Public Benefits and Financial Aid Support Education Beyond High School and Long-Term Economic Well-Being for Low-Income Young Adults

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Education beyond high school is one of the most reliable paths to economic stability in the United States, yet many of the young adults who stand to benefit most from this kind of continuing education face substantial barriers to enrolling and completing credentials—barriers such as the cost of attendance, the need to work to make ends meet, and family responsibilities that combine to make attending school and earning a living a daily balancing act. Federal public benefits are available to help low-income young adults meet their immediate needs, but whether those same programs also help people invest in their own education—and whether that investment pays off in the long run—has remained an open and important policy question. This study provides a comprehensive account of how the full portfolio of major public benefit programs and financial aid shapes educational decisions and long-term earnings, tracing effects for our cohort across nearly three decades, from young adulthood through approximately age 40.

Key Findings

1. **Public benefits—specifically the Earned Income Tax Credit (EITC) and Supplemental Nutrition Assistance Program (SNAP)—increase the likelihood that young adults from low-income backgrounds enroll in education beyond high school.** SNAP receipt increases enrollment odds by 63 percent and the EITC increases them by 36 percent.
2. **Public benefits and financial aid shape educational pathways in distinct but complementary ways**: Public benefits facilitate enrollment and persistence; financial aid enables full-time engagement with education. Together, they function as a springboard to long-term economic self-sufficiency by making education beyond high school possible.
3. **Receiving public benefits and financial aid while enrolled strongly predicts degree completion**: Each additional year of receiving EITC, SNAP, WIC (Special Supplemental Nutrition Program for Women, Infants, and Children), Medicaid, or housing assistance while in school is associated with 14 to 59 percent higher odds of earning a degree (depending on benefit and degree). Receipt of any type of financial aid is also strongly associated with degree completion.
4. **Facilitated by public benefits and financial aid, degrees deliver substantial mid-life economic returns.** Earning a bachelor's or graduate degree is associated with $18,400–$40,600 more in annual income at approximately age 40; associate degrees reduce poverty and improve economic mobility without an income premium.

A note on context: The findings in this brief reflect a specific historical window. The largest share of participants in our study pursued education beyond high school in the early 2000s, a period that predates major changes to several of the public benefit programs examined here. Whether and how these changes have affected the capacity of public benefit programs to support educational investment among young adults from low-income backgrounds remains an open question—one that makes the underlying relationships documented in this study all the more important to understand.

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A substantial body of evidence documents that public benefit programs effectively reduce material hardship in the short term (see, e.g., Hoynes & Schanzenbach, 2018). Less settled is whether these programs also support long-term economic mobility—in other words, whether public transfers to low-income households function as genuine investments in human capital and economic self-sufficiency, or primarily as a floor against acute economic hardship. This framing has shaped program design in consequential ways: Most major federal supports include strong work requirements or work incentives, reflecting a policy theory that paid employment is the primary route to economic self-sufficiency.

What that framing largely overlooks is education. College degrees are critical in the labor market, and earnings gaps are growing between households with and without college degrees (Scherer & King, 2025). Yet the relationship between public benefit programs and educational investment has received surprisingly little attention—and what attention it has received suggests the picture is complicated. SNAP, for example, requires students who are enrolled at least half-time in degree programs to meet additional criteria, such as working an average of 20 hours per week. That threshold—along with other aspects of policy design—may push some students toward intensive work schedules that impede the very degree completion that leads to lasting economic independence.

Prior research has established that childhood exposure to public benefit programs produces long-term gains in health and economic well-being (Hoynes, Schanzenbach, & Almond, 2016), and that receiving the EITC in childhood is associated with higher educational attainment and earnings in adulthood (Bastian & Michelmore, 2018; Manoli & Turner, 2018). But these studies examine program benefits received by young people's parents—and not by young adults themselves, at precisely the moment they are deciding whether and how to pursue education beyond high school. That gap in knowledge is where this study is situated (see box below).

Understanding whether safety net programs facilitate or impede educational pathways—and whether those pathways translate into improved long-term outcomes—has direct implications for program design, for higher education practice, and for efforts to expand economic opportunity for low-income Americans.

For additional background and context on the policy history behind this study, please see "Situating this study" in the Appendix.

A note on language

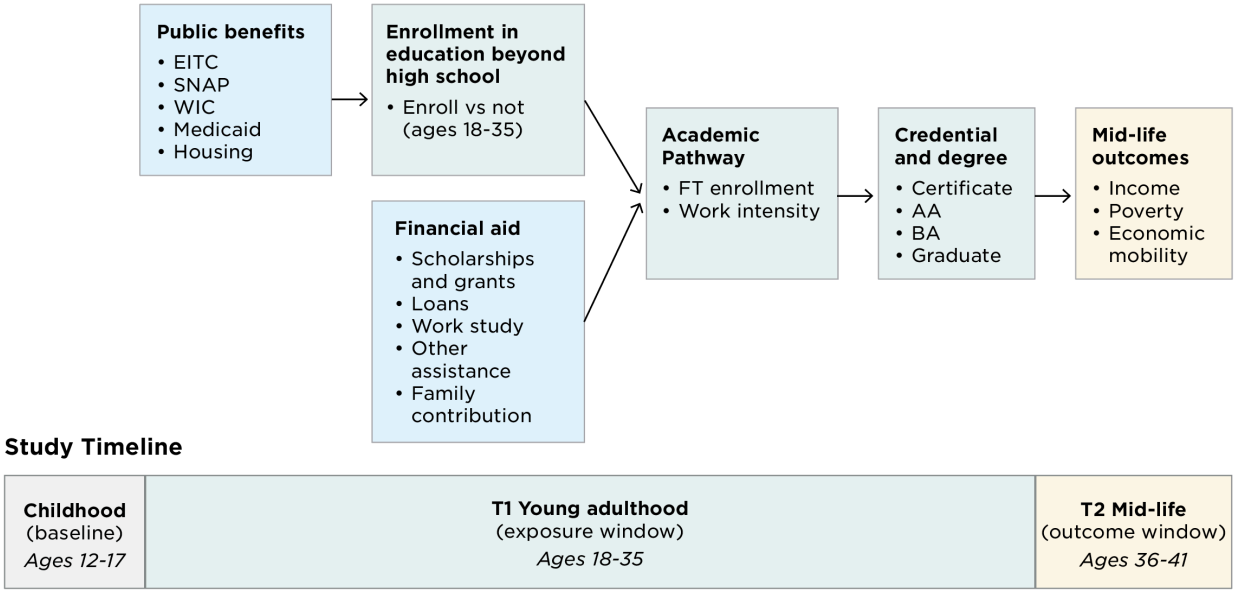
Throughout this research brief, we use a handful of terms in very specific ways. We use the inclusive term "education beyond high school" to refer to a range of educational pursuits, including certificates, associate degrees, bachelor's degrees, and graduate degrees. When we discuss credentials for all of these programs, we use the term "credential." We use the term "degree" to specifically refer to associate, bachelor's, or graduate degrees (and not certificates).

We use the term "public benefits" to refer to a range of government support programs that make up the social safety net.

Study Design

Our study draws on the National Longitudinal Survey of Youth 1997 (NLSY97; Bureau of Labor Statistics, 2026), which followed a nationally representative cohort from ages 12 to 17 in 1997 for nearly 30 years, through ages 36 to 41 (see Figure 1). We focused on the 3,735 respondents from economically disadvantaged backgrounds, defined as those who lived in a low-income household at age 17, received public benefits in childhood, or had a teen mother.

Figure 1. Study Design



We organized our analyses around three questions:

1. Does receipt of public benefits predict the decision to enroll in education beyond high school for young adults from low-income backgrounds?
2. How does receipt of public benefits and financial aid shape students' likelihood of degree completion and their experiences while enrolled?
3. Do those educational pathways translate to improved economic outcomes at mid-life?

The analyses examine two types of economic supports that young adults with low incomes may receive while navigating education beyond high school: public benefit programs administered through federal and state agencies, and financial aid received that is tied to education (both described in Table A1 in the appendix).

From ages 18 to 35, we tracked annual receipt of five public benefit programs: EITC, SNAP, WIC, Medicaid, and housing assistance. Among those who enrolled in education beyond high school, we additionally tracked financial aid receipt—including scholarships and grants, student loans, work-study, and other assistance (such as employer-subsidized education), along with family contributions. We measured educational decisions (whether the young adult enrolled in school and whether they enrolled full-time or part-time), whether and how intensively they worked while enrolled, and what degree or credential they ultimately completed.

Among the individuals in our sample, 57 percent pursued education beyond high school at some point from ages 18 to 35. The most common ages at enrollment were 19 to 22 (when at least approximately one in four

young adults in the sample was enrolled in education beyond high school), with enrollment peaking in 2002–2004. The most commonly pursued credentials were associate degrees (38% of the sample) and bachelor's degrees (32%), followed by certificates (14%) and graduate degrees (8%); because some individuals pursued more than one credential type over the observation window, these figures are not mutually exclusive. Economic supports were common among those who enrolled: Nearly two thirds (60%) received at least one form of public benefit while enrolled, and similar shares received financial aid—including 66 percent who received scholarships or grants and 51 percent who received student loans. By age 35, 25 percent had earned a credential beyond high school. Full sample descriptives are provided in Appendix C (see Tables C1–C3).

At ages 36 to 41, we assessed three long-term outcomes (see Table 1): individual income, poverty status, and economic mobility (whether the individual surpassed their parents' inflation-adjusted income). Unfortunately, measures of public program use into mid-adulthood are limited so we could not examine this as a long-term outcome.

Table 1. Outcomes Examined

Outcome	Description
Income	An individual's income (in thousands of dollars) at ages 36–41.
Poverty	A binary measure of whether a family's income is less than 100% of the Federal Poverty Level at ages 36–41. This measure is a rough proxy for eligibility for many of the public benefit programs in mid-life.
Economic mobility	A binary measure of whether a participant's household income at ages 36–41 exceeds their parents' household income at the time of the baseline survey when the individual was ages 12–17. Childhood household income was adjusted for inflation using the Consumer Price Index (CPI) so that the two numbers can be compared.

We employed multiple analytic strategies, suited to each research question: fixed effects panel models for enrollment and pathway decisions (which control for stable individual characteristics while tracking within-person changes over time), cross-sectional models for degree completion (restricted to enrollees), and OLS and logistic regression models for long-term economic outcomes. All analyses are weighted to be nationally representative. See Appendix A for a table that describes each public benefit and financial aid program we examined and Appendix B for full methodological details.

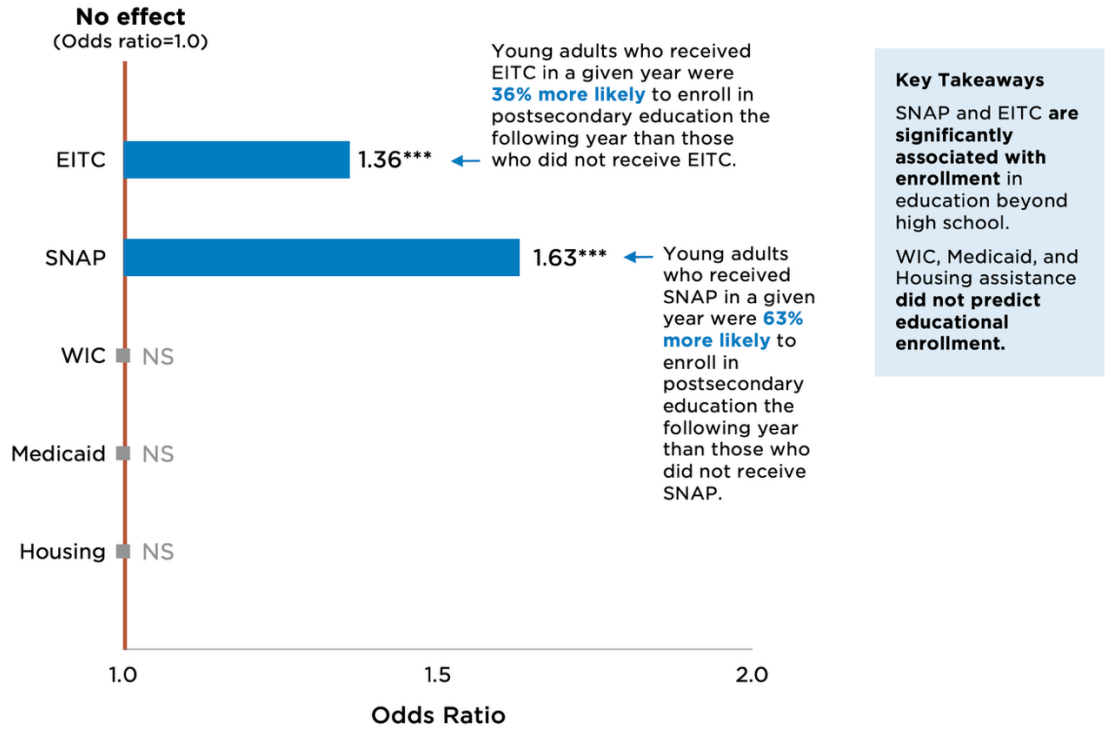
Key Findings

Finding 1. Public benefits—specifically, EITC and SNAP—increase the likelihood that young adults from low-income backgrounds enroll in education beyond high school.

In our analysis, young adults with low incomes who receive the Earned Income Tax Credit or food assistance (SNAP) in a given year are significantly more likely to enroll in education the following year than if they do not receive the support. EITC receipt increases enrollment odds by 36 percent, while SNAP receipt increases them by 63 percent (see Figure 2 and Table C4). WIC, Medicaid, and housing assistance do not show significant associations with enrollment in fully controlled models.

These enrollment benefits are not uniform across demographic groups.[1] For SNAP, enrollment benefits are attenuated for Hispanic young adults, a finding consistent with research documenting that Hispanic households face distinct structural and informational barriers to accessing federal safety net programs—including language barriers, confusing eligibility rules related to immigration status, and concerns about public charge rules—that may limit benefits uptake even among those who qualify (Acevedo-Garcia et al., 2021). EITC, on the other hand, may be more influential for women (aligned with research suggesting that the EITC increases labor force participation more for single mothers than for other groups; Meyer, 2002).

Figure 2. Public Benefits and Educational Enrollment



*** p<.001
NS = not significant
Notes: Bars illustrate odds ratios for the association between public benefits receipt and educational enrollment in the following year based on fixed effects panel models. N varies by model. Models control for age, parental status, family income, and individual fixed effects.
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

[1] Full results of analyses examining differences in associations by demographic group are available from the authors upon request.

What do odds ratios mean in practice?

An odds ratio of 1.63 means that, among otherwise-similar young adults—controlling for age, parenting status, income, and individual characteristics—those who receive SNAP in a given year are 63 percent more likely to enroll in education the following year than those who do not. These effects are estimated from within-person changes, so they reflect what happens when the same individual gains or loses access to supports over time—not just the comparison between people who did and did not receive supports.

Finding 2. Public benefits and financial aid shape educational pathways in distinct but complementary ways.

Among young adults who enrolled in education beyond high school, we examined how public benefits and financial aid affected two key choices: whether to enroll in school full- or part-time, and whether to work intensively (20+ hours per week) while in school.

Financial aid is a powerful enabler of full-time academic engagement. Students with larger proportions of their costs covered by scholarships or grants, loans, other assistance, or family contributions are more likely to enroll full-time (see Figure 3 and Table C5). These associations are substantial: Moving from no coverage to full coverage by scholarships and grants is associated with odds of enrolling full-time that are eight times higher; the equivalent figures for loans and other assistance are more than eight times and approximately three times higher, respectively. Importantly, some types of support require a certain level of enrollment intensity, so it is impossible to disentangle whether students receiving financial aid are more likely to enroll full-time because they receive financial support or whether enrolling full-time is a requirement of receiving financial support.

Moving from no coverage to full coverage by scholarships and grants, or loans, is also associated with significantly lower odds of working 20+ hours per week while enrolled—suggesting that financial aid provides enough of an economic buffer to reduce the need for intensive employment during school, in turn enabling deeper academic engagement.

Public benefit programs show more limited direct effects on enrollment and work intensity among enrolled students, with the possible exception of housing assistance.

Figure 3. Public Benefits, Financial Aid, and How Students Engage While Enrolled

	Full-Time Enrollment Higher odds= more likely to enroll full-time	**Intensive Work (20+ hours)** Higher odds=more likely to work 20+ hours per week while enrolled
Public benefits		
Any support	NS	NS
EITC	NS	NS
SNAP	NS	NS
WIC	NS	NS
Medicaid	NS	NS
Housing	▲ 1.72*	▼ .55*
Financial aid		
Scholarships and grants	▲ 8.09***	▼ .57***
Loan	▲ 8.62***	▼ .57***
Work-study	excluded (see note)	NS
Other assistance	▲ 3.35***	NS
Family contribution	▲ 2.83***	▼ .33***

Key Takeaways

- **Housing assistance** *increases the likelihood* that students from economically disadvantaged backgrounds enroll full-time and reduces the likelihood that they work intensively while enrolled.
- Students with larger portions of their tuitions covered by **scholarships and grants, loans, and family contributions** were *more likely* to enroll full-time and *less likely* to work 20+ hours/week.
- Students with larger portions of their tuitions covered by **other financial assistance** (including employer-subsidized assistance) were *more likely* to enroll full-time, but saw no differences in work intensity.

* p < .05; ** p < .01; *** p < .001
NS = not significant
Notes: Numbers in the tables are odds ratios from fixed effects models among enrolled students. Public benefits models are estimated in individual models. The financial aid types are combined in a single model. Public benefits and financial aid odds ratios are not on a common scale and cannot be compared. Green indicates increased odds, red indicates decreased odds and grey indicates nonsignificant findings. Work study was excluded from enrollment intensity model due to quasi-complete separation (e.g., there were only 14 work-study recipients who were not enrolled full-time).
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Taken together, these patterns suggest that public benefits and financial aid are not interchangeable—they operate differently, and those differences matter. Financial aid is strongly associated with full-time enrollment and may provide enough of an economic buffer that students do not need to work as intensively while in school. Full-time enrollment, in turn, is one of the strongest predictors of degree completion in our data and within the larger literature (see Table C6; Attewell et al., 2012). Public benefits, by contrast, do not show the same relationship with enrollment intensity or work hours; however, as Findings 1 and 3 indicate, they are nonetheless consistently associated with enrollment and degree completion. The most plausible interpretation is that both types of support are associated with educational outcomes, but at different pressure points: Financial aid shapes *how* students engage academically, while public benefits help make the

basic economics of enrolling and staying enrolled feasible. For students with low incomes navigating the cost of education alongside the cost of living, both may be necessary.

Finding 3. Receiving public benefits and financial aid while enrolled strongly predicts degree completion.

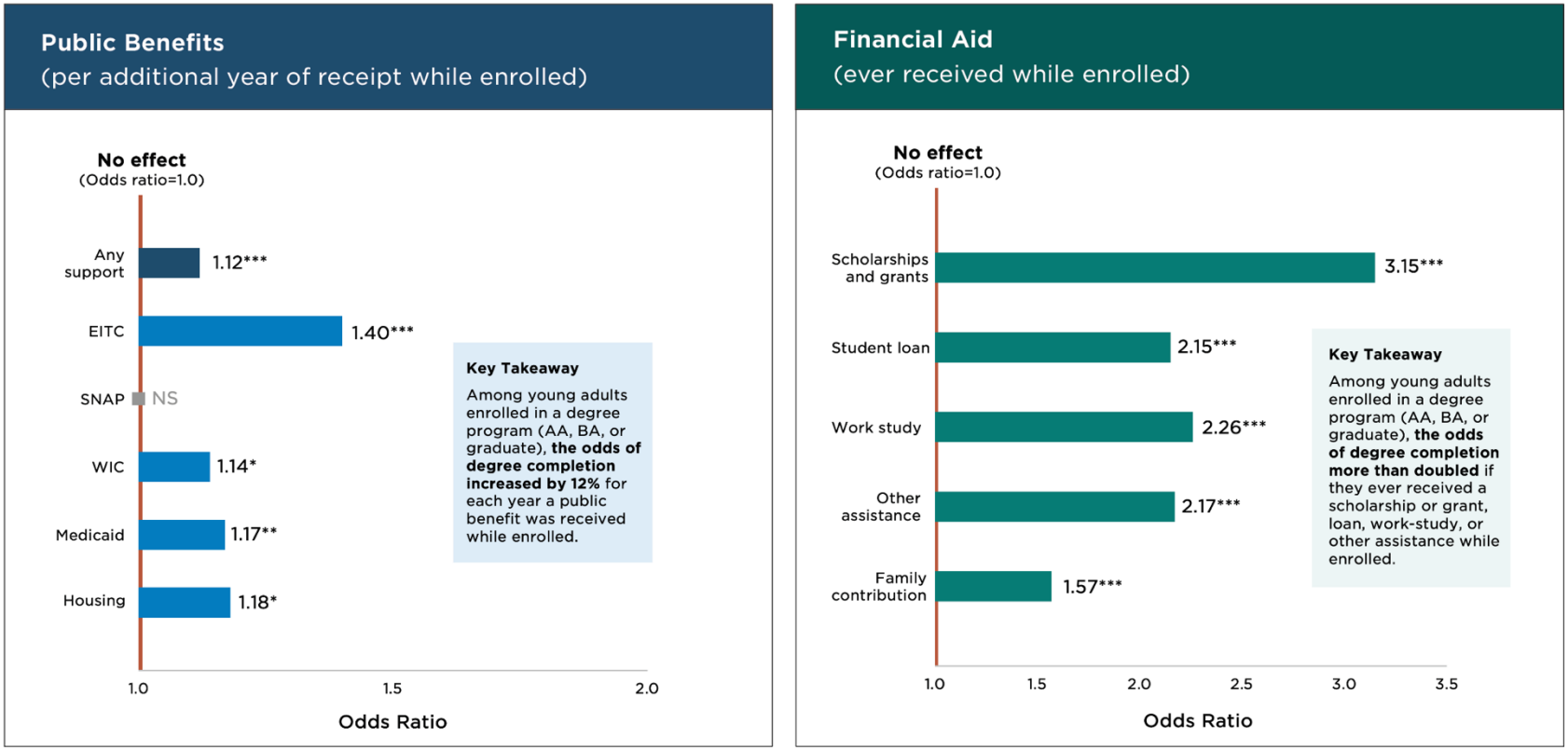
For young adults who enrolled in college, the number of years they receive public benefits while enrolled is a strong and consistent predictor of whether they ultimately earn a degree. This holds true across all degree types—associate, bachelor's, and graduate—but not for certificates.

For public benefits overall, the odds of earning a degree increases by 12 percent for each year of program receipt while enrolled (see Figure 4). Some programs show stronger correlations. For example, each additional year of EITC receipt while enrolled is associated with 40 percent higher odds of earning any degree.

Financial aid receipt is also strongly associated with degree completion. Ever receiving scholarships or grants more than doubles completion odds. Loans, other direct assistance (such as employer-subsidized education), and work-study show similar patterns. Correlations are generally stronger for bachelor's and graduate degrees than for associate degrees, and largely nonexistent for certificates (see Table C6).

Program effects on degree completion vary somewhat by students' race/ethnicity, gender, and student parent status. The role of EITC is somewhat lessened for student parents and women (as was housing). Hispanic students may benefit more from Medicaid receipt.

Figure 4. Public Benefits, Financial Aid, and Degree Completion



* p < .05; ** p < .01; *** p < .001
NS = not significant
Notes: Bars illustrate odds ratios for association between public benefits receipt or financial aid receipt and degree completion (not including certificates) among enrollees. Public benefits models are estimated in individual models. The financial aid types are combined in a single model. Public benefits and financial aid odds ratios are not on a common scale and cannot be compared.
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Finding 4. Facilitated by public benefits and financial aid, degrees deliver substantial mid-life economic returns.

The long-term economic payoffs to degree attainment—particularly at the bachelor's and graduate levels—are large and significant (see Table 2 below and Table C7 in the appendix). The following points compare outcomes at ages 36 to 41 for low-income young adults who completed various credentials to those who completed none:

- Young adults who complete bachelor's degrees earn approximately $18,400 more per year.
- Young adults who complete graduate degrees earn approximately $40,600 more per year.
- An associate degree is not associated with a significant income premium but is associated with significantly reduced odds of living in poverty and higher odds of economic mobility, compared to having no credential.
- Certificates are not significantly associated with higher income, lower poverty, or improved economic mobility in our sample, consistent with prior evidence showing varying returns to sub-baccalaureate credentials (Bahr et al., 2015; Jepsen et al., 2014).

Working intensively (20+ hours/week) while enrolled is associated with an income premium at mid-life for some students. While we cannot rule out that students who work intensively while enrolled differ in ways that independently predict higher earnings—including access to higher-quality jobs or stronger motivation—this finding is consistent with a growing body of evidence suggesting that some level of structured, field-relevant work experience can build skills, professional networks, and work history in ways that carry lasting labor market value (Bolli et al., 2021; Tu, 2022).

Both public benefits and financial aid indirectly contribute to long-term economic well-being via the educational pathways they facilitate. That is, public benefits and financial aid support while enrolled are associated with higher odds of completing a degree, which, in turn, is predictive of substantially higher mid-life income. Beyond this indirect effect, some supports—namely, housing and other financial assistance—appear to also have an independent positive effect on individual income in mid-life, while receipt of the EITC and housing assistance is associated with lower odds of household poverty in mid-life.

Table 2. Long-Term Economic Outcomes

Variable	Annual Income ($)	Poverty Status (Odds Ratio)	Economic Mobility (Odds Ratio)
Credential (ref: no credential)			
Certificate	--	--	--
Associate	--	0.44**	2.20**
Bachelor's	+ $18,400***	0.45*	1.80*
Graduate	+ $40,600***	0.10*	3.51**
Education Pathways			
Pursued education, no credential (compared to worked only)	--	--	1.53**
Worked 20+ hours per week while enrolled (compared to working <20 hours per week while enrolled)	+ $7,00**	--	--

Variable	Annual Income ($)	Poverty Status (Odds Ratio)	Economic Mobility (Odds Ratio)
Public Benefit (years received while enrolled)			
Any support	--	--	--
EITC	--	0.81**	--
Housing assistance	2.06*	0.83*	--
Financial Aid (average percent of cost of attendance while enrolled)			
Other assistance	27.13*	--	--

** p < .05; ** p < .01; *** p < .001.*
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021
Notes: SNAP, WIC, Medicaid, scholarships and grants, loans, work-study, and family contributions are not significantly related to any of the economic well-being outcomes after controlling for degree attainment in the full model and are not included in this table.

Persistent racial and gender gaps in mid-life income deserve emphasis. Even after accounting for educational pathways, degree attainment, young adult income, and receipt of support, Black individuals face approximately $4,800 less in mid-life annual income and significantly higher poverty rates than their White counterparts. Women face approximately $12,500 less in annual income than men. These gaps point to structural labor market barriers—including hiring discrimination and occupational segregation by race and gender—that educational investments alone cannot overcome. Research consistently finds that Black workers and women face penalties in the workforce that persist even after equalizing for educational attainment and experience, reflecting labor market dynamics that operate independently of credentials (Bertrand & Mullainathan, 2004; Blau & Kahn, 2017).

At the same time, Hispanic individuals and first-generation college students show significantly greater intergenerational economic mobility—they are more likely to surpass their parents' inflation-adjusted income than demographically and educationally similar peers. Broader evidence has shown that education beyond high school can serve as a particularly powerful vehicle for upward mobility for students who begin at a lower socioeconomic status (Chetty et al., 2017), including Hispanic and first-generation students.

Recommendations for Policy and Practice

The central finding of this research is that public benefit programs and financial aid are complementary mechanisms to helping low-income young adults achieve economic self-sufficiency—not competing approaches. Public benefits can facilitate an individual's decision to pursue higher education and sustain persistence through completion; financial aid enables fuller, more focused academic engagement that accelerates degree completion. Together, they function as a springboard toward lasting economic mobility that neither approach can fully achieve alone.

Based on our analyses of nearly 30 years of data following young adults from low-income backgrounds, we offer six recommended actions for federal and state policymakers and five recommended actions for higher education institutions to optimize existing public benefits and financial aid programs to promote sustained economic well-being via education beyond high school. For each, we provide an example of progress in this direction or a resource to support additional learning.

Recommendations for federal and state policymakers

1. **Preserve and strengthen EITC access for working students.**

   EITC receipt increases the odds that an individual will enroll by 36 percent and raises degree completion odds by 40 percent per year of receipt while enrolled. However, EITC eligibility requires

earned income, which can create tension with full-time enrollment. A revised phase-in schedule for students could maintain the EITC's work incentive while reducing pressure on students to overwork during school and impede academic progress.

- *Some institutions are already helping students access the EITC they've earned—for example, through free tax preparation services like those at Miami Dade College.*

2. **Align SNAP eligibility rules with educational pathways to support economic mobility.**

   SNAP receipt increases college enrollment odds by more than 50 percent and supports bachelor's degree completion. Yet students enrolled at least half-time in higher education are ineligible for SNAP unless they meet one of a limited set of exemptions, such as working at least 20 hours per week, participating in federal or state work-study, pursuing a SNAP Employment and Training (E&T) program, or caring for a dependent child under age 6. For some students, the 20-hour work threshold may slow progress toward degree completion. At the same time, most students work (Fletcher et al., 2026); our findings suggest that, for some students, working while enrolled can carry long-term income benefits, pointing to the value of work experiences that complement rather than compete with academic progress. Aligning SNAP eligibility rules to better support economic mobility through education could include simplifying and clarifying the exemption rules to reduce administrative burden on students and institutions; broadening access to the work-study exemption by expanding federal and state work-study availability; allowing comparable employment arrangements to qualify for students who lack access to formal work-study programs (which vary considerably across institutions); and facilitating approval of additional schools as third-party SNAP E&T providers.

   - *A Hope Center analysis documents state-level approaches, including Wisconsin's policy of averaging student work hours across semesters—a small design change that meaningfully reduces the risk of losing benefits during academically intensive periods. To learn more about SNAP and college, The Institute for College Access and Success has a detailed analysis of SNAP's restrictions on education beyond high school.*

3. **Improve coordination between financial aid and public benefits.**

   Our findings show that public benefits and financial aid work in complementary, independent ways. Improved coordination would better ensure that low-income students have access to both public benefits and financial aid. Students can meet a SNAP exemption, for example, by participating in a federal work-study program or a SNAP E&T program. Expanding these opportunities can maximize investments across programs, and interagency data sharing agreements can inform opportunities for effective coordination.

   - *State-level examples of data-sharing and coordination between colleges and public benefit programs illustrate what improved coordination can look like in practice (see page 6).*

4. **Increase need-based grant supports for low-income students to cover a meaningful share of attendance costs.**

   Our findings show that the amount of financial aid a student receives matters—not just whether they are eligible for aid. Students who receive more aid relative to their costs are more likely to enroll full-time and complete degrees. Increasing award amounts to cover a meaningful share of cost of attendance would enable the kind of full-time engagement that leads to faster degree completion. The current maximum Pell Grant award, at $7,395, covers only a fraction of the cost of attendance at many institutions—a share far smaller than when the program was created (U.S. Department of Education, 2025; Delisle, 2021). Federal and state policymakers can act to close this gap by raising Pell award amounts, expanding state need-based aid, and designing grants to keep pace with rising costs of attendance.

   - *A recent analysis from The Century Foundation examines how federal and state aid investments can be better targeted and scaled to meaningfully reduce unmet need for low-income students.*

5. **Provide multi-year financial aid commitments to support continuous enrollment.**

   Our findings show that sustained, year-over-year support while enrolled in school predicts completion of a degree—not just a single year of aid. Annual uncertainty about aid renewal can disrupt enrollment and force students to work more hours or stop out. Multi-year award commitments (guaranteeing aid levels for two to four years contingent on satisfactory academic progress) designed to support both part-time and full-time students would reduce uncertainty, support planning, and facilitate the continuous enrollment that leads to completion.

   - *The University of Michigan's HAIL Scholarship—a rigorously evaluated program that provided low-income, high-achieving students with an early, unconditional four-year commitment of free tuition and fees—demonstrated that predictable, multi-year aid guarantees more than doubled the likelihood that low-income students applied and enrolled, and has since informed similar commitment programs at institutions across the country*

6. **Align public benefit program rules with the time and credential requirements of education beyond high school.**

   Public benefit program rules can also pose barriers to educational pathways to economic mobility. Under federal law, education beyond high school can count as a qualifying work activity for SNAP and TANF recipients for only 12 months—far shorter than the time needed to complete most degrees. And some states impose additional restrictions, limiting participation to two-year programs or excluding four-year degrees entirely. Federal and state policymakers can act by extending the period during which education beyond high school counts toward work participation requirements, ensuring that program rules accommodate the full credential ladder that our findings show delivers lasting economic returns and reviewing time limits so students are not required to exit programs before completing a degree. States have considerable flexibility here.

   Maine has established the Parents as Scholars Program to support up to 2,000 TANF-eligible families pursuing two- or four-year degrees with financial resources that can continue beyond 12 months, allowing them to pursue education with support that exceeds typical TANF thresholds. The Hope Center's state-by-state analysis documents the range of approaches and where opportunities for reform remain.

Recommendations for higher education institutions

1. **Actively connect students to public benefits.**

   Many eligible students do not receive public benefits due to complex application processes and lack of awareness. For example, just one third of students potentially eligible for SNAP reported receiving benefits (U.S. Government Accountability Office, 2024). A small fraction of colleges offer interactive public benefits screening services (Speirs et al., 2022), but financial aid offices should provide benefits screenings and application assistance as standard practice. Data already collected through financial aid applications can, with student consent, be used to screen for public benefits eligibility and assist with applications as a relatively low-cost, high-return intervention to support completion. Schools can also pursue approval as a third-party SNAP Employment and Training provider to help students meet SNAP work exemptions.

   - *State and institutional examples of this coordination in action illustrate how colleges have built these connections into existing financial aid workflows (see page 6). The Kentucky Community and Technical College System's Kynect Benefits program, embedded on all community college campuses, is one model for how institutions can make benefits connection a standard part of student support services. To learn more, explore Trellis Strategies' toolkit for connecting college students with public benefit programs.*

2. **Structure financial aid and communicate aid packages transparently to make sustained full-time enrollment financially feasible.**

   Financial aid recipients are dramatically more likely to enroll full-time: In our data, full-time enrollment is one of the strongest predictors of degree completion. Institutions can support this full-time enrollment by prioritizing aid structures that are both sufficient and predictable across a student's full enrollment period. Aid packages that diminish in later years create financial shocks that push students toward concerns about meeting basic needs and reduced enrollment at precisely the point at which academic momentum matters most. Institutions can be transparent with students about multi-year aid commitments upfront, minimize year-to-year variability in aid packages for students who remain in good standing, and build in proactive outreach when a student's aid eligibility is at risk of changing, so financial surprises don't become the reason a student who was succeeding stops out.

   - *The University of Michigan's HAIL Scholarship—a rigorously evaluated program that provided low-income, high-achieving students with an early, unconditional four-year commitment of free tuition—demonstrated that predictable, multi-year aid guarantees more than doubled the likelihood that low-income students applied and enrolled. HAIL has since informed similar programs at institutions including the University of Illinois's Illinois Commitment, which guarantees four years of tuition and fees for low-income in-state students.*

3. **Invest in work experiences that build students' credentials *and* careers.**

   Many low-income students will work while enrolled in school. While previous research has shown that working intensively while enrolled can slow the path to graduation (Ecton et al., 2023), our analyses show that working 20+ hours per week while enrolled is associated with an income premium at mid-life for some students (however, we cannot rule out that students who work intensively differ in ways that independently predict earnings). The quality of students' work experiences also likely matters. For example, field-relevant work experience, professional networks, and employer relationships forged during school retain value long after graduation in ways that unrelated work does not. Institutions can support *meaningful* work opportunities for students by expanding relevant work-study opportunities, apprenticeships, credit-bearing internships, and structured employer partnerships in students' fields of study—and by investing in the career advising infrastructure that helps students identify and compete for work that will pay dividends. Schools can also pursue approval as a third-party SNAP E&T provider, which allows them to structure qualifying work or training activities that simultaneously help students meet SNAP exemption criteria and build field-relevant experience. Federal and state work-study represent one existing mechanism, but these reach only a fraction of the students who are working while enrolled; institutions willing to go further—for example, via employer partnerships and externally funded internship programs—will produce graduates who are both credentialed and professionally networked. Our data suggest that the combination is worth more than either strategy alone.

   - *One example of an institution going further is the CUNY apprenticeship program, which allows community college students to earn college credit and a salary while gaining hands-on experience in tech or business, with opportunities for full-time employment after graduation.*

4. **Expand support for working students pursuing education part-time.**

   Many low-income students—particularly those who are parents or have heavy work obligations—will pursue education part-time regardless of available public benefits and financial aid. Institutions can offer flexible course scheduling (evening, weekend, virtual, and hybrid options) and flexible hours for advising and financial aid, and can set clear course sequencing that allows part-time progression. The most effective educational institutions serving this population will be those that recognize diverse enrollment patterns as legitimate pathways to completion.

   - *The Community College Research Center documents how institutions can support part-time learners specifically through concentrated schedules (7- or 8-week terms, "mini-mesters"), multi-term*

registration that allows students to plan around work and family commitments, and priority registration for student parents. These relatively low-cost design changes can meaningfully reduce time to completion for students who cannot enroll full-time.

5. **Reduce administrative barriers to continuous enrollment.**

   Our findings show that years of consistent support during school enrollment predict an individual's likelihood of completing a credential: In other words, continuity matters. Institutions can simplify re-enrollment processes, provide proactive outreach to students who stop out, ensure clear credit-transfer pathways from certificates to associate to bachelor's degrees, and create bridge programs that maintain momentum across academic years and life transitions.

   - *Tennessee Reconnect offers one model: A dedicated "Reconnect Navigator" serves as a single point of contact guiding stopped-out students through the entire re-enrollment process.*

Conclusion

When public benefits reach young people as they are confronting choices about pursuing education beyond high school, they can function as a springboard to economic stability—increasing the likelihood of enrollment; supporting persistence through degree completion; and producing lasting gains in income, poverty reduction, and economic mobility.

Public benefits and financial aid each play distinct and complementary roles that point toward a system where both are necessary but neither is sufficient. Public benefits appear to ease post-high school education's access and persistence problem—helping low-income young adults get into school and stay there. Financial aid facilitates fuller, more focused academic investment and faster completion. Policies that improve simultaneous access to both public benefits and financial aid—and that align program rules with the educational route to economic mobility—are likely to be more effective than reforming either system in isolation.

Persistent racial and gender gaps in mid-life outcomes—evident even after accounting for educational attainment—also remind us that expanding access to education and supports is necessary but not sufficient to achieve economic equity. Structural barriers in the labor market require attention alongside educational and public benefits policy.

The path from economic hardship to economic stability is rarely straight. However, the evidence from our analysis suggests that public benefits—when designed to support rather than impede educational investment—can be a powerful part of that path.

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Appendix A

Foundational Context

Situating this study

This study is situated within a long policy history. Prior to the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), welfare policy emphasized education and training as routes to self-sufficiency (Grogger & Karoly, 2005). Evaluations of pre-reform programs showed mixed evidence for education-based approaches, however, while experimental welfare waivers that tied benefits to work requirements produced more consistent short-run employment gains (Blank, 2002; Grogger & Karoly, 2005). These findings helped establish a "work first" paradigm that shaped PRWORA's design—and that continues to inform current debates over work requirements. The consequences for educational investment were significant: By limiting the extent to which education beyond high school counted as a qualifying work activity, PRWORA created structural barriers to college enrollment for low-income women receiving public assistance, and research finds that welfare reform reduced college enrollment among women at risk of welfare receipt by as much as 20 to 25 percent (Dave et al., 2011; Dave et al., 2012). However, the labor market has changed substantially since PRWORA, and the income returns to college credentials have grown in the past 20 years (Scherer & King, 2025).

This study revisits a question sidelined by these early policy assumptions: whether public benefit programs help low-income young adults invest in education beyond high school, and whether that investment pays off at mid-life.

Answering that question requires situating the study in several bodies of related evidence. Financial barriers are among the most consistent and well-documented drivers of under-enrollment among young adults with low incomes, operating through both long-run differences in family resources and preparation and short-run liquidity constraints that prevent enrollment, even among those who are academically prepared and motivated (Belley & Lochner, 2007; Dynarski, 2003). While financial aid relaxes those constraints and increases enrollment (Dynarski, 2003), complexity in the aid application process can undermine take-up (Bettinger et al., 2012; Dynarski & Scott-Clayton, 2013). Among students who enroll, intensive work hours have been consistently linked to slowed academic progress and lower completion rates (Ecton et al., 2023), but the type of work and location may matter (Remenick & Bergman, 2021; Scott-Clayton, 2011). Basic needs insecurity—including food and housing instability—has been documented as a primary driver of stopping out among low-income students (Goldrick-Rab, 2016), providing a plausible mechanism by which public benefits may support persistence. Returns to credentials vary substantially by credential type, with bachelor's and graduate degrees showing the strongest associations with earnings (National Center for Education Statistics, 2024), while returns to sub-baccalaureate credentials are more variable and field-dependent (Bahr et al., 2015; Jepsen et al., 2014). This study brings these threads together to examine how public benefits and financial aid jointly predict educational investment among low-income young adults—and follows participants further into adulthood than most prior work to ask whether that investment pays off at mid-life.

Table A1. Public Benefits and Financial Aid Examined

Public Benefit Programs

Public program	Description	Eligibility	Work incentives?
Earned Income Tax Credit (EITC)	A refundable federal tax credit that supplements the earnings of low- and moderate-income workers	Workers with earned income below income thresholds (~$60,000) that vary by filing status and number of qualifying children—benefits substantially larger for families with children	Yes—requires earned income to qualify. The credit increases with earnings up to a threshold, then phases out—creating a built-in work incentive. Students with qualifying earned income are eligible.
Supplemental Nutrition Assistance Program (SNAP; aka food stamps)	Provides monthly electronic benefits (EBT) to help low-income individuals and families purchase groceries	Households with gross income at or below 130% of the federal poverty level	Yes, with important student-specific rules. College students enrolled at least half-time are generally *ineligible* for SNAP unless they are working 20 hours per week, participating in federal work-study, or caring for a dependent child under age 6.
Supplemental Nutrition Program For Women, Infants, & Children (WIC)	Provides monthly electronic benefits (EBT) for the purchase of approved foods	Pregnant, postpartum, or breastfeeding women; infants; and children up to age 5 with household income at or below 185% FPL	No
Medicaid	Government-funded health insurance that covers doctor visits, hospital care, prescription drugs, and preventive services	Low-income adults and children with incomes at or below 138% FPL (in Medicaid expansion states; lower thresholds in non-expansion states)	Not during the study period
Housing assistance	Federal rental assistance in the form of housing vouchers and/or subsidies	Low-income households, generally below 50% of area median income	Yes, with variation. Many public housing authorities require adult residents to participate in work, education, or job training activities. Enrollment in education beyond high school typically satisfies this requirement.

Notes: (1) Eligibility thresholds, benefit structures, and work requirements reflect general program rules and are summarized at a level appropriate for a study spanning 1997–2019. (2) We also examined child care assistance and AFDC/TANF, but we did not include these programs because sample sizes were too small to power analyses.

Financial Aid

Type of financial aid	Description
Scholarships and grants	Need- or merit-based awards that do not require repayment, and therefore directly reduce the net cost of attendance; includes federal Pell Grants, institutional grants and scholarships, tuition or fee waivers or reductions, and fellowships.
Loans	Borrowed funds that must be repaid with interest after leaving school, typically after a grace period; includes government-subsidized or private loans.
Work-study	Federally funded part-time employment program that subsidizes wages for students with demonstrated financial need, typically in on-campus positions or with approved community service employers; earnings are intended to help cover educational costs and participation requires at least half-time enrollment.
Other assistance	A residual category that captures forms of financial support not classified elsewhere, including employer assistance, Job Training Partnership Act (JTPA) wages, or other government-provided assistance.

Note: We also examined the role of family contributions, alongside financial aid, in facilitating educational pathways and completion. Family contributions include gifts, transfers, and loans from family members that help cover tuition, fees, living expenses, or other costs of attendance.

Appendix B

Data and Methods

Data

We draw on the National Longitudinal Survey of Youth 1997 (NLSY97), a nationally representative cohort of Americans born between 1980 and 1984 who were first surveyed at ages 12–17 in 1997 (N = 8,984) and followed biennially thereafter, with the most recent data collection in 2021–2022 when respondents were ages 36 to 41. The NLSY97 survey is sponsored and directed by the U.S. Bureau of Labor Statistics and managed by the Center for Human Resource Research (CHRR) at The Ohio State University. Interviews are conducted by the National Opinion Research Center (NORC) at the University of Chicago.

We restrict the analytic sample to youth from economically disadvantaged backgrounds using an approach modeled on the target population for major safety net programs. Specifically, we include respondents who: (1) lived in a household with income below 200% of the federal poverty level at age 17; (2) reported childhood receipt of any public benefit; or (3) had a teen mother. This restriction yields an analytic sample of N = 3,735. This focus enables us to examine variation within the population most likely to face barriers to educational attainment.

Measures

Public benefits. We track annual receipt of five public benefit programs from ages 18 to 35 (as data allow): (1) EITC, measured via annual tax return data; (2) SNAP/food stamps; (3) WIC; (4) Medicaid; and (5) housing assistance (including Section 8 and public housing). Receipt is coded as a binary annual indicator for each program, lagged one year for enrollment and pathway models. Unfortunately, the NLSY97 does not ask about all of these public benefits each year or about the dollar amount value for each benefit. Table B1 details the years data were collected for each public benefit.[2]

Table B1. Public Benefit Program Measurement

Public benefit	Years data was collected in NLSY97	Notes
Earned Income Tax Credit (EITC)	1998-2011, 2013, 2015, 2017, 2019	Imputed for every-other year after the survey went biennial, based on receipt the previous year
Supplemental Nutrition Assistance Program (SNAP; aka Food Stamps)	1998-2009	
Supplemental Nutrition Program For Women, Infants, & Children (WIC)	1998-2009	

[2] Because program data availability varied across survey years—with complete coverage across all five programs only through 2009—we conducted sensitivity analyses restricting enrollment and pathway models to that window. This restriction necessarily focused the sample on respondents who were younger when they pursued education beyond high school, but enrollment and pathway findings were nearly identical to those reported in the main analyses, providing confidence that results are not artifacts of uneven program coverage in later years.

Public benefit	Years data was collected in NLSY97	Notes
Medicaid	1998-2011, 2013, 2015, 2017, 2019	Imputed for every-other year after the survey went biennial, based on receipt the previous year
Housing assistance	1998-2011, 2013, 2015, 2017, 2019	Based on multiple variables that capture housing paid for by a government agency/welfare/charitable institution; living in a public housing project; or receiving rental certificates or vouchers from a public agency. Imputed for every-other year after the survey went biennial, based on receipt the previous year

Financial aid. Among respondents enrolled in a credential program between the ages of 18 and 35, we track five types of financial aid: scholarships and grants (which includes Pell grants as well as institutional aid and outside grants and scholarships), student loans, federal work-study, other assistance (which includes employer-subsidized education), and family contributions. Financial aid variables are coded as ever received during enrollment for credential completion models, and as average amount as a percentage of total costs for models predicting working intensity while enrolled, enrollment intensity, and long-term outcomes.

Educational outcomes. Educational enrollment between the ages of 18 and 35 is a binary annual indicator. Enrollment intensity (full-time vs. part-time) and work intensity while enrolled (20+ hours/week vs. fewer)[3] are examined separately among enrolled respondents. Highest degree attained is measured at the end of the survey period and coded as: no credential, certificate, associate degree, bachelor's degree, or graduate degree.

Long-term economic outcomes. We measure three outcomes at ages 36 to 41: (1) individual income (in thousands of dollars, non-transformed); (2) poverty status (family income below 100% of the federal poverty level); and (3) intergenerational economic mobility (a binary indicator of whether household income at ages 36–41 exceeds parental household income at the time of the baseline survey, adjusted for inflation using the CPI).

Analytic Strategy

Enrollment and pathway models. We model educational enrollment decisions using unidirectional fixed effects panel models (ages 18 to 35), which absorb all time-invariant individual characteristics (including family background, baseline ability, and geographic factors) by estimating effects from within-person variation over time. Each model includes time-varying controls for age, parental status, and lagged (one-year) family income and public benefit receipt. This design asks whether receiving a given public benefit in year t predicts enrollment or pathway decisions in year t+1, addressing concerns about reverse causality (i.e., that enrollment drives public benefit receipt rather than the reverse).[4]

Logistic regression is used for binary outcomes (enrollment, full-time enrollment, working 20+ hours/week while enrolled). We estimate nine separate models for each outcome: one for each of the five public benefit programs individually, one for any support receipt, one for support count (number of program types), one for financial aid types jointly, and one for financial aid types jointly along with receipt of any public benefits.

[3] We selected a cutoff of 20 hours per week because higher work intensity has been linked to lower likelihood of graduation (at cutoffs varying from 8-25 hours per week; Ecton et al., 2023) and work requirements for public benefit programs tend to require at least 20 hours of work per week.

[4] However, this design limits our ability to look at young adults who enrolled in college at age 18 (as we do not have good public benefit receipt data for 17-year-olds). Our enrollment models are based on young adults who enrolled at age 19 and older. Note that only 18% of our analytic sample was enrolled in education beyond high school at age 18 (and this jumped to 29% at age 19).

Public benefit program variables were estimated in separate models rather than jointly because receipt of different programs is highly correlated: low-income young adults who receive one form of public benefit are substantially more likely to receive others simultaneously, creating multicollinearity that would destabilize coefficient estimates and complicate interpretation in a joint model. Financial aid variables, by contrast, were estimated jointly in a single model. Because each financial aid type is measured as the average percentage of total costs covered (for all models except degree completion)— rather than as a binary receipt indicator — the degree of collinearity across aid types is considerably lower, and a joint model is both feasible and more informative about the independent contribution of each aid type.

Degree completion models. We model whether students completed any degree using logistic regression predicting any *degree* completion (associate, bachelor's, or graduate) among students who ever enrolled in higher education (excluding students who only ever enrolled in certificate programs).

We model level of degree/credential attainment using multinomial logistic regression among the subsample who ever enrolled in education beyond high school, with outcome categories: no degree (reference), certificate, associate, bachelor's, and graduate. All models control for average poverty ratio across young adulthood, demographic characteristics (race/ethnicity, gender, first-generation student status), and student parent status (ever being a parent while enrolled). Public benefit variables are measured as years of receipt while concurrently enrolled in order to capture the cumulative experience with public benefits over the course of enrollment; financial aid variables are measured as ever received while enrolled.

Long-term economic outcome models. We model individual income, poverty status, and economic mobility at ages 36 to 41 using OLS regression (for income) and logistic regression (for poverty and mobility), controlling for educational pathway (worked only vs. pursued education; working 20+ hours/week vs. less than 20 hours/week or no work while enrolled), degree attainment, average poverty ratio across young adulthood, demographic characteristics, and health status.

All analyses are weighted to be nationally representative and based on complete cases. Additionally, we present both weighted and unweighted descriptives in Appendix C. We test for heterogeneity by race/ethnicity, gender, and student parent status using interaction terms in separate models (available upon request from the authors).

Sensitivity analyses. We conducted a series of sensitivity analyses to assess the robustness of the findings reported in this brief, which are presented in Appendix D. (1) First, we examined the influence of survey weighting by comparing weighted and unweighted model estimates. As described above, weighted estimates were selected as the primary specification so that findings are nationally representative. Unweighted models were retained as sensitivity checks. (2) Second, we assessed the potential influence of omitted variables by adding several covariates not included in the primary models: time-varying urbanicity in the fixed effects enrollment and pathway models; adolescent region and urbanicity in the cross-sectional regression models; perceived likelihood of earning a college degree by age 30 — a measure of educational expectations available at baseline—in the regression models, to address the possibility that motivational factors correlated with both public benefit receipt and educational outcomes drive the observed associations; and high school non-completion in the long-term income model. (3) Third, because program receipt data are not available consistently across all survey years, we re-estimated enrollment and pathway models restricting the observation window to 1998–2009, the years for which complete data were available across all five public benefit programs, as described above. (4) Fourth, we estimated long-run income models using logged income as the dependent variable, as an alternative to the linear specification used in the primary analyses. Findings were substantively unchanged across all specifications, supporting the robustness of the core results. Two sets of sensitivity analyses are presented in Appendix D: Table D1 presents the alternative specifications of our long-term outcome models using logged income, and the high school non-completion robustness check for the long-run income model. Table D2 presents the alternative specifications of our degree completion models including adding additional control variables. Results from all remaining sensitivity analyses are available from the authors upon request.

Limitations

As with all observational panel studies, residual confounding by time-varying factors remains a limitation even with fixed effects designs. The fixed effects approach controls for stable individual characteristics but cannot rule out the influence of time-varying unobserved factors (e.g., changes in local labor markets or motivation) that jointly predict benefit receipt and educational decisions. Our fixed effects findings should therefore be interpreted as associations that are consistent with causal effects, rather than definitive causal estimates. Our cross-sectional findings should be interpreted as correlational.

We are also limited in our ability to compare effect sizes across programs and across public benefit types. Public benefit program data were not collected consistently across all survey years, meaning that some programs have longer observation windows than others (see Table B1 above). Odds ratios and coefficients across programs therefore, reflect different amounts of exposure time and should not be interpreted as directly comparable estimates of program effectiveness. Comparisons across programs are best read as indicating the direction and general magnitude of associations rather than precise relative effects. A related issue applies to comparisons between public benefit and financial aid variables: public benefit variables are measured as receipt during a specific year (for fixed effect models) or *years of receipt while enrolled* (for cross-sectional models), while financial aid variables are measured as either ever receiving the type of aid while enrolled or the *average percentage of costs covered*. These are fundamentally different units, and effect sizes across the two sets of variables are not on a common scale. Throughout the findings we have interpreted each type of support on its own terms rather than ranking programs against one another, and readers should exercise the same caution when reviewing the full results tables in Appendix C.

Sample size limitations affect some public benefit-specific analyses, particularly for housing assistance and WIC, which are received by smaller shares of the sample. Interaction analyses for race/ethnicity, gender, and parental status should be interpreted cautiously given sample sizes within subgroups. Similarly, analyses of TANF and child care subsidies—other potentially relevant public benefits—were not feasible given data availability and sample sizes in this cohort.

The NLSY97 cohort was young during the early welfare reform era; program rules and benefit levels have changed substantially since many of these young adults were receiving supports. Findings may not fully generalize to young adults navigating today's program landscape and should be interpreted in light of the policy context of the 1997–2022 period, and particularly during the early 2000s when the largest share of the sample enrolled in education beyond high school.

Appendix C

Full Results Tables

The following tables present complete model results for each stage of the analysis. See Appendix B for detailed variable definitions. All models include full covariate specifications as described in Appendix B.

Table C1. Analytic Sample Descriptive Statistics

	Percent or mean (unweighted)	Percent or mean (weighted)	Unweighted N
Baseline Demographics (at approximately age 17)			
Average family income in 2020$	$36,198	$40,234	2,995
Below the Federal Poverty Line (based on family income and size)	48%	41%	3,444
Race/ethnicity			3,725
Black	36%	24%	
Hispanic	28%	18%	
White	34%	53%	
Other (AIAN, Asian, Pacific Islander, something else)	3%	4%	
Gender			3,735
Male	49%	49%	
Female	51%	51%	
Family structure			3,734
Single-parent household	41%	39%	
Two-parent household	44%	47%	
Other household arrangement	14%	14%	
No parent had more than a high school education	69%	65%	3,382
Economic Outcomes at age 36-41			
Average individual income (inflation adjusted to 2020$)	$36,212	$38,364	2,955
Average family income (inflation adjusted to 2020$)	$72,631	$78,817	2,802
Below the Federal Poverty Line (based on family income and size)	25%	21%	2,907
Economic mobility (income higher than parental income at age 17, adjusted for inflation)	69%	70%	2,187

Note: Weighted results account for initial sampling design and attrition so that they are nationally representative.
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Table C2. Education Pathways Beyond High School Descriptive Statistics

	Percent (unweighted)	Percent (weighted)	Unweighted N
Education Pathways Beyond High School			
Ever pursued education beyond high school between ages 18-35	56%	57%	3,692
Ever pursued, by credential[a]			3,735
Certificate	14%	14%	
Associate	39%	38%	
Bachelor's	31%	32%	
Graduate degree	8%	8%	
Worked 20+ hours per week while enrolled, on average (among those ever enrolled)	48%	48%	2,074
Enrolled mostly full-time (among those ever enrolled)	64%	64%	2,010
Highest credential received by age 35			3,694
No credential	77%	75%	
Certificate	2%	2%	
Associate	8%	8%	
Bachelor's	10%	10%	
Graduate degree	4%	4%	

[a] Results add up to 92% (rather than 56%) because individuals could pursue multiple credentials.
Note: Weighted results account for initial sampling design and attrition so that they are nationally representative. Ns vary by variable due to treatment of missing data, and whether analysis was limited to those who ever enrolled.
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Table C3. Public Benefit and Financial Aid Use While Enrolled, Among Those Who Ever Enrolled In Education Beyond High School

Public benefit use while enrolled	Percent ever used program while enrolled (unweighted)	Percent ever used program while enrolled (weighted)	Among those who used program while enrolled, average program years (unweighted)	Among those who used program while enrolled, average program years (weighted)	Range	Unweighted N
Any public benefit	64%	60%	--	--	--	2,074
EITC	54%	51%	2.3	2.2	1-11	2,064
SNAP / Food Stamps	17%	14%	2.1	2.0	1-11	2,074
WIC	19%	17%	2.2	2.2	1-9	2,074
Medicaid	20%	18%	2.2	2.1	1-10	2,028
Housing assistance	9%	7%	2.2	2.1	1-8	2,074
Financial aid	**Percent ever used program while enrolled (unweighted)**	**Percent ever used program while enrolled (weighted)**	**Among those who used program while enrolled, % of costs covered (unweighted)**	**Among those who used program while enrolled, % of costs covered (weighted)**	**Range**	**Unweighted N**
Scholarship / grant	67%	66%	40%	40%	0-100%	2,007
Student loan	50%	51%	27%	28%	0-100%	2,007
Work-study	12%	12%	6%	6%	0-58%	2,007
Other assistance	16%	16%	22%	23%	0-100%	2,007
Family contribution	39%	39%	20%	21%	0-100%	2,007

Note: Weighted results account for initial sampling design and attrition so that they are nationally representative.
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Table C4. Enrollment Model

Public benefit	Odds ratio
Any support	1.24**
Support count	1.12**
EITC	1.36***
SNAP / Food Stamps	1.63***
WIC	0.86
Medicaid	1.09
Housing assistance	1.11

* p<.05; ** p<.01; ***p<.001
Notes: In order to examine the link between public benefit receipt and initial enrollment decisions (i.e., deciding to pursue education), the sample was restricted to person-years when the individual was not enrolled in education beyond high school in the previous year. The independent variables, public benefit receipt, are lagged to address concerns about reverse causality (i.e., that enrollment drives support receipt rather than the reverse). Models were estimated separately for each public benefit program (7 models). Covariates include age, lagged family income, concurrent parental status, and individual fixed effects (i.e., time-invariant individual characteristics such as family background, baseline ability, and geographic factors). Results are weighted to account for initial sampling design and attrition so that they are nationally representative.
Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Table C5. Education Pathway Models—Enrollment and Work Intensity

	Enrollment Intensity	Work Intensity
Variable	**FT Enrollment Odds Ratio (OR)**	**Working 20+ hours/week while enrolled OR**
Public benefit		
Any support	1.00	1.02
Support count	0.99	1.05
EITC	1.12	0.90
SNAP	0.93	0.74
WIC	0.63	1.48
Medicaid	0.95	0.96
Housing assistance	1.72*	0.55*
Financial aid types (as a % of the cost of attendance)		
Scholarship / grant	8.09***, p	0.57***, p
Student loan	8.62***, p	0.57**, p
Work-study	n/a[a]	0.63
Other assistance	3.35***, p	0.85
Family contribution	2.83***, p	0.33***, p

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

[f] Findings retain statistical significance (p<.05) in the same direction when financial aid variables are added as covariates. (This is only relevant for the public benefit programs.)

[p] Findings retain statistical significance (p<.05) in the same direction when lagged receipt of any public benefit is added as a covariate. (This is only relevant for the financial aid types.)

[a] Work-study was excluded from the enrollment intensity model (full-time vs. part-time enrollment) because federal work-study eligibility requires enrollment at least half-time, and in our sample only 14 respondents received work-study while not enrolled full-time. This near-perfect collinearity between work-study receipt and full-time enrollment produced an unstable odds ratio that reflected data sparsity rather than a meaningful association, and the variable was therefore dropped from this model. Work-study is retained in all other models.

Notes: The sample was restricted to those enrolled in education beyond high school. Public benefit models were estimated separately for each public benefit program (7 models); financial aid models included all financial aid types estimated jointly in a single model. Public benefits were measured as years of receipt while enrolled; financial aid was measured as percent of total costs. Odds ratios are not directly comparable between the public support programs and financial aid types due to these differences in measurement. The coefficients for public benefit programs represent the change in odds associated with each additional year of program receipt while enrolled. The coefficients for financial aid types represent the change in odds associated with moving from 0% of costs covered by that aid type to 100% of costs covered by that aid type. Covariates include age, lagged family income, concurrent parental status, and individual fixed effects. Results are weighted to account for initial sampling design and attrition so that they are nationally representative.

Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Table C6. Degree Completion Models (Among Enrollees)

Variable	Any Degree (not including Certificates; Odds Ratios)	Highest Degree Completed (relative risk ratios compared to no credential after high school)			
		Certificate	Associate	Bachelor's	Graduate
Public benefit (years received while enrolled)					
Any support	1.12***,f	1.02	1.12***,f	1.16***,f	1.18***,f
EITC	1.40***,f	0.96	1.37***,f	1.49***,f	1.59***,f
SNAP	1.10	1.07	1.02	1.25*	1.18
WIC	1.14*	0.81	1.06	1.26**	1.27*
Medicaid	1.17**	1.13	1.31***,f	1.00	1.19
Housing assistance	1.18*	1.19	1.20	1.32**,f	1.17
Financial aid types (ever received while enrolled)					
Scholarship / grant	3.15***,p	0.38*,p	2.82***,p	3.71***,p	7.76***,p
Student loan	2.15***,p	0.74	1.92***,p	2.34***,p	4.21***,p
Work-study	2.26***,p	0.53	0.99	2.83***,p	4.04***,p
Other assistance	2.17***,p	2.19*,p	2.05**,p	2.85***,p	2.46**,p
Family contribution	1.57***,p	1.19	1.33	2.05***,p	1.87*,p
Education pathways[a]					
Full-time enrollment	4.95***	1.07	3.16***	10.62***	33.89***
Working 20+ hours/week while enrolled	0.95	1.08	1.43*	0.97	1.51

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

[f] Findings retain statistical significance (p<.05) in the same direction when financial aid variables are added as covariates. (This is only relevant for the public benefit programs.)

[p] Findings retain statistical significance (p<.05) in the same direction when receipt of any public benefit while enrolled is added as a covariate. (This is only relevant for the financial aid types.)

[a] The education pathways were run in separate models and are not included as covariates in the models for public benefit programs or financial aid.

Notes: For degree completion models, we restricted our sample to those who ever enrolled in education beyond high school between ages 18 and 35. This helps us interpret the role of financial aid variables. Otherwise, the model would include young adults who never enrolled in education beyond high school and receipt of financial aid would be conflated with educational enrollment. Specifically, models for any degree include young adults who ever pursued an associate degree, bachelor's degree, or graduate degree (but not those who only ever pursued a certificate). Models predicting the highest degree earned include young adults who pursued any type of education after high school.

Models for public benefit programs were estimated individually (6 models); financial aid types were estimated jointly in a single model. Public benefit variables are measured as years of receipt while enrolled; financial aid variables are measured as whether an individual ever received this type of aid while enrolled. Odds ratios are not directly comparable across these two measurement approaches. Covariates include poverty experiences throughout young adulthood, race, gender, first-generation student status, age in 1997, and whether the respondent was ever a parent while enrolled in school. Results are weighted to account for initial sampling design and attrition so that they are nationally representative.

Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Table C7. Long-Term Economic Outcome Models (Ages 36–41)

Variable	Income (in thousands of dollars)	Poverty Status (odds ratio)	Economic Mobility (odds ratio)
Credential (ref: no credential)			
Certificate	5.45	0.69	0.79
Associate	4.57	0.44**	2.20**
Bachelor's	18.38***	0.45*	1.80*
Graduate	40.64***	0.10*	3.51**
Education pathways			
Pursued ed, no credential (compared to worked only)	0.37	0.82	1.53**
Worked 20+ hours per week while enrolled (compared to working <20 hours per week while enrolled)	7.00**	0.69	1.09
Public benefit (years received while enrolled)			
Any support	0.51	0.97	1.02
EITC	0.81	0.81**,f	1.12
SNAP	3.02	0.97	0.95
WIC	1.34	0.98	1.06
Medicaid	0.13	1.09	0.97
Housing assistance	2.06*,f	0.83*,f	1.04
Financial aid (average percent of cost of attendance while enrolled)			
Scholarship / grant	5.66	0.63	1.66
Student loan	-1.54	0.83	0.73
Work-study	16.21[a]	0.02	74.40[a]
Other assistance	27.13*,p	0.21	2.83
Family contribution	-2.99	1.54	0.39
Demographics			
Black (vs. White)	-4.83**	2.14***	0.67**
Hispanic (vs. White)	2.26	1.05	1.47**
Other race (vs. White)	8.57	0.57	1.30
Female	-12.54***	1.17	0.84
First-generation student	0.57	0.82	1.62**
Poor/fair health	-8.26***	2.00***	0.69**
Average family income-to-needs in young adulthood	0.08***	0.99***	1.00***
Age in 1997	0.58	0.96	1.00

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

[f] Findings retain statistical significance (p<.05) in the same direction when financial aid variables are added as covariates. (This is only relevant for the public benefit programs.)

[p] Findings retain statistical significance (p<.05) in the same direction when lagged receipt of any public benefit is added as a covariate. (This is only relevant for the financial aid types.)

[a] Work-study coefficients in the income and economic mobility models were large in magnitude but statistically non-significant, with wide confidence intervals consistent with estimate instability driven by the relatively small number of work-study recipients in the analytic sample and the amplifying effect of sampling weights on sparse cells. These estimates should be interpreted with particular caution.

Notes: Public benefit programs were estimated individually in 6 separate models; financial aid variables estimated jointly in a single model. All models include degree attainment, education pathways (educational pursuit, working 20+ hours/week while enrolled), demographic controls, health status, average poverty ratio, and age in 1997 (to control for cohort effects). The coefficients for public benefit programs represent the *direct* effect on economic outcomes of each additional year of program receipt while enrolled, above and beyond the indirect effect operating through degree completion. The coefficients for financial aid types represent the *direct* effect associated with moving from 0% to 100% of educational costs covered by that aid type, likewise net of the indirect pathway through degree attainment. The coefficients for degrees, pathways, and demographics are from the model with any public benefit receipt (and no financial aid variables); though they are relatively consistent across all models. Results are weighted to account for initial sampling design and attrition so that they are nationally representative.

Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Appendix D

Sensitivity Analyses

Appendix D presents results from selected sensitivity analyses conducted to assess the robustness of the primary findings reported in this brief. We examined a range of alternative specifications, including unweighted models, models restricting the observation window to years with complete program data across all five public support programs (1998–2009), and models with additional covariates. Four specifications are presented here because they address concerns most likely to arise in peer review or policy interpretation. Table D1 presents the primary long-term economic outcome model alongside two alternative specifications: one substituting logged income for the linear income measure used in the primary analyses, to assess sensitivity to the functional form of the outcome (Column 2), and one adding an indicator for high school non-completion at the end of the young adulthood observation window, to address the possibility that public support and financial aid variables partially capture selection into high school completion—a prerequisite for most education beyond high school (Column 3).

Table D2 presents the degree completion model with two additional covariates: respondents' baseline educational expectations (perceived likelihood of earning a college degree by age 30), which addresses the possibility that unmeasured motivation drives the observed associations between supports and completion (Column 2), and adolescent region, which addresses potential geographic confounding (Column 3). Findings are substantively unchanged across all specifications presented here and across the full range of sensitivity analyses conducted. Results from sensitivity analyses not presented in this appendix are available from the authors upon request.

Table D1. Sensitivity Analyses—Long-Term Income Models (Ages 36-41)

Column 1 reproduces the primary income model as a reference. Column 2 substitutes logged income for the linear income measure used in the primary analyses, to assess sensitivity to the functional form of the outcome. Column 3 adds an indicator for high school non-completion at the end of the young adulthood observation window, to address the possibility that public support and financial aid variables partially capture selection into high school completion—a prerequisite for most education beyond high school.

Variable	Main Income Model (in thousands of $)	Logged Income Model	Main Model + No HS Degree
Credential (ref: no credential)			
Certificate	5.45	0.25	5.51
Associate	4.57	0.21	4.55
Bachelor's	18.38***	0.60***	18.41***
Graduate	40.64***	0.87***	40.68***
Education pathways			
Pursued ed, no credential (compared to worked only)	0.37	0.09	0.96
Worked 20+ hours per week while enrolled (compared to working <20 hours per week while enrolled)	7.00**	0.41***	7.01**

Variable	Main Income Model (in thousands of $)	Logged Income Model	Main Model + No HS Degree
Public benefit (years received while enrolled)			
Any support	0.51	0.04**, f	0.51
EITC	0.81	0.09***, f	0.81
SNAP	3.02	0.10	3.01
WIC	1.34	0.11**, f	1.32
Medicaid	0.13	-0.02	0.12
Housing assistance	2.06*, f	0.17**, f	2.04*, f
Financial aid (average percent of cost of attendance while enrolled)			
Scholarship / grant	5.66	0.31	5.60
Student loan	-1.54	0.26	-1.58
Work-study	16.21[a]	0.11	16.02
Other assistance	27.13*, p	0.62	27.09*, p
Family contribution	-2.99	-0.25	-2.97
Demographics			
Black (vs. White)	-4.83**	-0.29**	-4.85**
Hispanic (vs. White)	2.26	0.10	2.27
Other race (vs. White)	8.57	0.25	8.53
Female	-12.54***	-0.46***	-12.55***
First-generation student	0.57	0.09	0.58
Poor/fair health	-8.26***	-0.46***	-8.21***
Average family income-to-needs in young adulthood	0.08***	0.002***	0.08***
Age in 1997	0.58	0.01	0.58
No high school degree (T2)	—	—	-1.23

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

[f] Findings retain statistical significance (p<.05) in the same direction when financial aid variables are added as covariates. (This is only relevant for the public benefit programs.)

[p] Findings retain statistical significance (p<.05) in the same direction when lagged receipt of any public benefit is added as a covariate. (This is only relevant for the financial aid types.)

[a] Work-study coefficients in the income and economic mobility models were large in magnitude but statistically non-significant, with wide confidence intervals consistent with estimate instability driven by the relatively small number of work-study recipients in the analytic sample and the amplifying effect of sampling weights on sparse cells. These estimates should be interpreted with particular caution.

Notes: Public benefit programs were estimated individually in 6 separate models; financial aid variables estimated jointly in a single model. All models include degree attainment, pathways (educational pursuit, working 20+ hours/week while enrolled), demographic controls, health status, average poverty ratio, and age in 1997 (to control for cohort effects). The coefficients for public benefit programs represent the *direct* effect on economic outcomes of each additional year of program receipt while enrolled, above and beyond the indirect effect operating through degree completion. The coefficients for financial aid types represent the *direct* effect associated with moving from 0% to 100% of educational costs covered by that aid type, likewise net of the indirect pathway through degree attainment. The coefficients for degrees, pathways, and demographics are from the model with any public benefit receipt (and no financial aid variables); though they are relatively consistent across all models. For the logged income model, we added $1,000 before transforming the outcome so that all values are captured (about one in four respondents have $0 individual income). Results are weighted to account for initial sampling design and attrition so that they are nationally representative.

Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021

Table D2. Sensitivity Analyses—Degree Completion Models (Among Enrollees)

Column 1 reproduces the primary degree completion model as a reference. Column 2 adds respondents' baseline educational expectations—specifically, their perceived likelihood of earning a college degree by age 30, measured at the start of the observation window—to address the possibility that unmeasured motivation is driving the observed associations between support receipt and degree completion. Column 3 adds indicators for region and urbanicity, to assess whether geographic factors present during childhood and adolescence confound the relationship between public benefit or financial aid receipt and educational attainment.

	Main Model Predicting Any Degree (not including Certificates; Odds Ratios)	Adding Educational Expectations	Adding Geography
Public benefit programs (years received while enrolled)			
Any support	1.12***,f	1.12***,f	1.13***,f
EITC	1.40***,f	1.37***,f	1.40***,f
SNAP	1.10	1.07	1.11
WIC	1.14*	1.15	1.15*
Medicaid	1.17**	1.19	1.19***,f
Housing assistance	1.18*	1.18	1.20*
Financial aid types (ever received while enrolled)			
Scholarship / grant	3.14***,p	3.73***,p	3.05***,p
Student loan	2.15***,p	2.21**,p	2.16***,p
Work-study	2.26***,p	3.88***,p	2.24***,p
Other assistance	2.16***,p	2.69***,p	2.17***,p
Family contribution	1.57***,p	1.42	1.57***,p
Additional covariates[a]			
Educational expectations	—	1.01	—
Region (in adolescence)	—	—	
North central	—	—	1.04
South	—	—	1.09
West	—	—	0.76
Urban (in adolescence)	—	—	0.66**

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

[a] Additional covariates coefficients reported are for the any support model. The N decreases by approximately 1,100 (from about 1,700 to about 600) for the models with educational expectations because this question was asked of a subset of respondents.

[f] Findings retain statistical significance (p<.05) in the same direction when financial aid variables are added as covariates. (This is only relevant for the public benefit programs.)

[p] Findings retain statistical significance (p<.05) in the same direction when receipt of any public benefit while enrolled is added as a covariate. (This is only relevant for the financial aid types.)

Notes: For degree completion models, we restricted our sample to those who ever enrolled in education beyond high school between ages 18 and 35. This helps us interpret the role of financial aid variables. Otherwise, the model would include young adults who never enrolled in education beyond high school and receipt of financial aid would be conflated with educational enrollment. Specifically, models for any degree include young adults who ever pursued an associate degree, bachelor's degree, or graduate degree (but not those who only ever pursued a certificate Models for public benefit programs were estimated individually (6 models); financial aid types were estimated jointly in a single model. Public benefit variables are measured as years of receipt while enrolled; financial aid variables are measured as whether an individual ever received this type of aid while enrolled. Odds ratios are not directly comparable across these two measurement approaches. Covariates include poverty experiences throughout young adulthood, race, gender, first-generation student status, age in 1997, and whether the respondent was ever a parent while enrolled in school. Results are weighted to account for initial sampling design and attrition so that they are nationally representative.

Source: Authors' analysis of the National Longitudinal Study of Youth 1997 cohort, 1997-2021