# For-Profit Colleges, Educational Attainment, and Labor Market Outcomes

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*Abstract:* The rise of for-profit colleges raises important questions about educational opportunity, particularly whether such institutions have the potential to increase access to higher education and to reduce racial/ethnic and class disparities in college enrollment and completion. This study examines whether attending a for-profit college is associated with increased probability of receiving an Associate's or Bachelor's degree, greater likelihood of employment, or higher earnings. We use data from the National Longitudinal Survey of Youth 1997 Cohort, which follows a representative sample of about 9,000 youth age 12-16 in 1997 through 2008. We will compare individuals who have attended for-profit colleges with comparison groups of respondents who never enrolled in college and those who attended public colleges, focusing on three outcomes – degree completion, employment, and wages – and controlling for pre-college characteristics through regression adjustment and propensity score matching. We will also use geographic variation in access to for-profit colleges as an instrument.

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<u>Background and Motivation</u>

African-Americans, Latinos, and young people from lower income families or whose parents did not attend college are much less likely to enroll in and complete college (Kane 2004). These students face barriers to college enrollment and completion ranging from insufficient financial resources and poor secondary school preparation to lack of knowledge about institutions of higher education and financial aid (Kane 2004; Rosenbaum, Deil-Amen, and Person 2006, Deil-Amen and Rosenbaum 2003, Hurtado et al. 1997) to family obligations that interfere with schooling (Charles, Dinwiddie, and Massey 2004, Massey and Fischer 2006).

Since the 1970s the proportion of the population earning a college degree has remained flat at about 25% (Fischer and Hout 2006), yet the for-profit (or "proprietary") sector has been growing rapidly. For example, the number of BA degrees granted by for-profits rose tenfold between 1982 and 2002, a period when the total number of BAs increased by only one-third (Breneman, Pusser, and Turner 2006). Meanwhile, community colleges have gradually shifted their mission from preparation for transfer to a BA-granting institution to vocational training (Brint and Karabel 1989).

The rise of for-profit colleges raises important questions about educational opportunity, particularly whether such institutions have the potential to increase access to higher education and to reduce racial/ethnic and class disparities in college enrollment and completion. Although overall only one in 20 students who attend AA or BA granting institutions attend for-profits, one in ten black students, one in 14 Latino students, and one in 14 first generation college students is

enrolled in a for-profit college (author's calculations, National Postsecondary Student Aid Study [NPSAS] 2004).

Proponents of for-profits cite several advantages of these colleges for traditionally underserved students. First, as publicly-traded corporations, for-profit colleges have strong institutional imperatives to grow in order to meet shareholder expectations of rising profits (Ruch 2001, Berg 2005). A primary untapped market for for-profits is students who would not otherwise attend college. Another key avenue of profit growth is retaining students until degree completion. For-profits and other private colleges have higher completion rates than community colleges, despite their higher cost (Rosenbaum et al. 2006), which has been attributed to student services and flexible scheduling (Ruch 2001, Berg 2005, Rosenbaum et al. 2006). Third, for-profits' degree options and coursework requirements target skills needed in the labor market, which is particularly appealing to students from disadvantaged backgrounds (Ruch 2001, Berg 2005). Though their figures have not been independently verified, for-profit colleges boast high job placement rates, increasing their attractiveness to students for whom employment is the primary motivation for college.

Nevertheless, critics have raised several counterpoints. First, the quality of for-profit education is unclear, especially given high numbers of part-time faculty, watered-down liberal arts curricula, minimal facilities, and fewer classroom hours with instructors (Breneman et al. 2006, Bailey, Badway and Gumport 2001).  Second, anecdotal evidence suggests that many for-profit campuses may be located in suburban office parks (Ruch 2001, Berg 2005) that are largely inaccessible to those from poor rural or central city neighborhoods. Third, some for-profits enroll mostly older students who are returning to school (Berg 2005). They may not be targeting those from disadvantaged backgrounds. Fourth, scandals in the 1980s involving federal financial aid

funds have raised questions about the compatibility of higher education and for-profit business (although such scandals are now rare [Breneman et al. 2006; Kinser 2006]). Most recently, the Obama administration and Congress have focused on higher rates of loan default among for-profit students and have questioned the large amounts of federal financial aid that for-profit colleges receive.

These debates highlight the lack of research on for-profit higher education, both the institutions themselves and their students (Breneman et al 2006, Kinser 2006). Much of the published research has been conducted by former "industry insiders" (e.g. Ruch 2001, Berg 2005). A key challenge for researchers is the lack of individual-level data on students attending for-profit colleges. Traditional higher education datasets such as those gathered by the National Center for Education Statistics have either very small numbers of for-profit students in their samples (e.g. National Educational Longitudinal Studies) or do not follow students over time and therefore cannot be used to assess the effects of for-profit attendance (e.g. NPSAS). Many questions remain unanswered, including why students choose to attend for-profit colleges, whether for-profits improve completion or labor market outcomes over private non-profit and community colleges or simply attract students more likely to complete, and whether for-profit colleges are enrolling students who would not otherwise attend college. More broadly, the rise of for-profit colleges presents an analytic opportunity for research on college access and affordability by providing new comparison institutions that might illuminate more widespread barriers to college entry and completion. For example, if for-profits increase enrollment and completion rates over community colleges despite their higher cost, and if their mechanisms for doing so were identified, this knowledge could be used to improve other higher education institutions.

Research Questions

Before such issues can be addressed, the more central question of whether for-profit colleges actually improve student outcomes must be answered. This study examines whether attending a for-profit college is associated with increased probability of receiving an Associate's or Bachelor's degree, greater likelihood of employment, or higher earnings.

Data and Methods

We use data from the National Longitudinal Survey of Youth 1997 Cohort (NLSY97), which follows a representative sample of about 9,000 youth age 12-16 in 1997 through 2007-08 (the latest wave available to us at this time). These data contain an oversample of black and Latino youth and, with restricted data we have obtained under contract with the Bureau of Labor Statistics, allow researchers to identify which colleges each individual attended and when. NLSY97 contains over 600 individuals who have attended a for-profit college, far more than other longitudinal datasets. These data also contain extensive parent and individual background information, including high school transcript data, and detailed data on outcomes (degrees earned, employment, and earnings).[1]

*Variables*

The dependent variables in this study are measures of educational and labor market outcomes. Education is captured in each year of the NLSY97 via a survey question asking about respondents' highest degree received: non-completer or high school drop-out, GED, high school diploma, associate's degree, bachelor's degree, master's degree, the Ph.D., or a professional degree. Labor market outcomes are annual income from wages, self-employment income, or

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[1] We have compared the demographic characteristics of for-profit students in the 2004 wave of NLSY97 to benchmark data from the 2004 NPSAS, finding roughly comparable distributions on descriptive statistics such as race, gender, and family background.

both, and the mean hourly compensation received by NLSY97 respondents.  We employ the logarithmic transformation to income and wage data. Our key independent variable is the type of post-secondary institution(s) attended:  non-attendees (or attended a non-degree granting institution), two- or four-year public institution only, two- or four-year private institution only, two- or four-year proprietary institution only, and attended more than one institution type.

We also measure of a number of other variables that are predictive of our outcomes. We divide these into non-time-varying individual and family background characteristics, time-varying individual characteristics, and characteristics of the county in which the respondent lives (which is also time-varying). The first set of measures includes sex, ethnicity/race, family structure (whether intact), parental educational attainment, parental household income, parental household income to poverty ratio, parental household size at study inception, maternal age at first birth, maternal age when respondent was born, high school GPA, Scholastic Aptitude Test (SAT) math and verbal scores, American Collegiate Test (ACT) score, Armed Services Vocational Aptitude Battery (ASVAB) percentile, and secondary school type (public/parochial/other private).  Intact family refers to a family where both the biological mother and father were present in the home at study inception.  Parental educational attainment is reported on a continuous scale suggestive of actual years of education attained.  Sixteen (16) years of education denotes 4 years of college education or the completion of a bachelor's degree. The academic ability measures, SAT and ASVAB, are measured on a categorical scale with six values.  SAT math and verbal scores are coded as 1=200-300, 2=301-400, 3=401-500, 4=501-600, 5=601-700, and 6=701-800.  ACT scores are coded as 1=0-6, 2=7-12, 3=13-18, 4=19-24, 5=25-30, 6=31-36.  The ASVAB reports the age-adjusted percentile achieved on the computer adaptive version of the four subtests that are officially referred to as the Armed Forces

Qualification Test (AFQT). Those four subtests are mathematical knowledge, arithmetic reasoning, word knowledge, and paragraph comprehension. Unlike NLSY79, in which the subtest scores of the ASVAB are computed by officials from the Department of Defense to produce the AFQT score, the NLSY97 administrators use a similar method of conversion to produce an unofficial combination of subtest scores. Parental household income and government aid amount are log transformed. School type refers to whether the secondary school attended at study inception was public (coded 1), parochial (2), private-not parochial (3), or other (4).

Time varying individual measures include age, census region of residence, independent status, urbanicity, marital status, number of own or adopted children in household, household size, number of household members under age 18, government aid recipiency, and government aid amount received. Ethnicity/race denotes whether a respondent is white (coded 1), black(2), Hispanic(3), American Indian or Alaska native (4), Asian or Pacific Islander (5), and other race (6). There are four regions coded in the data: 1=Northeast, 2=North Central, 3=South, and 4=West. Regarding MSA status, one is classified in a given year as either outside of a MSA (coded 1), in MSA-not in a central city (2), in MSA-in a central city(3), in MSA-centrality unknown, or outside of the U.S.(5). Marital status has five categories: 1=never married, 2=married, 3=separated, 4=divorced, and 5=widowed.

Our third set of predictors include county specific information on population size, unemployment rate, count of degree-granting post-secondary institutions, percent of adults with a college degree, percent who are minority, and per capita income. Intercensal population size and unemployment rate estimates were gathered from the U.S. Census Bureau website for years 1997-1999 and years 2001-2007. Actual population size and unemployment rate information were derived from U.S. Census 2000. Counts of degree-granting post-secondary institutions

were calculated utilizing the Integrated Post-secondary Education Data System (IPEDS). First, for each year for which the NLSY97 has information we retrieved degree-granting college and university addresses from the IPEDS website. These addresses were then geocoded using ArcGIS spatial analysis software, which generated longitude and latitude coordinates for all schools and for all years. Where an incomplete address failed to produce coordinates, the zip code was used as an approximation of the actual physical address. This process was most often applied to large institutions that list the university address as a campus building and office suite; it was our determination that a school's nearest post office, to which its zip code is attached in the geocode process, would serve as a sufficient proxy for its location. Once all coordinates were obtained, they were joined spatially on the county geography of the U.S. and exported to Stata. As was done in our NLSY97 data, the state and county FIPS codes for the extracted IPEDS data were combined for each year via a concatenation process. With the data reshaped to long format, counts of post-secondary institutions within county were generated by year. Once this file was completed, it was then combined with the NLSY97 data, merging on state and county FIPS by year. The last three predictors mentioned above—percent of adults in county with a college degree, proportion in county who are minority, and county per capita income—are drawn from U.S. Census 2000.

*Descriptive Statistics*

Summary statistics for all time-varying covariates are shown by year in Table 1.[2] We expect changes in college enrollment as the sample ages. Tables 2a and 2b show college

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[2] Variation over time in many of the household variables depends on whether the respondent is independent. A respondent is determined to be independent in the NLSY97 if he 1) has had a child, 2) is enrolled in a 4-year college or is no longer enrolled in secondary school, 3) is not living with a parent or parent figure, 4) is married, has ever

attendance by year and by age among NLSY respondents, broken down by public, private non-profit, and for-profit control, as well as the level of degrees offered at the institution attended. Calculations are based on whether each individual reported any institution of a particular type in each year (or at each age), and thus an individual attending multiple institutions from different sectors is present in multiple columns. Additionally, we do not report percentages of respondents attending less-than-two-year institutions, as they are less relevant to our focus on degree attainment and returns to college education. (For these reasons, the "4-Year +" and "2-Year" columns do not necessarily sum to the "any level" column.) Attendance at "other type" colleges reflects reports of attendance at colleges with names that NLSY could not match to a unique identifier from IPEDS.

The 12 waves of data we have cover the college-going years for almost the entire sample, such that over 99 percent are not enrolled in 1997 and over 95 percent are not enrolled in 2008, but enrollment grows and declines over the intervening years (see Table 2a). At NLSY's first wave, very few respondents were old enough that they might have attended any college, but by age 18, enrollment is high and increasing steadily, and remains sizable through age 26 (see Table 2b). A parallel trend occurs across years, with enrollment peaking around 2003 or 2004, when respondents were 21 to 22 years old (see Table 2a). However, these trends differ somewhat according to the type of college a respondent attended. Although enrollment in public institutions far surpasses enrollment in private non-profit and for-profit institutions in all years, Table 2a shows that enrollment in public colleges peaks in 2003, whereas enrollment in for-profits peaks in 2007, reflecting in part the increasing importance of the for-profit sector in the higher education marketplace in recent years (Breneman, Pusser, and Turner 2006). Similarly, Table 2b

been married, or is in a marriage-like relationship at the survey date, or 5) has obtained to the age of 18. By 2003, all respondents had met this last condition and were thereafter deemed independent.

indicates that even though enrollment in any sector is highest between ages 20 and 22, the changes in enrollment between each successive age are not nearly as large for for-profits as they are for other public or non-profit institutions. For example, the percentage of NLSY respondents enrolled in the public sector decreases by 18.3 percent between ages 22 and 23 and 55.8 percent between ages 26 and 27; the percent decline in the private non-profit sector is even larger: 29.6 percent between ages 22 and 23 and 60.2 percent between ages 26 and 27. The numbers enrolled in for-profit colleges remain more stable over age groups, declining by only 6.9 percent between ages 22 and 23 and 41.7 percent between ages 26 and 27. This is likely reflective of for-profit colleges' tendency to serve an older, less traditional population of college students (Berg 2005).

As mentioned above, NLSY97 includes many more individuals that have attended for-profit institutions than other datasets. Although Tables 2a and 2b reveal that for-profit students do not make up a large share of the entire NLSY sample, the sample sizes for the most relevant categories and at the most relevant ages are likely sufficient for our analyses, and it is encouraging that NLSY includes individuals with a diverse array of college experiences. Indeed, recent cross-sectional data of college students from the National Postsecondary Student Aid Study (NPSAS) show that only six percent of college students attended for-profit colleges in 2004 (NPSAS 2004; authors' calculation). Thus, we would not expect a large percentage of the entire NLSY sample (both those who attended college and those who did not) to have attended a proprietary school. More importantly, our data is richer than simply indicating if an individual has ever attended an institution from a certain sector. We have data on individuals who have multiple enrollments in the same year and have simultaneously and successively enrolled in different sectors. This implies a need to study students' college-going trajectories. Because we can track multiple-institution attendance and enrollment changes between institutional sectors

across multiple years, we can analyze how aspects of "student swirl" (Goldrick-Rab 2006;

McCormick 2003; Sturtz 2006) may be patterned and related to later outcomes.


<u>Bivariate Associations</u>

Table 3 shows the relationship between family background characteristics and patterns of

college attendance across the multiple waves of NLSY97. A greater proportion of females than

males enroll in for-profits. Blacks and Hispanics represent a minority of those who report only

ever attending public or private post-secondary institutions. Their combined numbers are far

exceeded by the number of white student attendees in both cases, though the most striking

racial/ethnic discrepancy appears to be at private institutions. Differences in many of the other

background variables are quite stark across the various institution types. Those who were non-

attendees tended 1) to come from a broken family of a sort, 2) had parents with lower income

and a lower income to poverty ratio, 3) to come from larger households consisting of a greater

number of children under age 18, 4) to have a lower high school grade point average, lower SAT

math and verbal and ACT scores, and lower ASVAB percentile scores, and 5) to hail

predominantly from the South. Those who only ever attended a for-profit college or university

fared slightly better than non-attendees on most academic measures. The only exception was

average performance on the ACT. With respect to some family background variables, the means

of for-profit attendees were the same as for non-attendees. The same proportion, a little more

than 30%, came from intact families. Maternal age at first birth and maternal age at respondent's

birth were lowest among these two groups compared to the public, private, and multiple

university attendees. Parental income among respondents who only ever attended a proprietary

school was higher than among respondents who were non-attendees, but lower than the other

three attendee groups. Likewise, parental income to poverty ratio is slightly higher among respondents who attended proprietary institutions than among those who were non-attendees, but compared to the other three attendee groups, it is quite low. A majority of for-profit attendees also hailed from the South.

As we would expect, private university attendees come from the most advantageous backgrounds by all measures. Nearly seven of ten come from intact families. The mean parental income to poverty ratio was greater than 4 among these attendees. Mean parental income, maternal age at first and at respondent's birth, SAT math and verbal score, ACT score, ASVAB percentile are all higher among those who only ever attended a private college or university. Greater than 15% reported attending a private secondary school at study inception, more than double the number among those who only ever attended a public institution, and about three times the proportion of non-attendees and those only ever attending a proprietary institution. Only those who attended multiple institution types came close to the proportion receiving a private education. The majority of private university attendees resided in the Northeast.

Table 4 shows outcomes in the latest wave of data by type of institution in the respondent ever enrolled. Educational outcomes are strongest among private, multi-school, and public attendees—in that order—with for-profit attendees coming in a distant fourth. While about 17% of for-profit attendees have earned their associate's degree—a larger proportion than have received the same degree after attending multiple institution types (only about 10%), a public institution (about 9%), or a private institution (about 4%)—only about 5% have obtained a BA. About 38% of multi-school attendees, 60% of private school attendees, and 26% of public school attendees had received their bachelor's degree by survey year 2007 of the NLSY97. No propriety respondents reported receiving a master's degree or higher, while among all other

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attendee groups, at least 1% but not greater than 6% reported having earned a master's, a Ph.D.,

a professional degree, or some combination of these three.

With regard to income and wages, we find that respondents attending a proprietary

institution have similar outcomes to those who never attend college. The difference in mean log

income between non-attendees and for-profit attendees is negligible, while the difference in

mean self-employment log income between the two favors non-attendees. For-profit attendees

do, however, have an advantage with respect to mean hourly wage. Ultimately, respondents who

attend traditional public or private institutions, both, or a combination of the newer for-profit

institutions and traditional schools appear to have the advantage with respect to income and

wages. Interestingly, when it comes to income earned from one's own business, non-attendees

fare best among all attendee groups, especially in comparison to private university attendees. At

this point, we are unsure whether these bivariate associations reflect differences in work

experience, the effects of college attendance itself, or other uncontrolled factors.


Next Steps

The "counterfactual" causal framework emphasizes the importance of understanding the

process of selection into "treatment" (here, for-profit attendance) for estimating causal effects

(Morgan and Winship 2007). In assessing the effects of for-profits, there are three potential

comparison groups, individuals who attend (a) public or non-profit two-year institutions, (b)

public or non-profit four-year institutions, and (c) individuals who do not attend college. There

are therefore three different corresponding causal effects. Although our bivariate results above

suggest that non-attendees are an appropriate comparison group for proprietary students, we will

begin our multivariate analyses by comparing the pre-college characteristics of students who

attend for-profit colleges with those of the three comparison groups in order to select comparable control group(s). For each comparison, the region of common support will be examined for the propensity score and for key individual pre-college covariates (e.g. parent education, income, grades, AFQT scores).

We will compare individuals who have attended for-profit colleges with the appropriate comparison group(s), focusing on three outcomes – degree completion, employment, and wages – and controlling for pre-college characteristics through regression adjustment and propensity score matching. The key assumption of both these approaches is that there are no unobserved confounders that could account for the association between for-profit attendance and the outcomes. Our first approach for addressing such "selection bias" will be to assess the sensitivity of causal estimates to hypothetical confounders of varying strengths (e.g. Rosenbaum 2002, Aakvik 2001, Harding 2003, Harding 2009).

Our second approach for estimating causal effects in the presence of unobserved confounding is to harness exogenous variation in selection into treatment. The NLSY restricted data include county of residence, allowing us to use geographic variation in access to for-profit colleges as an instrument. Geographic proximity is an important prerequisite for college enrollment, particularly for students from disadvantaged backgrounds (Card 1995, Turley 2009). Past research has used proximity as an instrument for the identification of college effects (Card 1995, Kane and Rouse 1993, Rouse 1995). This identification strategy assumes that the density of for-profit colleges in the county is correlated with individual outcomes only through its effect on for-profit attendance. Because this analysis relies on cross-county comparisons, we will adjust for county characteristics like employment and median income. Such instrumental variable methods estimate the local average treatment effect (LATE), or the effect of the treatment among

those subjects whose treatment status is changed by the instrument. Unless we assume constant treatment effects, the IV models will estimate a different estimand than the regression or matching methods.

An important complication for both types of analysis is that almost half of undergraduates now attend more than one undergraduate institution during their college careers (McCormick 2003), a phenomenon (called "swirling" in the literature) that has a greater impact on low SES students (Sturtz 2006, Goldrick-Rab 2006, Godrick-Rab and Pfeffer 2009). A common strategy is to focus on the first postsecondary institution (e.g. Stephan, Rosenbaum, and Person 2009) or to compare those ever attending vs. never attending one type of institution, both of which we will do. In addition, we will compare outcomes across common sequences of institution types.

We will also estimate the effects of "time-varying treatments" like institution type using inverse-probability of treatment weighting (IPTW) methods developed in epidemiology (Robins, Hernan, and Brumback 2000; see also Hong and Raudenbush 2006). When time-varying outcomes like wages, employment, or degree completion depend on time-varying treatments that are in turn affected by previous outcomes, standard methods to control for confounding variables can sometimes produce biased estimates of treatment effects. Instead of controlling for confounders via regression, inverse-probability-of-treatment weights are constructed that create a "pseudo-population" in which treatment (for-profit attendance) is no longer correlated with control variables in each year, replicating sequential randomization with regard to observed variables. Each observation at each time point is weighted by the inverse probability that it received the treatment it actually received. These probabilities are predicted from the control variables and the history of treatments and outcomes over prior time periods. IPTW estimators

can also incorporate sensitivity analysis that examines assumptions about unobserved covariates (Robins 1999).

We recognize three limitations of this study. First, the sample of for-profit students in the NLSY97 is too small to allow for subgroup analysis or other forms of treatment effect heterogeneity, so we are limited to estimating average treatment effects. Second, with the NLSY data we cannot distinguish students who take all of their courses online, though this is relatively rare. Although the most well-know for-profits, such as the University of Phoenix, are widely perceived to be online colleges, the vast majority of their students attend most of their classes at "brick and mortar" campuses (Breneman et al. 2006). Third, the NLSY contains only students of traditional college age, so we are unable to estimate the effects of for-profits on students who return to school later in life or to examine long-term employment and earnings effects.

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Table 1. Summary statistics for all time-varying dependent and independent variables by year (NLSY97).

| | 1997 | | | 1998 | | | 1999 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | n | Mean | Std. Dev. | n | Mean | Std. Dev. | n | Mean | Std. Dev. | n |
| *Dependent* | | | | | | | | | | |
| Highest degree received[a] | | | | | | | | | | |
|   GED | 8984 | 0.000 | 0.018 | 8384 | 0.003 | 0.050 | 8205 | 0.016 | 0.126 | 8078 |
|   HS Diploma | 8984 | 0.001 | 0.032 | 8384 | 0.080 | 0.272 | 8205 | 0.222 | 0.416 | 8078 |
|   Associates | NA | NA | NA | NA | NA | NA | 8205 | 0.000 | 0.019 | 8078 |
|   Baccalaureate | NA | NA | NA | NA | NA | NA | NA | NA | NA | 8078 |
|   Master's | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
|   PhD | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
|   Professional (JD, MD) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total income from wages (log$) | 3553 | 6.42 | 1.43 | 3384 | 7.10 | 1.48 | 3817 | 7.73 | 1.40 | 4478 |
| Self-employment income (log$) | 12 | 5.51 | 1.63 | 36 | 6.40 | 2.06 | 52 | 7.21 | 1.65 | 63 |
| Hourly compensation (log$) | 1360 | 1.58 | 0.56 | 2280 | 1.71 | 0.48 | 2887 | 1.83 | 0.41 | 3115 |
| | | | | | | | | | | |
| *Independent* | | | | | | | | | | |
| Age | 8984 | 14.307 | 1.475 | 8984 | 15.947 | 1.446 | 8984 | 16.904 | 1.441 | 8984 |
| Independent | 8981 | 0.048 | 0.213 | 8386 | 0.219 | 0.413 | 8208 | 0.378 | 0.485 | 8079 |
| Region[b] | | | | | | | | | | |
|   North Central | 8984 | 0.228 | 0.420 | 8386 | 0.228 | 0.420 | 8208 | 0.226 | 0.418 | 8080 |
|   South | 8984 | 0.374 | 0.484 | 8386 | 0.377 | 0.485 | 8208 | 0.378 | 0.485 | 8080 |
|   West | 8984 | 0.222 | 0.415 | 8386 | 0.221 | 0.415 | 8208 | 0.223 | 0.416 | 8080 |
| Metropolitan Statistical Area status[c] | | | | | | | | | | |
|   In Metropolitan Statistical Area, not in central city | 8984 | 0.491 | 0.500 | 8386 | 0.501 | 0.500 | 8208 | 0.503 | 0.500 | 8080 |
|   In Metropolitan Statistical Area, in central city | 8984 | 0.322 | 0.467 | 8386 | 0.315 | 0.465 | 8208 | 0.314 | 0.464 | 8080 |
|   In Metropolitan Statistical Area, unkown | 8984 | 0.011 | 0.104 | 8386 | 0.007 | 0.085 | 8208 | 0.008 | 0.087 | 8080 |
|   Outside of U.S. | NA | NA | NA | 8386 | 0.002 | 0.049 | 8208 | 0.003 | 0.051 | 8080 |
| Marital status[d] | | | | | | | | | | |
|   Married | 1672 | 0.002 | 0.042 | 3274 | 0.013 | 0.111 | 4846 | 0.022 | 0.148 | 6413 |
|   Separated | 1672 | 0.001 | 0.024 | 3274 | 0.001 | 0.030 | 4846 | 0.001 | 0.025 | 6413 |
|   Divorced | NA | NA | NA | NA | NA | NA | 4846 | 0.000 | 0.020 | 6413 |
|   Widowed | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Number of respondent's own children in household | 8984 | 0.0 | 0.1 | 8984 | 0.0 | 0.2 | 8984 | 0.1 | 0.2 | 8984 |
| Household size[e] | NA | NA | NA | 8384 | 4.421 | 1.560 | 8208 | 4.304 | 1.609 | 8080 |
| Household members under age 18[e] | NA | NA | NA | 8369 | 2.097 | 1.361 | 8195 | 1.769 | 1.339 | 8074 |
| Enrolled | 8982 | 7.821 | 1.107 | 8384 | 7.334 | 2.102 | 8203 | 6.923 | 2.657 | 8073 |
| Total # of jobs worked[f] | 8984 | 0.262 | 0.580 | 8984 | 0.814 | 1.043 | 8984 | 0.994 | 1.018 | 8984 |
| Number of months received government aid | 8651 | 0.201 | 1.425 | 8646 | 0.331 | 1.824 | 8634 | 0.498 | 2.211 | 8622 |
| Government aid amount received (log$) | 183 | 6.95 | 1.47 | 317 | 6.91 | 1.36 | 489 | 6.95 | 1.37 | 670 |
| Population size | 8916 | 1,011,877 | 1,884,017 | 8920 | 1,014,521 | 1,885,656 | 8921 | 1,018,264 | 1,893,310 | 8921 |
| Unemployment rate | 8916 | 5.4 | 2.7 | 8920 | 4.9 | 2.5 | 8921 | 4.5 | 2.3 | 8921 |
| Count of postsecondary, degree-granting institutions in county | 7781 | 14.8 | 22.5 | 7253 | 14.8 | 22.9 | 7142 | 14.6 | 22.8 | 6929 |

[a]Highest degree received is represented as a set of dummy variables whose reference category is "None." [b]Northeast is the census region reference category. [c]The reference category for the Metropolitan Statistical Area vari[...] married" is the reference category. [e]The 1997 values for household size and count of household members are treated as time invariant background family variables. They are therefore not reported in this table. As NLSY97 pa[...] independence, and begin their own families, however, the values reported for these variables reflect circumstances that may imp[...], at any given period, respondents' educational attainment, income, or both. [f]The variable den[...] a given year was created from the employer roster and is available for all respondents in all years, even when the respondent was not surveyed.

Table 1 continued.

| | 2001 | | | 2002 | | | 2003 | | | 2004 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | Mean | Std. Dev. | n | Mean | Std. Dev. | n | Mean | Std. Dev. | n | Mean | Std. Dev. |
| *Dependent* | | | | | | | | | | | | |
| Highest degree received[a] | | | | | | | | | | | | |
| GED | 7874 | 0.047 | 0.212 | 7881 | 0.065 | 0.247 | 7733 | 0.078 | 0.268 | 7477 | 0.085 | 0.279 |
| HS Diploma | 7874 | 0.522 | 0.500 | 7881 | 0.665 | 0.472 | 7733 | 0.684 | 0.465 | 7477 | 0.650 | 0.477 |
| Associates | 7874 | 0.005 | 0.072 | 7881 | 0.013 | 0.112 | 7733 | 0.026 | 0.160 | 7477 | 0.040 | 0.196 |
| Baccalureate | 7874 | 0.002 | 0.039 | 7881 | 0.012 | 0.111 | 7733 | 0.045 | 0.207 | 7477 | 0.082 | 0.275 |
| Master's | NA | NA | NA | 7881 | 0.000 | 0.011 | 7733 | 0.001 | 0.023 | 7477 | 0.002 | 0.046 |
| PhD | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Professional (JD, MD) | NA | NA | NA | NA | NA | NA | NA | NA | NA | 7477 | 0.000 | 0.012 |
| Total income from wages (log$) | 4315 | 8.57 | 1.19 | 4499 | 8.85 | 1.16 | 4457 | 9.14 | 1.11 | 4558 | 9.39 | 1.03 |
| Self-employment income (log$) | 104 | 7.70 | 1.47 | 115 | 7.76 | 1.76 | 89 | 8.06 | 1.57 | 113 | 8.35 | 1.72 |
| Hourly compensation (log$) | 3144 | 2.04 | 0.52 | 3221 | 2.13 | 0.58 | 3260 | 2.22 | 0.63 | 3260 | 2.32 | 0.61 |
| | | | | | | | | | | | | |
| *Independent* | | | | | | | | | | | | |
| Age | 8984 | 18.932 | 1.443 | 8984 | 19.937 | 1.425 | 8984 | 20.886 | 1.449 | 8984 | 21.907 | 1.449 |
| Independent | 7882 | 0.748 | 0.434 | 7896 | 0.915 | 0.278 | 8984 | 1.000 | 0.000 | 8984 | 1.000 | 0.000 |
| Region[b] | | | | | | | | | | | | |
| North Central | 7882 | 0.222 | 0.416 | 7896 | 0.222 | 0.416 | 7754 | 0.223 | 0.416 | 7502 | 0.219 | 0.414 |
| South | 7882 | 0.381 | 0.486 | 7896 | 0.383 | 0.486 | 7754 | 0.384 | 0.486 | 7502 | 0.388 | 0.487 |
| West | 7882 | 0.223 | 0.416 | 7896 | 0.223 | 0.416 | 7754 | 0.222 | 0.416 | 7502 | 0.223 | 0.416 |
| Metropolitan Statistical Area status[c] | | | | | | | | | | | | |
| In Metropolitan Statistical Area, not in central city | 7882 | 0.496 | 0.500 | 7896 | 0.488 | 0.500 | 7754 | 0.486 | 0.500 | 7502 | 0.514 | 0.500 |
| In Metropolitan Statistical Area, in central city | 7882 | 0.318 | 0.466 | 7896 | 0.327 | 0.469 | 7754 | 0.334 | 0.472 | 7502 | 0.410 | 0.492 |
| In Metropolitan Statistical Area, unkown | 7882 | 0.010 | 0.099 | 7896 | 0.009 | 0.096 | 7754 | 0.009 | 0.096 | 7502 | 0.017 | 0.128 |
| Outside of U.S. | 7882 | 0.003 | 0.053 | 7896 | 0.004 | 0.060 | 7754 | 0.003 | 0.058 | 7502 | 0.005 | 0.074 |
| Marital status[d] | | | | | | | | | | | | |
| Married | 7875 | 0.053 | 0.224 | 7894 | 0.073 | 0.261 | 7749 | 0.105 | 0.307 | 7493 | 0.142 | 0.349 |
| Separated | 7875 | 0.002 | 0.045 | 7894 | 0.005 | 0.069 | 7749 | 0.006 | 0.079 | 7493 | 0.007 | 0.085 |
| Divorced | 7875 | 0.002 | 0.041 | 7894 | 0.003 | 0.054 | 7749 | 0.006 | 0.077 | 7493 | 0.011 | 0.102 |
| Widowed | NA | NA | NA | 7894 | 0.000 | 0.016 | 7749 | 0.000 | 0.020 | 7493 | 0.000 | 0.016 |
| Number of respondent's own children in household | 8984 | 0.1 | 0.4 | 8984 | 0.2 | 0.5 | 8984 | 0.2 | 0.6 | 8984 | 0.3 | 0.7 |
| Household size[e] | 7880 | 4.012 | 1.718 | 7896 | 3.815 | 1.748 | 7754 | 3.588 | 1.734 | 7502 | 3.389 | 1.718 |
| Household members under age 18[e] | 7879 | 1.156 | 1.282 | 7892 | 0.869 | 1.142 | 7749 | 0.761 | 1.074 | 7496 | 0.723 | 1.058 |
| Enrolled | 7869 | 5.973 | 3.328 | 7878 | 5.578 | 3.473 | 7732 | 5.309 | 3.420 | 7481 | 5.109 | 3.260 |
| Total # of jobs worked[f] | 8984 | 1.395 | 1.090 | 8984 | 1.415 | 1.072 | 8984 | 1.373 | 1.036 | 8984 | 1.379 | 1.047 |
| Number of months received government aid | 8536 | 0.908 | 2.955 | 8465 | 1.157 | 3.289 | 8392 | 1.407 | 3.580 | 8331 | 1.629 | 3.829 |
| Government aid amount received (log$) | 852 | 7.06 | 1.31 | 1088 | 7.11 | 1.29 | 1319 | 7.15 | 1.34 | 1455 | 7.26 | 1.31 |
| Population size | 8921 | 1,053,315 | 1,948,555 | 8966 | 1,070,673 | 1,951,604 | 8970 | 1,076,334 | 1,942,613 | 8973 | 1,077,049 | 1,926,740 |
| Unemployment rate | 8921 | 4.8 | 1.5 | 8966 | 5.7 | 1.7 | 8970 | 6.0 | 1.7 | 8973 | 5.6 | 1.5 |
| Count of postsecondary, degree-granting institutions in county | 6744 | 18.2 | 30.6 | 6807 | 17.0 | 27.4 | 6714 | 16.4 | 25.3 | 6537 | 16.0 | 24.3 |

Table 1 continued.

| | 2005 | | | 2006 | | | 2007 | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | Mean | Std. Dev. | n | Mean | Std. Dev. | n | Mean | Std. Dev. |
| *Dependent* | | | | | | | | | |
| Highest degree received[a] | | | | | | | | | |
| GED | 7317 | 0.098 | 0.297 | 7537 | 0.104 | 0.305 | 7398 | 0.110 | 0.313 |
| HS Diploma | 7317 | 0.599 | 0.490 | 7537 | 0.549 | 0.498 | 7398 | 0.503 | 0.500 |
| Associates | 7317 | 0.047 | 0.213 | 7537 | 0.053 | 0.224 | 7398 | 0.059 | 0.236 |
| Baccalureate | 7317 | 0.122 | 0.327 | 7537 | 0.162 | 0.369 | 7398 | 0.192 | 0.394 |
| Master's | 7317 | 0.004 | 0.062 | 7537 | 0.004 | 0.062 | 7398 | 0.013 | 0.113 |
| PhD | NA | NA | NA | 7537 | 0.000 | 0.016 | 7398 | 0.001 | 0.028 |
| Professional (JD, MD) | 7317 | 0.001 | 0.023 | 7537 | 0.002 | 0.041 | 7398 | 0.003 | 0.056 |
| Total income from wages (log$) | 5057 | 9.60 | 1.00 | 5058 | 9.80 | 0.96 | 5427 | 9.93 | 0.94 |
| Self-employment income (log$) | 155 | 8.57 | 1.64 | 185 | 8.61 | 1.70 | 213 | 8.68 | 1.70 |
| Hourly compensation (log$) | 3384 | 2.42 | 0.61 | 3605 | 2.53 | 0.69 | 3644 | 2.62 | 0.72 |
| | | | | | | | | | |
| *Independent* | | | | | | | | | |
| Age | 8984 | 22.867 | 1.448 | 8984 | 23.840 | 1.446 | 8984 | 24.789 | 1.453 |
| Independent | 8984 | 1.000 | 0.000 | 8984 | 1.000 | 0.000 | 8984 | 1.000 | 0.000 |
| Region[b] | | | | | | | | | |
| North Central | 7338 | 0.217 | 0.412 | 7559 | 0.215 | 0.411 | 7418 | 0.214 | 0.410 |
| South | 7338 | 0.391 | 0.488 | 7559 | 0.391 | 0.488 | 7418 | 0.394 | 0.489 |
| West | 7338 | 0.225 | 0.417 | 7559 | 0.228 | 0.419 | 7418 | 0.228 | 0.420 |
| Metropolitan Statistical Area status[c] | | | | | | | | | |
| In Metropolitan Statistical Area, not in central city | 7338 | 0.513 | 0.500 | 7559 | 0.510 | 0.500 | 7418 | 0.507 | 0.500 |
| In Metropolitan Statistical Area, in central city | 7338 | 0.416 | 0.493 | 7559 | 0.410 | 0.492 | 7418 | 0.414 | 0.492 |
| In Metropolitan Statistical Area, unkown | 7338 | 0.008 | 0.089 | 7559 | 0.021 | 0.144 | 7418 | 0.022 | 0.146 |
| Outside of U.S. | 7338 | 0.005 | 0.073 | 7559 | 0.006 | 0.074 | 7418 | 0.006 | 0.079 |
| Marital status[d] | | | | | | | | | |
| Married | 7330 | 0.181 | 0.385 | 7547 | 0.215 | 0.411 | 7404 | 0.241 | 0.428 |
| Separated | 7330 | 0.006 | 0.078 | 7547 | 0.006 | 0.078 | 7404 | 0.010 | 0.099 |
| Divorced | 7330 | 0.018 | 0.134 | 7547 | 0.026 | 0.159 | 7404 | 0.034 | 0.182 |
| Widowed | 7330 | 0.000 | 0.020 | 7547 | 0.001 | 0.026 | 7404 | 0.001 | 0.028 |
| Number of respondent's own children in household | 8984 | 0.3 | 0.7 | 8984 | 0.4 | 0.8 | 8984 | 0.5 | 0.9 |
| Household size[e] | 7337 | 3.269 | 1.701 | 7559 | 3.219 | 1.656 | 7418 | 3.174 | 1.638 |
| Household members under age 18[e] | 7324 | 0.724 | 1.092 | 7545 | 0.757 | 1.107 | 7409 | 0.799 | 1.131 |
| Enrolled | 7317 | 4.903 | 3.092 | 7541 | 4.702 | 2.903 | 7398 | 4.601 | 2.734 |
| Total # of jobs worked[f] | 8984 | 1.326 | 1.008 | 8984 | 1.332 | 0.997 | 8984 | 1.259 | 0.980 |
| Number of months received government aid | 8218 | 1.743 | 3.941 | 8055 | 1.773 | 3.967 | 7953 | 1.849 | 4.041 |
| Government aid amount received (log$) | 1553 | 7.27 | 1.33 | 1535 | 7.36 | 1.28 | 1558 | 7.43 | 1.28 |
| Population size | 8975 | 1,097,234 | 1,936,299 | 8976 | 1,107,251 | 1,937,603 | 8976 | 1,117,651 | 1,931,766 |
| Unemployment rate | 8975 | 5.3 | 1.5 | 8976 | 4.8 | 1.4 | 8976 | 4.8 | 1.4 |
| Count of postsecondary, degree-granting institutions in county | 6382 | 16.6 | 24.8 | 6591 | 17.1 | 26.7 | 6459 | 17.4 | 26.8 |

TABLE 2a. College enrollment by year across 12 waves of the NLSY97 (weighted % and raw n).

| Year (total n) | Public | | | Private Non-Profit | | | For-Profit | | | Other | Not |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Any Level | 4-Year + | 2-Year | Any Level | 4-Year + | 2-Year | Any Level | 4-Year + | 2-Year | Any Level | Not Enrolled |
| 1997 | 0.26 | 0.07 | 0.19 | 0.05 | 0.04 | 0.01 | 0 | 0 | 0 | 0.01 | 99.68 |
| (8984) | (21) | (6) | (15) | (6) | (5) | (1) | (0) | (0) | (0) | (2) | (8955) |
| 1998 | 2.74 | 1.11 | 1.65 | 0.45 | 0.42 | 0.03 | 0.11 | 0.01 | 0.05 | 0.09 | 96.65 |
| (8386) | (207) | (80) | (127) | (32) | (30) | (2) | (8) | (1) | (4) | (6) | (8136) |
| 1999 | 10.72 | 5.39 | 5.57 | 2.55 | 2.42 | 0.11 | 0.57 | 0.08 | 0.39 | 0.26 | 86.21 |
| (8208) | (774) | (372) | (417) | (175) | (165) | (8) | (44) | (7) | (28) | (22) | (7215) |
| 2000 | 17.98 | 9.3 | 9.32 | 3.85 | 3.71 | 0.15 | 0.88 | 0.23 | 0.42 | 0.52 | 77.43 |
| (8080) | (1300) | (636) | (704) | (265) | (254) | (11) | (76) | (22) | (31) | (34) | (6451) |
| 2001 | 25.44 | 13.76 | 12.82 | 5.42 | 5.29 | 0.13 | 1.18 | 0.46 | 0.53 | 0.84 | 68.14 |
| (7882) | (1833) | (940) | (971) | (376) | (366) | (10) | (103) | (37) | (47) | (57) | (5590) |
| 2002 | 32.3 | 18.09 | 15.75 | 6.81 | 6.68 | 0.14 | 1.5 | 0.73 | 0.55 | 0.92 | 59.71 |
| (7896) | (2360) | (1255) | (1207) | (473) | (461) | (12) | (137) | (63) | (53) | (67) | (4943) |
| 2003 | 37.37 | 22.07 | 17.3 | 8.63 | 8.55 | 0.07 | 1.96 | 1.04 | 0.72 | 0.76 | 53.17 |
| (7754) | (2724) | (1533) | (1324) | (589) | (581) | (7) | (166) | (82) | (64) | (56) | (4345) |
| 2004 | 35.11 | 21.56 | 15.43 | 8.02 | 7.94 | 0.08 | 2.02 | 1.23 | 0.59 | 0.81 | 55.68 |
| (7502) | (2500) | (1456) | (1171) | (534) | (524) | (9) | (176) | (96) | (58) | (57) | (4343) |
| 2005 | 30.82 | 19.21 | 12.82 | 7.03 | 6.98 | 0.04 | 2.28 | 1.55 | 0.47 | 0.66 | 60.72 |
| (7338) | (2167) | (1270) | (976) | (462) | (455) | (6) | (188) | (117) | (45) | (44) | (4583) |
| 2006 | 25.4 | 15.94 | 10.44 | 5.93 | 5.9 | 0.03 | 2.34 | 1.57 | 0.52 | 0.71 | 66.82 |
| (7559) | (1818) | (1103) | (786) | (393) | (388) | (5) | (194) | (129) | (43) | (54) | (5182) |
| 2007 | 20.04 | 12.41 | 8.24 | 4.74 | 4.73 | 0.01 | 2.45 | 1.7 | 0.53 | 0.76 | 72.71 |
| (7418) | (1427) | (851) | (620) | (308) | (307) | (1) | (206) | (142) | (44) | (58) | (5471) |
| 2008 | 3.56 | 1.96 | 1.61 | 0.58 | 0.56 | 0.02 | 0.41 | 0.35 | 0.05 | 0.05 | 95.4 |
| (7490) | (263) | (145) | (118) | (41) | (40) | (1) | (36) | (28) | (7) | (5) | (7145) |

TABLE 2b. College enrollment statistics by age for 15 – 29 year-olds in NLSY97, all years combined (weighted % and raw n).

| Age (total n) | Public | | | Private Non-Profit | | | For-Profit | | | Other | Not |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Any Level | 4-Year + | 2-Year | Any Level | 4-Year + | 2-Year | Any Level | 4-Year + | 2-Year | Any Level | Enrolled |
| 15 | 0.15 | 0.06 | 0.09 | 0.03 | 0.01 | 0.02 | 0 | 0 | 0 | 0 | 99.82 |
| (5288) | (8) | (3) | (5) | (2) | (1) | (1) | (0) | (0) | (0) | (0) | (5278) |
| 16 | 0.69 | 0.08 | 0.61 | 0.07 | 0.07 | 0 | 0 | 0 | 0 | 0.06 | 99.18 |
| (6707) | (44) | (5) | (39) | (5) | (5) | (0) | (0) | (0) | (0) | (3) | (6655) |
| 17 | 2.25 | 0.51 | 1.68 | 0.22 | 0.17 | 0.04 | 0.1 | 0.03 | 0.05 | 0.12 | 97.34 |
| (7221) | (150) | (34) | (112) | (16) | (13) | (3) | (6) | (2) | (3) | (10) | (7041) |
| 18 | 13.73 | 5.94 | 7.92 | 2.33 | 2.24 | 0.09 | 0.65 | 0.18 | 0.32 | 0.42 | 83.05 |
| (8059) | (1039) | (442) | (607) | (172) | (165) | (6) | (54) | (17) | (27) | (31) | (6778) |
| 19 | 33.96 | 17.87 | 17.81 | 7.35 | 7.13 | 0.2 | 1.57 | 0.37 | 0.88 | 0.84 | 57.65 |
| (7855) | (2495) | (1266) | (1344) | (521) | (503) | (16) | (136) | (35) | (71) | (62) | (4740) |
| 20 | 42.07 | 23.46 | 20.77 | 9.53 | 9.35 | 0.18 | 2.22 | 1.13 | 0.78 | 0.78 | 47.12 |
| (7833) | (3076) | (1632) | (1592) | (656) | (641) | (16) | (199) | (91) | (71) | (58) | (3968) |
| 21 | 39.36 | 23.55 | 17.91 | 9.16 | 9.03 | 0.13 | 2.05 | 1.21 | 0.59 | 1.22 | 50.28 |
| (7737) | (2843) | (1612) | (1377) | (621) | (610) | (11) | (179) | (97) | (59) | (85) | (4149) |
| 22 | 36.68 | 23.95 | 14.48 | 9.23 | 9.12 | 0.11 | 2.11 | 1.16 | 0.63 | 0.94 | 53.02 |
| (7725) | (2648) | (1636) | (1132) | (615) | (603) | (12) | (189) | (101) | (60) | (67) | (4339) |
| 23 | 30.11 | 19.98 | 11.26 | 6.35 | 6.33 | 0.02 | 2.04 | 1.27 | 0.59 | 0.63 | 62.21 |
| (7652) | (2164) | (1361) | (878) | (433) | (429) | (3) | (176) | (104) | (54) | (46) | (4931) |
| 24 | 19.68 | 12.39 | 7.9 | 4.16 | 4.14 | 0.01 | 1.61 | 1.22 | 0.3 | 0.52 | 74.7 |
| (7422) | (1391) | (842) | (585) | (272) | (269) | (2) | (133) | (93) | (29) | (35) | (5633) |
| 25 | 15.08 | 9.01 | 6.48 | 3.49 | 3.48 | 0 | 1.93 | 1.33 | 0.43 | 0.49 | 79.57 |
| (5935) | (847) | (483) | (390) | (183) | (182) | (0) | (125) | (85) | (28) | (30) | (4782) |
| 26 | 10.8 | 5.57 | 5.69 | 2.86 | 2.85 | 0.01 | 1.67 | 1.18 | 0.37 | 0.57 | 84.44 |
| (4364) | (450) | (226) | (240) | (108) | (107) | (1) | (84) | (59) | (16) | (25) | (3713) |
| 27 | 7.94 | 3.85 | 4.14 | 1.89 | 1.83 | 0.06 | 1.73 | 1.29 | 0.26 | 0.35 | 88.3 |
| (2773) | (199) | (90) | (110) | (43) | (41) | (2) | (49) | (36) | (6) | (10) | (2477) |
| 28 | 3.38 | 1.13 | 2.24 | 0.67 | 0.67 | 0 | 0.22 | 0.22 | 0 | 0 | 95.73 |
| (1235) | (37) | (14) | (23) | (7) | (7) | (0) | (4) | (4) | (0) | (0) | (1187) |
| 29 | 6.68 | 3.46 | 3.23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 93.32 |
| (45) | (2) | (1) | (1) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (43) |

TABLE 3. Summary statistics of background variables by type of post-secondary institution attended across 12 waves of the NLSY97.

| Variable | Non-Degree-Granting or No College Attended (n = 3417) | | Attended Public 2- or 4-Year College Only (n = 3816) | | Attended Private 2- or 4-Year College Only (n = 444) | | Attended Proprietary 2- or 4-Year College Only (n = 307) | | Attended More Than One College Type (n = 1,000) | | % Missing Across All College Types (n = 8984) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. | |
| Sex[a] | | | | | | | | | | | 0.0 |
| Male | 0.590 | 0.490 | 0.480 | 0.500 | 0.480 | 0.500 | 0.420 | 0.490 | 0.410 | 0.490 | |
| Ethnicity/Race[b] | | | | | | | | | | | 0.0 |
| Black | 0.300 | 0.450 | 0.230 | 0.420 | 0.190 | 0.400 | 0.340 | 0.470 | 0.270 | 0.440 | |
| Hispanic | 0.250 | 0.430 | 0.200 | 0.400 | 0.110 | 0.310 | 0.250 | 0.430 | 0.180 | 0.380 | |
| American Indian/Alaska Native | 0.005 | 0.070 | 0.004 | 0.070 | 0.000 | 0.000 | 0.010 | 0.110 | 0.005 | 0.070 | |
| Asian/Pacific Islander | 0.008 | 0.090 | 0.020 | 0.150 | 0.020 | 0.140 | 0.020 | 0.130 | 0.030 | 0.160 | |
| Other race/ethnicity specified | 0.010 | 0.100 | 0.020 | 0.120 | 0.020 | 0.140 | 0.020 | 0.130 | 0.010 | 0.100 | |
| Intact family[c] | 0.330 | 0.470 | 0.520 | 0.500 | 0.680 | 0.470 | 0.330 | 0.470 | 0.540 | 0.500 | 12.9 |
| Parental Household Income (log$) | 9.990 | 1.120 | 10.520 | 1.010 | 10.840 | 0.930 | 10.120 | 1.180 | 10.680 | 0.970 | 27.8 |
| Parental household income to poverty ratio | 1.956 | 1.781 | 3.230 | 2.808 | 4.289 | 3.801 | 2.261 | 2.172 | 3.728 | 3.172 | 27.0 |
| Household size at study inception | 4.710 | 1.680 | 4.440 | 1.420 | 4.440 | 1.350 | 4.500 | 1.520 | 4.450 | 1.530 | 0.0 |
| Household members under age 18 at study inception | 2.650 | 1.380 | 2.330 | 1.190 | 2.270 | 1.070 | 2.490 | 1.260 | 2.310 | 1.260 | 0.0 |
| Maternal age at first birth | 21.4 | 4.6 | 23.4 | 4.9 | 25.0 | 5.0 | 21.5 | 4.5 | 23.9 | 4.9 | 8.0 |
| Maternal age at respondent's birth | 24.4 | 5.4 | 26.2 | 5.4 | 27.5 | 5.2 | 24.0 | 4.9 | 26.3 | 5.6 | 6.8 |
| HS GPA | 2.460 | 0.590 | 2.960 | 0.550 | 3.190 | 0.540 | 2.600 | 0.520 | 3.050 | 0.560 | 33.2 |
| Took SAT | 0.810 | 0.390 | 0.690 | 0.460 | 0.760 | 0.430 | 0.750 | 0.440 | 0.700 | 0.460 | 60.8 |
| SAT math score | 3.090 | 1.400 | 3.760 | 1.140 | 4.320 | 1.110 | 3.520 | 1.490 | 3.930 | 1.150 | 72.6 |
| SAT verbal score | 3.280 | 1.350 | 3.730 | 1.090 | 4.310 | 1.040 | 3.320 | 1.170 | 3.940 | 1.100 | 73.0 |
| Took ACT | 0.300 | 0.460 | 0.460 | 0.500 | 0.470 | 0.500 | 0.330 | 0.470 | 0.450 | 0.500 | 60.8 |
| ACT score | 3.730 | 0.920 | 4.030 | 0.810 | 4.420 | 0.910 | 3.690 | 0.810 | 4.220 | 0.840 | 77.7 |
| ASVAB (percentile) | 28.0 | 23.6 | 53.3 | 27.1 | 67.3 | 26.6 | 36.0 | 23.9 | 59.4 | 27.3 | 21.1 |
| School type[d] | | | | | | | | | | | 0.2 |
| Parochial | 0.025 | 0.157 | 0.060 | 0.238 | 0.149 | 0.356 | 0.023 | 0.150 | 0.104 | 0.306 | |
| Private, not parochial | 0.004 | 0.059 | 0.011 | 0.103 | 0.018 | 0.133 | 0.007 | 0.081 | 0.012 | 0.109 | |
| Other | 0.039 | 0.194 | 0.014 | 0.118 | 0.029 | 0.169 | 0.036 | 0.186 | 0.027 | 0.162 | |
| Census Region[e] | | | | | | | | | | | 0.0 |
| North Central | 0.210 | 0.410 | 0.240 | 0.420 | 0.250 | 0.430 | 0.180 | 0.390 | 0.260 | 0.440 | |
| South | 0.410 | 0.490 | 0.360 | 0.480 | 0.270 | 0.450 | 0.340 | 0.470 | 0.330 | 0.470 | |
| West | 0.200 | 0.400 | 0.250 | 0.440 | 0.130 | 0.340 | 0.210 | 0.410 | 0.210 | 0.400 | |
| Urban[f] | 0.710 | 0.450 | 0.740 | 0.440 | 0.740 | 0.440 | 0.770 | 0.420 | 0.760 | 0.430 | 0.0 |
| % in county with college degree - 2000 Census | 27.9 | 8.1 | 29.2 | 8.6 | 31.7 | 9.2 | 29.2 | 8.0 | 30.1 | 8.6 | 0.8 |
| % in county who are nonwhite - 2000 Census | 34.5 | 21.9 | 33.7 | 21.4 | 29.5 | 21.0 | 37.2 | 22.6 | 34.1 | 21.1 | 0.8 |
| county per capita income (log$) - 2000 Census | 9.90 | 0.22 | 9.93 | 0.24 | 10.00 | 0.24 | 9.91 | 0.23 | 9.96 | 0.23 | 0.8 |

*Notes:* NLSY97 = National Longitudinal Survey of Youth, 1997 Cohort. ASVAB = Armed Services Vocational Aptitude Battery.

[a]Female is the reference category. [b]White is the reference category. Individuals for whom no information on race was given are not coded as missing, but rather as "No Information Given." This category is excluded here. [c]Intact family refers to a family where both the biological mother and father were present at study inception. Nine other categories of this family structure variable are present in the data, but are excluded here. [d]Public school is the reference category. [e]Northeast is the census region reference category. [f]Rural is the reference category. A third category of urbanicity exists in the data, coded as "Urbanicity unknown," but is excluded here.

TABLE 4. Summary statistics of year 2007 outcomes by type of post-secondary institution attended (NLSY97).

| Variable | Non-Degree-Granting or No College Attended (n = 3417) | | Attended Public 2- or 4-Year College Only (n = 3816) | | Attended Private 2- or 4-Year College Only (n = 444) | | Attended Proprietary 2- or 4-Year College Only (n = 307) | | Attended More Than One College Type (n = 1,000) | | % Missing Across All College Types (n = 8984) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. | |
| *Dependent* | | | | | | | | | | | |
| Highest Degree Received[a] | | | | | | | | | | | 17.7 |
| GED | 0.204 | 0.403 | 0.068 | 0.252 | 0.020 | 0.139 | 0.117 | 0.321 | 0.027 | 0.163 | |
| HS Diploma | 0.486 | 0.500 | 0.546 | 0.498 | 0.308 | 0.462 | 0.647 | 0.479 | 0.429 | 0.495 | |
| Associates | NA | NA | 0.087 | 0.282 | 0.037 | 0.188 | 0.165 | 0.372 | 0.101 | 0.302 | |
| Baccalaureate | NA | NA | 0.260 | 0.439 | 0.602 | 0.490 | 0.045 | 0.208 | 0.373 | 0.484 | |
| Master's | NA | NA | 0.013 | 0.111 | 0.023 | 0.149 | 0.000 | 0.000 | 0.051 | 0.221 | |
| PhD | NA | NA | 0.001 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 | 0.057 | |
| Professional (JD, MD) | NA | NA | 0.002 | 0.049 | 0.008 | 0.092 | 0.000 | 0.000 | 0.013 | 0.114 | |
| Total income from wages (log$) | 9.71 | 1.04 | 10.04 | 0.84 | 10.21 | 0.88 | 9.75 | 1.12 | 10.03 | 0.94 | 39.6 |
| Self-employment income (log$) | 8.88 | 1.48 | 8.70 | 1.90 | 7.92 | 1.46 | 8.17 | 1.66 | 8.67 | 1.63 | 97.6 |
| Hourly compensation (log$) | 2.47 | 0.75 | 2.68 | 0.73 | 2.74 | 0.56 | 2.63 | 0.67 | 2.76 | 0.60 | 59.4 |

*Notes:* NLSY97 = National Longitudinal Survey of Youth, 1997 Cohort. [a]Highest degree received is represented as a set of dummy variables whose reference category is "None." Information on total income from wages (log$) and self-employment income (log$) refer to income received over the entire 2007 year; these values were gathered in round 12 of the NLSY97 survey. Hourly compensation refers to the highest reported wage a respondent received from all jobs worked in year 2007.