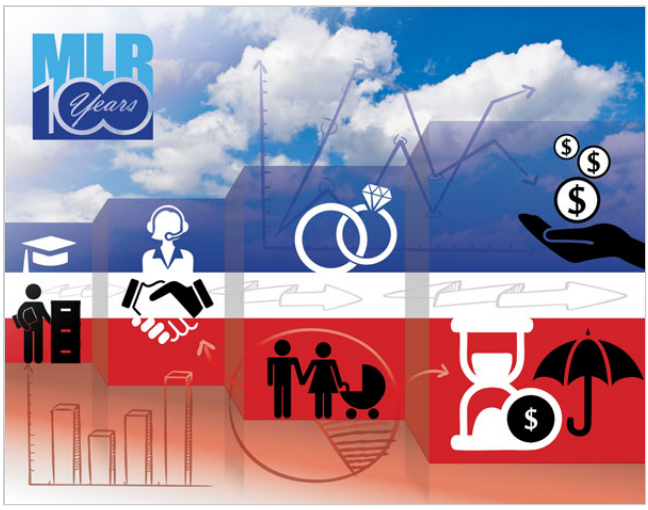
Monthly Labor Review

BLS

September 2015

The National Longitudinal Surveys of Youth: research highlights

To help mark the Monthly Labor Review's centennial, the editors invited several producers and users of BLS data to take a look back at the last 100 years. This article highlights research based on data from the National Longitudinal Surveys of Youth. The studies presented demonstrate the breadth and uniqueness of the surveys, covering topics from employment and education to health and criminal behavior.



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Interviewing the same individuals every year or two for several decades and asking them detailed questions about all aspects of their lives allows us to learn things we can learn in no other way. For nearly 50 years, the National Longitudinal Surveys (NLS) program has used this approach to gather data that give a unique perspective on the lives of ordinary Americans. Because the NLS program asks respondents about their hopes and dreams when they are young and follows their experiences as they age, we can see how past actions and aspirations affect respondent lives today. And because the NLS program asks about a wide variety of topics, from education and employment to health and family life, we can see how experiences in one domain of life affect other domains—for example, how family experiences affect educational achievement and, years later, how these both affect labor market success.

This article focuses on the National Longitudinal Surveys of Youth, which provide comprehensive information about two cohorts of Americans. The older group, included in the National Longitudinal Survey of Youth 1979 (NLSY79), consists of individuals born from 1957 to 1964 who were age 14 to 22 when first interviewed in 1979. The younger group, included in the National Longitudinal Survey of Youth 1997 (NLSY97), consists of individuals born from 1980 to 1984 who were age 12 to 17 when first interviewed in

1997. The NLSY79 cohort has been interviewed 26 times since the late 1970s, and the children of the women in this sample (captured in the Children of the NLSY79 survey) have been assessed and interviewed 15 times since 1986; the NLSY97 cohort has been interviewed 16 times since the late 1990s.

The primary focus of these surveys is labor force and employment behavior. However, the NLS program takes a holistic approach to capturing information about employment. Anything that affects how much one works, what type of job one has, or how much one earns is fair game in NLS interviews. Thus, in addition to asking about narrowly defined employment topics such as occupation, working hours, and compensation, the surveys ask about education, health, marriage, children, wealth, criminal behavior, and the use of government programs. This approach gives researchers a very complete picture of how work is integrated into American lives.

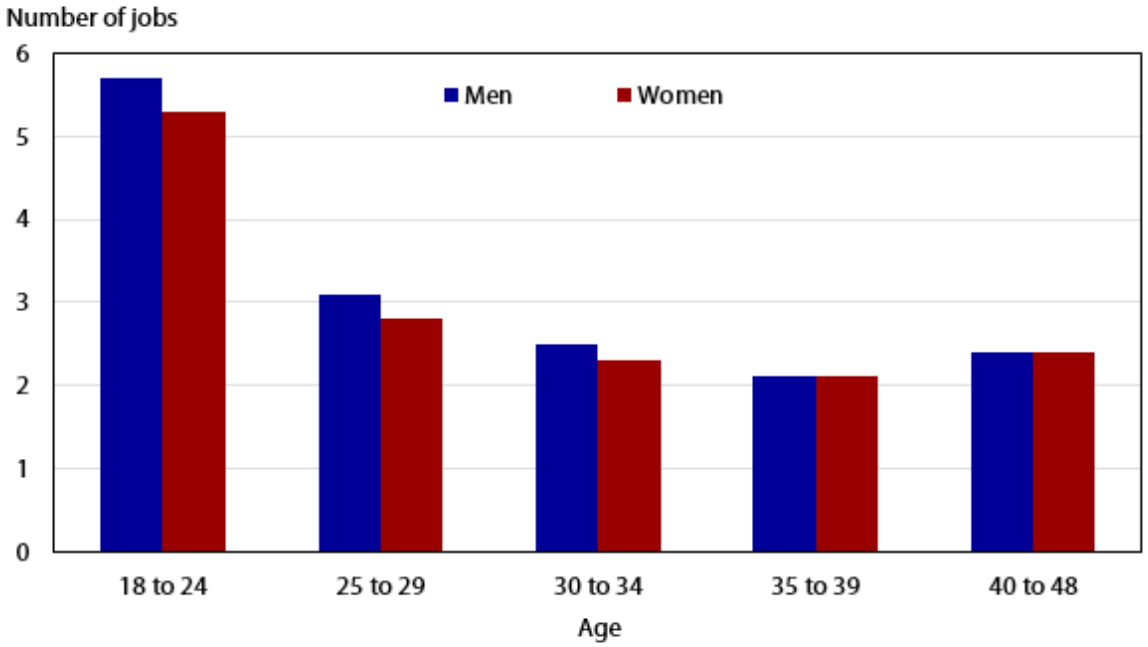
The National Longitudinal Surveys have informed social science research, policy, and the public about issues of vital concern. Because of their quality, breadth, and thoroughness, the surveys have provided some of the most analyzed data in the social sciences. These data have been used in thousands of journal articles, working papers, Ph.D. dissertations, and books that have shaped theory and knowledge in a diverse set of disciplines, including economics, sociology, education, psychology, and health sciences.

The sections that follow provide highlights of research using the NLSY79, the NLSY97, and the Children of the NLSY79.[1] The discussion covers employment and education, along with topics that demonstrate the breadth of the NLS, such as marriage, fertility, health, cognitive and noncognitive skill formation, and criminal behavior.

Employment

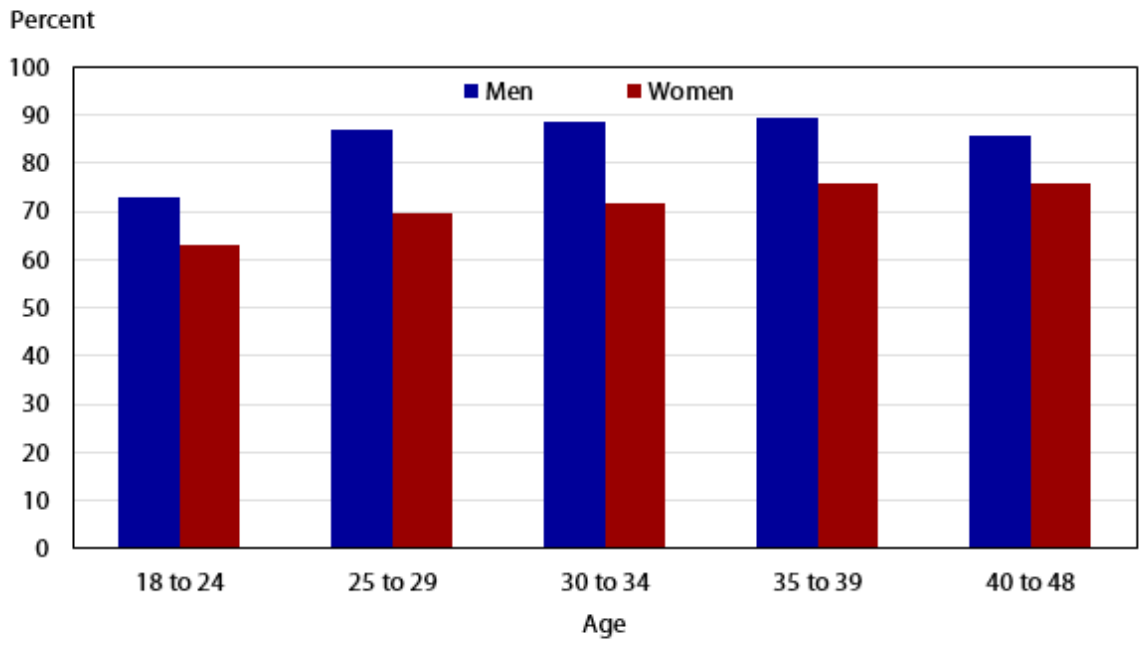
A major strength of the NLSY79 and NLSY97 datasets is that they provide detailed employment histories of respondents. The datasets indicate employment status—whether a respondent is employed, unemployed, or out of the labor force—week by week, starting in each respondent's late teens. If employed, respondents report each job held, along with their hours, wages, occupation, industry, benefits, and other job characteristics. They also report job search activities, whether they are employed or not. No other U.S. longitudinal dataset contains such detailed information on employment. In addition, combining employment data with extensive information on other topics in the NLSY79 and the NLSY97 allows many studies of labor market behavior that would not otherwise be possible.

Figure 1. Number of jobs held from age 18 to 48, by age and gender



Source: U.S. Bureau of Labor Statistics, National Longitudinal Survey of Youth 1979.

Figure 2. Percent of weeks employed from age 18 to 48, by age and gender



Source: U.S. Bureau of Labor Statistics, National Longitudinal Survey of Youth 1979.

Job histories, wages, and job search. The detailed employment histories tell researchers a great deal about respondents' work experiences over the life course. Figures 1 and 2 show the number of jobs held and the percentage of weeks worked in early to mid-career. On average, from age 18 to age 48, men held 11.8 jobs and women held 11.5 jobs. Men held 5.7 jobs from age 18 to age 24, compared with 2.4 jobs from age 40 to age 48. (See figure 1.) The reduction in the average number of jobs held in successive age groups was similar for women.

On average, from age 18 to age 48, men spent 84 percent of weeks working, compared with 71.2 percent for women. At each age range, men spent a higher percentage of weeks working than did women (see figure 2).[2] As respondents age and retire, the NLSY79 will be able to show the number of jobs held and the percentage of weeks worked over a wider segment of respondents' lifetimes.

Employment histories also allow the examination of job mobility. A number of studies have used NLS data to evaluate economic theories of worker mobility and wage growth. For example, Derek Neal presents a job search model in which workers search over careers first, and then, after finding a suitable career match, they search over employers.[3] Thus, complex job changes (changes in both career and employer) tend to occur early on, while simple job changes (changes in employer) occur later. Using the NLSY79, Neal finds support for his theory—job mobility among younger workers often involves career changes, but as workers gain more experience, their job mobility tends to remain within the current career. In another study, Audrey Light and Kathleen McGarry find that overall job mobility is negatively associated with wages, controlling for time invariant individual and job characteristics via the error structure in their empirical model.[4] They posit that this finding is consistent with a model in which jobs are viewed as experience goods, where the productivity match between a worker and a job is learned over time. Anne Royalty finds that job turnover behavior for women with more than a high school education looks very much like men's turnover behavior.[5] In contrast, women with less than a high school education have a significantly lower probability of staying at the current job than do men with either more or less than a high school education or women with more than a high school education. Using detailed questions about job search in the NLSY97 and controlling for demographic characteristics, a cognitive test score, and home Internet access, Peter Kuhn and Hani Mansour find that using the Internet for job search reduces unemployment durations substantially.[6]

Human capital attainment and subsequent wages. The NLSY79 and the NLSY97 gather extensive information on training and educational attainment, including the timing of degrees. This collection allows researchers to combine information on human capital investments with information on subsequent employment to explain various aspects of the labor market. Studies of this kind are important because they help us determine the return on our substantial investments in education and training, both at the individual and societal levels.

For example, using the NLSY79, Stephen Cameron and James Heckman find that individuals with exam-certified high school equivalents—General Educational Development certificates, or GEDs—have labor market outcomes similar to those of high school dropouts, rather than to those of people with a high school diploma.[7] The authors note that the value of obtaining a GED is largely that it opens postsecondary schooling and training opportunities, not that it increases wages or the likelihood of being employed.

In two separate studies using the NLSY79, Andrew Gill and Duane Lee examine the value of community college. In the first study, they find equivalent favorable wage returns to enrolling in a community college for both continuing high school graduates and adults with labor market experience who return to school.[8] In the second study, they find that 4-year college graduates who transfer from a community college are not at a substantial earnings disadvantage relative to those who start at a 4-year college.[9] The authors also find that the wage returns for those who participate in a terminal training program at a community college (vocational, not leading to an associate's degree) are similar to the returns for those who enter a 4-year college and do not graduate.

In another article, Lisa Kahn studies the long-term labor market consequences of graduating from college in a bad economy.[10] She focuses on the early 1980s recession, comparing white men who graduated from college at the depth of the recession with those who graduated during better economic times. She finds that those who

graduated during the recession not only experienced short-term difficulty finding a job after graduation, but also received lower wages that persisted well into their careers.

Another example of research in this area is Lisa Lynch's examination of the effect of formal training on the wages of young workers who have not received a college degree.[11] Lynch finds that private sector training plays a significant role in determining wages and wage growth for young workers with less than a college education. In addition, Mark Loewenstein and James Spletzer find that much of employer-provided training is general in nature; that is, it is not specific to the firm providing the training and can be used at other employers.[12]

Cognitive test scores, race, and employer learning. One unique feature of the NLSY79 and the NLSY97 is the availability of a cognitive test score for the majority of respondents. Respondents in both surveys are administered the Armed Services Vocational Aptitude Battery (ASVAB) shortly after their enrollment in the NLS program. Results from this battery—generally the math–verbal test score component, known as the Armed Forces Qualification Test (AFQT)—are widely used by researchers to control for the skill level of respondents at the time they enter the survey.

In one study in this area, Derek Neal and William Johnson find that much of the wage gap between black and white men and women is due to skill differences that each group brings to the labor market.[13] Controlling for early skills diminishes the negative wage gap between black and white men and eliminates it for black and white women. With respect to unemployment, however, Joseph Ritter and Lowell Taylor find that, even after controlling for early skills, large disparities remain between Blacks and Whites.[14]

Other researchers have used AFQT scores and the fact that skill levels of new hires are only imperfectly known by employers to investigate how employers learn about their employees' skills. For example, Henry Farber and Robert Gibbons find evidence that employee-specific measures that are correlated with ability but unobserved by employers, such as AFQT scores, are increasingly correlated with wages as labor market experience increases.[15] The authors present this finding as a complement to human-capital theory: wages are determined not only by the skills of workers but also by how fast employers learn about these skills. Joseph Altonji and Charles Pierret take this insight one step further, hypothesizing that if the effects of hard-to-observe factors become more important in determining wages over time, the effects of easier-to-observe correlates that are used as proxies for those factors should become less important.[16] They show that education is used in this sense to statistically discriminate among young workers, but that race is not.

The intersection of labor markets, health, and criminal behavior. A major strength of the NLSY79 and NLSY97 datasets is the vast information available in them on topics such as health and risky behaviors. Although these topics are not directly related to the labor market, they address conditions that may affect and be affected by labor market behaviors. One example is the association between weight and earnings. Controlling for unobservable individual-level characteristics, John Cawley finds that obesity has a negative impact on wages for white women, but not for other race and gender groups.[17] Jay Bhattacharya and Kate Bundorf find that employers offer lower wages to obese workers with employer-sponsored health insurance to offset higher healthcare costs.[18] Obese workers without employer-sponsored health insurance do not receive lower wages relative to their non-obese peers.

Another example of research on topics that are seemingly unrelated to the labor market is the effect of incarceration on labor market behavior and outcomes. Using the NLSY97, for instance, Robert Apel and Gary Sweeten find that individuals who were not incarcerated after their first conviction have significantly higher rates of formal employment (both in the short run and over a longer timeframe) relative to similar individuals who were incarcerated.[19] Using data from the NLSY79, Bryan Englehardt provides estimates on how long it takes released inmates to find employment and, when they do, how likely they are to be incarcerated again.[20] To model criminal behavior, he also develops an on-the-job search model that incorporates a distribution of crime opportunities.

Marriage, children, and the labor market. The NLS program has always collected information about important family milestones, such as marriages and the births of children. Unsurprisingly, these events can have substantial impacts on all aspects of one's life. Over the years, researchers have used NLS data to examine how these life-cycle events affect men's and women's labor market outcomes.

One key area of inquiry is why married men earn more than single men. Sanders Korenman and David Neumark, for example, use the NLS Young Men's survey (one of the original NLS cohorts) to investigate this puzzle.[21] They focus on white men in the sample and find that even with extensive human capital controls, married men earn higher wages and have higher wage growth than do single men. The authors find that more years of marriage significantly increase wages, a finding they interpret as support for the hypothesis that marital wage premiums accrue over time. Harry Krashinsky revisits this question with data from the NLSY79.[22] He finds that better controls for ability (such as AFQT scores) vastly reduce the marriage wage premium for men. In addition, he finds that wage growth for men who eventually marry is higher before marriage. Taken together, these results suggest that once ability is taken into account, marriage does not have a causal effect on men's wages; higher ability men are more likely to both marry and have higher wages.

In a study that considers the role of children, David Loughran and Julie Zissimopoulos use both the NLS Young Men's and Young Women's surveys, along with data from the NLSY79, to examine the effects of marriage and childbearing on the wages of men and women.[23] They find that marriage decreases wages for women and slows wage growth for both men and women. In addition, a first birth decreases women's wages but has no effect on subsequent wage growth. The authors find no effect of children on men's wages. They note that their results suggest that men and women can increase their lifetime earnings by delaying marriage and childbearing. Similarly, using the NLSY79, Amalia Miller finds that delaying motherhood leads to a significant increase in earnings.[24] The postponement premium is largest for college-educated women and those in professional and managerial fields.

Education

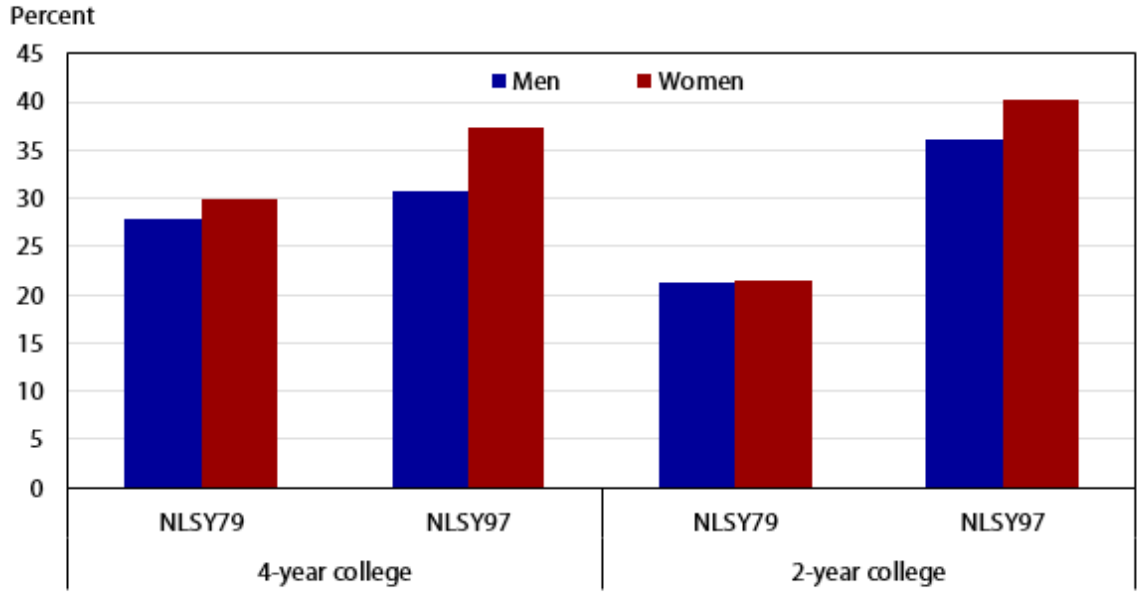
The NLSY79 and the NLSY97 both contain information about school enrollment and educational attainment over the years, but the NLSY97 education data are much more extensive. In its first years, the NLSY79 mainly collected information about grade attendance and completed years of schooling. In contrast, NLSY97 high school data include information on coursework, grades, peers, opinions about the school, and school-to-work programs; college data include term-by-term information on grades, majors, and college costs and financial aid. The NLSY97 also contains a section that asks about colleges to which respondents applied. Both the NLSY79 and the NLSY97 contain high school transcripts and high school surveys, and the NLSY97 recently added college transcripts. These detailed educational data, together with data on employment, income, ability, and demographic

characteristics, allow users of the surveys to study many aspects of the relationship between educational experiences and other life events.

Educational attainment. One major study area for researchers who use NLS education data is educational attainment. For instance, why do some individuals drop out of high school and others complete advanced degrees? In one study, Stephen Cameron and James Heckman estimate a dynamic model of schooling attainment to examine the sources of racial and ethnic differences in men's college attendance.[25] Their results indicate that long-term factors associated with parental and family background account for the differentials. The authors note that policies aimed at improving scholastic ability well before the college years could help eliminate the racial and ethnic differences in college-going behavior.

In another study, Michael Keane and Kenneth Wolpin embed the schooling-attainment decision in a dynamic model of schooling, work, and occupational choices over the life cycle.[26] They use this model to investigate racial disparities in schooling and earnings of black and white men. Their findings suggest that the lower employment and school attendance rates for black men result from a combination of racial wage discrimination and lower premarket skill endowments (which may reflect previous parental investment or innate traits).

Figure 3. Percent of high school graduates who attend 2- or 4-year colleges, by gender



Source: U.S. Bureau of Labor Statistics, National Longitudinal Surveys of Youth 1979 and 1997.

Other studies of educational attainment concentrate on college attendance and completion and their relationship to ability, income, race, employment, and other factors. This research often compares data between the NLSY79 and NLSY97 cohorts. Figure 3 shows the percent of high school graduates who attend a 2- or 4-year college in the two cohorts.[27] The figure depicts an increase in 4-year college attendance among female high school graduates (from 30 percent for the NLSY79 cohort to 37 percent for the NLSY97 cohort). Most striking is the very large increase in 2-year college attendance for both men and women. In the NLSY79 cohort, about 21 percent of male and female

high school graduates attended a 2-year college; in contrast, in the NLSY97 cohort, about 36 percent of male high school graduates and 40 percent of female high school graduates did.

Using the NLSY79 and NLSY97 cohorts, Philippe Belley and Lance Lochner estimate changes in the effects of family income and cognitive ability on high school completion and college attendance.[28] They find that cognitive ability measured with a test score is a significant predictor of educational outcomes for both cohorts. While family income has a minimal effect on the likelihood of high school completion for both cohorts, it is a much more important predictor of college attendance in the NLSY97 cohort. The evidence is consistent with the idea that more stringent borrowing constraints faced by the NLSY97 cohort explain at least part of the increase in the gap in college attendance, by family income, seen between the two cohorts.

Similarly, Michael Lovenheim and C. Lockwood Reynolds examine changes over time in the impact of cognitive ability and income on the postsecondary decision between not attending college, attending a 2-year college, and attending a 4-year college.[29] Comparing the two cohorts, the authors find large increases in college attendance for the NLSY97 cohort, particularly for high-ability students. However, increases in 2-year college attendance among high-ability, low-income men appear to come at the expense of 4-year college enrollment.

Focusing on the relationship between race and college and using a sequential model of college attendance and graduation decisions, Audrey Light and Wayne Strayer examine how Whites and minorities differ in their college-going behavior.[30] Their results suggest that minorities are more likely to attend college than Whites are. However, after accounting for unobservable factors, they find that minorities are less likely to complete college than Whites.

Returns to schooling. Another important and productive area of inquiry that relies heavily on both the education and employment data in the NLS is the study of the labor market returns to education. Research in this area relies on information on educational enrollment and degree attainment, along with detailed wage and employment histories. For example, Stephen Bronars and Gerald Oettinger use sibling respondents in the NLSY79 to estimate the wage returns to years of schooling and cognitive ability, while controlling for family fixed effects.[31] The authors find that, for women, the within-family estimates of the returns to schooling are similar to cross-sectional estimates; for men, the within-family estimates are much lower. In addition, they find that the wage returns to cognitive ability are substantial and of similar magnitude in cross-sectional and fixed-effects estimations.

Also using data from the NLSY79, Light and Strayer assess wage differences within the population of college-educated workers, with a focus on transfer students.[32] They find that transferring has a positive effect on wages for two types of workers—4-year transfer students who attain a bachelor's degree and 2-year transfer students who do not earn a degree and are likely in college primarily for training. The authors view the wage premium as a return to successful college matching.

Focusing on associate's degree programs, Stephanie Cellini and Latika Chaudhary use the NLSY97 to study the wage returns to attending for-profit colleges.[33] They find that the wages of students who enroll in associate's degree programs at for-profit colleges are higher than those of high school graduates with no college degree but similar to those of individuals who attend lower cost public community college programs.

High school employment and grades. A final line of research using education and employment data combines the week-by-week employment histories in the NLSY datasets with transcript data on high school coursework and grades to examine how employment during high school affects youths' academic outcomes. For example, Gerald Oettinger uses the NLSY79 to examine the effect of high school employment on student grade point average.[34] He

finds that extensive high school employment reduces the academic performance of minorities. Working with data from the NLSY97, Donna Rothstein also asks whether employment during high school affects youths' grade point average.[35] She finds negative, but small, effects of employment.

Lastly, using a sample of white men in the NLSY79, Zvi Eckstein and Kenneth Wolpin estimate an empirical model of grade progression through high school, in which the youths make sequential decisions about school attendance and employment.[36] The authors find that although working while in high school reduces high school grades, it has a negligible effect on the high school graduation rates of white men.

The breadth of the National Longitudinal Surveys

There is a great deal of information in the NLS beyond employment and education. Both the NLSY79 and the NLSY97 contain information about marriage, cohabitation, and divorce; fertility and children; skills both cognitive and noncognitive; income and wealth; health and substance use; attitudes; criminal activity; and much more. One of the great strengths of the surveys is that they enable researchers to examine the interplay among all these variables and to study American lives across a whole host of domains.

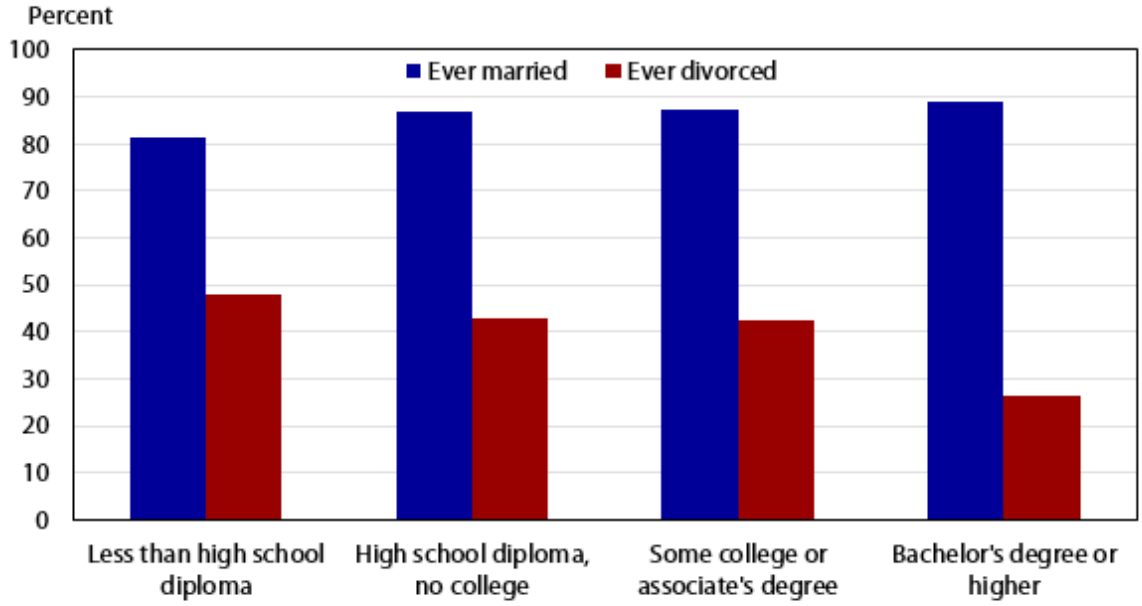
Demographic decisions: union formation, dissolution, and fertility. The NLSY79 and the NLSY97 both collect the dates and details of demographic events, such as marriages and births. In addition, the NLSY97 has collected dates of cohabitation since its beginning. While the NLSY79 has always captured whether a respondent was living with a partner at the date of interview, it is only since 2002 that the survey has tracked dates of cohabitation. These data permit researchers to examine factors affecting men's and women's decisions to cohabitate, marry, divorce, and have children.

Using the NLSY97, David McClendon, Janet Kuo, and Kelley Raley consider whether educational attainment affects the opportunities that men and women have to meet potential college-educated partners.[37] To carry out the investigation, the authors examine the relationship between the educational composition of occupations and the probability of marrying during young adulthood. They find that, for women, the proportion of young adult workers with a college degree within young workers' occupations is positively associated with transitioning to a first marriage and with marrying a college-educated partner; for men, no such relationship is observed. Also using the NLSY97, Fenaba Addo looks at how credit card and student loan debt affect the timing of first unions (both cohabitation and marriage).[38] Controlling for educational and labor market outcomes for both men and women, Addo finds that credit card debt is positively associated with cohabitation irrespective of gender and that women with student loan debt are more likely than women without such debt to delay marriage and transition into cohabitation. In a study based on the NLSY79, Scott South and Kim Lloyd examine how local marriage-market characteristics (such as gender ratios) and other geographic variables affect the likelihood of divorce.[39] For non-Hispanic Whites, the probability of separation or divorce is highest where either wives or husbands have many alternatives to their current spouse. High rates of labor force participation among unmarried women and high rates of geographic mobility in the local area are related to higher levels of marital instability.

A number of studies use the NLSY79 to examine both the explanations for and the consequences of premarital childbearing. For example, Lawrence Wu studies whether the effect of family structure on the likelihood of having a premarital birth depends on family income.[40] He finds that low levels of income, declining income, and frequent changes in family structure are associated with increased risk of premarital birth, but that the effects of income and change in family structure are independent. In related research, Dawn Upchurch, Lee Lillard, and Constantijn

Panis examine how education and marriage affect nonmarital fertility.[41] Their results show that the risk of nonmarital conception increases immediately after leaving school, with the effects of education being smaller for black than for white women. For black women, the likelihood of a nonmarital birth is lower for previously married women than for never-married women, controlling for age. The chance of having a nonmarital birth decreases for women with more children. Focusing on the consequences of premarital childbearing, Steven Nock notes that men who have premarital children are less likely to marry and more likely to cohabitate.[42] In addition, these men leave school earlier, have lower earnings, work fewer weeks per year, and are more likely to live in poverty. Nock finds that although some of these adverse education and labor market outcomes are due to negative selection, they are also a consequence of not marrying. Including controls for marriage and cohabitation history in the estimates of earnings, education, work, and poverty reduces and, in some cases, eliminates the effect of premarital births on these outcomes.

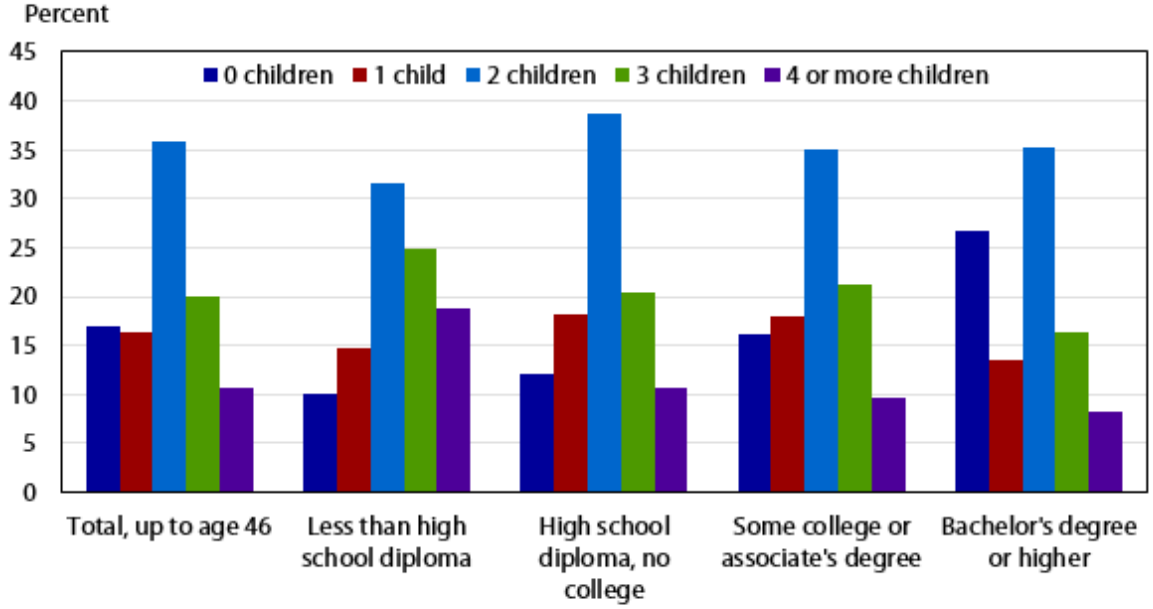
Figure 4. Percent of men and women ever married or divorced by age 46, by education



Source: U.S. Bureau of Labor Statistics, National Longitudinal Survey of Youth 1979.

One can also use the detailed data on marriage and births to look at marriage and fertility patterns for a cohort. For example, Alison Aughinbaugh, Omar Robles, and Hugette Sun use the NLSY79 to look at the marital histories of people ages 15 to 46.[43] They find that about 85 percent of respondents in the NLSY79 cohort marry by age 46, and among those who marry, almost 30 percent do so more than once. The vast majority of marriages take place by age 28, with relatively few occurring at age 35 or older. About 42 percent of all marriages that take place between age 15 and age 46 end in divorce by age 46. Marriage patterns differ by educational attainment. Men and women with less than a high school education are less likely to marry than are men and women with more education. (See figure 4.) In addition, men and women with a bachelor's degree or more are much less likely to get divorced than are men and women with lower levels of education.

Figure 5. Percent of women with biological children by age 46, by education and number of children



Source: U.S. Bureau of Labor Statistics, National Longitudinal Survey of Youth 1979.

In another study, Aughinbaugh and Sun examine fertility patterns among the women in the NLSY79.[44] By age 46, 83 percent of women have had at least one child. About 36 percent have two children, which is both the mode and the mean, and over 30 percent have three or more children. The fertility data in the NLSY79 show that the number of children that a woman has by age 46 varies with education. (See figure 5.) The average number of children falls as education increases. Women with a bachelor's degree have no children at rates more than twice as high (27 percent) as the rates of those without college education (10 to 12 percent).

Family interactions and links. The NLSY datasets contain many features that permit researchers to examine how family affects behaviors. First, information is collected about the respondents' parents and grandparents. Second, because the sample design includes all household members born in a set range of years, many sibling groups are available in the data. About 46 percent of all NLSY79 respondents and 43 percent of those in the NLSY97 have at least one sibling in the sample. Third, respondents report characteristics of their spouses and partners, including occupation, labor supply, and marital history, and characteristics of their children, including birth weight and health problems. Fourth, the children of the women in the NLSY79 have been given cognitive and socioemotional assessments biennially since 1986 and interviewed upon reaching age 15; this information is captured in the Children of the NLSY79 dataset.

A number of researchers have used the Children of the NLSY79 to study how characteristics and decisions of a child's family affect the child's scores on cognitive and socioemotional assessments. Paula Fomby and Andrew Cherlin, for example, examine how a mother's marital history affects her child's assessments.[45] They compare the outcomes of children who experience multiple transitions in family structure to those of children raised in stable one- or two-parent families. They find that, for white children, part of the association between the number of family-structure transitions and cognitive outcomes can be explained by the mother's pre-birth characteristics. However, they also note that part of the association may be causal. David Blau estimates the effect of parental income on children's cognitive, social, and emotional development.[46] He finds that family background characteristics play a

more important role than income in determining child outcomes. Lastly, Kasey Buckles and Elizabeth Munnich investigate the effect of the age difference between siblings (spacing) on educational achievement.[47] According to their study, a 1-year increase in spacing increases cognitive test scores for older siblings, but it has no effect on the test scores of younger siblings.

Cognitive and noncognitive skills. In addition to providing ASVAB and AFQT measures of cognitive ability, the NLSY79 and the NLSY97 capture measures of noncognitive skills. Respondents in both surveys are asked batteries of questions that evaluate attributes such as self-esteem, locus of control, and various personality traits. Combining data on cognitive and noncognitive skills with the vast amount of data on labor market experiences, education, and other life experiences allows studies on the roles of various types of skill on individuals' outcomes. For example, Robert Kaestner and Kevin Callison find that adolescent cognitive ability and two measures of noncognitive skills (self-esteem and internal locus of control) are positively associated with adult health at age 41.[48] James Heckman, Jora Stixrud, and Sergio Urzua find that noncognitive skills and cognitive ability have an important impact on schooling choices, wages, employment, work experience, and choice of occupation.[49] They also find that both cognitive and noncognitive skills can help explain some risky behaviors.

The Children of the NLSY79 provides an additional source of information on cognitive and noncognitive skills. Biological children born to women in the NLSY79 are given both cognitive assessments (e.g., the Peabody Individual Achievement Test in math and reading recognition) and noncognitive assessments (e.g., the Behavioral Problems Index) over time. Researchers have used these assessments, along with the vast amount of other information about the children and their mothers, to study the relationship between early childhood inputs and subsequent child cognitive outcomes and to test theories of how cognitive and noncognitive skills develop through childhood and beyond. Using these data, Flavio Cunha and James Heckman formulate and estimate models of the evolution of cognitive and noncognitive skills over the life cycle of children and explore the role of family environments in shaping these skills at different stages of the life cycle.[50] They find that both cognitive and noncognitive skills change over the life cycle of the child and that parental inputs affect the formation of both types of skills. Further, they find evidence of sensitive (more productive) periods for parental inputs in the acquisition of cognitive and noncognitive skills: sensitive periods for cognitive skills occur earlier in the life cycle of the child than do sensitive periods for noncognitive skills. A child-investment model in a study by Cunha et al. also indicates that it is more difficult to compensate for the effects of adverse environments on cognitive skills at later ages than at earlier ages.[51] However, at later stages of childhood, it is possible to remediate early disadvantage through investments in noncognitive skills.

The rich data on mothers and their children in the Children of the NLSY79 dataset allow investigations of the relationship between early childhood inputs and young children's cognitive test scores. For example, Janet Currie and Duncan Thomas find that participation in Head Start is associated with large gains in cognitive test scores for white and black children.[52] However, among black children, these gains quickly fade over time. Raquel Bernal finds a negative effect of maternal employment and the use of childcare on children's cognitive test scores.[53] Laura Argys et al. find evidence that child support has a positive impact on cognitive test scores among black children in households with divorced or separated parents.[54] Donna Rothstein finds improved cognitive outcomes for 5- and 6-year-olds who were breastfed as infants.[55] The effects do not appear to be due to differences in maternal ability, employment, or parenting skills.

Health. In every round of the NLSY79 and the NLSY97, respondents answer questions about their general health and any health limitations on work. Items describing mental health, coverage by health insurance, health behaviors, and medical treatment are asked periodically in both surveys. In addition, a large set of health-related questions are asked at benchmark ages: at ages 40 and 50 in the NLSY79 and at age 29 in the NLSY97. These age-specific batteries collect a medical history for the respondents and their parents and assess any chronic conditions the respondents may have.

The NLSY79 has been used to examine the relationship between educational attainment, health, and cognitive ability, as measured by AFQT scores. Regression estimates from Christopher Auld and Nirmal Sidhu indicate that cognitive ability is associated with better adult health, but that the estimated effect decreases substantially when educational attainment is included in the model.[56] These results suggest that the relationship between cognitive ability and health may work through schooling. Controlling for both cognitive and noncognitive attributes, David Cutler and Adriana Lleras–Muney further analyze the relationship between adult health behaviors and completed education.[57] Their results indicate that family background and cognitive ability are significantly associated with adult health behaviors, with family background having a larger average effect. Noncognitive factors, such as self-esteem, locus of control, and depressive symptoms, tend to have a weaker association with health behaviors.

In a study using NLSY97 data, Margot Jackson examines the relationship between health and educational attainment.[58] She finds that poor health during adolescence is associated with a decreased probability of both graduating from high school by age 19 and attending a 2- or 4-year college—especially a 4-year college—upon high school graduation. The estimated effects of poor health are larger for white youth than for black and Hispanic youth. In Jackson's work, the link between adolescent health and educational attainment can be explained, in part, by academic performance and not by lower educational expectations.

Criminal activity and criminal justice. Both the NLSY79 and the NLSY97 are valuable for studying the effects of incarceration, because they follow individuals before, during, and after imprisonment. The surveys also can provide a comparison group of similar individuals who are not incarcerated. At each interview, the NLSY79 data indicate whether a respondent is incarcerated. In the second round of interviews, the NLSY79 collects information on engagement in delinquent and criminal activity from all respondents. The NLSY97 data on criminal activity and criminal justice go beyond those collected in the NLSY79. The NLSY97 repeatedly collects data on criminal activity from all respondents, contains an event history on arrests, and follows each arrest to adjudication. These data provide comparison groups for both those who are arrested and those who are incarcerated.

The NLSY97 self-reported data show that, by age 18, about 18 percent of youths had been arrested at least once.[59] By age 23, the prevalence of arrest is approximately 30 percent. Men are arrested at higher rates than women, and the rate of arrest differs by race for men but not for women.[60] About 30 percent of black men have experienced at least one arrest by age 18, compared with about 22 percent of white men. By age 23, about 49 percent of black men have been arrested, compared with about 38 percent of white men.

Using the NLSY79, Bruce Western finds that incarceration is associated with reduced wages and lower wage growth for ex-inmates relative to high-risk men who were never incarcerated.[61] In a study based on the NLSY97, Randi Hjalmarsson finds that incarceration reduces the probability of high school completion.[62]

Summary

For almost 50 years, the NLS program has provided researchers with a unique portrait of American life. Its surveys follow large, nationally representative groups of people over many years, asking them questions about many important aspects of their lives. This combination of large samples, long histories, and multiple areas of inquiry gives analysts the ability to study our economy and society from a rare and complex perspective; it also allows them to trace how inputs early in life lead to outcomes in very different domains much later in life.

Articles using NLS data can be found in academic journals of economics, sociology, education, psychology, demography, criminology, and many other fields. The studies presented here barely scratch the surface of this research. Continuing to follow the NLS cohorts for years to come will allow an even better understanding of the experiences of these groups and give policymakers the information needed to understand and tackle our pressing social and economic problems.

SUGGESTED CITATION

Alison Aughinbaugh, Charles R. Pierret, and Donna S. Rothstein, "The National Longitudinal Surveys of Youth: research highlights," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, September 2015, https://doi.org/10.21916/mlr.2015.34

NOTES

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