.

The Sallie Mae Fund and the Tomas Rivera Policy Institute. (2005). *Perceptions of financial aid among California Latino youth*. Available at http://www.trpi.org/PDFs/facts.pdf

Terenzini, P., Cabrera, A., & Bernal, E. (2001). *Swimming against the tide: The poor in American higher education* (College Board Research Report No. 2001-3). New York: The College Board.

Turnbull, H. R., Turnbull, A. P., Wehmeyer, M. L., & Park, J. (2003). A quality of life framework for special education outcomes. *Remedial and Special Education, 24*, 67-74.

United States Census Bureau. (2009). *American Community Survey*. Washington, DC: US Census Bureau.

United States Department of Education. (2010). *Twenty-ninth report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: US Department of Education.

Wagner, M., & Blackorby, J. (1996). Transition from high school to work or college: How special education students fare. *The future of children: Special education for students with disabilities*, *6*(1), 103-120.

Wolniak, G., & Engberg, M. (2010). Academic achievement in the first year of college: Evidence of the pervasive effects of the high school context. *Research in Higher Education*, *55*(5), 451-467.

World Bank. (2002). *Empowerment and poverty reduction: A sourcebook*. Washington, DC: The World Bank.

Yadama, G., & Sherraden, M. (1996). Effects of assets on attitudes and behaviors: Advance test of a social policy proposal. *Social Work Research, 20*(1), 3-11.

Zhan, M., & Sherraden, M. (2003). Assets, expectations, and children's educational achievement in female-headed households. *Social Service Review, 77*(2), 191-211.

Zuna, N., Summers, J. A., Turnbull, A. P., Hu, X., & Xu, S. (2011). Theorizing about family quality of life. In R. Kober (Ed.), *Enhancing quality of life for people with intellectual disabilities: From theory to practice* (pp. 241-278). Dordrecht, Netherlands: Springer.

Appendix A

Table 4. Logistic regression predicting postsecondary enrollment among special education students (N = 1,151,994)

	Model 1 Student		Model 2 Parent/Household		Model 3 School		Model 4 College Assets	
Item	*b*	S.E.	*b*	S.E.	*b*	S.E.	*b*	S.E.
Male	-.165	.189	-.087	.195	-.083	.195	.008	.202
Asian	.161	.468	.012	.478	-.038	.483	-.068	.504
Hispanic	-.349	.263	-.180	.273	-.169	.279	-.193	.287
Black	.189	.295	.277	.310	.321	.312	.374	.329
English is not first language	-.213	.314	-.223	.322	-.210	.331	-.301	.359
Grade point average	.391***	.073	.318***	.076	.313***	.077	.333***	.078
Cost of college very important	-.650	.341	-.608	.354	-.574	.351	-.646	.356
Financial aid very important	.235	.327	.236	.346	.226	.339	.211	.335
Expects to attend college	1.109** *	.211	.840***	.222	.806***	.229	.814***	.230
Some college			.363	.226	.339	.227	.302	.238
Four-year degree or more			.851**	.262	.815**	.263	.693*	.275
Low-income ($0 to $20,000)			.205	.266	.152	.269	.126	.282
Moderate-income ($20,001 to $50,000)			.472	.296	.367	.299	.302	.332
Middle-income ($50,001 to $100,000)			1.251**	.452	1.068*	.472	.934	.514
Expects student to attend college			.513*	.216	.460*	.226	.441	.237
School climate					1.363	.731	1.446	.728
Number of guidance counselors					.030	.054	.022	.053
Private school attendance					.800	.474	.844	.478
Savings account							-.316	.338
Bonds							.771*	.365
Stocks							.088	.423
Child investment fund							.422	.502
Plan to mortgage home							1.570	.781
State college savings plan							-.655	.686
McFadden's R²		.11		.16		.17		.20

Source: Educational Longitudinal Study (ELS): 2002/2006. Missing data are replaced using Expectation-Maximization imputation. Data are weighted. Estimates are adjusted for clustering in schools.

Notes: S.E. = robust standard error. Odds rations for significant variables: Model 1 – GPA = 1.478; Student expectations = 3.025; Model 2 – GPA = 1.374; Student expectations = 2.317; four-year degree or more = 2.343; High-income = 3.495; High-income = 3.495; Parents' expectations = 1.670; Model 3 – GPA = 1.368; Student expectations = 2.239; four-year degree or more = 2.259; High-income = 2.909; Parents' expectations = 1.584; Model 4 – GPA = 1.396; Student expectations = 2.257; four-year degree or more = 1.999; Bonds = 2.161.

* $p < .05$; **p < .01; ***p<.001.

Appendix B

Table 5. Logistic regression predicting four-year college enrollment among special education students (N = 1,151,994)

	Model 5 Student		Model 6 Parent/Household		Model 7 School		Model 8 College Assets	
Item	*b*	S.E.	*b*	S.E.	*b*	S.E.	*b*	S.E.
Male	-.681**	.232	-.683**	.242	-.664**	.244	-.641**	.250
Asian	.845	.499	.911	.508	.879	.525	.938	.521
Hispanic	-.556	.335	-.348	.358	-.342	.369	-.346	.371
Black	-.532	.334	.655	.372	.726	.381	.835*	.389
English is not first language	-.440	.411	.451	.445	.486	.463	.337	.473
Grade point average (GPA)	.612***	.102	.509***	.103	.506***	.105	.497***	.110
Cost of college very important	-.636*	.297	-.531	.318	-.508	.313	-.602	.328
Financial aid very important	.148	.277	.144	.297	.146	.298	.134	.296
Expects to attend college	1.521***	.328	1.143**	.370	1.117**	.380	1.028*	.394
Some college			.213	.307	.176	.307	.228	.314
Four-year degree or more			.687*	.337	.618	.341	.614	.360
Low-income ($0 to $20,000)			.424	.388	.373	.393	.332	.404
Moderate-income ($20,001 to $50,000)			.415	.419	.310	.427	.303	.459
Middle-income ($50,001 to $100,000)			1.199*	.496	1.025*	.516	1.107*	.554
Expects student to attend college			.662*	.314	.611	.319	.629	.345
School climate					1.657	.938	1.697	.990
Number of guidance counselors					.019	.051	.015	.0511
Private school attendance					.455	.411	.607	.413
Savings account							-.171	.374
Bonds							.883*	.375
Stocks							-.387	.395
Child investment fund							.107	.497
Plan to mortgage home							-.350	.654
State college savings plan							-1.088	.806
McFadden's R^2		.18		.23		.24		.26

Source: Educational Longitudinal Study (ELS): 2002/2006. Missing data are replaced using Expectation-Maximization imputation. Data are weighted. Estimates are adjusted for clustering in schools.

Notes: S.E. = robust standard error. Odds rations for significant variables: Model 5 – Female = .506; GPA = 1.843; College costs very important = .529; Student expectations = 4.576; Model 6 – Female = .505; GPA = 1.663; Student expectations = 3.138; four-year degree or more = 1.987; High-income = 3.316; Parents' expectations = 1.939; Model 7 – Females= .515; GPA = 1.658; Student expectations = 3.056; High-income = 2.787; Model 8 – Female = .527; Black 2.305; GPA = 1.644; Student expectations = 2.797;High-income = 3.026; Bonds = 2.417.

* p < .05; **p < .01; ***p<.001.