Can I Afford College? How Students' Perceived Ability to Pay Shapes Postsecondary Outcomes and the Role of Policy

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Abstract

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Low- to moderate-income children who are qualified for college are far less likely to attend college and graduate than high-income children due, in part, to concerns about the cost of college (Advisory Committee on Student Financial Assistance, 2010). While many financial aid resources can make college affordable to many low-income children, the complexity of aid programs and eligibility requirements makes it difficult to understand the cost of higher education, whether it's affordable, and which colleges are affordable (Goldrick-Rab & Kolbe, 2016). When students lack clarity on the affordability of college, they may think they cannot afford it and decide not to pursue higher education.

While prior research on financial aid and college access acknowledges the importance of student's perceived ability to pay for college in shaping educational outcomes, it has not empirically evaluated this construct as a distinct mechanism, separate from actual ability

to pay, and has rarely considered how policy can influence it. This dissertation addresses this gap by exploring how high school students' perceived ability to pay for college shapes their postsecondary outcomes and the role that policy can play in shaping high school students' perceived ability to pay, thereby affecting their college-going expectations, and college enrollment.

Chapter 1 of this dissertation models the relationship between a student's socioeconomic status (SES) when in high school, perceived ability to pay for college, and their later post-secondary outcomes (i.e. enrollment and degree attainment) using a structural equation model and a large nationally representative longitudinal survey spanning 2009 to 2021. Findings indicate that perceived ability to pay mediates approximately 38% of SES's effect on students' college-going expectations and between 8% and 19% of its effect on postsecondary enrollment and degree attainment, depending on the outcome measured. The findings suggest that public policies aiming to improve postsecondary outcomes among low-SES students must address not only financial barriers but also students' perceptions of their ability to pay.

Chapter 2 of this dissertation examines the implementation of a new child development policy in California, which aims to support college-going among low-income students by providing universal, progressive education savings accounts. Using a mixed-methods approach—including administrative data analysis, surveys, and interviews with program participants and staff—I explore how CalKIDS is being implemented, how students perceive the program, and what barriers may be

limiting account claiming and fund use. Findings reveal that while the process of claiming accounts is generally easy for students, limited program awareness remains a primary obstacle to broader reach, largely due to constrained marketing resources and limited staff. Additionally, program administrators raised concerns that fund utilization among the eligible population is significantly lower than expected. Investigating this, I find that young adults who are eligible to use their funds are not experiencing issues with withdrawing funds—instead, many students choose to save their funds for future use, perceiving CalKIDS as a form of emergency savings for later in their educational journey, particularly when transferring to four-year institutions. Last, I highlight several program design features which create implementation challenges and may reduce the value of the program—such as logistical delays in processing distribution requests and confusion about eligibility rules—and provide recommendations for improvement. Despite these limitations, I find that students overwhelmingly view CalKIDS as a helpful and motivating source of support.

Chapter 3 of this dissertation examines the effect of a new FAFSA completion policy in California that aims for every high school senior to complete a FAFSA or the state financial aid form. This policy represents a major effort to increase college-going by ensuring that students learn their specific net cost of college, after accounting for financial aid. Using a panel of nearly all California high schools from 2017–18 through 2023–24, I estimate the policy's effects on FAFSA submissions, financial aid awards, and college enrollment using two quasi-experimental methods.

> Specifically, I use difference-in-differences and instrumental-variable designs to identify the causal impact of the policy. Results show that the policy significantly increased FAFSA and Cal Grant submissions, but had no effect on Cal Grant awards, and only modest positive effects on college enrollment.

This research aims to provide critical insights for state, local, or national policymakers seeking to improve educational access for young adults from low-income backgrounds. By analyzing the role that perceived ability to pay for college plays in shaping college-going expectations and enrollment, Chapter 1 illuminates how policies and interventions can improve academic outcomes by targeting students' perceived ability to pay. By conducting a process evaluation of a CDA policy, Chapter 2 improves our understanding of how students perceive the benefits of CDA programs, identifies areas for strengthening CDA program implementation in California, and informs the work of agencies nationwide that implement CDAs. Last, by examining the effect of a FAFSA completion policy in Chapter 3, this research illuminates how such policies can increase college enrollment by helping students understand the net cost of college after financial aid is applied. Ultimately, by understanding the complex interplay between socioeconomic status, perceived ability to pay for college, educational attainment, and policy interventions, it is possible to help promote a more equitable and inclusive society where every child has the opportunity to climb the economic ladder.

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Contents

Introduction and Motivation

A large body of research has challenged the notion that America is a "land of opportunity," where hard work and determination alone can elevate individuals born into poverty to higher socioeconomic status (SES) as adults. Instead, SES — defined by their parents' relative social, political, and economic standing and financial resources (Diemer et al., 2013)[1] — persists from generation to generation (Bowles & Gintis, 2002; K. K. Charles & Hurst, 2003; Chetty et al., 2014; Corcoran & Chaudry, 1997; Grodsky & Riegle-Crumb, 2010; Harper et al., 2003; Mazumder, 2005; Mckay & Lawson, 2003). According to Chetty (2014), only 8% of children born in 1980 in the bottom 20th income percentile make it to the highest income quintile as adults (compared to 36 percent of children born in the highest income quintile). Likewise, Charles & Hurst (2003) find that only 7% of children born to parents in the bottom wealth quintile make it to the top wealth quintile as adults (compared to 36% of children born to parents in the top wealth quintile).

Postsecondary education is one of the most important levers for upward mobility. Postsecondary educational attainment is strongly associated with higher earnings, greater employment stability, and increased wealth. For example, the unemployment rate for

[1] Socio-economic status (SES) status captures an individual's relative social-political-economic standing and financial resources (Diemer et al., 2013). SES is typically measured as a combination of education, income, and occupational prestige (Diemer et al., 2013; Liu, Soleck, et al., 2004). However, a review of SES measures by Diemer et al. (2013) suggests that assets should also be included in this definition; they find that indicators of social status generally cluster around two domains- prestige and resources. Researchers typically measure prestige by occupation, while resources are measured in various ways, including income, wealth, educational credentials, or lack of specific resources (e.g. food insecurity). Further, there are disciplinary differences in the measurement of SES; psychologists typically measure SES as educational attainment and occupational prestige, while sociologists and economists are more apt to use income, earnings, and wealth (Duncan & Magnuson, 2003).

persons 25 and older with a bachelor's degree is nearly half the rate of those with a high school diploma (U.S. Department of Labor, 2023). Likewise, the median weekly earnings of bachelor's degree earners are nearly double those of those with a high school diploma (U.S. Department of Labor, 2023). Conversely, less education is associated with less stable employment (Cairó & Cajner, 2014; Topel, 1991) and lower wealth (Oliver & Shapiro, 2006).

Despite the benefits of postsecondary education, significant educational attainment gaps exist between low-SES students and their higher-SES peers. Low-SES students – as measured by household income, parent's education and parental assets- are less likely to enroll in college and less likely to complete college degrees than higher-SES students. In 2020, about half of graduating low-income high-school students enrolled in college after graduation compared to nearly two-thirds of students from median-income households and three-quarters of students from high-income households (Klugman et al., 2022a). Among students who began postsecondary education between 1992 and 2000, only 24% of those whose parents did not have a bachelor's degree attained one, compared to 68% of students whose parents did (X. Chen & Carroll, 2005). These education gaps by childhood SES suggest a need for more effective public policies targeting education equity. Parental assets also predict educational attainment, even when controlling for income (Conley, 2001; Jez, 2014; Pfeffer, 2018; Williams Shanks & Destin, 2009; Zang et al., 2024). For example, one study found that the probability of college attendance is about 12% higher for children whose parents have higher than median wealth relative to their lower-wealth peers, after controlling for factors associated with educational attainment, including parental income (Zang et al., 2024). These persistent gaps underscore the crucial role of

public policies in overcoming the barriers that restrict low-income students' access to higher education.

Many policies and interventions aim to help students pay for college and increase transparency in the cost of college, two well-established barriers (Advisory Committee on Student Financial Assistance, 2010; Heller & Callender, 2013). However, many of these have had disappointing results and faced criticism. Tax credits, Pell Grants, and traditional 529 accounts have been criticized for disproportionately benefiting middle- and upper-income families (Bulman & Hoxby, 2016; Herbaut & Geven, 2020; Long, 2004). While promise programs and some state aid have boosted enrollment overall, their effects on low-income students remain limited or uneven (Bruce & Carruthers, 2014; S. Dynarski, 2000; Sjoquist & Winters, 2015). Information campaigns designed to increase students' understanding of financial aid and the cost of college have rarely shifted enrollment (e.g., (Bird et al., 2021; Gurantz et al., 2020; Page et al., 2023). While more intensive supports—counseling, FAFSA assistance, or clear affordability messages—have proven more effective (Avery, 2010; Bettinger, 2013; Cannon & Goldrick-Rab, 2016; B. Castleman & Goodman, 2014; Gurantz et al., 2020).

More recently, policymakers and advocates have developed new approaches aimed at reducing barriers specifically for low-SES students. This dissertation explores two such policies- Child Development Accounts (CDAs) and FAFSA completion policies. CDAs are publicly subsidized education savings plan that operate through tax-advantaged 529 college savings plans. Typically provided early in a child's life and designed to channel larger benefits to lower-resources households, CDAS not only help build financial assets

for higher education but also aim to instill a college-going mindset (Clancy et al., 2019; M. W. Sherraden, 1991). FAFSA completion policies, in contrast, intervene later, when adolescents are making decisions about going to college. Because the FAFSA is the gateway to federal, state, and institutional aid, completing the form allows students to learn their net cost of college, after accounting for financial assistance. By requiring or strongly encouraging FAFSA completion in high school, these policies can increase transparency about college affordability at a critical decision point and have the potential to raise college enrollment rates. Both policies, though distinct in timing and design, can shape the students' beliefs about whether college is financially attainable.

While SES is strongly predictive of postsecondary outcomes, and many policies seek to make college more affordable or improve cost transparency, little is known about how such policies shape students' *perceived* ability to pay for college. However, theory suggests that students' perceived ability to pay for college is an important mechanism in the relationship between SES and educational outcomes. Drawing on identity-based motivation theory (Oyserman, 2014), Elliott and colleagues argue that students' affordability beliefs influence the development of college-going identities, which in turn shape college-going expectations and behavior (Elliott et al., 2011). If this theory is true, students who doubt their ability to pay may lower their expectations or forgo applying altogether, even when aid could make attendance possible. Conversely, students who believe college is affordable may form stronger college-going identities and persist in pursuing higher education. By overlooking perceived ability to pay, research and policy alike may be missing a central mechanism that helps explain why SES gaps in enrollment and completion persist.

Dissertation Studies

This dissertation consists of three empirical studies that together advance understanding of how socioeconomic status, perceived ability to pay, and policy interventions interact to shape postsecondary trajectories for students from low-SES backgrounds. Chapter 1 focuses on perceived ability to pay as a mechanism; Chapter 2 examines the implementation and perceived value of a large-scale CDA program; and Chapter 3 analyzes the effects of a statewide FAFSA completion policy. Taken together, these chapters establish perceived affordability as a key mediator between SES and postsecondary outcomes and deepen our understanding of two complementary policy tools—one financial, one informational—that can plausibly shift affordability beliefs, college-going expectations, and enrollment decisions.

Summary of Chapter 1: Perceived Affordability as a Mediator Between Socioeconomic Status and Postsecondary Outcomes: Evidence from a Structural Equation Model

This study examines the mediating role of high school students' *perceived* ability to pay for college in the relationship between socioeconomic status (SES) and postsecondary educational outcomes using structural equation modeling. Drawing on theories of identity formation, the study examines whether students' beliefs about their ability to pay for college influence their educational expectations and, in turn, impact their academic outcomes. Utilizing data from the 2009 High School Longitudinal Survey (HSLS), a nationally representative sample of High School Students, the analysis investigates whether high school students' perceived ability to pay for college mediates the effects of

SES on their postsecondary educational expectations, enrollment, and degree attainment. Findings indicate that perceived affordability mediates approximately 38% of SES's effect on students' college-going expectations and between 8% and 19% of its effect on postsecondary enrollment and degree attainment, depending on the outcome measured. The findings suggest that public policies aiming to improve postsecondary outcomes among low-SES students must address not only financial barriers but also students' perceptions of their ability to pay.

Chapter 1 contributes to the literature on mechanisms linking adolescents' socioeconomic status (SES) to postsecondary outcomes by broadening both the outcomes and mediators typically examined. Prior research has primarily focused on expectations for a bachelor's degree or enrollment at 4-year institutions, yet many low-income students pursue sub-baccalaureate pathways; for example, in 2021–22 about 44.1 percent of Pell Grant recipients were enrolled at institutions that primarily grant associate's degrees, certificates, or other sub-baccalaureate credentials (U.S. Department of Education, 2020). This chapter addresses that limitation by examining a wider range of postsecondary pathways, including technical/vocational programs and community colleges, using data from the High School Longitudinal Study of 2009 (HSLS). HSLS includes students' own postsecondary expectations, detailed SES measures, and—critically—a direct measure of their perceived ability to pay for college. While perceived ability to pay has been treated as a theoretically important construct in models of college choice and identity-based motivation (e.g., Perna, 2006; Elliott et al., 2011; Oyserman, 2015), to my knowledge this is the first study to empirically model students' perceived ability to pay as a mediator

between SES and postsecondary expectations and outcomes. Distinguishing perceived from more direct measures of actual ability to pay (i.e. income and parental education level) is particularly important because income and assets may shape these constructs differently. Finally, HSLS provides degree outcomes, allowing this chapter to examine degree attainment (including sub-baccalaureate credentials) as well as expectations and enrollment, thereby offering a more comprehensive view of how SES and affordability perceptions shape students' postsecondary trajectories.

These results have several implications for policy and practice. Many policies, such as the federal Pell Grant and institutional aid, primarily target actual ability to pay and do so relatively late in the college decision-making process (after FAFSA completion or college application), limiting their influence on earlier stages when students form expectations, talk with parents and mentors about college, and take preparatory steps. In contrast, policies like Promise programs, child development accounts (CDAs), and school-based advising or counseling are designed to influence perceptions of affordability before students must make concrete decisions about college. CDAs, for example, often provide modest initial deposits that may not substantially change students' objective ability to pay, but can signal that college is attainable and offer a tangible financial asset, thereby shifting perceived ability to pay—an effect that, based on this chapter's findings, should support the development of a postsecondary-bound identity and, ultimately, higher attainment; early evidence from San Francisco's Kindergarten to College (K2C) program suggests that CDAs can increase college enrollment, with larger effects among groups underrepresented in college (Elliott et al., 2025). Likewise, Promise programs that combine simple, salient

affordability guarantees with clear messaging—such as the Kalamazoo Promise and Pittsburgh Promise—have been shown to increase college intentions and enrollment, particularly among disadvantaged students (Bartik et al., 2021; Page et al., 2017). These findings also help explain why many information-only interventions have shown limited impacts on enrollment: generic or non-personalized information may not meaningfully alter perceived ability to pay (Bird et al., 2021; Gurantz et al., 2020; Page et al., 2023), whereas more intensive or personalized efforts, such as FAFSA counseling, appear more effective because they help students understand how aid applies to them (Bettinger et al., 2012). Taken together, the results underscore that perceived affordability should be explicitly targeted and measured as a key outcome or mediating mechanism when designing and evaluating policies aimed at reducing inequality in college access and completion.

Summary of Chapter 2: Outreach, Participation, and Perceptions: A Process Evaluation of CalKIDS

This study evaluates the implementation of the California Kids Investment and Development Savings (CalKIDS) program, which aims to support college-going among low-income students by providing universal (but also progressive) education savings accounts. Focusing on young adults who have claimed their CalKIDS account but have not used the funds they are eligible for, this study uses a mixed methods approach- including administrative data analysis, surveys, and interviews with program participants and staff—to explore how CalKIDS is being implemented, how students engage with the program, and what barriers may be limiting account claiming and fund use.

Findings reveal that while the process of claiming accounts is generally easy for students, limited program awareness remains a primary obstacle to broader reach, largely due to constrained marketing resources and limited staff. Due to limited marketing funds, CalKIDS staff have been relying heavily on school district engagement to increase awareness, and the patterns of account claiming, which vary widely by geographic region, suggest this is so. Each successive cohort has higher account claiming rates, reaching 33% for the 2024 high school graduating class, indicating that program awareness is increasing due to the efforts of both the program and school districts. Looking forward, two recently passed laws will likely further increase awareness in the school system.

Additionally, program administrators raised concerns that fund utilization among the eligible population is significantly lower than expected. Investigating this, I find that young adults who are eligible to use their funds are not experiencing issues with withdrawing funds—instead, many students choose to save their funds for future use, perceiving CalKIDS as a form of emergency savings. As resources for later in their educational journey, particularly when transferring to four-year institutions. The distribution request rates by cohort are consistent with this: 67% of the first cohort, who have claimed their account and are now three years from high school, have used their CalKIDS funds, and 17% of recent high school graduates were not enrolled in classes, making them ineligible for a distribution. Thus, the vast majority (81%) of CalKIDS participants eligible for a distribution are requesting one by the third year after high school. Although the distribution process is technically straightforward, there is room for improvement in this process. Logistical delays and confusion about eligible uses may limit the program's effectiveness, especially for

those expecting rapid access. Despite these limitations, students overwhelmingly view CalKIDS as a helpful and motivating source of support.

This chapter makes three main contributions. First, it offers actionable, near-term guidance for CalKIDS staff by identifying where implementation is working well, where account claiming and fund use break down, and which concrete changes to outreach, messaging, and procedures could reduce frictions and better reach under-served groups. These lessons are also relevant for others implementing similar programs in other jurisdictions, including new Trump Accounts created under the One Big Beautiful Bill Act of 2025. Second, it provides an in-depth empirical study of a large, statewide child development account, contributing to the academic literature on CDAs and assessing how their theoretical models play out in practice—at least for a cohort of young adults who have been exposed to the policy for only a short time. It also supplies future researchers with critical implementation context that they can use when studying the longer-run effects of CalKIDS across cohorts. Third, it contributes to social policy implementation literature by unpacking why some eligible students do not use their benefits.

Summary of Chapter 3: Early Impacts of California's FAFSA Completion Policy: Can a FAFSA Completion Policy without a High School Graduation Requirement Increase Financial Aid Awards or College Enrollment Outcomes?

The Free Application for Federal Student Aid (FAFSA) is the critical entry point for accessing federal, state, and institutional financial aid, yet many students forgo filing, leaving billions of dollars in aid unclaimed. To address this, fifteen states have enacted universal FAFSA

policies requiring or strongly encouraging all high school seniors to complete the FAFSA or a comparable aid form. In 2022–2023, California implemented a "soft" version of this policy, which—unlike some other states—does not mandate FAFSA completion as a graduation requirement but relies on school counselors to facilitate one-on-one support for students. This study examines whether such a policy, absent a high school graduation mandate, can increase FAFSA submission, financial aid applications and awards, and college enrollment.

Using a panel of nearly all California high schools from 2017–18 through 2023–24, I estimate the effect of the policy using two quasi-experimental methods. Specifically, I use difference-in-differences and instrumental variable designs to identify the causal impact of the policy. My main finding is that California's policy produced sizable increases in FAFSA/CADAA submission rates—about 7 percentage points on average for schools that are treated by the policy (i.e., schools not already in the top decile of FAFSA/CADAA completion rates)—and modest gains in college enrollment of roughly 1 percentage point, relative to top-decile schools with little room to improve. The policy also raised Cal Grant submission rates, with effects of about 5.5 percentage points on average among non-alternative schools in the bottom nine baseline deciles, where the parallel-trends assumptions are best supported. Despite the increase in Cal Grant submission rates, I found no effect on Cal Grant award rates.

This paper provides an evaluation of California's FAFSA completion policy, extending the evidence base on how state-level initiatives can promote college access. The study offers new insights into how FAFSA completion laws can affect student outcomes without making

FAFSA completion a high school graduation requirement. The results are useful for policymakers contemplating similar laws in their own states and contribute to several strands of academic literature. The findings add to the body of research on initiatives that aim to increase FAFSA completion (e.g., Bettinger, 2013; Bird et al., 2021; Castleman & Goodman, 2014; Deneault, 2023; Kim, 2025) and the broader college-access literature that emphasizes the factors that shape postsecondary decision-making (S. M. Dynarski & Scott-Clayton, 2006; L. W. Perna, 2006).

Taken together, these three chapters advance theory by establishing perceived ability to pay as a key mechanism linking SES to postsecondary outcomes and advance our understanding of two related policies —one financial and one informational. Both address barriers to college access in ways that can plausibly shape affordability beliefs, college-going expectations, and enrollment decisions.

Chapter 1: Perceived Affordability as a Mediator Between Socioeconomic Status and Postsecondary Outcomes: Evidence from a Structural Equation Model

1.0 Introduction

Socioeconomic status (SES)—commonly measured by household income, parental education, and family assets- is a strong predictor of children's postsecondary attainment. A large body of research has found that young adults hailing from households with low-income, limited assets, or whose parents are without college degrees are less likely to complete college than higher-SES students (X. Chen & Carroll, 2005; Conley, 2001; Jez, 2014; Klugman et al., 2022b; Williams Shanks & Destin, 2009; Zang et al., 2024). Researchers have identified many explanations for gaps in enrollment and degree attainment between low- and high-SES households. These reasons include less academic preparation in K-12 schools (Carbonaro et al., 2023; Condron & Roscigno, 2003; Reardon et al., 2022) greater challenges with transitioning to postsecondary school (Cabrera & La Nasa, 2000; Choy, 2001; Hartley & Garfinkel, 2020; Ikenberry & Hartle, 1998; Page & Scott-Clayton, 2016), more competing family responsibilities, (Ober et al., 2020), greater difficulty paying for postsecondary education (Advisory Committee on Student Financial Assistance, 2010), and lower parental educational expectations (Grinstein-Weiss et al., 2009; Huang et al., 2010; Zhan & Sherraden, 2002).

Researchers have explored this latter factor – parental education expectations – using mediation analysis, and have found parental educational expectations mediate the relationship between financial resources and a range of outcomes, including students'

performance on math and reading tests (Zhan, 2006), high school graduation (Zhan & Sherraden, 2002) high school engagement (Grinstein-Weiss et al., 2009) and college entry (Huang et al., 2010). While these prior studies often interpret educational expectations for postsecondary education as a psychological mechanism that links socioeconomic background to postsecondary outcomes, none of the studies I reviewed incorporate students' own educational expectations. Furthermore, to my knowledge, mediation studies in this literature have not investigated a related factor: adolescents' perceived ability to pay for postsecondary education. This perception reflects how adolescents interpret their financial reality—not simply how much money their families have, but whether they believe they can afford college.

As a result, we know little about whether students' educational expectations and affordability perceptions help explain the well-established relationship between SES and postsecondary outcomes, or whether they operate as distinct mechanisms. This represents a critical gap in the literature; in particular, students' perceived ability to pay may reflect a distinct psychological construct—one that is related to, but not reducible to, actual SES—and may help explain variation in expectations and educational outcomes beyond what objective SES measures can capture.

Understanding this mechanism is crucial because it provides insight into how policies might be able to alter the educational trajectories of low-SES students by helping them to believe that college is financially within reach. This study addresses this gap by explicitly modeling adolescents' perceived ability to pay as a distinct psychological mechanism linking socioeconomic background to postsecondary outcomes—a factor that is theorized

to be important (Elliott et al., 2011; Hossler et al., 1999; Oyserman & Destin, 2010; L. W. Perna, 2006, 2006; Shobe & Page-Adams, 2001; St. John, 1991), but not tested empirically.

I argue that adolescents' perceived ability to pay for postsecondary education plays a critical role in shaping students' postsecondary expectations and outcomes. Drawing on Identity-Based Motivation (IBM) theory, I hypothesize that students who believe they can afford college are more likely to adopt a college- or career-training identity in high school—that is, to see higher education as a realistic and relevant part of their future identity, to form expectations that align with that future, and to take steps toward achieving it.

To examine whether SES influences postsecondary outcomes through students' perceived ability to pay and their postsecondary educational expectations, I use structural equation modeling (SEM) and data from the High School Longitudinal Study of 2009 (HSLS:09) and the U.S. Department of Education's Central Processing System (CPS). I examine whether SES influences postsecondary outcomes directly and indirectly through students' perceived ability to pay for postsecondary school and their postsecondary expectations. I answer three research questions:

1. Do adolescents' perceived ability to pay for postsecondary mediate the relationship between SES (as measured by parental income and parental education) and their college- or career-training going identity?
2. Do adolescents' college- or career-training going identities mediate the relationship between SES and postsecondary enrollment and degree attainment?

3. Do these mediated relationships differ by the type of degree students earn (e.g., associate vs. bachelor's)?

This analysis finds that the perceived ability to pay is significantly associated with students' educational expectations, and that these expectations, in turn, are associated with postsecondary enrollment and attainment. These associations suggest that students who believe they can afford college are more likely to expect to earn a degree, and those expectations are positively related[2] to postsecondary outcomes, underscoring the need for policies that address not only financial constraints but also students' perceptions of affordability.

By modeling perceived ability to pay and students' educational expectations as distinct mediators — mechanisms theorized but rarely tested empirically - this study deepens understanding of the psychological processes linking SES to postsecondary outcomes. Prior studies have proxied student affordability beliefs with income or assets, and student educational expectations with parental expectations (e.g. Grinstein-Weiss et al., 2009; Huang et al., 2010; Zhan & Sherraden, 2002). However, this analysis uses measures of *students'* expectations and their *perceived* ability to pay. By examining these mediators, while accounting for SES and a measure of actual ability to pay, the study provides new evidence that subjective student affordability beliefs influence postsecondary expectations and enrollment, strengthening theoretical claims about how perceived

[2] While these relationships cannot be interpreted as causal, they provide evidence consistent with the theoretically plausible idea that psychological factors—such as affordability perceptions and future expectations—may play a role in the broader pattern of SES disparities in educational attainment.

barriers shape educational trajectories. The study also contributes to the academic literature by examining enrollment and degree outcomes beyond the very commonly studied bachelor's degree and 4-year college (e.g., Avery & Kane, 2004; Elliott et al., 2011; L. Perna, 2024). By examining associate's degrees, certificates, and other sub-baccalaureate pathways in addition to bachelor's degrees, this study offers a more comprehensive view of how affordability beliefs shape the educational trajectories of low-income students, who often pursue these alternative pathways.

This research has important implications for public policies aiming to increase educational attainment, particularly for students from lower-SES backgrounds. Distinguishing between actual and perceived ability to pay matters because financial incentives alone may fall short if students never view college as a feasible option. Students' beliefs about affordability may reflect not only material constraints but also confusion about the complex processes of college pricing, financial aid, and actual costs. Many existing policies—such as the Pell Grant or institutional financial aid—aim to improve students' actual ability to pay, but are delivered late in the decision-making process, after students have already completed the FAFSA and applied to college. By that point, students may have already formed expectations or made decisions based on what they believe is financially possible. In contrast, policies that emphasize affordability messages (e.g., "free college") or early interventions such as child development account (CDAs) may be effective in shifting actual financial capacity, students' psychological orientation toward college, and postsecondary enrollment (Bartik et al., 2021; Elliott et al., 2025; Page et al., 2017). Likewise, intensive supports such as FAFSA completion assistance (Bettinger et al.,

2012) have been more effective than broad information campaigns (Bird et al., 2021; Gurantz et al., 2020; Page et al., 2023), suggesting that interventions work best when they clarify students' own ability to pay. Yet because these studies did not measure perceived affordability, it is difficult to know whether the policies operate through this mechanism.

2.0 Background

A large body of research documents the relationship between socioeconomic status (SES), postsecondary educational expectations, and postsecondary outcomes. Scholars have consistently found that students from families with higher incomes, more assets, and more educated parents are more likely to expect to complete college and, ultimately, more likely to do so (Elliott et al., 2011; Huang et al., 2010; Pfeffer, 2018; Zhan, 2006). In many studies, researchers examine mediated pathways, asking whether the association between SES and educational outcomes operates through expectations—that is, students' or parents' realistic beliefs about the highest level of education the student will likely attain. Realistic *expectations* are conceptually distinct from *aspirations*, which reflect what individuals hope to achieve without regard to external constraints (Reynolds & Pemberton, 2001). A strong body of research finds that both matter, and that parental expectations may shape students' own expectations through socialization processes (Benner & Mistry, 2007; Blumenthal & Shanks, 2019a; Wang & Benner, 2014; Yamamoto & Holloway, 2010).

In mediation analyses, researchers have assessed connections between parental education level and various measures of financial resources (used as proxies for SES), parental expectations, and a range of behaviors, attitudes, or outcomes related to

education (Z. Chen et al., 2023; Elliott et al., 2011; Fang et al., 2018; Grinstein-Weiss et al., 2009; Huang et al., 2010; Williams Shanks & Destin, 2009; Yadama & Sherraden, 1996; Zhan, 2006; Zhan & Sherraden, 2002; Zheng et al., 2020). For example, Zhan(2006), using the National Longitudinal Survey of Youth (NLSY79), finds that mothers' expectations partially mediate the relationship between household net worth and children's performance on standardized math and reading tests. Zhan, Min; Sherraden, Michael, (2002) also use NLSY data to show that parental homeownership and savings predict children's high school graduation, with part of the association mediated by mothers' expectations. Using the Survey of Income and Program Participation (SIPP), Grinstein-Weiss et al. (2009) find that parental expectations mediate the relationship between family assets and students' school engagement. Similarly, Fang et al. (2018), using data from the China Family Panel Studies, find that parental educational expectations mediate the association between family savings and children's academic achievement in China.

A related factor that is theoretically important and distinct, but not yet tested (to my knowledge) in related literature, is adolescents' perceived ability to pay for postsecondary education. Drawing on Identity-Based Motivation (IBM) theory, Elliott et al. (2011) argue that students form postsecondary identities partly in response to contextual cues about affordability. However, in my extensive literature review, I have found no studies that have directly tested these theoretical claims using nationally representative longitudinal data.

The High School Longitudinal Study of 2009 (HSLS:09) offers an opportunity to examine this missing link. HSLS includes a direct measure of high school students' perceived ability to pay for college, based on their agreement with the statement: "Even if you study, your

family cannot afford a 4-yr college." Descriptive analysis of HSLS data shows that these affordability beliefs are strongly associated with postsecondary outcomes. For example, Freeman & Wilson (2022) report that 80% of students who believed their family could afford college had enrolled in postsecondary education within three years of high school, compared to just 59% of those who did not believe college was affordable. These patterns suggest that perceived ability to pay may be a key psychological factor worth measuring and modeling directly.

There is good reason to believe that adolescents' perceived ability to pay is distinct from measures of actual ability to pay (e.g., as approximated by SES), and thus worthy of being measured and studied. Simply put, measuring a student's actual ability to pay is not easy. It requires knowing a student's family income, assets, tuition costs, expected financial aid, and living expenses. Much of this is not information the students are privy to until they complete the FAFSA, submit college applications, and research local living costs of the college they want to attend. This delayed, convoluted, and ambiguity-laden process obscures the price of college (Goldrick-Rab & Kolbe, 2016) and suggests that students' perceived ability to pay may differ from measures of their actual ability to pay.

Empirical studies reinforce this claim. Researchers have found that high school students and their parents lack accurate and complete information about the cost of college and financial aid (Bettinger et al., 2012; Grodsky & Jones, 2007; Hillman et al., 2015; Horn et al., 2003; Scott Clayton, 2012; Velez & Horn, 2018). In particular, many studies have found that people tend to overestimate the actual price (Bettinger et al., 2012; Clayton et al., 2025; Horn et al., 2003; Ikenberry & Hartle, 1998). In one study, low-income participants thought

college costs three times as much as it does in reality (Bettinger et al., 2012). In another study of students at a high school with predominantly low-SES students and participating in a college coaching program, Avery & Kane, (2004) found correlations between students' affordability beliefs and both their plans to attend a 4-year university when in high school and their later enrollment. One surprising finding from their study was that there was no relationship between perceived ability to pay and the perceived cost of tuition (either total or net costs after aid). Given that almost everyone in the sample was from a low socioeconomic status (SES) background, presumably with a similar actual ability to pay for postsecondary education, this latter finding suggests that the perceived ability to pay differs from the actual ability to pay and thus, may be a factor influencing postsecondary educational expectations and enrollment outcomes, independent of the actual ability to pay.

Misunderstanding of actual college costs may have consequences. Students who underestimate their ability to pay may forgo early academic preparation, such as taking courses needed for college, saving, or completing application steps, reducing their chances of attending college. Grodsky and Jones (2007) showed that misinformation about costs and aid eligibility suppresses college application behavior. Similarly, Horn et al. (2003), using data from the 1999 National Household Education Survey (NHES), found that perceptions of affordability were highly predictive of whether students were less likely to engage in financial preparation activities, such as saving for college or planning to apply for financial aid. Rosa et al., (2006) surveyed low-income students in Southern California and found that many believed that college (broadly speaking) is too expensive for them to

attend, even though many California community college students pay little or no tuition. Misunderstanding the cost of college or the availability of financial aid is arguably linked to perceived ability to pay and college enrollment. If students are likely to overestimate the cost of college, their perceived ability to pay may be lower than their actual ability to pay. If perceived ability to pay is lower than their actual ability to pay, this could be a significant factor in suppressing college attendance. Thus, it is important to understand how students' perceived ability to pay for postsecondary education operates as a distinct mechanism.

While many policies and interventions have attempted to increase student and family awareness of college costs and financial aid, their effectiveness has been mixed. Information campaigns, such as reminders about FAFSA deadlines or aid availability, often fail to increase aid receipt or college enrollment (Bird et al., 2021; Gurantz et al., 2020; Page et al., 2023). In contrast, intensive counseling interventions (Avery, 2010; Bos et al., 2012; Cannon & Goldrick-Rab, 2016; Carrell & Sacerdote, 2017; B. Castleman & Goodman, 2018; Sherwin, 2012), direct assistance with completing the FAFSA (Bettinger et al., 2012; Cannon & Goldrick-Rab, 2016), assistance paired with requirements to complete the FAFSA (Deneault, 2023), and text-based nudges (e.g. reminders about FAFSA deadlines) done in partnership with institutions that had established relationships with students (B. L. Castleman & Page, 2015, 2016), have been effective at increasing financial aid receipt or enrollment. Further, financial aid interventions that provide clear messages of affordability by reducing tuition to zero, such as 'promise' programs and 'last dollar' programs, have also been effective at increasing enrollment of low SES-students (e.g., Dynarski et al., 2018). One possible explanation for this mixed evidence is that the more effective programs also

help students develop a clearer, more accurate understanding of their own ability to pay—though this remains speculative, as perceived ability to pay is rarely measured directly in evaluations. Other researchers have also suggested that providing basic information may be ineffective at changing postsecondary outcomes. For example, based on their findings of the study previously mentioned, Avery and Kane (2004, p.24) conclude that "intervention that only provides information about tuition, financial aid, and likely wages is unlikely to be effective at changing the percentage of low-income students who go to college."

Despite its theoretical relevance, perceived ability to pay has received limited attention in the empirical literature. Most mediation analyses mapping relationships between SES and education outcomes include income, parental education, and/or assets as measures of socioeconomic status, but omit students' own beliefs about whether college is financially feasible. As a result, we know little about whether these perceptions help explain the well-established relationship between SES and students' postsecondary educational expectations, or whether they are independently associated with postsecondary outcomes. Even interventions that aim to improve students' understanding of college costs and financial aid rarely measure perceived affordability directly, leaving a critical gap in our ability to evaluate whether such interventions are targeting a potentially important mechanism. This study addresses that gap by modeling perceived ability to pay as a distinct mediator between SES and students' educational expectations, ultimately influencing college enrollment and degree attainment. By incorporating this construct into a broader mediation framework, this research explores whether affordability beliefs may be one way in which SES is related to students' postsecondary trajectories.

3.0 Theoretical Framework

This study draws on both Identity-Based Motivation (IBM) theory and insights from the higher education literature on college affordability perceptions to explain how socioeconomic context shapes students' postsecondary educational expectations and postsecondary outcomes. While IBM provides a psychological framework for understanding how identity and motivation interact, research in higher education highlights the importance of perceived college costs and aid in shaping student decisions. Together, these literatures suggest that perceived ability to pay for postsecondary school – which I commonly refer to as 'affordability beliefs' in this paper – may be a key mechanism through which SES influences educational trajectories.

IBM is one of several theories of identity within the discipline of social psychology that focuses on how social context and identification with others influence the thoughts, feelings, and actions of individuals and groups and the salience and importance of one's identities. IBM explains relationships between social context (e.g., SES), future identity, and educational attainment. A future identity is a concrete vision of one's future self (Markus & Nurius, 1986), such as an identity that includes enrolling in postsecondary education (i.e. a college-or-career training identity). Such identities might include, for example, performing a job that requires a postsecondary vocational degree or being a college graduate. In empirical research in education, college- or career-training-bound identities are frequently measured as one's holding realistic postsecondary educational expectations (Elliott et al., 2011). Thus, to use IBM to understand how policies affect student outcomes requires

understanding how policies might affect a student's social context related to their SES and how student postsecondary expectations mediate between a student's social context and their outcomes.

According to IBM, when school feels relevant and congruent with a student's active identities (e.g., a future college- or career training identity), and when students feel they can accomplish relevant behavioral tasks (e.g., pass an exam if they study), they are more motivated to achieve in school (Oyserman & Destin, 2010). IBM theorists also emphasize that students need strategies for overcoming difficulties (Oyserman et al., 2006). For example, in the context of this study, if students perceive paying for postsecondary education as a barrier and do not have a strategy for overcoming it, they will be less likely to see themselves as bound for college or career training. A key takeaway from IBM is that lacking future self-images that make higher education seem relevant can create psychological barriers to achieving positive academic outcomes. This theory implies that if policies can foster a college- or career-training identity, they may be able to increase postsecondary educational attainment among low-SES households.

Researchers in the higher education field have also highlighted students' perceptions of whether college is affordable as an important factor related to aspirations to attend college. St. John (1991) argue that student perceptions of financial aid and costs, rather than objective measures alone, drive educational decisions, particularly for underrepresented groups. Shobe & Page-Adams (2001) propose that having financial resources precedes perceptions about what opportunities are available. Perna's (2006) college student choice model emphasizes that college choice is a layered decision-making

process in which perceptions of costs and aid — not just actual prices — heavily influence whether students aspire to and actually attend college. She also argues that differences in the acquisition and use of information about college costs and financial aid could help explain differences in college enrollment by SES groups. Hossler et al.'s (1999) college choice model explicitly lists perceptions of costs and benefits as critical during the predisposition and search stages of the college decision process. Yet despite this recognition, researchers in this tradition have typically treated perceptions as part of broader constructs like information or socioeconomic status, rather than measuring perceived ability to pay as a distinct psychological variable.

Elliott et al. (2011) and Goldrick-Rab & Kolbe (2016) bridge these literatures. Elliott et al. (2011) integrates Identity-Based Motivation theory into their conceptual framework to explain how public policies—namely, child development accounts —shape students' college-going identities. Unlike most researchers in higher education who focus primarily on structural or informational barriers, Elliott and colleagues use IBM to bring in sociopsychological mechanisms; they explain how the existence of financial resources sends messages to students that influence their postsecondary identity. They explain that children are more likely to hold a future identity that requires postsecondary education "if the costs of college feel manageable and the benefits feel salient." The same researchers further elaborate that such judgments should not be understood as children making decisions per traditional economic theory, where agents are rational and act on the basis of complete information (Becker, 1962; Paulsen, 2001). Instead, access to resources acts as contextual information that "sends explicit and subtle cues" that influence children's

perception of their future identity, i.e., increasing the perception that one is "college material" and should prepare ahead to be ready to enroll when the time comes. Further, Goldrick-Rab & Kolbe (2016) use theories and insights from social psychology to explain *how* context theoretically shapes affordability perceptions. They also explain how such perceptions influence high schools motivation: "feeling that the price of college is out of reach undercuts expectations that effort matters (Goldrick-Rab & Kolbe, 2016, p. 240)."

Drawing on these intersecting theoretical insights, my study investigates the pathways through which SES influences students' postsecondary outcomes, with a specific focus on the mediating roles of perceived ability to pay and college or career-training identity. My aim is to assess the extent to which students' beliefs—not just their material resources—contribute to persistent socioeconomic gaps in postsecondary outcomes (measured by enrollment and degree attainment). One limitation of my analysis is that when measuring SES, I do not observe family assets or net worth, which prior research has shown to be important predictors of postsecondary educational expectations and outcomes (Grinstein-Weiss et al., 2009; Huang et al., 2010; Zhan, 2006). As a result, as discussed in the next section, my models rely on available SES indicators—namely family income and parental education— which may only partially capture students' actual ability to pay.

4.0 Method, Conceptual Model, & Hypotheses

This analysis uses mediation analysis within a Structural Equation Modeling (SEM) framework to assess the relationships hypothesized in Figure 1. I use mediation analysis because it is one of the most effective methods to understand how a mediator intervenes

in a pathway from predictor to outcome (MacKinnon et al., 2007). Specifically, I investigate whether high schooler's perceived ability to pay for postsecondary education (M1) mediates the relationship between their SES (X, measured by family income and parental education level) and their college-going identity (M2, measured by their realistic postsecondary educational expectations), and whether those expectations, in turn, mediate the relationship between their SES and their later postsecondary educational outcomes (Y, measured by enrollment and attainment). My hypotheses include the following:

Hypothesis 1: SES will have direct positive effects on high schoolers' beliefs in their ability to afford college, their college or career-training identity, and their postsecondary educational outcomes (In the diagram, $a > 0$, $b' > 0$, and $c' > 0$).

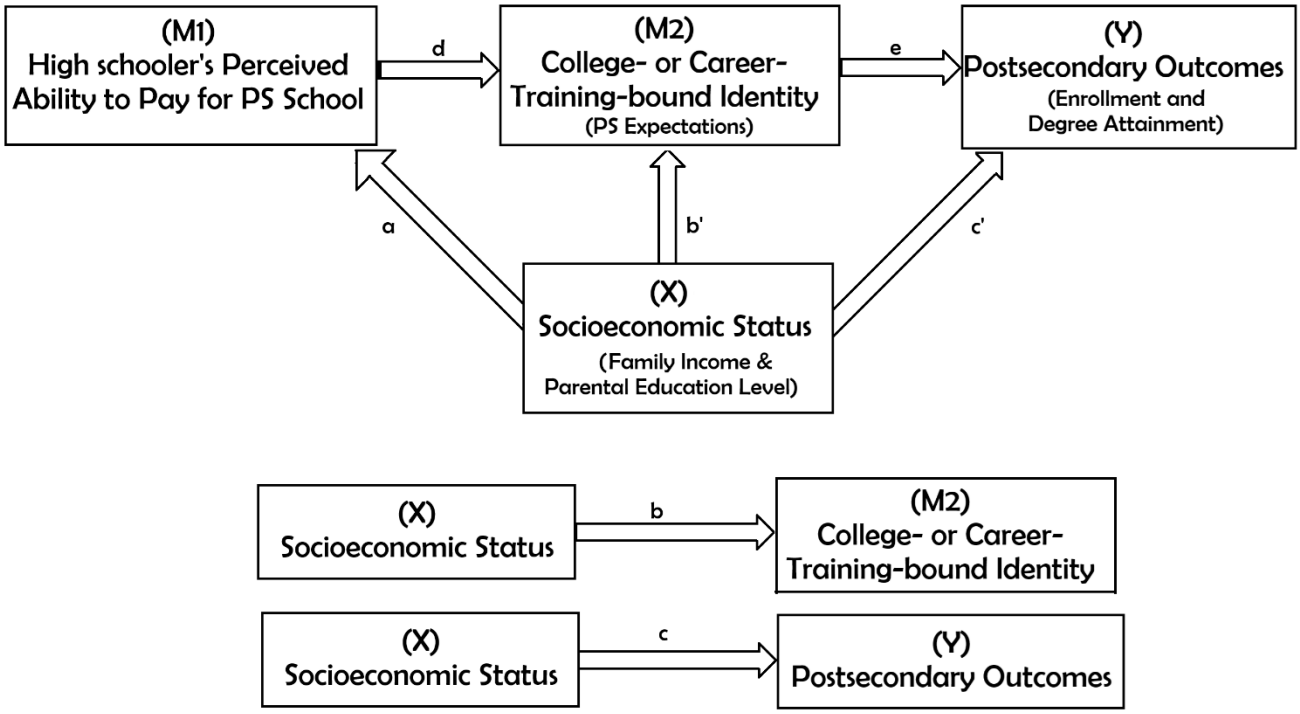
Hypothesis 2: A high schooler's perceived ability to pay for a postsecondary school will directly affect their college or career-training identity ($d > 0$).

Hypothesis 3: A high schooler's perceived ability to pay for postsecondary school will mediate the path between SES and their College or Career Training Identity ($b' < b$).

Hypothesis 4a and 4b: A high schooler's college or career-training identity will mediate the path between SES and their postsecondary educational outcomes ($c' < c$)

Hypothesis 5: These hypothesized relationships will be true for all postsecondary educational outcomes tested.

Figure 1: Conceptual Model



I use structural equation modeling (SEM) to conduct my mediation analyses because it allows me to estimate multiple, interrelated regression equations simultaneously and to examine both direct and indirect (mediated) effects within a single unified model. SEM is a versatile methodology that combines elements of factor analysis, path analysis, and regression analysis (Kline & Little, 2023). It uses a conceptual model, path diagram, and system of linked regression-style equations to capture complex relationships among observed and latent variables (Gunzler et al., 2013). SEM is widely used in psychology, sociology, economics, and related disciplines to test theoretically informed models involving mediators and other interrelated variables. This approach is particularly well-suited to my research because it enables a rigorous test of the mediation pathways

proposed by identity-based motivation theory, while also incorporating empirical insights from studies of college affordability. It further allows me to account for measurement error and to formally test whether multiple mediators (perceived ability to pay for postsecondary school and postsecondary educational expectations) mediate the relationship between SES and postsecondary outcomes.

Using SEM, I estimate the total, direct, and indirect effects of SES on educational outcomes. Measuring the total and indirect effects allows me to assess the extent to which perceived ability to pay and educational expectations mediate the relationship between SES and postsecondary outcomes. Indirect effects are computed for each path of interest and divided by total effects, and confidence intervals on the resulting 'share mediated' are used to assess their statistical significance. All models include observed variables only (i.e., no latent constructs), control for a comprehensive set of covariates (described in the next section), and are estimated using Stata's sem command.

To account for complex survey design and to produce accurate standard errors, I incorporate balanced repeated replication (BRR) weights provided by NCES. BRR replicates account for the complex survey design (e.g., stratification and clustering), improving the accuracy of standard error estimates. Although the outcome variables in this analysis are binary, I use OLS-based structural equation modeling to estimate direct and indirect effects. This approach is not uncommon in mediation research (MacKinnon et al., 2007) and allows for straightforward decomposition of total effects. While OLS violates some assumptions for binary outcomes—such as homoscedasticity and normally distributed errors—it produces reasonable approximations under conditions where the outcome is not

rare and predicted values remain within plausible bounds. The resulting coefficients from the estimated model should be interpreted as marginal effects rather than odds ratios or changes in probability.

5.0 Data

This majority of data used in this study comes from the restricted-use version of the High School Longitudinal Study of 2009 (HSLS:09), a nationally representative sample dataset administered by the National Center for Education Statistics (NCES).[3] HSLS follows a cohort of approximately 21,000 9th-grade students from 944 public and private schools across the United States, beginning in the 2009–10 school year and tracks them through their high school and postsecondary years. The primary goal of the HSLS is to measure students' academic, social, and interpersonal development over time. The study collects extensive information from students, parents, teachers, and school staff, and is merged with administrative data sources by NCES staff. The analytic sample uses HSLS data spanning 2009 to 2021, capturing outcomes by approximately age 26, including whether students enrolled in postsecondary education and whether they completed an associate or bachelor's degree. The sample is restricted to study participants who completed the 11th-grade "first follow-up survey." Throughout this analysis, I weight the data to adjust for unequal selection and survey nonresponse.

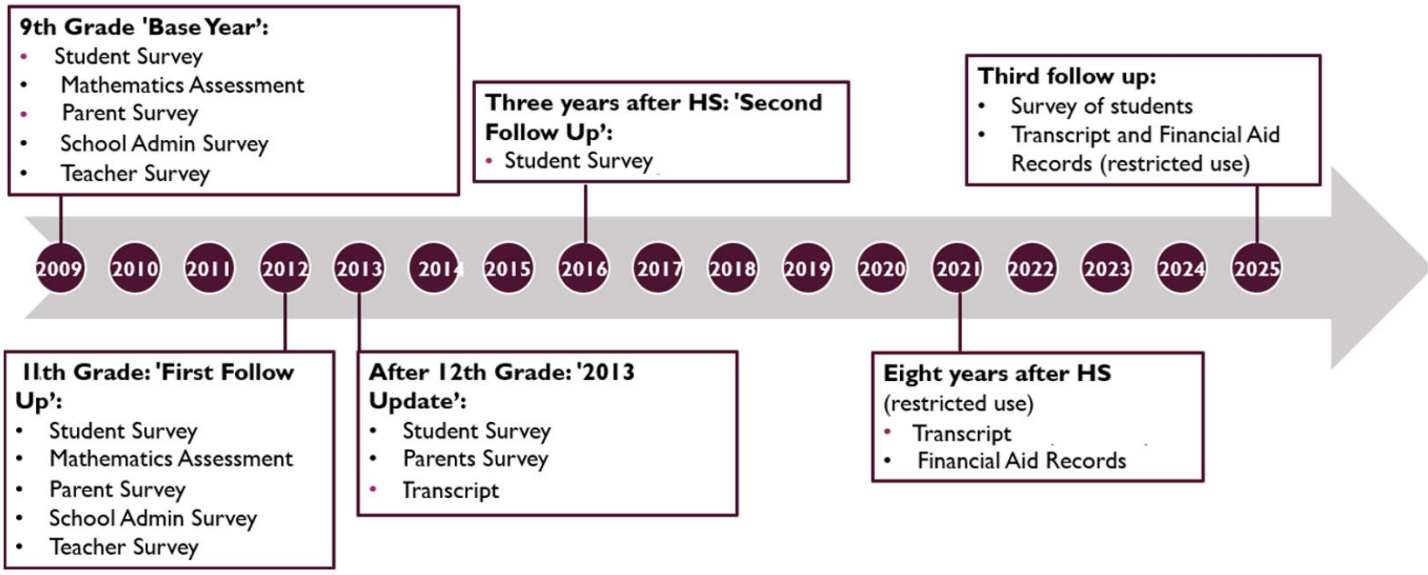
[3] I gained access to these data through an online portal after completing a rigorous application and approval process administered by the Institute of Education Sciences (IES), which required detailed assurances regarding confidentiality, secure data handling, and protections to ensure that individual participants could not be identified from generated results.

5.1 Data Collection Timeline and Instruments

The High School Longitudinal Survey of 2009 (HSLS:09) used in these analyses was collected in multiple waves. In the base year (2009–10), NCES administered surveys to 9th grade students, their parents, math and science teachers, school administrators, and counselors. Surveys were administered online and by telephone. Ninth graders also completed a direct assessment of math skills. In the first follow-up (2012), students were surveyed in the spring of 11th grade along with school administrators and counselors. The 2013 update gathered high school transcript data and surveyed the students shortly after their expected high school graduation. A random subsample of parents was also re-surveyed. The second follow-up occurred in 2016, when students were approximately 21 to 22 years old. Data collection in the second follow-up included a student survey, linking data from other administrative datasets to obtain postsecondary transcripts and financial aid records. Then, in 2021 when students are about 26 years old, the students' postsecondary transcript and financial aid record data were retrieved again. A third follow-up is planned for 2025 to continue tracking participants into adulthood.[4] Figure 2 shows the HSLS Data collection over time, spanning from 2009 to 2025. This research uses data collected through 2021.

[4] However, it is unclear if this follow-up survey will happen given the recent substantial unplanned staff cuts at the Department of Education that occurred in early 2025.

Figure 2: Timeline of HSLS Data Collection



In addition to using the core HSLS:09 dataset and NCES merged measures, I merge the student records with one of the administrative data sources that NCES also links to HSLS: the FAFSA data from the U.S. Department of Education's Central Processing System (CPS). This merge allows me to incorporate additional financial variables not already included in the merge done by NCES, most notably the expected family contribution (EFC)—a FAFSA-based estimate of how much a student's family is expected to pay for college. EFC is calculated using a standardized federal formula based on family income, taxed and untaxed government benefits, household size, and number of family members in college. Because EFC reflects a measure of students' actual ability to pay (rather than their perceptions), it serves as a useful control when analyzing the distinct role of perceived affordability.

I supplemented the HSLS:09 restricted-use dataset with institutional location data from the NCES Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics file, which reports the ZIP code for each Title IV–eligible postsecondary institution in the United States. I calculated the distance between the centroid of each U.S. ZIP code and the centroid of the ZIP code for the nearest higher education institution.[5] I then merged this measure of distance to the closest postsecondary institution onto the HSLS:09 restricted-use dataset.

Strengths of the Dataset

HSLS offers several advantages for this analysis. First, it includes data from multiple sources, enabling a nuanced understanding of how students' educational pathways are shaped by their own perceptions, their families, and local contexts. Second, it combines survey responses with administrative records, including FAFSA submissions, postsecondary transcripts, and institutional characteristics. This allows the construction of high-quality variables on both actual financial capacity (e.g., income, parental education level, and expected family contribution, or EFC) and educational outcomes (e.g., enrollment in postsecondary education and degree completion). Third, it includes measures of students' realistic postsecondary educational expectations and their perceived ability to pay for college collected during their freshman and junior years of high school. In this analysis, I focus mostly on measures collected in their junior year of high

[5] Distances were calculated in Stata using the geodist routine, which applies the Haversine (great-circle) formula.

school because they are more highly correlated with the outcome variables than measures collected in their freshman year (see Appendix 1 for details).

5.2 Measures

Dependent Variables

This analysis includes four postsecondary education outcomes: two postsecondary enrollment outcomes and two postsecondary degree attainment outcomes. Both are drawn from administrative transcript data as of 2021 –when students are about 26 or 27 years old.

Enrollment is captured using two binary outcome variables.

Enrollment in any postsecondary school is a binary variable. Students who ever enroll in any type of postsecondary school (in the IPEDS Data) by 2021 have a value of 1. Students not present in any postsecondary institution's data as of 2021 (and thus presumably never enrolled) have a value of 0.

Enrolled in 4-year postsecondary school is a binary variable. Students who ever enroll in a 4-year institution by 2021 have a value of 1. Those with a 0 either do not enroll in a 4-year school by 2021 or enroll in a non-4-year institution.

Degree attainment is captured using two binary outcome variables.

Attained AA degree or higher is a binary variable. Students who receive an AA degree or higher by 2021 have a value of 1, and those who have not have a value of 0.

Attained BA degree or higher is a binary variable. Students who receive a BA degree or higher by 2021 have a value of 1, and those who have not have a value of 0.

Mediators

My model has two psychosocial mediators related to affordability perceptions and college or career training identity. Each are measured in a few different ways in this analysis.

High Schoolers' Perceived Ability to Pay for College (i.e., affordability beliefs) is measured in two ways, utilizing survey questions that ask whether students believe their families can afford six different types of postsecondary institutions- Occupational training, 2-year public school, 4-year in-state public college, 4-year out-of-state public college, typical 4-year private college, or highly selective 4-year private college.[6]

Believes can afford a college is coded as 1 if a student indicates they believe any of the 4-year college types are affordable, and 0 if they do not believe any of them are affordable.

Believes can afford any type of postsecondary is coded as 1 if a student indicates they believe any of the six postsecondary institution types are affordable, and 0 if they do not believe any of them are affordable. This measure is used in a robustness check.

College or Career-Training Identity is measured in three ways in this analysis.

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[6] The question wording for these variables is: "Considering all sources of funds including scholarships, grants, loans and savings, do you think your family [will/would] be able to afford to send you to: a school that offers Occupational Training?, a 2-year public school?, a 4-year public college in your state?, a 4-year public college out of state?, a typical 4-year private college?, a highly selective 4-year private college such as Harvard? …." Response options for these questions are Yes (1), No, and Don't know (0).

Student expects to attain an AA or higher, 11th grade is a binary variable equal to 1 if the student expects to at least attain an associate's degree and 0 if they expect to not complete high school, only complete high school, or enroll but not attain a degree.[7] This question is asked after a question about aspirations, thus measuring *realistic* postsecondary educational expectations. For students who indicate they don't know or don't answer the question, I use their 9th-grade response to the same question. Students who don't know in both surveys or don't answer in both surveys are coded as missing.

Student aspires to attain an AA or higher, 11th grade is a binary variable equal to 1 if the student aspires to at least attain an associate's degree and 0 if they expect to not complete high school, or? only complete high school. This measure is used in a robustness check.

Student expects to attain an AA or higher, 9th grade is a binary variable equal to 1 if the student expects to at least attain an associate's degree and 0 if they expect to not complete high school, only complete high school, or enroll but not attain a degree.[8] This measure is used in a robustness check.

SES Measures

This analysis uses three measures of SES. Two are used in the main analysis and one is used in a robustness check:

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[7] The wording for the question on the student's 11th-grade survey is: "As things stand now, how far in school do you think you will actually get?".

[8] The wording on the 9th-grade survey is: "As things stand now, how far in school do you think you will actually get?". Students who indicate they don't know or don't answer the question are coded as missing.

Log of family income is the natural log of total family income measures in 2011, collected when students are in the 11th grade.[9] The categorical variable has 13 possible values, corresponding to ranges in total family income. The lowest income category is $15,000 or less and the highest income category is more than $235,000.

Parent(s) have a college degree is a dummy variable where 1 indicates that one or more of the student's parents have an associate's degree or higher, and 0 if they have less than an associate's degree.

Students' SES status in 11th grade is measured as quintiles of a composite variable NCES creates using family income, parents' education, and parents' occupation. This measure is used in a robustness check.

Covariates

The main set of analyses contains all but the last two following covariates related to expected family contribution (EFC). The EFC variables are used for a secondary analysis and a robustness check.

[9] I create this variable using two variables: a continuous and categorical measure of total family income. When continuous income values are missing, I use the midpoint between the two categorical brackets' endpoints.

Studying doesn't pay off is a binary variable, where 1 indicates the high school student that studying rarely pays offs with a good job after high school, and 0 indicates they do not believe that studying rarely pays off.[10]

Distance to the nearest college is less than 20 miles is a binary variable, where 1 indicates that the distance from the high school student's home to the closest college is less than 20 miles away.

Student's **race and Hispanic ethnicity** are measured by four binary variables: Hispanic, Black non-Hispanic, White non-Hispanic, and Other non-Hispanic. Other non-Hispanic includes those who identify as Asian, Pacific Islander, Other race, or multiple races.

Female is a binary variable with two categories: Male and Female.[11]

GPA in high school is an unweighted average GPA in grades 9 through 12, on a scale of 0.0 to 4.0.[12]

Parents' postsecondary enrollment expectations for their child is a binary variable equal to 1 if the parent expects their child to at least enroll in a postsecondary institution of any

[10] The survey asks 11th graders if they agree or disagree with the following statement: "Studying rarely pays off later with a good job." Agree and Strongly Agree are coded as 1 and Disagree and Strongly Disagree are coded as 0.
[11] I create this variable using X1SEX, a variable created by the NCES that combines data from the base year student questionnaire, parent questionnaire, and school-provided sampling roster. X1SEX has
[12] This variable reflects the average GPA across all years of high school.

kind and 0 if they expect their child to not complete high school or only complete high school.[13]

Expected family contribution (EFC) of $4K or more is a binary variable indicating whether the FAFSA-calculated EFC was $4,000 or greater, averaged across all years the student filed a FAFSA.[14]

Imputed share with an expected family contribution of $4K or more is a version of the prior variable with missing values imputed. I create this variable because EFC is missing for a large portion of the sample. I use multiple imputation in Stata (mi impute) to generate 30 plausible values for each missing EFC observation. The imputation model includes observed covariates associated with the information used on the FAFSA to determine EFC.[15] Each of the 30 imputations is generated using random draws from the estimated

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[13] I create the variable using X2PAREDEXPCT, which, like X2STUEDEXPCT, contains imputed missing data values. The options are the same as X2STUEDEXPCT, and I code the variable in the same way as student postsecondary enrollment expectations. When parents indicate they don't know or if they do not answer the question, I use their 9th grade response to the same question.

[14] $4,000 was chosen because it is the median value among those who had an EFC value. To calculate the expected family contribution, the FAFSA form uses parental income, student income, parents' assets, and students' assets. This variable is only calculated for students who completed the FAFSA. This data comes from the postsecondary dataset and is merged onto the HSLS data using student ID provided in both datasets.

[15] See Appendix 2 for imputation details. In brief, the EFC prediction model includes the following variables: family income (13 categories), above/below poverty threshold, highest parental education level (7 categories), high school GPA, zip code, race, number of parents, household size, and whether the student has a sibling is in college. I imputed this variable two ways. The first way is used in the main body of the paper. The second way is shown in Appendix 2. For the first method, I impute the continuous version of EFC, and then classify the imputed value into above/below $4,000, imputing 4,461 values (about 1/5th of the dataset). After categorizing the variables into above/below $4,000, I run several tests to understand the model's accuracy at predicting in-sample. For example, in one test, 64% of known values are imputed accurately, higher than a random guess. For the second imputation method, I transform the continuous EFC variable into a binary version and then impute that variable. This second method yields results similar to those presented in the main body of the paper but outperforms them in tests of prediction accuracy. See Appendix 2 for all tests of the imputation performance and the alternate imputation method.

residual distribution, reflecting uncertainty about the missing values. I use this variable in a robustness check.

5.3 Descriptive Statistics

Table 1 below presents weighted summary statistics for the analytic sample. The variables described above are summarized by high school students' socioeconomic characteristics, specifically their family income (above/below median) and parents' education level (with/without an AA degree or higher). Appendix 3 contains tests of significant differences for each variable by income category and parental education level. The descriptive statistics are weighted to take into account the complex sample design of the data, including the unequal probability of selection.[16] Therefore, they are generalizable to the population of U.S. high school freshmen in 2009.

Overall, the majority of students in the analytic sample believed they could afford postsecondary school, reported wanting to attend postsecondary school and had some kind of engagement with postsecondary education after High School. When asked in the 11th grade, 84.2% believed they could afford some postsecondary school, and a majority (61.5%) believed they could afford a 4-year college. About 87.8% aspired to earn at least an AA degree, while slightly less - about 78.8% - realistically expected to do so. About 76.7% of students enrolled in a postsecondary institution by 2021?, and 53.5% enrolled in a 4-year institution. Despite these high aspirations and expectations among 11th graders,

[16] I use the balanced repeated replicate (BRR) weights for the 11th-grade student survey.

degree attainment was lower: by 2021, 36.6% had earned an AA degree or higher and 29.4% had earned a BA degree or higher.

Regarding covariates, on average, students had a high school GPA of 2.6, lived close to college (91.0% lived within 20 miles), and 31.0% believed that studying rarely leads to good jobs. Parents' expectations were high: 81.8% expected their child to attain a degree. The average SES composite score was near 0, with a mean logged income of 10.8 (approx. $73,100 unlogged). About 59.0% of students had a parent with a college degree.

Students from above-median income households and those with college-educated parents had significantly higher rates of postsecondary enrollment and attainment.[17] For instance, 83.3% of higher-income students enrolled in college compared to 70.1% of lower-income students. BA attainment was more than twice as high among higher-income students (40.5% vs. 18.2%). Perceptions of affordability and expectations about college followed the same pattern: 73.0% of high-income students believed they could afford a 4-year college, versus 50.0% of low-income students. Similar gaps exist by parental education.

Control variables show significant differences by SES, including in race/ethnicity, GPA, and regional distribution. For example, White students are more prevalent in the high-income and college-educated parent groups, while Hispanic and Black students are overrepresented in the low-income and non-degree parent groups. However, expected

[17] T-tests were conducted to assess differences for the variables shown in Table 1 by Family Income and Parent's Education Level. See the appendix.

family contribution (EFC) shows particularly large disparities. Only 21.5% of low-income students had an EFC over $4,000 compared to 63.9% of high-income students.

Because not all students complete the FAFSA, the EFC is missing for 37.5% of the analytic sample, which limits its usefulness in models that aim to provide estimates for the population represented in the HSLS. However, the imputed version of the same variable (described earlier) substantially reduces missingness to 15.0%. This variable retains a similar mean and standard deviation compared to the observed data, suggesting that the imputation preserves the original variable's distributional properties.

Table 1: Summary Statistics for the Analytic Sample, Overall and by Family Income and Parent(s) Education Level (standard errors in brackets)

	Full Analytic Sample	Family Income		Parent(s) Education Level		Share Missing
		Below Median	Above Median	Less than an Associate's Degree	Associate's Degree or higher	
Unweighted Number of Observations	20,850	9,170	11,680	7,300	13,540	
Weighted Share of Observations		50.0%	50.0%	41.0%	59.0%	
Outcome Variables of Interest						
Share ever enrolled in a postsecondary School	76.7% [0.46]	70.1% [0.77]	83.3% [0.52]	67.2% [0.89]	83.3% [0.48]	1.5%
Share who enrolled in a 4-Year Institution	53.5% [0.57]	42.5% [0.91]	64.5% [0.68]	38.6% [1.01]	63.9% [0.64]	3.5%

Share who attained AA degree or higher by 2021	36.6 % [0.52]	25.8% [0.73]	47.5% [0.68]	22.9% [0.76]	46.2% [0.65]	1.4%
Share who attained BA degree or higher by 2021	29.4% [0.48]	18.2% [0.62]	40.5% [0.66]	16.2% [0.65]	38.6% [0.62]	1.4%
Hypothesized Mediator Variables						
Share of 11th graders who believe they can afford a 4-year college	61.5% [0.56]	50.0% [0.91]	73.0% [0.62]	49.7% [1.01]	69.7% [0.64]	2.5%
Share of 11th graders who believe they can afford a postsecondary institution	84.2% [0.42]	78.3% [0.73]	90.1% [0.40]	78.4% [0.82]	88.2% [0.42%	2.1%
Share of 11th graders who expect to attain an AA degree or higher	78.8% [0.5]	71.8% [0.84]	85.7% [0.51]	69.6% [0.93]	85.1% [0.53]	6.0%
Share of 9th graders who expect to attain an AA degree or higher*	80.3% [0.6]	74.0% [1.0]	86.6% [0.65]	71.8% [1.09]	86.2% [1.68]	29.0%
Share of 11th graders who aspire to attain an AA degree or higher*	87.8% [0.39]	84.5% [0.66]	91.2% [0.43]	82.8% [0.77]	91.3% [0.39]	10.8%

Control Variables						
Female	49.6% [0.56%	49.6% [0.89]	49.6% [0.68]	49.5% [0.99]	49.6% [0.65]	0.0%
Black non-Hispanic	14.3% [0.49]	20.2% [0.86]	8.4% [0.42]	16.6% [0.90]	12.7% [0.54]	4.2%
White non-Hispanic	50.6% [0.58]	38.0% [0.79]	63.1% [0.73]	39.2% [0.89]	58.4% [0.70]	4.2%
Other race non-Hispanic	12.2% [0.46]	11.5% [0.44]	12.9% [0.48]	10.8% [0.39]	13.2% [0.56]	4.2%
Hispanic	23.0% [0.59]	30.4% [0.93]	15.6% [0.69]	33.5% [1.07]	15.7% [0.60]	4.2%
Share of parents who expect their child to attain an AA degree or higher	81.8% [0.47]	75.6% [0.81%	87.9% [0.47]	73.0% [0.94]	87.8% [0.44]	6.0%
GPA in High School: Mean and Standard Deviation	2.6 [0.10]; 0.93	2.4 [0.10]; 0.9	2.8 [0.10]; 0.9	2.5[0.02]; 0.9	2.8[0.01] ; 1.0	6.8%
Share who live less than 20 miles from the nearest college	91.0% [0.32]	89.5% [0.51]	92.4% [0.38]	89.3% [0.57]	92.1% [0.36]	5.4%
Share of 11th graders who believe that studying rarely pays off with a good job	31.0% [0.56]	37.0% [0.9]	24.9% [0.64]	37.1% [0.99]	26.6% [0.64]	3.9%
NE Region	17.64% [0.54]	16.4% [0.94]	18.92% [0.56]	16.7% [0.51]	18.28% [0.56]	5.4%
MW Region	22.33% [0.41]	21.0% [0.6]	23.66% [0.54]	19.88% [0.64]	24.04% [0.52]	5.4%
S Region	37.41% [0.53]	40.20% [0.85]	34.64% [0.63]	38.65% [0.93]	36.55% [0.62]	5.4%

W Region	22.61% [0.53]	22.45% [0.81]	22.78 [0.67]	24.74% [0.94]	21.13% [0.61]	5.4%
SES Measures						
Socioeconomic Status (Composite Var, 2011): Mean and Standard Deviation	-0.0 [0.01]; .9	-.5 [0.01];0.9	.4 [0.01];0.9	-.7 [0.01];0.9	.4 [0.01];1.0	0.0%
Natural Log of Family Income in 2011: Mean and Standard Deviation	10.8 [0.01]; 1.05	10.1 [0.01];1.0	11.5 [0.01];0.4	10.5 [0.02];1.0	11.1 [0.01];1.0	0.0%
Family Income in 2011: Mean and Standard Deviation	73125.8 [1750.6]; 162030.7	29000.3 [205.65]; 12768.7	117251.4 [2807.7]; 220099.5	47446.9 [656.4]; 39928.8	91006.1 [2443.2]; 206487.6	0.0%
Share whose parent(s) have a college degree	59.0% [0.57]	43.2% [0.86]	74.7% [0.64]	0.0% [0.0]	100.0% [0.0]	0.0%
FAFSA: Family Contribution Measures (2013/2014-2020/2021)						
Family Contribution: Mean and Standard Deviation	9920.2 [221.9]; 20361.8	3588.6 [170.9]; 10,050.6	15749.6 [352.4]; 25,147.0	4501.0 [214.3]; 12,128.7	13167.8 [312.0]; 23,382.0	37.5%
Imputed Family Contribution: Mean and	10114.2 [173.7]; 19091.7	3223.35 [140.4]; 9,230.0	16694.47 [286.7]; 23,202.1	4338.01 [176.3]; 11,128.2	13916.78 [261.3]; 21,962.0	15.0%

Standard Deviation						
Average Total Family Contribution is $4K or higher	42.7% [0.69]	21.5% [0.86]	63.9% [0.84]	27.0% [0.11]	53.5% [0.82]	37.5%
Imputed Average Total Family Contribution is $4K or higher	48.9% [0.61]	25.84% [080]	69.07% [0.71]	32.0% [1.00]	58.5% [0.73]	15.9%

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: Unweighted Ns are rounded to the nearest 10. All other figures are weighted.

6.0 Analytical Approach

My theoretical framework emphasizes not only the structural role of income and parental education but also the importance of students' affordability beliefs and their postsecondary educational expectations in shaping their postsecondary outcomes. Furthermore, the focus of this analysis is on mediation —specifically, I assess the proportion of total effect of SES on postsecondary outcomes that operates through psychological mediators, first through students' perceived ability to pay for postsecondary education and then through students' postsecondary educational expectations.

I use Stata's SEM command to estimate my models and Stata's estat teffects command to obtain total, direct, and indirect effects. Unlike the traditional Baron & Kenny (1986) approach, which requires separate regressions to estimate total and mediated effects,

SEM computes all relevant coefficients within a unified model. I calculate the share of total effect as the sum of direct and indirect effects. Direct effects refer to the path from each SES variable (e.g., income or parent education) directly to the outcome, controlling for mediators and covariates. Indirect effects are calculated as the product of coefficients along the mediated paths. The share mediated is the ratio of the indirect effect to the total effect. For example, using Figure 1 as a reference, the calculations of indirect, direct, total, and share mediated for the path from SES (X) to postsecondary Expectations (M1) are the following:

The indirect effect = a × d .

The direct effect = b'.

The total effect = a×d +b'.

The share of X > M2 mediated by M1 is (a×d)/(a×d+b).

Likewise, the equations for the full path from SES to each of the four postsecondary Education Outcomes (Y1-Y4) variables used in this analysis are the following:

The indirect = a×d×e + b'× e.

The direct effect = c'.

The total effect =a×d×e + b'× e + c'

The share of X >Y mediated by M1 and M2 = (a×d×e + b'× e)/ (a×d×e + b'× e + c')

6.1 Model Specifications, including Robustness Checks

For each outcome variable shown in the summary statistics presented in Table 1 (enrollment in any postsecondary institution, enrollment in a 4-year college, attainment of an AA degree, and attainment of a BA degree), I estimate eight specifications. Model A is the primary model and includes two SES measures (the natural log of family income and a binary indicator for parental education), two mediators (belief in the ability to afford college and college-going identity), and a set of demographic and academic-related covariates. Since my analysis primarily focuses on mediation, I present detailed results for Model A only. These detailed results include unstandardized and standardized estimates of total effects, indirect effects, and the proportion of X > M2 mediated by M1, as well as the proportion of X > Y mediated by M1 and M2. For all other models, which include alternative specifications and robustness checks, I report only the mediation shares.

Models B and C are alternative specifications that introduce a control for whether the student's average expected family contribution (EFC) was $4,000 or higher. A key challenge in including Expected Family Contribution (EFC) as a control is that it is only available for students who submitted a FAFSA. Only three-quarters of the analytical sample have an EFC value for at least one year between the 2013/2014 and 2020/2021 school years. This limitation creates potential selection bias: students who complete a FAFSA differ systematically from those who do not along several characteristics that are themselves predictive of postsecondary outcomes. For example, FAFSA filers are more likely to be female, have higher high school GPAs, and have parents with a college degree. These

differences are shown in Appendix 4, which compares FAFSA filers and non-filers in the analytic sample.

Because of these differences, a model limited to FAFSA filers would not be generalizable to the full population. To address this, Model B relies on some imputed data. To impute missing values of EFC based on observed covariates, I use multiple imputation (see Appendix 2 for details on the imputation method, and the results of an alternate imputation method). While this approach requires certain assumptions that are difficult to verify empirically,[18] it allows me to retain the full sample and test the robustness of the main model to the inclusion of a control for a student's actual ability to pay for postsecondary school. Model C re-estimates Model B using only cases without imputed EFC values. Students who complete the FAFSA differ along a number of demographic characteristics. They also may differ from the broader population in a few key ways. While the data in the model was collected in the fall of 11th grade—prior to FAFSA submission—students who later file a FAFSA may possess greater college knowledge compared to those who do not ever submit a FAFSA. The fact that they eventually submit a FAFSA might also be indicative of a higher level of seriousness and commitment to postsecondary education. These characteristics may influence how affordability beliefs and expectations are formed. Thus,

[18] The multiple imputation approach assumes that the imputed variable (EFC) is Missing at Random (MAR). This means that the probability of missingness depends on other observed variables (such as family income, GPA, FAFSA filing status), but not on the unobserved true value of EFC itself, after controlling for covariates (UCLA Statistical Consulting Group, n.d.). When the MAR assumption holds and the missing data mechanism is ignorable (i.e., it does not depend on unobserved information), multiple imputation produces unbiased estimates. See Appendix 2 for more details.

both models come with limitations that are important to consider when interpreting the results, and both should be viewed as supplemental to the primary analysis.

Models D, E, F, and G test alternative measures of SES and the mediators. Model D tests a version of the model using a continuous SES variable that combines parental education, parental occupation, and household income into a single standardized index variable. Model E substitutes students' 9th-grade expectations for their 11th-grade expectations. Model F uses 11th-grade aspirations instead of expectations. Model G uses students' beliefs about paying for any postsecondary education school, not just a 4-year college.

Last, Model H tests an alternative conceptual model to Figure 1, which assumes a sequential pathway in which students' perceived ability to pay for college shapes their educational expectations, which in turn influence postsecondary outcomes. Figure 1 does not allow for perceived affordability to capture elements of a student's actual ability to pay that are not fully accounted for by observed variables such as family income, parental education, or expected family contribution. For example, affordability beliefs may reflect unmeasured financial constraints—such as family assets, debt, or informal financial support—and could therefore exert a direct influence on enrollment or degree attainment decisions. To test the robustness of the conceptual model, I compare the results of the main analysis to an alternative model- Model H, which is depicted in Appendix 10 (see Figure A10-1). In this model, no structural constraints are imposed: perceived affordability and postsecondary expectations are treated as parallel mediators, each allowed to directly affect postsecondary outcomes.

7.0 Results

The results of Models A-G are presented here. I describe and show detailed results for Model A. In addition, I briefly describe seven further specifications (Models B, C, D, E, F, G, and H), focusing primarily on mediation effects. Further, I provide more detailed information for Models A and Models D-H in Appendices 6-10. Throughout the text, I use stars to indicate the significance level of the results I discuss, where *** indicates a 1% level, ** indicates a 5% level, and * indicates a 10% level.

7.1 Model A: Primary Specification

Table 2 shows the proportion of each total effect that is mediated by the hypothesized psychological pathways, the primary focus of this analysis. Specifically, it quantifies the share of the total effect of SES on students' postsecondary expectations that operates through their belief in their ability to afford college, and the share of the total effect of SES on postsecondary outcomes that operates through students' postsecondary expectations (which incorporates the effect of affordability beliefs). Table 3 presents the standardized and unstandardized total effects[19] of SES on postsecondary expectations and outcomes,

[19] The standardized coefficients represent the expected change in the dependent variable (in standard deviation units) for a one standard deviation change in the predictor, holding other variables constant. The unstandardized coefficients represent the expected change in the outcome for a one-unit change in the predictor, again controlling for other covariates. Because the SES predictor variables are coded on a 0 to 1 scale, the unstandardized coefficients can be interpreted as the approximate change in the probability that the outcome variable equals 1. These estimates, produced using OLS, reflect marginal effects rather than predicted probabilities, but they nonetheless offer a useful approximation.

including total effects when SES is modeled as the combined influence of both family income and parental education. Appendix 5 shows direct effects.[20]

As shown in Table 2, students' college affordability beliefs mediate roughly 38%*** of the total effect of SES, defined as the combined effects of income and education, on postsecondary expectations. Between 8% and 19% of the total effect of SES on postsecondary outcomes is mediated through expectations, depending on the postsecondary outcome. Importantly, these mediation effects are estimated while controlling for a wide range of student demographic and academic characteristics, as well as the direct effects of income and parental education. Further, the mediation share declines from postsecondary enrollment at any institution, to enrollment at a 4-year institution, to AA degree attainment, to BA degree attainment.

When looking at the individual SES components, family income plays a particularly strong role in shaping students' perceptions of affordability—73%** of its total effect on expectations is mediated by this belief, compared to 29%*** for parental education. However, expectations appear to mediate a slightly larger share of the total effect of parental education on postsecondary outcomes than they do for income. For instance, expectations account for about 17%*** of the effect of parental education on enrollment in a 4-year institution, compared to 14% for income. While these point estimates appear to

[20] The two measures of SES—family income and parental education—have significant direct positive effects on students' affordability beliefs and on most postsecondary educational outcomes. For postsecondary expectations, parental education retains a significant direct association, whereas the direct effect of family income is small and not statistically significant once affordability beliefs are included. See Appendix 5 for details.

differ, the confidence intervals for these two figures overlap, indicating they are not significantly different from one another.

Table 2: Share of Total Effect of SES Measures on Postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by Postsecondary Expectations

	Path				
	Student Believes They Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
Natural Log of Family Income	73.02*** [36.97-109.05]	22.12*** [8.15-36.22]	13.65*** [8.03-19.27]	10.59*** [6.08-14.15]	7.42*** [4.33-10.50]
Parent(s) have a college degree	28.80*** [16.32-41.32]	23.72*** [17.22-30.22]	16.80*** [10.19-23.43]	12.69*** [6.22-14.96]	10.97*** [15.39-6.54]
SES (both variables)	37.99*** [22.92-53.06]	19.14*** [13.14-25.15]	13.36*** [7.64-19.07]	10.12*** [6.08-14.154]	8.29*** [4.68-11.89]
SRMR	N/A	.02	.02	.02	.02
N	N/A	15,530	15,530	15,530	15,530
Population size	N/A	3,093,164	3,093,164	3,093,164	3,093,164

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. Unweighted Ns are rounded to the nearest 10.

The results in Table 3 show that SES has a strong and significant positive association with all outcomes. The standardized coefficients ('effect' in the table) range from 0.15 (on students' expectations) to 0.25 (on BA attainment). This indicates that the combined effects of income and education are meaningfully associated with both students' aspirations and postsecondary success.

These total SES effects can also be considered in terms of their two contributing variables: the natural log of family income and a binary indicator for whether a parent has a college degree. Here, both standardized effects and unstandardized coefficients are useful to interpret. The **standardized effects** suggest that the variation in parental education exerts a slightly stronger influence than the variation in family income. For example, the standardized total effect of family income on bachelor's degree attainment is 0.11, while the effect of parental education is 0.14. This pattern holds across all postsecondary outcomes, indicating that both factors matter, but variation in parental education appears to play a somewhat larger role in predicting postsecondary enrollment and degree attainment compared to family income. The unstandardized coefficients help with real-world interpretation. They suggest that having at least one parent with a college degree is associated with an 8-percentage point increase in postsecondary expectations, a 10-percentage point increase in postsecondary enrollment, a 15- percentage point increase in 4-year college enrollment, and a 14-percentage point increase in the likelihood of attaining an associate's or bachelor's degree, controlling for income and other covariates. Further, a one-unit increase in the natural log of family income (equivalent to an increase from approximately $30,000 to $81,000) is associated with a 2 percentage point increase in

postsecondary expectations, a 3 percentage point increase in postsecondary enrollment, a 5 percentage point increase in 4-year college enrollment, a 4 percentage point increase in associate's degree attainment, and a 5 percentage point increase in bachelor's degree attainment, controlling for parental education and other covariates.

Table 3: Total Association (C) Between SES Measures and M2, Y1, Y2, Y3, Y4; unstandardized and standardized

			Outcome Variable							
	M2-Student Expects an AA Degree or Higher		Y1-Ever enrolled in Any Institution		Y2-Ever enrolled in a 4-Year Institution		Y3-Attained an AA Degree or Higher		Y4-Attained a BA Degree or Higher	
	Coeff	Effect	Coeff	Effect	Coeff	Effect	Coeff	Effect	Coeff	Effect
Natural Log of Family Income	0.02	0.05	0.03	0.07	0.05	0.10	0.04	0.09	0.05	0.11
zstat/tstat	6.06	5.92	4.61	4.07	6.27	5.64	5.72	5.28	6.45	5.89
Parent(s) have a college degree	0.08	0.10	0.10	0.12	0.15	0.15	0.14	0.14	0.14	0.14
zstat/tstat	5.18	5.33	7.35	8.40	86.20	69.40	38.24	40.81	45.61	42.72
SES (both variables)	0.10	0.15	0.13	0.19	0.20	0.24	0.18	0.23	0.19	0.25
zstat/tstat	7.95	14.06	15.47	32.48	22.45	12.94	39.41	16.42	17.06	11.45
SRMR	N/A		0.02		0.02		0.02		0.02	
N	N/A		15,530		15,530		15,530		15,530	
Population size	N/A		3,093,164		3,093,164		3,093,164		3,093,164	

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.

NOTE: SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 'Coeff' indicates the non-standardized coefficient, and 'Effect' indicates the standardized coefficient. Unweighted Ns are rounded to the nearest 10.

7.2 Models B and C: Alternative Specifications with Expected Family Contribution (EFC)

In Model B, I include a binary indicator for whether the imputed EFC is $4,000 or higher, which allows me to control for a measure of students' actual ability to pay for postsecondary school. The mediation results using the imputed measure of expected family contribution are shown in Table 4 below. These results are substantively similar to the specification without EFC for the slightly smaller population for which it's possible to estimate the imputed EFC (also shown in Table 4). The share of the total SES effect on expectations that is mediated by affordability beliefs remains sizable and statistically significant, even after accounting for a proxy of actual financial capacity. The inclusion of imputed EFC slightly changes the estimated mediated share, but the differences are not statistically significant, and the overall pattern of findings remains unchanged.

Table 4: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations- With and Without Imputed Expected Family Contribution Included in the Model

	Student Believes they Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher

Model A: Without EFC	36.14*** [25.88-46.40]	20.07*** [13.35-26.79]	12.82*** [8.54-17.11]	9.57*** [6.60-12.54]	7.80*** [5.13-10.47]
Model B: With Imputed EFC	32.79*** [20.99-44.59]	16.90*** [11.4-21.1]	13.98*** [8.97-18.48]	10.95*** [7.7-14.09]	9.40*** [5.3-12.61]
SRMR: Without Imputed EFC \ With Imputed EFC	N/A	.01 / .01	.02 / .02	.02 /.01	.02 /.02
N	N/A	13,890	13,890	13,890	13,890
Population Size	N/A	2,750,589	2,750,589	2,750,589	2,750,589

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. Model A results differ from those presented in Table 3 because the population is slightly smaller. Unweighted Ns are rounded to the nearest 10.

I also estimate the model using only the subsample of students with observed (non-imputed) EFC values—that is, those who submitted a FAFSA. While not generalizable to all students, this model allows for a more direct examination of how actual EFC is associated with perceived affordability and postsecondary outcomes among students who are engaged in the financial aid process. Within this restricted group, all mediation effects remain sizable and statistically different from zero—suggesting that, even among FAFSA filers, affordability beliefs and expectations continue to serve as important pathways. Further, controlling for EFC does not result in statistically significant changes in the share of the total effect mediated. These results are shown in Table 5.

Table 5: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations- With and Without Expected Family Contribution Included in the Model, Population of FAFSA Submitters

	Student Believes They Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
Without EFC	33.21*** [25.17-41.24]	16.58*** [10.03-23.13]	9.63*** [5.10-14.16]	6.17*** [3.51-8.84]	5.27*** [2.79-7.74]
With EFC	30.65*** [18.23-43.08]	17.24*** [5.83-26.65]	10.44*** [3.89-17.01]	6.56*** [2.69-10.42]	5.42*** [1.90-8.91]
SRMR: Without EFC \ With EFC	N/A	.01 / .01	.02 / .02	.01 /.02	.02 /.02
N	N/A	10,620	10,620	10,620	10,620
Population Size	N/A	2,077,138	2,077,138	2,077,138	2,077,138

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. Unweighted Ns are rounded to the nearest 10.

7.3 Models D, E, F, and G: Alternative Measures of SES and Mediators 1 and 2

Model D tests a version of the model using a continuous SES variable that combines parent education, parental occupation, and household income into a single standardized index

variable. The results from this specification are consistent with the primary model. For example, Model D estimated that perceived ability to pay mediates 40.63%*** of the relationship between SES and postsecondary expectations, compared to 37.99%*** in Model A. The mediation effects for enrollment and degree attainment were also statistically significant and closely aligned with the estimates from Model A.

Table 6: Comparison of Mediation Shares in Models D to Model A (Primary Specification)

Model	SES Variable	Mediated % of SES → postsecondary Expectations \ Aspirations (95% CI)	Mediated % of SES → postsecondary Enrollment (95% CI)	Mediated % of SES → 4-Year Enrollment (95% CI)	Mediated % of SES → AA Degree (95% CI)	Mediated % of SES → BA Degree (95% CI)
A	Household Income and Parental Education Level	37.99*** [22.92-53.06]	19.14*** [13.14-25.15]	13.36*** [7.64-19.07]	10.12*** [6.08-14.154]	8.29*** [4.68-11.89]
D	Continuous SES Measure	40.63*** [24.03-57.23]	24.69*** [19.23-30.14]	14.53*** [10.31-18.75]	10.99*** [7.43-14.56]	8.08*** [5.65-10.50]

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01number.

Models E, F, and G test alternative measures of Mediator 1 (high schoolers' perceived ability to pay for a postsecondary school) and Mediator 2 (college or career-training bound identity). In these models, the strength of the mediation pathways is slightly attenuated but remained statistically significant (see Table 7). Specifically, the mediated shares declined

when using 11th-grade aspirations (Model E) or 9th-grade expectations (Model F) instead of 11th-grade expectations, and when using broader affordability beliefs about being able to afford college in general (Model G) instead of beliefs specifically about affording a 4-year college. More detailed results are in Appendices 6-10.

Table 7: Comparison of Mediation Shares in Models E, F, and G to Model A (Primary Specification)

Model	Mediator1:	Mediated % of SES → postsecondary Expectations \ Aspirations (95% CI)	Mediator2:	Mediated % of SES → postsecondary Enrollment (95% CI)	Mediated % of SES → 4-Year Enrollment (95% CI)	Mediated % of SES → AA Degree (95% CI)	Mediated % of SES → BA Degree (95% CI)
A	Believes can Afford a 4-Year College	37.99% *** [22.92–53.06]	11th Grade Expectations	19.14% *** [13.14–25.15]	13.36% *** [7.64–19.07]	10.12% *** [6.08–14.15]	8.29% *** [4.68–11.89]
E	Believes can Afford a 4-Year College	29.73% *** [10.31–48.23]	11th Grade Aspirations	11.78% *** [6.21–17.36]	8.54% *** [2.88–14.21]	5.94% ** [0.81–11.08]	4.90% *** [1.48–8.31]
F	Believes can Afford a 4-Year College	26.09% *** [25.54–26.64]	9th Grade Expectations	12.93% *** [9.92–15.94]	8.52% *** [3.99–13.05]	6.35% *** [3.71–8.09]	4.82% *** [1.97–7.66]
G	Believes Can Afford a College	16.19% *** [12.21–20.17]	11th Grade Expectations	18.95% *** [12.86–25.04]	13.20% *** [7.42–18.99]	9.99% *** [5.92–14.87]	8.19% *** [4.54–11.84]

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01.

7.4 Model H: Alternative Conceptual Model

Finally, Model H adjusts the conceptual model to allow perceived ability to pay to directly affect postsecondary outcomes (shown in Appendix 10), rather than influencing them solely through expectations. Using this alternative conceptual model and specification, I find that the perceived ability to pay has a significant direct effect on some, but not all, of the outcome variables. The standardized coefficient on '4-year institution' is 0.137***, and the standardized coefficients on 'AA degree attainment' and 'BA degree attainment' are 0.085* and 0.129*, respectively. Moreover, the mediation shares remained substantively similar to those in Model A. The full results are in Appendix 10.

8.0 Discussion and Conclusion

8.1 Discussion of Results

This study finds that students' perceived ability to pay for college mediates the relationship between socioeconomic status (SES) and postsecondary expectations, and that postsecondary expectations meaningfully mediate the relationship between SES and postsecondary outcomes. Using structural equation modeling (SEM) and HSLS data, I show that affordability beliefs may help explain who expects to attend college, who enrolls, and who ultimately completes a degree. These results are consistent with a large body of research documenting that SES is strongly linked to educational expectations and postsecondary outcomes (Elliott et al., 2011; Huang et al., 2010; Pfeffer, 2018; Zhan, 2006) These prior studies have shown that students from higher-income, higher-asset, and more-educated families are more likely to expect to complete college and, ultimately, more likely

to do so. Many of these studies have focused on mediated pathways, demonstrating that SES influences postsecondary outcomes in part through students' or parents' expectations. However, most of this research has focused on parental expectations or broad measures of SES, often without directly considering students' own perceptions of whether college is financially attainable. This study extends that work by showing that students' affordability beliefs are not simply a proxy for SES, but an important psychological mechanism that helps explain how SES shapes students' own postsecondary expectations. This finding builds on prior theoretical work, including Elliott et al. (2011), who draw on Identity-Based Motivation theory to suggest that affordability cues shape students' postsecondary identities; however, they did not empirically test this mechanism using nationally representative longitudinal data. By incorporating both affordability beliefs and postsecondary expectations, this study helps address that limitation; it demonstrates that student perceptions of affordability—not just parental resources or parental expectations—play a significant role in shaping students' educational pathways.

Specifically, the results from my primary specification suggest that perceived ability to pay mediates 38% of the relationship between SES and students' postsecondary expectations, supporting Hypothesis 3. This result aligns with identity-based motivation theory, which suggests that students will be more likely to adopt a college-bound identity when they believe postsecondary education is financially attainable. I also find that postsecondary expectations mediated between 8–19% of SES's effect on various postsecondary outcomes (enrollment and degree attainment). Regarding enrollment, expectations

mediate about 19%*** of the relationship between SES and enrollment at any postsecondary school and about 13%*** of enrollment at a 4-year school (Hypothesis 4a). Postsecondary expectations mediate smaller but still meaningful proportions of the relationship between SES and degree attainment. Expectations mediate approximately 10%*** of the relationship between SES and attainment of an associate's degree or higher, and about 8%*** of the relationship with bachelor's degree attainment (Hypothesis 4b). These findings suggest that forming a postsecondary-bound identity (as measured by postsecondary expectations) is associated with a higher likelihood of enrollment and, to a lesser extent, degree completion (Hypothesis 5). The smaller share of mediation for AA and BA degree attainment, compared to enrollment, suggests that additional barriers—possibly financial, academic, or social—become relatively more important for students' ability to persist and complete degrees.

Importantly, because enrollment and degree attainment are measured around age 25, these results are about early-adulthood outcomes rather than final educational trajectories. Because low-SES students are more likely to delay college entry and take longer to graduate (Bozick & DeLuca, 2005; Goldrick-Rab, 2006), the results might differ if measured later in life. For example, if degree attainment were measured later in adulthood—after more low-SES students with college-going expectations have had the opportunity to enroll or graduate—the estimated mediation shares would likely be larger.[21]

[21] This statement assumes the underlying relationships among SES, expectations, and attainment are otherwise stable over time.

The results are robust to multiple specifications, which serve as robustness checks. Models B and C showed that even after controlling for a proxy of actual financial capacity (expected family contribution, or EFC), the mediation effects remained significant. These results have three important implications. First, the results suggest that the main findings are not sensitive to the inclusion of a measure of actual ability to pay or restricting the population to FAFSA-filers. Second, these results reinforce the interpretation that SES does not fully determine students' postsecondary outcomes; postsecondary expectations and perceptions about affordability are distinct and meaningful mechanisms.

Models D, E, F, and G tested alternative measures of SES and the mediator variables. The results of Model D provide confirmation that the observed mediation pathways are robust to SES treated as a continuous construct rather than as separate household income and parental education measures. The mediation results from this specification are consistent with the primary model for all outcome variables.

The results of Model E and Model F highlight the important distinction between aspirations and expectations when measuring college or career-training-bound identity. Model E showed that mediation effects were weaker for 11th-grade aspirations versus 11th-grade expectations (used in Model A). This difference aligns with identity-based motivation theory, which emphasizes that people are more likely to act when they believe a future identity is realistically attainable—not just desirable. Further, these findings bolster the use of postsecondary educational expectations in prior research (Zhan, 2006; Huang et al., 2010; Pfeffer, 2018; Grinstein-Weiss et al., 2009) as a key psychological mechanism linking SES to postsecondary outcomes. Likewise, Model F showed that mediation effects were

weaker when using 9th-grade expectations (29.73%***) instead of 11th-grade expectations (37.99%***). This difference likely reflects the developmental timing of identity formation. Broadly, identity development continues throughout adolescence and often remains fluid until the early twenties or later for many individuals (Arnett, 2000; Kroger et al., 2010). Although research has not yet pinpointed when adolescents typically form a solid college-going identity, college-choice frameworks generally posit that college-related orientations begin to develop in early adolescence (Hossler et al., 1999; L. W. Perna, 2006). The present findings suggest that these orientations may become more fully internalized and consequential as students approach the actual transition to college, providing an update to these frameworks by indicating that the strength and salience of a college-going identity appear greater in later adolescence than earlier in high school.

The mediation results of Model G show that affordability beliefs about a 4-year college account for a larger share of the relationship between SES and postsecondary expectations than broader affordability beliefs about attending any postsecondary institution (37.99%*** compared to 16.19%***). One possible explanation for the weaker mediation share when using general affordability beliefs is that students who believe they can afford a 2-year college or vocational school, but not a 4-year college, may be more likely to face other barriers that are not fully captured in the model—such as college readiness, family responsibilities, or personal constraints. Additionally, a greater share of these students may have no desire to pursue postsecondary education, even if they believe it is affordable. For example, they may plan to enter the workforce directly, take over a

family business, or follow other non-college pathways that align with their goals and circumstances.

Finally, Model H adjusted the conceptual model to allow perceived ability to pay to directly affect postsecondary outcomes, rather than influencing them solely through expectations. While this model showed that the direct path from perceived ability to pay to postsecondary outcomes was significant for some postsecondary outcomes, the mediation shares through expectations remained substantively similar to those in Model A. Thus, this alternative model also suggests that perceived ability to pay and expectations are key mechanisms linking SES to postsecondary attainment.

In summary, despite some differences in the magnitude of **mediation** effects found in the alternative specifications (Model B-H), the overall pattern of results remained consistent across specifications. These findings strengthen the conclusion that the observed mediation effects are not artifacts of measurement choice. The findings also provide important insight into which measures most accurately reflect the conceptual mediators in the theoretical model.

In addition to examining mediated pathways, this analysis assessed the **direct effects** of SES on affordability beliefs, postsecondary expectations, and postsecondary outcomes, as well as the direct effect of affordability beliefs on postsecondary expectations. The results are largely consistent with Hypothesis 1. Higher family income and parental education are both associated with stronger beliefs that college is affordable and both SES measures have positive direct effects on all postsecondary outcomes. However, only parental

education (not family income) shows a clear direct association with postsecondary expectations. Consistent with Hypothesis 2, students' affordability beliefs are strongly and positively associated with their postsecondary expectations. Together, these results suggest that family income is related to students' expectations only through its association with affordability beliefs—there is no clear direct association between income and expectations—whereas parental education is linked both to stronger affordability beliefs and to higher expectations. For postsecondary outcomes, both family income and parental education have positive direct associations with enrollment and degree attainment above and beyond the mediating roles of affordability beliefs and expectations, suggesting that SES shapes students' educational trajectories both through these psychological pathways and through additional mechanisms not included in this model, such as differences in actual ability to pay that are not fully captured by family income and parental education.

Overall, these findings underscore the importance of students' perceptions about college affordability and their expectations for postsecondary education as key mechanisms linking socioeconomic background to educational outcomes. The results suggest that even among students with comparable academic preparation and socioeconomic resources (as measured by income and parental education), perceived ability to pay and future postsecondary expectations vary meaningfully. That is, affordability perceptions are not fully determined by actual ability to pay, but are likely shaped by uncertainty, misinformation, and the complexity of the college financing process. In turn, such beliefs can shape student expectations, enrollment, and degree attainment. These findings also

highlight where we need more information to understand the two key mediators studied in this analysis, as I discuss next.

More research is needed to better understand how and when these two key mediators develop and influence college-going outcomes. Specifically, the finding that 11th-grade expectations are stronger predictors of postsecondary outcomes than 9th-grade expectations suggests that students' college-going identities tend to solidify later in high school. However, if students form these identities earlier, it may help them have enough time to adequately prepare for college, including pursuing the necessary coursework in high school and completing the FAFSA. Future research should investigate the types of interventions—such as school-based advising, family engagement, or early financial literacy messaging—most effective in helping students develop their affordability beliefs and postsecondary expectations at different points in high school or even earlier. Additionally, further research is needed to investigate the relative importance of students believing that a 4-year college is affordable versus believing that there is at least one type of affordable postsecondary option. This distinction is especially relevant in today's policy context, where many initiatives, such as Promise programs, typically focus on increasing the perceived affordability of community college. It remains unclear whether general affordability beliefs are sufficient to shape postsecondary expectations and long-term outcomes, or whether beliefs about affording a 4-year college remain uniquely influential in driving college-going behavior.

8.2 Policy and Practice Implications

These results offer several implications for policy and practice. Many policies, such as the federal Pell Grant or institutional financial aid, target actual ability to pay but tend to do so late in the college decision-making process, often after students have completed the FAFSA or applied to college (which typically occurs in the high school senior year). As such, they may have limited influence on whether students form postsecondary expectations earlier in high school, discuss college with their parents and mentors, and take college-going steps such as preparing academically for college or completing the FAFSA.

In contrast, other policies—such as Promise programs, child development accounts (CDAs), and school-based advising or counseling—are designed to influence perceptions of affordability before students must make a decision about college. For example, CDAs often involve modest dollar amounts and may not substantially alter students' objective ability to pay for college. However, by signaling that college is attainable and providing a tangible financial asset, CDAs may shape students' perceived ability to pay, which, based on the results of this study, should in turn support the formation of a postsecondary-bound identity and, ultimately, increased educational attainment. Indeed, early results from San Francisco's Kindergarten to College (K2C) program indicate CDA programs can increase college enrollment, with larger effects among demographic groups underrepresented in college (Elliott et al., 2025).[22] Likewise, Promise programs that offer clear, simple

[22] The KTC program automatically provides $50 to all students when they enter kindergarten in San Francisco public schools. The first cohort of high school graduates in the program was 6 percentage points more likely to enroll in college compared to the prior cohort that did not participate in K2C (City and County of San

messaging about college affordability may be more effective than equally costly programs that do not explicitly target students' perceptions of their ability to pay, because—as my results suggest—they may more effectively influence postsecondary expectations. This is supported by findings from evaluations of the Kalamazoo Promise and Pittsburgh Promise programs, which both increased students' intentions to attend college, particularly among disadvantaged high school students (Bartik et al., 2021; Page et al., 2017).

These findings also shed light on the mixed success of information-based interventions. Many efforts to inform students about the cost of college or the availability of aid have not led to measurable increases in enrollment (Bird et al., 2021; Gurantz et al., 2020; Page et al., 2023). This may be because such interventions fail to affect perceived ability to pay, particularly when they provide generic or non-personalized information. In contrast, more intensive or personalized interventions—such as FAFSA counseling (Bettinger et al., 2012) – appear to be more effective, potentially because they help students understand how financial aid applies specifically to them. Whether informational or financial, these results underscore that perceived affordability should be directly targeted and measured as a key outcome or mediating variable in program evaluations.

8.3 Methodological Considerations and Limitations

This study uses SEM to model the relationships between SES, perceived postsecondary affordability, expectations, and educational outcomes. The analysis encompasses a wide

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Francisco, 2023). This effect increases to 12 percentage points for underrepresented students (e.g., Black, Latino, Filipino, Pacific Islander).

range of covariates, leverages longitudinal data from a nationally representative sample, and conducts multiple robustness checks to ensure the validity of the findings.

A key analytic decision involved how to handle missing data on the Expected Family Contribution (EFC), observed only for FAFSA filers and thus subject to selection bias. To retain generalizability to the full population, I used multiple imputation to estimate EFC values based on FAFSA filing status, family income, GPA, parental education, race/ethnicity, and other relevant predictors. This enabled the incorporation of EFC into a robustness check for the larger sample. I also estimated the model using only FAFSA filers. This allowed for a direct examination of financial capacity, but limited generalizability, as FAFSA filers are more likely to be female, have higher GPAs, and have college-educated parents—characteristics themselves associated with educational attainment.

One limitation of this analysis is that while SEM is a powerful tool for understanding complex relationships and potential mediating variables, it is a correlational approach. Despite the inclusion of numerous control and mediator variables, the estimates could still be biased by unobserved variables that influence educational outcomes not included in the model. Notably missing from the model are family-specific factors such as families' willingness or ability to provide financial support. Family income and parental education are only proxies and do not capture variation in assets, debt, the belief that college is a good investment, or the financial aid students receive. If such measures were available and included, some of the direct effects currently attributed to SES might instead be absorbed by these more proximal indicators of actual ability to pay, possibly reducing both the estimated direct effects of SES and the mediation shares for affordability beliefs and

expectations. As such, this study cannot definitively establish causal relationships between SES, mediator variables, and educational outcomes. The longitudinal aspect of these data and robust statistical controls mitigate this limitation to some extent, but causality cannot be assured without experimental or quasi-experimental designs.

Further, the accuracy of SEM depends on the quality and reliability of the measurements used. The HSLS dataset, despite its comprehensiveness, may still contain measurement errors or biases, particularly in self-reported data such as perceived ability to pay and educational expectations. These errors could potentially distort the estimated relationships among variables, although it is not clear in which direction those errors might tend. To address this concern, I conducted several robustness checks using alternative measures of both key mediators, including different affordability belief questions and different indicators of postsecondary identity (e.g., aspirations and earlier expectations). While the mediation estimates were generally consistent with the primary model, some estimates were somewhat lower in magnitude—suggesting that the overall findings hold, but also that the timing and framing of how postsecondary affordability beliefs and postsecondary expectations are measured may influence their apparent role in the pathway from SES to outcomes.

Lastly, the HSLS dataset is designed to be nationally representative of U.S. 9th graders as of 2009-10. Findings may not generalize to different cohorts of 9th graders or smaller geographic contexts (e.g., a specific state or county). Variations in educational policies, economic conditions, and societal attitudes over time and location could affect the applicability of the results to different populations. Although 2009–10 may seem dated, this

cohort provides a valuable window into long-term outcomes, as it takes roughly 15 years for students who begin 9th grade to complete college and be far enough into the labor market for meaningful analysis.

8.4 Contribution

Prior research highlights the importance of affordability perceptions and postsecondary expectations and suggests potential pathways linking SES to educational outcomes. This study addresses multiple gaps in the measurement and modeling of these mechanisms. First, this line of research had not measured a key aspect of one mechanism through which SES affects postsecondary expectations- students' perceived ability to pay for PS education. Perceived ability to pay is an important theoretical lever that might be able to be influenced by higher education policies. Yet, to my knowledge, no papers have attempted to test the theoretical connection between perceived ability to pay and postsecondary education. Datasets used in prior research have lacked a measure of perceived ability to pay; instead, they have only been able to proxy this belief using income and assets. This research addresses this gap by modeling students' perceived ability to pay as a mediator, while controlling for SES and a measure of students' actual ability to pay. By testing this pathway empirically, the analysis contributes new evidence to long-standing theoretical claims that subjective affordability beliefs can influence educational trajectories.

Second, this study extends the literature by analyzing not only postsecondary expectations and enrollment but also degree attainment, which is essential for understanding long-term economic outcomes. Related past research has largely focused on postsecondary

expectations for a bachelor's degree, enrollment at a 4-year university, or attainment of a bachelor's degree (e.g., Avery & Kane, 2004; Elliott et al., 2011; L. Perna, 2024). This distinction is particularly important because students hailing from low-income backgrounds are very likely to pursue postsecondary education at institutions that don't tend to grant baccalaureate degrees. The majority of low-income students who attend a 4-year institution start at a 2-year institution (Kurlaender, 2006), which tends to be more affordable (Woodhouse, 2024). In the 2022-23 school year, about 41.3% of students using Pell Grants were enrolled at institutions that primarily grant associate's degrees, certificates, or other sub-baccalaureate degrees (National Center for Education Statistics, Institute of Education Sciences, n.d.). Further, sub-bachelor's educational pathways can also lead to well-paying jobs. For example, postsecondary career training often targets in-demand occupations that can pay significantly more than a job that requires only a high school diploma and higher than jobs commonly held by some bachelor's degree-holders in social science, liberal arts, and education (Kim & Tamborini, 2019). Thus, it is important to model degree attainment, including educational pathways other than the bachelor's. This research addresses the limitations of past research by examining postsecondary expectations defined as expectations for an associate's degree or higher, enrollment defined as enrollment in any type of postsecondary education, and attainment of associate's degrees in addition to attainment of a bachelor's degree. These broader definitions offer a more nuanced and policy-relevant view of how postsecondary expectations and affordability perceptions shape lower-income students' real postsecondary trajectories.

Third, this study improves upon prior research by using rich longitudinal data from the High School Longitudinal Study of 2009 (HSLS) and the U.S. Department of Education's Central Processing System (CPS). In addition to the HSLS being able to measure college enrollment and degree attainment for a large, nationally representative sample from administrative sources, it also has rich student and parent surveys. Unlike many prior studies that rely on parental expectations or broad proxies for financial resources, this analysis includes students' own reported postsecondary expectations and expected family contribution for college from the Department of Education's CPS, which adds an additional measure of actual ability to pay on top of traditional measures of SES.

Lastly, this study contributes new evidence that students' perceptions of their ability to afford college are a meaningful and policy-relevant mechanism linking SES to postsecondary outcomes. By showing that affordability beliefs help explain the relationship between SES and both postsecondary expectations and enrollment—and to a lesser extent, degree attainment—this research strengthens theoretical models that emphasize identity, perceived barriers, and contextual cues in shaping educational decisions. It also highlights the importance of measuring perceived ability to pay as a distinct construct, offering insight into why students with similar financial resources may follow different educational paths.

In conclusion, these findings suggest that efforts to reduce inequality in college access and completion must address not only financial constraints but also psychological ones. Providing students with clear, early, and personalized signals of support—whether through advising, college savings accounts, or policy guarantees—may not only lower actual costs

but also reshape students' beliefs about what is possible. While this study focuses on students in 11th grade, this is not especially early in the college decision-making process. Truly early interventions—such as those embedded in child development account (CDA) programs—may hold even greater potential by cultivating a college-going identity well before high school. Future research should explore how affordability perceptions evolve over time and how interventions can most effectively shift beliefs at critical identity developmental stages.

9.0 Appendices

Appendix 1: Correlation Analyses

This appendix presents pairwise correlations among the key variables used in the mediation model to assess the extent of multicollinearity. The correlation analysis serves two purposes. First, it provides evidence that the variables included in the model are not highly correlated, thereby reducing concern about multicollinearity. Second, it helps inform the selection of specific variables to represent the mediator constructs when multiple similar measures exist in the dataset.

First, I analyze whether predictors and mediators included in the model are not so highly correlated as to pose concerns for estimation or interpretation. As a rule of thumb, correlations above 0.70 or 0.80 may indicate problematic multicollinearity (Dormann et al., 2013). While some association is expected—particularly between socioeconomic status (SES) measures and affordability beliefs—none of the observed correlations approach this threshold. In general, correlations among variables used together within any specific equation are below 0.60 (see Table A1-1). For example, the binary variable indicating whether a student's expected family contribution (EFC) is $4,000 or higher correlates at 0.41 with family income and at 0.26 with parental education. These values suggest that each variable captures a distinct construct and can be jointly included in the model without inflating standard errors or biasing coefficient estimates.

Second, I examined a set of options to use as the postsecondary expectations mediator (highlighted in orange). Among the available measures chosen in Table A1-1, I selected

students' 11th-grade expectations of attaining an associate degree or higher to represent the college-going identity construct. This decision was based on several empirical and conceptual considerations. First, the AA expectation measure from 11th grade was more highly correlated with each of the four key postsecondary outcome variables (highlighted in purple)—enrollment in any institution, enrollment in a 4-year institution, AA degree attainment, and BA degree attainment—than either 9th-grade expectations or 11th-grade aspirations. Expectations may be more predictive of behavior than aspirations, which tend to reflect idealized goals rather than realistic planning. Further, expectations reported in 11th grade may be more likely to be more stable and informed than those reported in 9th grade. Although expectations of earning a bachelor's degree in 11th grade were more strongly correlated with postsecondary outcomes for three out of the four outcomes, I ultimately chose the AA expectations measure because associate degree expectations allow for a broader assessment of postsecondary identity formation across the sample.

To identify the most appropriate measure of perceived affordability, I reviewed six survey questions—five administered in 11th grade and one in 9th grade—that asked students whether they believed their families could afford different types of college or postsecondary education (see Table A1-2). The 11th grade measures include binary indicators of whether students believed they could afford: (1) a 2-year college, (2) a 4-year college, (3) a school for occupational training, or (4) or any to these schools. In addition, one 11th grade measure asked students "How much do you agree or disagree with the following statement? Even if you get accepted to college, your family cannot afford to send you. Similarly, in 9th grade they were asked if they agreed or disagreed with the following

statement: “Even if you study, your family cannot afford to pay for you to attend college.” These last questions were then reverse-coded to aid with interpretability.

I compared each measure's correlation with 11th graders' postsecondary expectations outcome (expecting to earn an AA degree or higher) and considered the number of valid observations available for each variable (See Table A2-2). The measure indicating whether students believed they could afford a 4-year college (administered in 11th grade) had both the strongest correlation with the outcome and the highest number of non-missing observations. Therefore, this measure was selected as the primary indicator of perceived ability to pay.

Table A1-1: Correlations between variables used in this analysis

	X4X2SES_U	canAffordAny4yr13	studentexpectAAdegreeplus09	studentexpectAAdegreeplus13	studentexpectBAplus13	studentaspiresAAplus13	everenrolled	everenrolled4yr_transcriptdata	degreeattainedAAplus	degreeattainedBAplus	distance_anycollegeunder20mi	studyingDoesntPayOff	siblinginColl
X4X2SES_U	1.00												
canAffordAny4yr13	0.31	1.00											
studentexpectAAdegreeplus09	0.25	0.25	1.00										
studentexpectAAdegreeplus13	0.25	0.33	0.49	1.00									
studentexpectBAplus13	0.26	0.36	0.47	1.00	1.00								
studentaspiresAAplus13	0.17	0.22	0.31	0.62	0.71	1.00							
everenrolled	0.24	0.28	0.29	0.38	0.46	0.28	1.00						
everenrolled4yr_transcriptdata	0.34	0.36	0.30	0.39	0.43	0.30	0.60	1.00					
degreeattainedAAplus	0.32	0.30	0.26	0.32	0.33	0.23	0.42	0.61	1.00				
degreeattainedBAplus	0.35	0.31	0.24	0.30	0.30	0.21	0.36	0.61	0.85	1.00			
distance_anycollegeunder20mi	0.07	0.05	0.02	0.05	0.07	0.03	0.06	0.08	0.05	0.07	1.00		
studyingDoesntPayOff	-0.17	-0.13	-0.17	-0.19	-0.21	-0.18	-0.16	-0.19	-0.17	-0.17	0.00	1.00	
siblinginColl	0.12	0.12	0.09	0.11	0.11	0.07	0.11	0.10	0.13	0.12	-0.01	-0.06	1.00
X2FAMINCOME	0.73	0.27	0.18	0.18	0.19	0.11	0.17	0.25	0.24	0.27	0.07	-0.13	0.11
X2FAMINCOMEsq	0.64	0.24	0.15	0.15	0.16	0.09	0.14	0.22	0.21	0.24	0.06	-0.11	0.10
avgtotalFamilyCont4Kplus	0.42	0.25	0.17	0.16	0.14	0.10	0.10	0.27	0.31	0.34	0.04	-0.13	0.10
submittedFAFSA	0.09	0.18	0.23	0.28	0.33	0.21	0.63	0.46	0.40	0.34	0.04	-0.14	0.08
parentseduc_degree	0.69	0.20	0.18	0.19	0.20	0.13	0.19	0.25	0.24	0.24	0.05	-0.11	0.10
HSGPA_multsources	0.24	0.25	0.24	0.32	0.35	0.23	0.34	0.39	0.37	0.35	-0.01	-0.18	0.10
race_hisp	-0.27	-0.13	-0.12	-0.10	-0.11	-0.03	-0.05	-0.12	-0.11	-0.12	0.03	0.12	-0.05
race_Black	-0.13	-0.01	-0.02	0.00	0.00	-0.03	-0.03	-0.05	-0.10	-0.08	0.07	0.09	-0.01
race_White	0.29	0.11	0.10	0.07	0.07	0.03	0.04	0.10	0.15	0.14	-0.07	-0.16	0.04
female	0.00	0.05	0.08	0.12	0.15	0.10	0.14	0.12	0.12	0.11	0.01	-0.04	0.00
regionNE	0.04	0.06	-0.03	0.01	0.02	0.00	0.05	0.08	0.07	0.08	0.10	-0.03	0.01
regionMW	0.05	0.02	0.03	0.00	0.01	-0.01	-0.01	0.02	0.03	0.03	-0.01	-0.04	0.02
regionS	-0.04	0.00	0.03	0.01	0.02	0.01	-0.03	-0.01	-0.04	-0.03	0.06	0.02	-0.03
regionW	-0.05	-0.08	-0.03	-0.03	-0.04	-0.01	0.00	-0.09	-0.06	-0.06	-0.16	0.04	0.00

	X2FAMINCOME	X2FAMINCOMEsq	avgtotalFamilyCont4Kplus	submittedFAFSA	parentseduc_degree	HSGPA_multsources	race_hisp	race_Black	race_White	female	regionNE	regionMW	regionS	regionW
X2FAMINCOME	1.00													
X2FAMINCOMEsq	0.96	1.00												
avgtotalFamilyCont4Kplus	0.41	0.34	1.00											
submittedFAFSA	0.01	-0.01	.	1.00										
parentseduc_degree	0.35	0.30	0.26	0.09	1.00									
HSGPA_multsources	0.20	0.16	0.20	0.27	0.15	1.00								
race_hisp	-0.18	-0.15	-0.17	-0.04	-0.21	-0.13	1.00							
race_Black	-0.17	-0.13	-0.21	0.04	-0.05	-0.10	-0.22	1.00						
race_White	0.26	0.21	0.32	-0.02	0.19	0.18	-0.55	-0.41	1.00					
female	-0.01	-0.01	-0.06	0.17	0.00	0.13	0.00	0.03	-0.02	1.00				
regionNE	0.05	0.05	0.07	0.06	0.02	0.08	-0.05	-0.04	0.08	0.01	1.00			
regionMW	0.02	0.01	0.07	0.00	0.05	-0.02	-0.17	-0.01	0.17	-0.02	-0.25	1.00		
regionS	-0.06	-0.05	-0.08	0.00	-0.02	-0.01	-0.03	0.17	-0.05	0.01	-0.36	-0.41	1.00	
regionW	0.00	-0.01	-0.04	-0.06	-0.04	-0.04	0.26	-0.15	-0.18	0.00	-0.25	-0.29	-0.42	1.00

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.

Table A1-2: Correlations Between Various Affordability Belief Measures and Postsecondary Expectations (AA degree or higher)

	Student Expects an AA Degree or Higher (11th Grade)	N
11th grader believes family can send him/her to college if accepted	0.18	18960
9th grader believes family can send him/her to college if studies	0.15	17430
11th grader believes he/she can afford a postsecondary institution	0.27	19350
11th grader believes he/she can afford occupational training	0.16	19000
11th grader believes he/she can afford at 2-year college	0.26	19050
11th grader believes he/she can afford a 4-year college	0.29	19270

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; author's calculations.
NOTE: Unweighted Ns are rounded to the nearest 10.

Appendix 2: Imputation of Expected Family Contribution

In this study, I address missing data on Expected Family Contribution (EFC) using multiple imputation procedures in Stata, which uses ordinary least squares (OLS) regression to model EFC based on these covariates. Rather than imputing a single predicted value, the multiple imputation technique adds random noise drawn from the residual distribution in each iteration, thereby generating multiple distinct and plausible values for each missing observation. I choose to use a multiple imputation over a simpler single imputation technique because "multiple imputation will likely lead to a more accurate set of estimates than using [single imputation] for missing data" (Ender, 2010, p. 344) by ensuring that uncertainty is reflected across the imputed datasets.

The multiple imputation approach assumes that the imputed variable (EFC) is Missing at Random (MAR). This means that the probability of missingness depends on other observed variables (such as family income, GPA, FAFSA filing status), but not on the unobserved true value of EFC itself, after controlling for covariates (UCLA Statistical Consulting Group, n.d.). When the MAR assumption holds and the missing data mechanism is ignorable (i.e., it does not depend on unobserved information), multiple imputation produces unbiased estimates.[23]

In this study, I proceed under the assumption that EFC is missing at random (MAR) and that the included covariates adequately explain the missingness. However, it is important to

[23] This is widely considered a more defensible assumption than data being Missing Completely at Random (MCAR), and is generally sufficient when rich auxiliary variables are available.

note that there is no definitive way to determine whether data are truly MAR or Missing Not At Random (MNAR). As Graham, Olchowski, and Gilreath (2007) explain, "There is no statistical test that can reliably distinguish between data that are missing at random and data that are not" (p. 209). Similarly, the UCLA Statistical Consulting Group notes that "MI assumes that the missing data mechanism is MAR, but this assumption cannot be empirically verified from the data at hand" (UCLA Statistical Consulting Group, n.d.).

To estimate the imputed data, I employ the mi impute regress command in Stata with 30 imputations to estimate missing values for the continuous EFC variable based on a rich set of covariates. These include family income (13 categories), an indicator for whether the household is above or below the poverty threshold, parental education (7 categories), high school GPA, ZIP code, race/ethnicity, number of parents, household size, and whether the student has a sibling in college. The imputation model is thus designed to reflect factors plausibly associated with both FAFSA filing and amount of expected financial need. After imputing the continuous EFC variable, I created a binary indicator for whether EFC exceeded $4,000. This binary variable is then used in the SEM models. A total of 4,461 observations were imputed. These 30 complete datasets are then used for my structural equation models (SEMs).

Formally, Stata estimates a linear regression model of the form:

$$EFC_i = \beta 0 + \beta 1 X1_i + \beta 2 X2_i + \cdots + \beta k X_{ki} + \epsilon_{iEFC_i}$$

, Where: EFC_i = is the (possibly missing) expected family contribution for student i, $\beta 1 X1_i + \beta 2 X2_i + \cdots + \beta k X_{ki}$ are observed covariates (e.g., family income, GPA, etc.), and ϵ_{iEFC_i} is the residual.

The choice of 30 imputations follows recommendations from the methodological literature that increasing the number of imputations can improve the stability and precision of parameter estimates, particularly when the proportion of missing data is moderate or high. As Graham, Olchowski, and Gilreath (2007) suggest, the efficiency loss from too few imputations can be considerable, and they recommend 20 to 100 imputations in many cases. Using 30 imputations balances computational feasibility and statistical efficiency.

Unfortunately, Stata's mi estimate command does not support the sem command used in structural equation modeling (SEM). Thus, I manually applied Rubin's Rules to combine the results from each imputed dataset. For each equation in the SEM, I estimated the model 30 times (once per imputed dataset), saving the coefficient and standard error for EFC. The pooled point estimate $\bar{\beta}$ is computed as the average estimate across the 30 imputations:

$$\bar{\beta} = \frac{1}{M} \sum_{m=1}^{M=30} \widehat{\beta_m}$$

The within-imputation variance is computed as:

$$\bar{U} = \frac{1}{M} \sum_{m=1}^{M=30} \widehat{U_m}$$

The between-imputation variance is calculated as:

$$B = \frac{1}{M-1} \sum_{m=1}^{M=30} \left(\widehat{\beta_m} = \hat{\beta}\right)^2$$

The total variance is calculated as:

$$T = \bar{U} + B\left(1 + \frac{1}{M}\right)$$

Impute, Then Transform or Transform, Then Impute

As described above, my imputation method is to first inpute the continuous expected family contribution variable, then transform it into a binary variable (above or below $4,000). This approach is referred to 'impute, then transform' in the broader missing-data literature (Austin et al., 2021). An alternative approach to imputing expected family contribution (EFC) is to first transform the continuous variable into a binary variable, and then impute the binary indicator - using logistic regression instead of OLS - for whether EFC is above or below $4,000. This is referred to as 'transform, then impute'. Some statisticians (Hippel, 2009) suggest that imputing variables after they have been transformed may yield more accurate and interpretable results.

Table A2-1 compares the performance of the two imputation methods, according to three metrics- RMSE, ROC-AUC, and Percent Correctly Imputed. RMSE captures the average squared difference between the observed and predicted binary outcomes. A lower RMSE indicates better predictive accuracy. With a binary variable that is evenly split (i.e., 50% of observed EFC values are ≥ $4,000 and 50% are < $4,000), the RMSE by chance (i.e., from guessing 0.5 for all cases) would be approximately 0.5. The ROC-AUC measures the model's ability to distinguish between high and low EFC values. A value of 0.5 indicates no predictive power, while 1.0 indicates perfect classification. The percent correctly imputed shows the proportion of imputed values that match the actual observed values.

Across all metrics, the 'transform, then impute' imputation method outperforms the 'impute, then transform' method. Specifically, the 'transform, then impute' method results in a lower root mean squared error (RMSE = 0.42), a higher area under the ROC curve (ROC-AUC = 0.81), and a greater percentage of correctly imputed values (68.5%). The RMSE of 0.42 indicates improvement over chance, which would yield an RMSE of approximately 0.50 given an even distribution of 0s and 1s. The ROC-AUC of 0.81 suggests strong discriminatory power, and the classification accuracy further reinforces the model's effectiveness. These findings indicate that the direct binary imputation method yields more accurate predictions within the analytic sample.

Table A2-1: Comparison of Predictive Performance of Two Imputation Methods

Imputation Method	RMSE	ROC-AUC	% correctly imputed
Impute continuous, then transform to binary	0.56	0.68	63.7%
Transform to binary, then impute	0.42	0.81	68.5%

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.

Table A2-2: Additional Descriptive Statistics

	Family Income		Parent(s) Education Level		Full Analytic Sample	Share Missing
	Below Median	Above Median	No Degree	Degree		
Alternate imputed average total family	16.2% [0.66%	68.9% [0.84]	23.6% [0.92]	55.8% [0.93]	43.1% [0.98]	14.6%

contribution is $4k or higher [SE]						

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
Alternate Results for Model B, Table 4 using this alternate imputed total family contribution variable are shown in Table A2-3 below.

Table A2-3: Alternate Table 4: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations- With and Without Imputed Expected Family Contribution Included in the Model

	Student Believes they Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
Without EFC	36.21 [24.87-47.55]	19.98 [13.41-26.56]	12.88 [8.61-17.15]	9.51 [6.52-12.50]	7.77 [5.11-10.42]
With Imputed EFC	33.10 [18.92-47.28]	18.75 [11.9-25.6]	13.74 [8.05-19.42]	10.63 [6.55-14.72]	8.65 [4.87-12.42]
SRMR: Without imputed EFC \ With Imputed EFC	N/A	.01 / .01	.02 / .02	.02 /.02	.02 /.02
N	N/A	14020	14020	14020	14020
Population Size	N/A	2776207	2776207	2776207	2776207

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. Unweighted Ns are rounded to the nearest 10.

Appendix 3: t Tests

Students whose families have lower incomes or whose parents do not have a college degree experience significantly lower postsecondary expectations and perceived ability to pay, and significantly worse postsecondary outcomes, compared to their more advantaged peers. Across both comparisons—by family income and by parent education—students from disadvantaged backgrounds are 20 to 25 percentage points less likely to enroll in a four-year college or attain a postsecondary degree. These students are also substantially less likely to believe they can afford college or to expect they will earn a degree. For example, only half of low-income or first-generation 11th graders believe they can afford a four-year college, compared to about 70% among higher-income or college-educated-parent peers. Notably, the socioeconomic gaps are slightly wider when comparing by parent education than by income, highlighting the intergenerational influence of educational attainment on students' college-going beliefs and outcomes.

Table A3-1: Differences in Summary Statistics for the Analytic Sample by Family Income and Parent(s) Education Level

	Family Income	Parent(s) Education Level						
	Below Median [SE in brackets]	Above Median [SE in brackets]	Difference [CI in brackets]	F-test p-value	No Degree	Degree	Difference	F-test p-value
Outcome Variables of Interest								

Share ever enrolled in a postsecondary School	70.1% [0.77]	83.3% [0.52]	13.2 [11.6–14.8]	<.001	67.2% [0.89]	83.3% [0.48]	16.1 [14.4–17.8]	<.001
Share who enrolled in a 4-Year Institution	42.5% [0.91]	64.5% [0.68]	22.0 [20.0–24.1]	<.001	38.6% [1.01]	63.9% [0.64]	25.3 [23.2–27.4]	<.001
Share who attained AA degree or higher by 2021	25.8% [0.73]	47.5% [0.68]	21.7 [20.1–23.3]	<.001	22.9% [0.76]	46.2% [0.65]	23.3 [21.7–24.9]	<.001
Share who attained BA degree or higher by 2021 (Spring, 11th grade)	18.2% [0.62]	40.5% [0.66]	22.3 [20.8–23.9]	<.001	16.2% [0.65]	38.6% [0.62]	22.4 [20.9–24.0]	<.001
Hypothesized Mediator Variables								
Share of 11th graders who believe they can afford a 4-year college	50.0% [0.91]	73.0% [0.62]	23.0 [21.0–25.0]	<.001	49.7% [1.01]	69.7% [0.64]	20.0 [18.0–22.0]	<.001
Share of 11th graders who believe they can afford a postsecon	78.3% [0.73]	90.1% [0.40]	11.8 [10.4–13.1]	<.001	78.4% [0.82]	88.2% [0.42%	9.8 [8.3–11.3]	<.001

dary institution								
Share of 11th graders who expect to attain an AA degree or higher	71.8% [0.84]	85.7% [0.51]	13.9 [12.3–15.4]	<.001	69.6% [0.93]	85.1% [0.53]	15.5 [13.8–17.2]	<.001
Share of 9th graders who expect to attain an AA degree or higher*	74.0% [1.0]	86.6% [0.65]	12.6 [10.7–14.5]	<.001	71.8% [1.09]	86.2% [1.68]	14.4 [11.4–17.4]	<.001
Share of 11th graders who aspire to attain an AA degree or higher*	84.5% [0.66]	91.2% [0.43]	6.7 [5.4–8.1]	<.001	82.8% [0.77]	91.3% [0.39]	8.5 [7.1–9.9]	<.001
Control Variables								
Female	49.6% [0.89]	49.6% [0.68]	0.0 [–1.5–1.5]	0.998	49.5% [0.99]	49.6% [0.65]	0.1 [–1.5–1.7]	0.96
Black non-Hispanic	20.2% [0.86]	8.4% [0.42]	11.8 [10.4–13.1]	<.001	16.6% [0.90]	12.7% [0.54]	3.9 [2.5–5.3]	<.001
White non-Hispanic	38.0% [0.79]	63.1% [0.73]	25.1 [23.5–26.7]	<.001	39.2% [0.89]	58.4% [0.70]	19.2 [17.5–20.9]	<.001
Other race non-Hispanic	11.5% [0.44]	12.9% [0.48]	1.4 [0.4–2.4]	0.005	10.8% [0.39]	13.2% [0.56]	2.4 [1.1–3.7]	<.001
Hispanic	30.4% [0.93]	15.6% [0.69]	14.8 [13.0–16.7]	<.001	33.5% [1.07]	15.7% [0.60]	17.8 [15.9–19.7]	<.001

Share of parents who expect their child to attain an AA degree or higher	75.6% [0.81%	87.9% [0.47]	12.3 [10.8–13.8]	<.001	73.0% [0.94]	87.8% [0.44]	14.8 [13.1–16.4]	<.001
Average GPA in High School	2.45 [0.1]	2.82 [0.1]	0.38 [0.34–0.42]	<.001	2.5 [0.02]	2.8 [0.01]	0.29 [0.26–0.32]	<.001
Share who live less than 20 mi from the nearest college	89.5% [0.51]	92.4% [0.38]	2.9 [1.8–4.1]		89.3% [0.57]	92.1% [0.36]	2.8 [1.7–3.9]	<.001
Share of 11th graders who believe that studying rarely pays off with a good job	37.0% [0.9]	24.9% [0.64]	12.1 [10.4–13.8]		37.1% [0.99]	26.6% [0.64]	10.5 [8.9–12.1]	<.001
NE Region	16.4% [0.94]	18.92% [0.56]	2.5 [1.1–4.0]	<.001	16.7% [0.51]	18.28% [0.56]	1.6 [0.3–2.9]	0.014
MW Region	21.0% [0.6]	23.66% [0.54]	2.7 [1.5–4.0]	<.001	19.88% [0.64]	24.04% [0.52]	4.1 [2.8–5.5]	<.001
S Region	40.20% [0.85]	34.64% [0.63]	–5.6 [–7.3– –3.8]	<.001	38.65% [0.93]	36.55% [0.62]	–2.1 [–3.9– –0.3]	0.02
W Region	22.45% [0.81]	22.78 [0.67]	0.3 [–1.3–1.9]	<.001	24.74% [0.94]	21.13% [0.61]	–3.6 [–5.3– –1.9]	<.001
SES Measures								

Average of Socioeconomic Status (Composite Var, 2011)	-0.55 [0.01]	0.44 [0.01]	0.99 [0.96–1.01]	<.001	-0.72 [0.01]	0.41 [0.01]	1.12 [1.10–1.15]	<.001
Natural Log of Family Income in 2011	10.09 [0.01]	11.54 [0.01]	1.44 [1.41–1.47]	<.001	10.45 [0.017]	11.07 [0.013]	0.62 [0.59–0.66]	<.001
Family Income in 2011	29000.33 [205.65]	117251.40 [2807.70]	88,251.07 [82,733.23–93,768.91]	<.001	47446.9 [656.38]	91006.1 [2443.19]	43,559.21 [40,920.10–46,192.32]	<.001
Share whose parent(s) have a college degree	43.2% [0.86]	74.7% [0.64]	31.5 [29.8–33.2]	<.001	0.0%	100.0%	100	<.001
FAFSA: Family Contribution Measures (2013/2014-2020/2021)								
Average Family Contribution	3588.6 [170.88]	15749.6 [352.37]	12,160.99 [11,394.10–12,927.87]	<.001	4501.0 [214.33]	13167.8 [311.97]	8,666.87 [8,127.21–9,206.50]	<.001
Imputed Average Family	3223.35 [140.44]	16694.47 [286.72]	13,471.12 [12,845.34–	<.001	4338.01 [176.29]	13916.78 [261.25]	9,578.77 [9,142.42–	<.001

Contribution			14,096.89]				10,015.3]	
Average Total Family Contribution is $4K or higher	21.5% [0.86]	63.9% [0.84]	42.4 [40.5–44.3]	<.001	27.0% [0.11]	53.5% [0.82]	26.5 [24.6–28.4]	<.001
Imputed Average Total Family Contribution is $4K or higher	25.84% [080]	69.07% [0.71]	43.23 [41.5–44.9]	<.001	32.0% [1.00]	58.5% [0.73]	26.5 [24.6–28.3]	<.001

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: All figures are weighted.

Appendix 4: Comparing FAFSA Filers to NonFilers

Table A4-1: Summary Statistics for the Analytic Sample by Family Income and Parent(s) Education Level

	Filed a FAFSA		Full Analytic Sample	Share Missing
	No	Yes		
Unweighted Number of Observations	7,540	13,310	20,850	
Weighted Share of Observations	37.5%	62.5%		
Outcome Variables of Interest				
Share ever enrolled in a postsecondary School	41.8% [.87]	96.9% [.25]	76.7% [0.46]	1.5%
Share who enrolled in a 4-Year Institution	22.6% [0.74]	70.6% [0.70%	53.5% [0.57]	3.5%
Share who attained AA degree or higher by 2021	11.3% [0.62]	51.4% [0.73]	36.6 % [0.52]	1.4%
Share who attained BA degree or higher by 2021 (Spring, 11th grade)	8.7% [0.50]	41.4% [0.68]	29.4% [0.48]	1.4%
Hypothesized Mediator Variables				
Share of 11th graders who believe they can afford a 4-year college	49.9% [0.89]	68.3% [0.71]	61.5% [0.56]	2.5%
Share of 11th graders who believe they can afford a postsecondary institution	76.7% [0.76]	88.6% [0.48]	84.2% [0.42]	2.1%
Share of 11th graders who expect to attain an AA degree or higher	63.6% [0.88]	87.5% [0.58]	78.8% [0.5]	6.0%
Share of 9th graders who expect to attain an AA degree or higher*	67.9% [0.10]	87.0% [0.72]	80.3% [0.6]	29.0%
Share of 11th graders who aspire to attain an AA degree or higher*	78.7% [0.77]	93.0% [0.44]	87.8% [0.39]	10.8%

Control Variables				
Female	39.5% [0.84]	25.9% [0.71]	49.6% [0.56%	0.0%
Black non-Hispanic	12.4% [0.65]	15.4% [0.68]	14.3% [0.49]	4.2%
White non-Hispanic	51.8% [0.91]	49.7% [0.74]	50.6% [0.58]	4.2%
Other race non-Hispanic	10.6% [0.39]	13.1% [0.48]	12.2% [0.46]	4.2%
Hispanic	25.2% [0.93]	21.7% [0.75]	23.0% [0.59]	4.2%
Share of parents who expect their child to attain an AA degree or higher	74.0% [0.78]	86.4% [0.59]	81.8% [0.47]	6.0%
Average GPA in High School [standard deviation]	2.3 [1.0]	2.8 [0.9]	2.6 [0.93]	6.8%
Share who live less than 20 mi from the nearest college	89.3% [0.57]	91.9% [0.38]	91.0% [032]	5.4%
Share of 11th graders who believe that studying rarely pays off with a good job	39.5% [0.92]	25.9% [0.68]	31.0% [0.56]	3.9%
NE Region	14.47% [0.66]	19.44% [0.75]	17.64% [0.54]	5.4%
MW Region	22.25% [0.67]	22.38% [0.51]	22.33% [0.41%	5.4%
S Region	37.15% [0.83]	37.56% [0.68]	37.41% [0.53]	5.4%
W Region	26.13% [0.92]	20.62% [0.63]	22.61% [0.53]	5.4%
SES Measures				
Average of Socioeconomic Status (Composite Var, 2011) [Standard Deviation]*	-0.2 [1.0]	0.0 [0.9]	-0.0 [.9]	0.0%
Natural Log of Family Income in 2011 [Standard Deviation]	10.8 [1.1]	10.8 [1.0]	10.8 [1.05]	0.0%
Family Income in 2011 [Standard Deviation]	74695.0 [239153.4]	72190.9 [87713.6]	73125.8 [162030.69]	0.0%
Share whose parent(s) have a college degree	53.0% [.87]	62.5% [.75]	59.0% 0.57]	0.0%
FAFSA: Family Contribution Measures (2013/2014-2020/2021)				

Average Family Contribution [Standard Deviation]	N/A	9920.2 [20361.1]	9920.156 [20361.8]	37.5%
Imputed Average Family Contribution [Standard Deviation]	10578.5 [14716.6]	9920.2 [20361.1]	10114.2 [19091.7]	15.0%
Average Total Family Contribution is $4K or higher	N/A	43.6% [0.69]	42.7% [0.69]	37.5%
Imputed Average Total Family Contribution is $4K or higher	61.3% [0.12]	43.6% [0.69]	48.9% [0.61]	15.9%

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: Unweighted Ns are rounded to the nearest 10.

Appendix 5: Standardized and Unstandardized Coefficients for Model A

Table A5-2 shows that a one-unit increase in the natural log of family income is associated with an 8.2 percentage point increase in students' belief that they can afford college, while having a parent with a college degree is associated with a 12.4 percentage point increase in this belief, controlling for other covariates. Regarding the direct effect of SES on postsecondary expectations, having a parent with a college degree is associated with a 5.6 percentage point increase in postsecondary expectations, while the direct effect of family income on expectations is smaller (0.6 percentage points) and not statistically significant at conventional levels. Additionally, SES has a significant direct impact on postsecondary outcomes. Parental education is associated with increases ranging from 7.6 to 12.4 percentage points in postsecondary enrollment and degree attainment outcomes, while a one unit change in the ln of family income is associated with increases ranging from 2.2 to 4.9 percentage points in these outcomes. Students' perceived ability to pay for college also has a significant direct effect on their postsecondary expectations. Specifically, Table A5-2 shows that a one-unit increase in students' belief that college is affordable is associated with an 18.1 percentage point increase in postsecondary expectations.

Table A5-1: Standardized Coefficients for Model A

Unweighted number of observations	15,530
Population size	3,093,164
	M1- Believes Can Afford College (2012-Spring 11th Grade)

X1- Natural Log of Family Income in 2011	0.172** (12.92)			
X2- Parent(s) have a College Degree	0.126** (13.19)			
High School GPA	0.198** (17.57)			
Hispanic	-0.040 (-2.35)			
Black	0.031 (2.71)			
White				
	M2- Student Expects AA+ (2012-Spring 11th Grade)			
M1- Believes Can Afford College (2012-Spring 11th Grade)	0.222* (9.35)			
X1- Natural Log of Family Income in 2011	0.014 (1.24)			
X2- Parent(s) have a College Degree	0.069 (3.55)			
High School GPA	0.190** (17.25)			
Hispanic	0.013 (0.53)			
Black	0.032 (1.88)			
White	-0.015 (-1.64)			
Distance to Nearest College is <20 Mi.	0.020 (2.68)			
Female	0.071* (4.31)			
Parents Expect College Degree (2012-Spring 11th Grade)	0.149** (18.45)			
Belief that Studying Rarely Pays Off with Good Job (2012-Spring 11th Grade)	-0.105* (-6.13)			
postsecondary Outcome Variable	Y1- Enrollment at any Higher Education Institution	Y2- Enrollment at a 4-Year Institution	Y3- Attained AA or Higher (2021)	Y4- Attained BA or Higher (2021)
Student expects AA or higher (2012-Spring 11th Grade)	0.290** (-21.02)	0.254*** (-47.83)	0.180** (-26.2)	0.159*** (-39.9)

Natural Log of Family Income in 2011	0.053 (-3.32)	0.084* (-5.52)	0.079* (-5.28)	0.104* (-6.08)
Parent(s) have a College Degree	0.091* (-7.92)	0.122** (-23.1)	0.121*** (-200.98)	0.125** (-21.27)
High School GPA	0.198*** (-32.8)	0.247** (-22.49)	0.235* (-9.8)	0.218* (-9.46)
Hispanic	-0.018 (-2.75)	-0.072* (-6.75)	-0.003 (-0.2)	-0.014 (-1.05)
Black	-0.016 (-0.95)	-0.052 (-4.29)	-0.049* (-8.79)	-0.033* (-7.1)
White	-0.061* (-5.78)	-0.084* (-6.03)	0.023 (-1.66)	0.013 (-1.02)
Female	0.064* (-9.01)	0.050* (-5.46)	0.068** (-11.03)	0.054* (-5.59)
Parents Expect College Degree (2012-Spring 11th Grade)	0.075** (-11.55)	0.081* (-6.24)	0.065* (-5.27)	0.071 (-3.05)
Northeast region	0.027** (-12.46)	0.027 (-2.25)	0.02 (-2.87)	0.041** (-10.81)
Southern region	-0.017 (-1.78)	-0.015* (-8.32)	-0.034 (-3.71)	-0.023*** (-34.27)
Western region	-0.005 (-0.19)	-0.067 (-1.73)	-0.042 (-2.00)	-0.039 (-2.72)

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: Standard errors are in parentheses. ***indicates significance at the 1% level. Unweighted Ns are rounded to the nearest 10.

Table A5-2: Unstandardized Coefficients for Model A

Unweighted number of observations	15,530
Population size	3,093,164
	M1- Believes Can Afford College (2012-Spring 11th Grade)
X1- Natural Log of Family Income in 2011	0.0824** (12.92)
X2- Parent(s) have a College Degree	0.124** (13.19)
High School GPA	0.102** (17.57)
Hispanic	-0.0468 (-2.35)
Black	0.0440 (2.71)
White	0.00768 (1.82)
Constant	-0.603* (-6.89)
	M2- Student Expects AA+ (2012-Spring 11th Grade)
M1- Believes Can Afford College (2012-Spring 11th Grade)	0.181* (9.35)
X1- Natural Log of Family Income in 2011	0.00552 (1.24)
X2- Parent(s) have a College Degree	0.0555 (3.55)
High School GPA	0.0799** (17.25)
Hispanic	0.0120 (0.53)

Black	0.0366 (1.88)			
White	-0.0118 (-1.64)			
Distance to Nearest College is <20 Mi.	0.0272 (2.68)			
Female	0.0553* (4.31)			
Parents Expect College Degree (2012-Spring 11th Grade)	0.155** (18.45)			
Belief that Studying Rarely Pays Off with Good Job (2012-Spring 11th Grade)	-0.0905* (-6.13)			
Constant	0.229* (9.66)			
postsecondary Outcome Variable	Y1- Enrollment at any Higher Education Institution	Y2- Enrollment at a 4-Year Institution	Y3- Attained AA or Higher (2021)	Y4- Attained BA or Higher (2021)
Student expects AA or higher (2012-Spring 11th Grade)	0.302** (21.02)	0.322*** (47.83)	0.226** (26.20)	0.190*** (39.90)
Natural Log of Family Income in 2011	0.0217 (3.32)	0.0416* (5.52)	0.0391* (5.28)	0.0486* (6.08)
Parent(s) have a College Degree	0.0757* (7.92)	0.124** (23.10)	0.121*** (200.98)	0.120** (21.27)
High School GPA	0.0868*** (32.80)	0.132** (22.49)	0.124* (9.80)	0.110* (9.46)
Hispanic	-0.0175 (-2.75)	-0.0872* (-6.75)	-0.00326 (-0.20)	-0.0160 (-1.05)
Black	-0.0192 (-0.95)	-0.0762 (-4.29)	-0.0701* (-8.79)	-0.0456* (-7.10)
White	-0.0501* (-5.78)	-0.0833* (-6.03)	0.0225 (1.66)	0.0121 (1.02)
Female	0.0520* (9.01)	0.0498* (5.46)	0.0664** (11.03)	0.0507* (5.59)
Parents Expect College Degree (2012-Spring 11th Grade)	0.0812** (11.55)	0.107* (6.24)	0.0847* (5.27)	0.0883 (3.05)

Northeast region	0.0287** (12.46)	0.0355 (2.25)	0.0258 (2.87)	0.0509** (10.81)
Southern region	-0.0140 (-1.78)	-0.0150* (-8.32)	-0.0340 (-3.71)	-0.0218*** (-34.27)
Western region	-0.00517 (-0.19)	-0.0793 (-1.73)	-0.0493 (-2.00)	-0.0434 (-2.72)
Constant	-0.0310 (-0.56)	-0.599** (-10.58)	-0.699* (-8.34)	-0.812* (-9.78)

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: Standard errors are in parentheses. ***indicates significance at the 1% level. Unweighted Ns are rounded to the nearest 10.

Appendix 6: Model D: Continuous SES Measure vs. Two Measures of SES

As an additional robustness check, I re-estimated structural equation model A using the NCES-provided continuous SES composite measure, which incorporates family income, parents' education, and parents' occupation into a single standardized variable. This allows me to test whether the relationships observed in the main model—which used separate indicators for family income and parental education—are sensitive to the way SES is operationalized.

The results using this continuous SES variable were substantively consistent with those presented in the main analysis. The direct effect of SES on perceived ability to pay, as well as the indirect effects through perceived affordability and expectations, remained statistically significant and similar in magnitude. The mediation percentages changed only slightly. These findings provide additional confidence that the conclusions drawn from the main model are not driven by the choice of SES measurement. The continuous SES model is reported in Table A6-1 and A6-2, which includes standardized coefficients for all path estimates and key mediation effects.

Table A6-1: Total Association (C) Between Two Alternative SES Measures and M2, Y1, Y2, Y3, Y4; unstandardized and standardized

		Outcome Variable			
	M2-Student Expects an AA Degree or Higher	Y1-Ever enrolled in Any Institution	Y2-Ever enrolled in a 4-Year Institution	Y3-Attained an AA Degree or Higher	Y4-Attained a BA Degree or Higher
	Std	Std	Std	Std	Std
Continuous SES Variable	0.14	0.17	0.24	0.23	0.26
t-test	9.55	19.39	27.65	25.23	15.91
SES (using parent's education level and household income)	0.15	0.19	0.24	0.23	0.25
tstat	14.06	32.48	12.94	16.42	11.45
SRMR: ModelA / ModelD	N/A	0.02 / 0.02	0.02 / 0.02	0.02 / 0.02	0.02 / 0.02
N	N/A	15,530	15,530	15,530	15,530
Population size	N/A	3,093,164	3,093,164	3,093,164	3,093,164

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. !Std means not standardized coefficients and Std means standardized coefficients. Unweighted Ns are rounded to the nearest 10.

Table A6-2: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations- comparing two measures of SES

	Student Believes They Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
SES (Model A- using parent's education level and household income)	37.99*** [22.92-53.06]	19.14*** [13.14-25.15]	13.36*** [7.64-19.07]	10.12*** [6.08-14.154]	8.29*** [4.68-11.89]
Continuous SES Variable (Model D)	40.63*** [24.03-57.23]	24.69*** [19.23-30.14]	14.53*** [10.31-18.75]	10.99*** [7.43-14.56]	8.08*** [5.65-10.50]
SRMR: Model A / Model D	N/A	0.02 / 0.02	0.02 / 0.02	0.02 / 0.02	0.02 / 0.02
N	N/A	15,530	15,530	15,530	155,30
Population size	N/A	3,093,164	3,093,164	3,093,164	3,093,164

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.2009 HSLS, CPS, and Author's Calculations

NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. Unweighted Ns are rounded to the nearest 10.

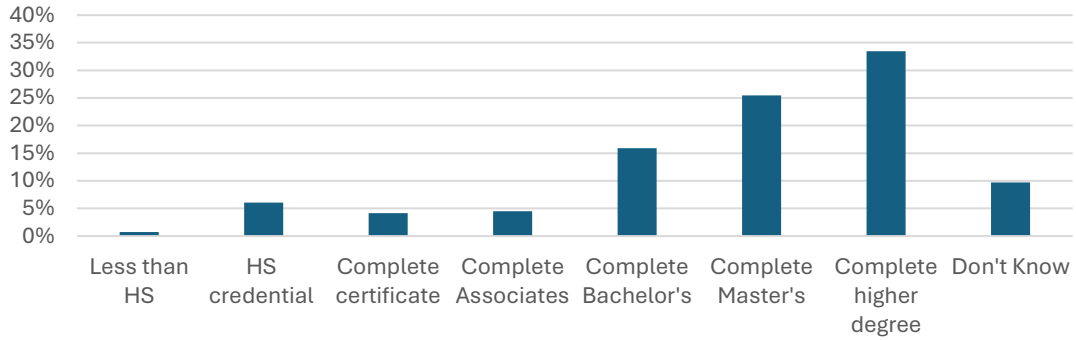
Appendix 7: Model E: Aspirations vs. Expectations

Figure A7-1 presents a visual comparison between students' aspirations and expectations, both measured in 11th grade. The top panel shows how far students report wanting to go in school if there were no barriers (i.e., their aspirations), while the bottom panel shows how far they realistically expect to go (i.e., their expectations).

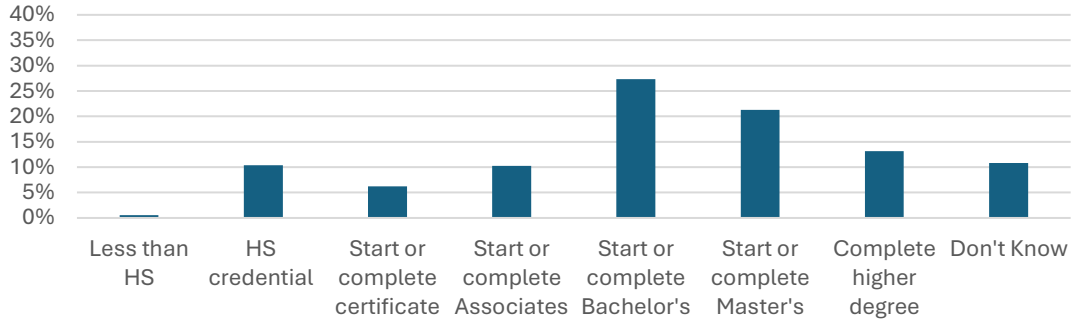
The two distributions reveal a clear difference: students' aspirations are substantially more ambitious than their expectations. Nearly 60% of students report aspiring to a graduate or higher degree, compared to about 1/3rd who expect to reach that level. This divergence highlights the importance of distinguishing between aspirations and expectations in studies of postsecondary identity and behavior. While aspirations likely reflect idealized goals, expectations may be more grounded in students' perceived constraints, such as financial resources and academic preparation.

Figure A7-1 Distribution of Aspirations versus Expectations

Panel A: How Far Student Would Like to Go if No Barriers (11th grade)



Panel B: How Far Student Thinks He/She will Get (11th grade)



SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; author's calculations.

One reason aspirations are not used in the main mediation model to measure college- or career-training identity is because they are less predictive of postsecondary outcomes than expectations (See Appendix 2). However, because aspirations are commonly measured in survey datasets and frequently discussed in the education literature, this appendix presents a supplemental analysis replacing expectations with aspirations to explore how the results compare.

As shown in Table A7-2, aspirations mediate a smaller share of the total effect than expectations across all pathways. Nonetheless, the aspiration measure still mediates a statistically significant portion of the total effect of SES, confirming that students' beliefs about their future—whether framed as expectations or aspirations—play an important role in shaping postsecondary trajectories.

Table A7-2: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations- Comparing Aspirations to Expectations

	Student Believes they Can Afford College >> Student postsecondary Expectations / Aspirations	Student postsecondary Expectations / Aspirations >> Ever enrolled in Any Institution	Student postsecondary Expectations / Aspirations >> Ever enrolled in a 4-Year Institution	Student postsecondary Expectations / Aspirations >> Attained an AA Degree or Higher	Student postsecondary Expectations / Aspirations >> Attained a BA Degree or Higher
Expectations (Model A)	37.99*** [22.92-53.06]	19.14*** [13.14-25.15]	13.36*** [7.64-19.07]	10.12*** [6.08-14.154]	8.29*** [4.68-11.89]
Aspirations (Model E)	29.73 *** [10.31-48.23]	11.78*** [6.21-17.36]	8.54*** [2.88-14.21]	5.94** [0.81-11.08]	4.90*** [1.48-8.31]
SRMR: Model A / Model E	N/A	.02 /.02	.02 /.02	.02 /.02	.02 /.02
N: Model A / Model E	N/A	15530 / 14450	15530 / 14450	15530 / 14450	15530 / 14450
Population size: Model A /Model E	N/A	3,093,164 / 2,866,023	3,093,164 / 2,866,023	3,093,164 / 2,866,023	3,093,164 / 2,866,023

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-

2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; **p-value <.05; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. Unweighted Ns are rounded to the nearest 10.

Appendix 8: Model F: 9th Grade Expectations vs. 11th Grade Expectations

As a sensitivity test, I also examined an alternative measure of college or career-going identity. While students' educational identities are actively forming throughout high school, it is possible that expectations formed in 9th grade could be especially influential, as they may allow more time for academic preparation and planning. However, expectations reported in 9th grade are less predictive of postsecondary outcomes than those reported in 11th grade. As shown in Appendix 2, 9th-grade expectations exhibit lower correlations with all four outcome variables—enrollment in any institution, enrollment in a 4-year institution, attainment of an associate degree, and attainment of a bachelor's degree—compared to 11th-grade expectations. Further, there is greater uncertainty amongst 9th graders. About 1/5th of 9th grade students across the income spectrum say they don't know how far they will get compared to about 1/10th of 11th graders. The stronger correlation suggests 11th graders expectations may capture a more developed and informed sense of students' educational trajectories at a critical decision-making stage. Consistent with these lower correlations, the 9th-grade expectation variable also mediates a smaller share of the total SES effect across all pathways, as shown in Table A8-1. These findings support the use of 11th-grade expectations in the primary model.

Table A8-1: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations- Comparing 9th and 11th Grade Expectations

	Student Believes they Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
11th Grade Expectations (Model A)	37.99*** [22.92-53.06]	19.14*** [13.14-25.15]	13.36*** [7.64-19.07]	10.12*** [6.08-14.154]	8.29*** [4.68-11.89]
9th Grade Expectations (Model F)	26.09*** [25.54-26.64]	12.93*** [9.92-15.94]	8.52*** [3.99-13.05]	6.35*** [3.71-8.09]	4.82*** [1.97-7.66]
SRMR: Model A / Model F	N/A	.02 /.02	.02 /.02	.02 /.02	.02 /.02
N: Model A / Model F	N/A	15,530 / 12,460	15,530 / 12,460	15,530 / 12,460	15,530 / 12,460
Population size: Model A /Model F	N/A	3,093,164 / 2,475,429	3,093,164 / 2,475,429	3,093,164 / 2,475,429	3,093,164 / 2,475,429

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.

NOTE: *** p-value is < 0.01; **p-value <.05; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. Unweighted Ns are rounded to the nearest 10.

Appendix 9: Model G: Can Afford Any College vs Can Afford 4-Year College

In this appendix, I examine how socioeconomic status (SES) influences postsecondary expectations and outcomes via two different affordability belief measures ("can afford a 4-year college" vs. "can afford any college"). Comparing the mediating effects, believing one can afford a 4-year college accounts for about 38% of the total SES impact on expecting at least an associate's degree—more than double the 16% mediated by the broader affordability belief. However, when it comes to actual enrollment and attainment—ever enrolling in any institution (≈19%), enrolling in a 4-year institution (≈13–13.4%), attaining an AA degree (≈10%), or attaining a BA degree (≈8%)—both beliefs show similar indirect effects. This suggests that while Model G highlights the stronger influence of specific 4-year affordability beliefs on expectations, both types of affordability perceptions exert comparable influence on real postsecondary outcomes through those expectations.

Table A9-1: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations- Comparing Two Measures of Affordability Beliefs

	Student Believes they Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
Believes Can Afford a 4-Year College (Model A)	37.99*** [22.92-53.06]	19.14*** [13.14-25.15]	13.36*** [7.64-19.07]	10.12*** [6.08-14.154]	8.29*** [4.68-11.89]

Believes Can Afford a College (Model G)	16.19*** [12.21-20.17]	18.95*** [12.86-25.04]	13.20*** [7.42-18.99]	9.99*** [5.92-14.87]	8.19*** [4.54-11.84]
SRMR: Model A / Model G	N/A	.02 /.01	.02 /.02	.02 /.01	.02 /.01
N: Model A / Model G	N/A	15,530 / 15,530	15,530 / 15,530	15,530 / 15,530	15,530 / 15,530
Population size: Model A /Model G	N/A	3,093,164 / 3,093,164	3,093,164 / 3,093,164	3,093,164 / 3,093,164	3,093,164 / 3,093,164

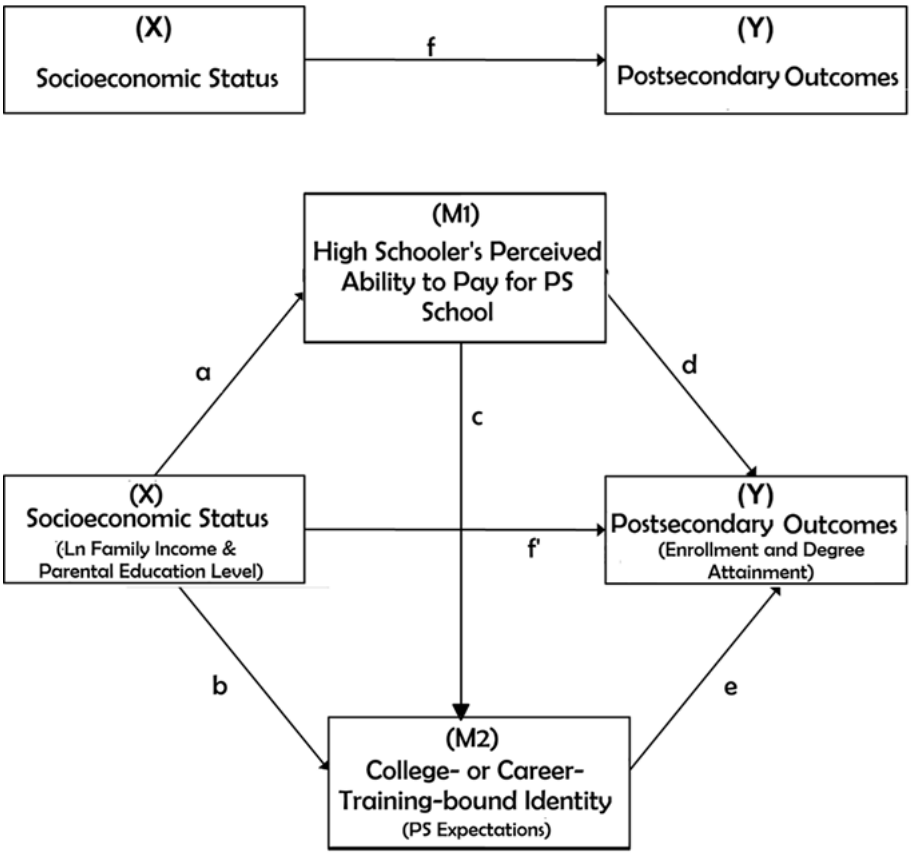
SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.

NOTE: *** p-value is < 0.01; **p-value <.05; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. Unweighted Ns are rounded to the nearest 10.

Appendix 10: Model H: Alternative Conceptual Model

To test the robustness of the conceptual model presented in the main body of the paper, I compare the results of the main analysis to an alternative model depicted in Figure A10-1. In this alternative conceptual model, no structural constraints are imposed: perceived affordability and postsecondary expectations are treated as parallel mediators, each allowed to directly affect postsecondary outcomes.

Figure A10-1: Fully Saturated Model



While I find that perceived ability to pay has a significant direct effect on some of the outcome variables, I also find the mediation results without EFC (Table A10-2) and the mediation results with EFC (Table A10-3) are not substantially different from the results using the conceptual model used in the main body of the paper. In terms of direct effects, perceived ability to pay does not have a significant effect on enrollment at any institution (standardized coefficient of -.003), but does have a substantial and significant effect on enrollment at a 4-year institution (standardized coefficient of 0.137***). Perceived ability to pay also directly affects AA degree attainment and BA degree attainment (standardized coefficient of 0.085* and 0.129*, respectively), although the effect is only slightly significant at the 10% level. These results suggest that the central findings are robust to this alternative conceptual model.

Table A10-2: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations: Main Specification (Model A) versus Fully Saturated Model (Model H)

	Path				
	Student Believes they Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
Main Specification (Model A)	37.99*** [22.92-53.06]	19.14*** [13.14-25.15]	13.36*** [7.64-19.07]	10.12*** [6.08-14.154]	8.29*** [4.68-11.89]
Fully Saturated	37.99*** [22.92-53.06]	20.15*** [13.55-26.74]	13.42*** [6.95-19.89]	9.70*** [5.32-14.09]	7.51*** [3.58-11.47]

Model (Model H)					
SRMR	N/A	.02 / .01	.02 /.01	.02 /.01	.02 /.01
N	N/A	15530 / 15530	15530 / 15530	15530 / 15530	15530 / 15530
Population size	N/A	3,093,164 / 3,093,164	3,093,164 / 3,093,164	3,093,164 / 3,093,164	3,093,164 / 3,093,164

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. 95% confidence intervals are in brackets. Unweighted Ns are rounded to the nearest 10.

Table A10-3: Share of Total Effect of SES Measures on postsecondary Expectations Mediated by Affordability Beliefs and Share of Total Effect of SES on postsecondary Outcome Variables Mediated by postsecondary Expectations: Main Specification (Model A) + EFC versus Fully Saturated Model (Model H) + EFC , Population of FAFSA Submitters

	Student Believes they Can Afford College >> Student Expects an AA Degree or Higher	Student Expects an AA Degree or Higher >> Ever enrolled in Any Institution	Student Expects an AA Degree or Higher >> Ever enrolled in a 4-Year Institution	Student Expects an AA Degree or Higher >> Attained an AA Degree or Higher	Student Expects an AA Degree or Higher >> Attained a BA Degree or Higher
Main Specification (Model A) + EFC	30.65*** [18.23-43.08]	17.24*** [5.83-26.65]	10.44*** [3.89-17.01]	6.56*** [2.69-10.42]	5.42*** [1.90-8.91]
Fully Saturated Model	30.65 [18.23-43.08	17.16*** [7.49-26.88]	10.75*** [4.03-17.46]	6.37*** [2.59-10.14]	5.01*** [1.61-8.01]

(Model H) + EFC					
SRMR: Model A + EFC / Model H + EFC	N/A	.01 / .01	.02 / .01	.02 /.01	.02 /.01
N	N/A	10620	10620	10620	10620
Population Size	N/A	2,077,138	2,077,138	2,077,138	2,077,138

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLS:09) Base Year to Second Follow-up Restricted Use Data File, Including Postsecondary Education Transcript Study and Student Financial Aid Records, 2009-2016; U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Administrative Records Restricted-use Data File, 2021; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics 2013; author's calculations.
NOTE: *** p-value is < 0.01; SRMR, N, and population size are N/A in the first column because these estimates are part of the equations specified in the other columns. Unweighted Ns are rounded to the nearest 10.

Chapter 2: Outreach, Participation, and Perceptions: A Process Evaluation of CalKIDS

1.0 Introduction

Across the United States, students from low-income backgrounds are much less likely to go to college. California is no exception to this. Among students graduating in the 2021-22 school year, the college-going rate (the share of high-school seniors that attended accredited postsecondary institutions within the next year) was 54% among low socioeconomic status (SES) students who received a high school diploma or a GED in California, compared to 76% of other students (California Department of Education, n.d.). The college-going rate also varies significantly by race and ethnicity. Among white students, the college-going rate in California is 68% compared to 55% among Black Students, 46% among American Indian or Alaskan Native students, and 54% among Latino students (California Department of Education, n.d.).

The California Kids Investment and Development Savings (CalKIDS) program launched in 2022 to "make it easier for more children to save for their future education" (ScholarShare Investment Board, n.d., p. 1) and "bridge the gap between wealth inequality and the high cost of education" (The Office of Governor Gavin Newsom, 2022, p. 1). The program provides a savings account for school-age students and newborns to be used for postsecondary education expenses, seeded with an initial deposit of varying amounts; for school-age students, the policy offers eligible low-income 1st-12th grade students a one-

time contribution between $500 and $1,500 (California Department of the Treasurer, ScholarShare Investment Board, 2024).

CalKIDS is an example of a Child Development Account (CDA), a policy theorized to operate not only through financial channels but also by increasing students' expectations of attending college (Elliott et al., 2011). CDAs are state- or local-level policies and thus vary in their design. Research to date has investigated the effect of CDAs on asset accumulation, savings behavior, educational expectations, financial knowledge, and college enrollment (Elliott et al., 2025; Elliott & Beverly, 2011; Huang et al., 2015; McKay et al., 2023; Nam, Yunju; Kim, Youngmi; Clancy, Margaret; Zager, Robert; Sherraden, Michael, 2011; Rauscher et al., 2017). While researchers have generally found positive effects on these dimensions (for a review, see Government Accountability Office, 2020), to my knowledge researchers have not studied the CalKIDS program specifically.

This study conducts a process evaluation of the CalKIDS program. I use a mixed-methods approach, including administrative data analysis, surveys, and interviews with program participants and staff. I explore how CalKIDS is being implemented, how students engage with the program, and what barriers may be limiting account claiming and fund utilization, which is lower than CalKIDS staff would like.

While CDAs are designed to work through both financial and psychological channels, activating those mechanisms depends on delivery—eligible families must hear about the program, understand it, and engage with it. An implementation study can identify where program delivery aligns with intent and where improvements are needed, particularly for

those who have not utilized their available funds. Because CalKIDS launched recently, improving delivery now increases the likelihood that the program will achieve its intended outcomes as future cohorts reach college age.

The scope of this analysis is limited in three ways. First, it focuses only on the school-age program (thus, excluding the newborn program). Second, the perceptions of program participants that I studied is limited to those who have not yet used their funds, are eligible to do so, and are at least 18 years old. Third, it focuses solely on CalKIDS' staff's efforts. It excludes examination of the work of other organizations with which CalKIDS is working closely to make the program effective. In particular, processes related to activities conducted by schools and partner organizations, which play a crucial role in communicating the CalKIDS program to the potentially eligible population, are excluded from this evaluation due to the complexities of data collection across the numerous schools and partner organizations with which CalKIDS is working. The focus on the school-age program and on young adults who have claimed their accounts but have not used their funds reflects a near-term operational priority for CalKIDS staff, who are concerned about lower-than-anticipated fund utilization.

Findings reveal that while the process of claiming accounts is generally easy for students, limited program awareness remains a primary obstacle to broader reach, largely due to constrained marketing resources and limited staff. Nevertheless, account claiming has risen with each cohort, reaching 33% for the high school graduating class of 2024. Related to CalKIDS staffs' lower-than-anticipated fund utilization, I find that young adults who are eligible to use their funds are not experiencing issues with withdrawing funds. Instead,

many perceive CalKIDS as a form of emergency savings or anticipate needing the funds when transferring to a four-year institution. Indeed, by the third year after high school, the vast majority (81%) of eligible CalKIDS participants (account claimed, age-eligible, and enrolled at a qualified institution) had requested a distribution from their funds. Although the distribution process is technically straightforward, there is room for improvement in this process. Logistical delays and confusion about eligible uses may limit the program's effectiveness, especially for those expecting rapid access. Despite these limitations, students in my study sample overwhelmingly view CalKIDS as a helpful and motivating source of support.

This process evaluation offers actionable feedback for CalKIDS staff and policymakers considering adopting CDAs, agencies implementing CDAs in other jurisdictions. This research clarifies how the CalKIDS program is structured, how it is being implemented, and identifies strengths and challenges in program operations. I also provide specific recommendations CalKIDS staff can use to prioritize program changes. For example, I offer ways CalKIDS can refine outreach and messaging based on student and parent perceptions, target under-reached subgroups, and remove specific frictions that block use of funds—so the program can work as intended. Policymakers beyond California can use the same evidence to help them choose effective design features and avoid observed pitfalls so as to strengthen CDA rollouts in their jurisdictions.

The results from this report also advance our understanding of CDAs broadly and will help future researchers studying CalKIDS specifically. To my knowledge, this is one of the only published process evaluations of a large-scale CDA initiative and one of the only published

research reports examining CalKIDS specifically.[24] This evaluation meaningfully contributes to the growing body of literature on CDA programs by examining a large-scale initiative that is similar in design to the optimal CDA policy described by Clancy et al. (2019) and to many other jurisdictions' CDA programs, but with a few key differences. In line with Clancy et al. (2019) recommendations, CalKIDS is universal and (mostly) automatic, with accounts opened for all eligible children (but children or their parents must 'claim' the account before they can use the funds); It is also progressive, providing larger benefits to lower-income households. CalKIDS differs from many other CDA programs in that it only provides financial benefits to students; other CDA designs often include additional components aimed at building a college-going identity, such as college and career readiness activities or required financial literacy curricula. It also differs from CDAs in other jurisdictions by jumpstarting the initiative through an initial eligibility determination for all 1st–12th graders at program inception, rather than the more typical birth or kindergarten starting point. As such, CalKIDS offers a valuable case study for understanding the operational and behavioral implications of a "money-only" CDA model and of a program introduced relatively late in some students' educational journeys, including 12th graders who received CalKIDS shortly after high school graduation and could immediately use the funds for postsecondary expenses.

[24] The CalKIDS Institute at UCLA also recently published a report examining a different population of CalKIDS than this study examines- young adults that have used their CalKIDS Funds (see Zempleni et al., 2025).

This evaluation also contributes to the literature on social policy implementation. It interrogates the CDA theory of change, providing evidence on whether the key mechanisms proposed in the CDA literature operate as expected in a real-world setting. It also illuminates reasons for non–take-up of government benefits. By focusing on why some eligible students do not use their CalKIDS funds, it contributes to broader literatures on the take-up of social programs and the small hassles, information gaps, and psychological barriers that shape participation (Bhargava & Manoli, 2015; Currie, 2004; Finkelstein & Notowidigdo, 2019; Herd & Moynihan, 2019). Finally, it offers critical implementation context that future researchers can use when examining the effects of CalKIDS across cohorts and over time.

2.0 Background

2.1 Child Development Accounts

Child development accounts (CDAs; also called child savings accounts) reflect intentional attempts to design a publicly subsidized education savings plan policy that channels benefits to lower-resourced households. First described by M. W. Sherraden (1991), CDAs explicitly aim to increase financial security, build financial capability, and improve the educational outcomes of low-income children and their families. To adequately help low-income households, Clancy et al. (2019) encourages designs that are universal and automatic (i.e., an account is opened for everyone) and that feature progressive policy designs with larger benefits for lower-income households. The universal aspect of CDAs may seem like a design for reaching all children, but it primarily reflects a method for

reaching low-income households, who are less likely to sign up for such policies; furthermore, universal programs are a way to increase public support, as they technically reach all children (Clancy et al., 2019).

State or local governments fund and administer CDA policies. As of December 2022, 128 CDAs exist across 38 states and DC (Prosperity Now, 2023). While there is extensive variation in the specific policy design of CDAs across the U.S., many policy designs match the 'optimal' design described by Clancy et al. (2019); most are universal programs, many automatically enroll those eligible (25% of programs representing 96% of participants), and many feature progressive policy designs with larger benefits for lower-income households. Some programs (42%) specifically target low-income households, while other programs (33%) provide additional deposits to low-income families or to all children who attend schools that serve predominantly low-income students (Prosperity Now, 2024). CDA programs must have some outside-the-family contribution to be considered a CDA (e.g., savings match or an initial deposit 'seed funding'). Most CDA programs (89% of programs, representing 98% of participants) provide initial (seed') deposits. Many programs also encourage families to deposit funds into their children's accounts by offering savings matches or deposit incentives (Prosperity Now, 2024). The most common type of program contribution is a seed deposit (89%); 19% provide $25, 30% of programs provide a $50 seed deposit, and 26% provide $100. In 2022, three programs offered an initial deposit of $500 (Prosperity Now, 2024). Thanks to their policy design, CDAs successfully reach beyond the wealthy; three-fourths of CDA participants are low-to-moderate-income (Prosperity Now, 2023).

The majority of CDA policies operate through state-level 529 savings accounts (57% of programs, representing 97% of participants). A 529 account is a tax-advantaged savings plan designed to encourage saving for future education costs (Internal Revenue Code, 2024). CDAs can be considered an expansion of the 529 account policy to include a wider swath of Americans by addressing the issue that higher-income households disproportionately reap the benefits of 529 accounts. When section 529 savings accounts were established as a postsecondary education savings tool, they were mostly targeted to help middle-class households, who were particularly concerned in that moment about the rising cost of higher education (Waldner, 2022). In contrast, CDAs reflect an effort to help lower-income Americans build savings for postsecondary education.

A close cousin to CDAs are "Trump Accounts," a new tax-advantaged savings and investment vehicle for children created by the One Big Beautiful Bill Act (OBBBA) in 2025 (Adams, 2025; One Big Beautiful Bill Act, 2025). Similar to a CDAs, trump accounts also utilize the 529 vehicle until the child is age 18 and provide a one-time $1,000 federal grant for newborns between January 1, 2025, and December 31, 2028. However, they are different from CDAs in that at age 18, the asset is converted into an IRA, and it is not restricted for educational purposes.[25] This design positions Trump Accounts as a universal (at least for 3 years) wealth-building tool for children, but notably lacks the progressive features recommended by Clancy et al. (2019).

[25] Trump Accounts combine features of IRAs and 529 plans. The accounts can receive after-tax contributions of up to $5,000 per year until the year the child turns 18, and earnings grow tax-free, with withdrawals taxed at the beneficiary's income tax rate after the account converts to an IRA at age 18.

While this research specifically investigates CDAs as a policy for addressing lower postsecondary attainment, it should be noted that CDAs should not be considered a "silver bullet"; they cannot address all of the factors related to the relationship between being low-SES and educational outcomes as discussed in the introduction to this dissertation. Instead, CDAs target postsecondary education savings, aiming to increase educational attainment by addressing the financial and educational expectations factors explained above. If successful, they have the potential to help sever the link between childhood SES and educational attainment.

2.2 CalKIDS and the California Context

CalKIDS is one of the most recent state-wide CDAs and comprises a universal program for newborns and a targeted program for low-income school-age children in grades 1-12. The Scholarshare Investment Board (SIB), an agency of the State of California, chaired by the State Treasurer, administers CalKIDS. It became operational on July 1, 2022, with a formal launch in August 2022. The newborn policy provides all babies born after July 1, 2022, with a CDA and a $25 seed deposit; eligible school-age students can receive up to $1500 (California Department of the Treasurer, ScholarShare Investment Board, 2024). Eligible low-income students receive a one-time $500 seed deposit in their CalKIDS account. Low-income foster youth receive an additional one-time deposit of $500, and low-income homeless youth receive an additional one-time deposit of $500. Therefore, the maximum a student can receive is $1500 if they fall into all three categories.

Both the newborn and school-age programs feature incentives for active participation in the program. Eligible students (or their parents) claim their accounts using an online portal, at which time they get an additional one-time $25. Linking a CalKIDS account to a tax-advantaged 529 account (called 'Scholarshare' in California) provides an additional one-time $50. All amounts are one-time contributions, and no other future contributions are planned.

As of June 2024, the state government had spent $1.98 billion ($1.93 billion just for the school-age program) to seed accounts and on incentives to participants for claiming their accounts and linking the accounts. About $1.8 billion of these funds came from one-time federal America Resuce Plan Act (ARPA) funds (California State Senate: Committee on Budget and Fiscal Review, 2021). As of June 30, 2024, 764,525 newborns and 3,665,607 school-age students had claimed their accounts, and the state had contributed $48 million to claimed newborn accounts and $1.9 billion to claimed school-age student accounts.

The state automatically invests the seed amounts and incentives provided by the state into a 'Scholarshare 529 Plan Passive Portfolio'. These accounts are separate from other 529 accounts they own (including ones they link). The portfolio of investments is initially invested in stocks (with higher average risk and return), but is designed to become more conservative as the children approach their anticipated college enrollment date. This strategy offers participants an opportunity to grow savings while the child is younger and better safeguards savings against market fluctuations when the child nears college age. Families claim their accounts online at CalKIDS.org, where they can also access their accounts and see their balances.

To be eligible for the targeted school-age program, students must be enrolled in a California public school and meet at least one of the eligibility criteria described below. School districts determine these criteria on Census Day (the first Wednesday of October) because they are used to determine school funding according to the Local Control Funding Formula (LCFF).[26]

- The student is eligible to receive meals from the National School Lunch Program (NSLP).[27]
- The student is identified as 'Migrant' based on information the Migrant Education Program provides to the school.[28]
- The student is identified as homeless based on information the student or family provided to their school or which the school learned from the district or county homeless liaison.
- The student is identified as 'Foster' based on information the CDE received from the California Department of Social Services.

[26] The Local Control Funding Formula (LCFF) is a funding mechanism used in California to allocate state funds to public schools. Schools receive a base amount per student, which varies by grade level. Schools receive additional funds for students that are fall into specific categories. Schools receive even more funding if their population of students who fall into specific categories described in the LCFF exceed 55% of total enrollment.
[27] There are two ways NSLP eligibility is determined. 1) The student is deemed eligible via an NSLP application or via an alternative household income form. 2) The student is deemed automatically eligible because they participate in CalFresh, CalWORKs, FDPIR (Food Distribution Program on Indian Reservations), or Medi-Cal.
[28] The migrant education program administers and coordinates services for migrant students and their families. Migrant students are children of migratory agricultural workers, migratory fishers, or migratory dairy workers.

- The student is identified as an English Learner based on a statewide assessment called the English Language Proficiency Assessments.

To be able to receive these funds, eligible students or their parents must first 'claim' their account with an online registration process. Then, to receive the funds, they must become eligible for a distribution and follow the necessary process to request it, as described below:

- To be eligible for a distribution from their CalKIDS account, students must:
    - Be at least 17 years of age and no older than 26 years old
    - Be enrolled in an eligible institution[29]
    - Have a qualified higher education expense, which includes costs such as tuition and related fees, books, required supplies, a computer, and room and board for students who are at least part-time.[30]
- To make a distribution request, students must complete a form online and provide the following:
    - Name and address of educational institution in which they are enrolled
    - Self-certification that they are enrolled in an eligible Institution

[29] Eligible institutions are those defined in Section 529(e)(5) of the Internal Revenue Code and generally include postsecondary schools that are eligible to participate in federal postsecondary financial aid programs. This includes thousands of colleges, universities, and technical/vocational schools across the nation and even some abroad.

[30] These qualified expenses are defined in California Education Codes 69996 - 69996.9, which refers to Section 529(e)(3) of the Internal Revenue Code and Section 529(c)(8) of the Internal Revenue Code.

- Self-certification that they were a resident of California for the 12 months preceding the request
- Student's ID number issued by the Eligible Institution they are attending, and
- Dollar amount of the distribution requested.
- Specify the type of qualified expense (but no receipts are required)

CalKIDS receives information about who is eligible during the summer following the first school year in which eligibility is determined. With the exception of the inaugural year of the program and foster children, staff determine eligibility for the targeted school-age program once (in the first grade), and their eligibility status remains unchanged as the student progresses through school. One exception to this statement is the first year of the program, when all 1st-12th graders who met the above criteria were eligible. Following the initial year of the program, staff determine eligibility for 1st graders only, since older students have already had their eligibility determined. The other exception is for foster students; students who become foster children after initially being eligible may still qualify in future years.

Two recently passed pieces of legislation embed CalKIDS more directly into the high school-to-college pipeline. First, CalKIDS will be integrated into California's new high school financial literacy curriculum, ensuring that students receive early exposure to the program while learning about broader financial planning and post-secondary educational costs. Second, local educational agencies will now be required to inform students and their families about CalKIDS during the FAFSA (Free Application for Federal Student Aid) or CADAA (California Dream Act Application) completion process. These legislative changes were enacted after the data for this evaluation was collected and analyzed.

Students who choose to use their funds in California have access to an extensive higher education system with broad geographic access and multiple price points, creating practical on-ramps for low-income students. The higher education system includes the following broad categories: University of California (UC), California State University (CSU), California Community Colleges (CCC), and private nonprofit/for-profit institutions. Together, they span urban and rural regions, enable commuting or living at home, and support transfer pathways from community colleges to four-year degree-granting institutions.[31] Community colleges enroll the largest share of low-income students and provide associate degrees, transfer credits, and career training. In 2021–22, 60% of low-income students were at CCCs, compared with 20% at CSUs and 10% at UC campuses (California Department of Education, n.d.). Affordability is bolstered by state and institutional financial aid, as well as two years of tuition-free community college, which together reduce net costs well below the "sticker price."[32]

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[31] There are 33 public 4-year university campuses (many of which have campuses in multiple locations), 115 community colleges, 83 private nonprofit colleges. These institutions have varying 'sticker prices' (before financial aid) i.e., tuition rates, but on average, the University of California system has the highest tuition rates among the public options, and Community Colleges have the lowest tuition rates. Private schools vary greatly in their tuition costs, and could be higher or lower than the public options, depending on the credential being sought and the school. This extensive network of 2- and 4-year institutions facilitates access to postsecondary education, including in relatively rural areas. This is important because it means that students have more opportunities to live at home while attending college, mitigating the high cost of housing in California.

[32] The state financial aid ('Cal Grant') program is usable at public and most private institutions and an annual 'access award' up to $6,000 is available for students with dependent children. Further, need-based institutional aid is substantial. For example, at CSU, the State University Grant made up 23% of undergraduate grant aid, and at UC, the UC Grant made up 32% of grant aid. At private nonprofits, the average institutional grant to undergraduates is about $15,700 annually, with about 70% of students receiving institutional or public aid. For context, the maximum Pell Grant in 2021–22 was $6,495; average in-state tuition that year was $8,559 at public four-year institutions and $1,281 at public two-years (National Center for Education Statistics, 2021).

One potential barrier to successfully implementing CalKIDS is student immigration status and trust in the government, which play a significant role in whether people choose to participate in government-sponsored programs. In 2021, 20 percent of California residents under 18 were undocumented themselves or living with someone who was (California Immigrant Data Portal 2021). Many immigrants fear that enrolling in government programs could expose them to immigration enforcement or jeopardize their ability to remain in the country. For example, a 2019 study by the Urban Institute revealed that approximately 16% of adults in California immigrant families reported avoiding a noncash government benefit program, such as Medi-Cal (California's Medicaid program), CalFresh (the state's Supplemental Nutrition Assistance Program), or housing assistance, due to fears that participation might negatively impact their future immigration status (Bernstein, Gonzalez, Karpman, and Zuckerman, 2020). As a result, government programs such as CalKIDS may see lower participation rates among immigrant communities despite their eligibility and need.

In summary, despite the potentially modest seed amounts provided – even after considering investment returns – CalKIDS holds significant promise for students. California has a vast network of postsecondary schools that offer a variety of education and training options. Further, California offers substantial grants for tuition and other college costs. Thus, CalKIDS can still be financially beneficial even if it provides a small sum of money. For example, it might still help students substantially by covering the cost of books and school supplies necessary for attending college, as well as the initial costs associated with moving (e.g., a deposit for an apartment) or frequently traveling to a new location (e.g.,

purchasing a car). These costs are less likely to be covered by financial aid, which primarily covers varying portions of tuition and fees.

2.3 Take-up of Government Benefits

A large body of research documents that take-up of social programs is often well below 100 percent, even when benefits are substantial. For example, estimates for the Earned Income Tax Credit (EITC) suggest that roughly three-quarters to four-fifths of eligible tax units receive the credit, leaving a sizable share of eligible families unserved (Bhargava & Manoli, 2015; Currie, 2004). Participation in the Supplemental Nutrition Assistance Program (SNAP) is somewhat higher overall—on the order of 80 percent of eligible individuals in recent years—but substantially lower for some groups, such as older adults (Currie, 2004; Finkelstein & Notowidigdo, 2019). Further, millions of uninsured adults each year are eligible for Medicaid or for zero- or heavily-subsidized low-premium Marketplace plans through the Affordable Care Act, but are not enrolled (Ortaliza et al., 2023; Tolbet et al., 2024). Across programs, the empirical pattern is consistent: eligibility does not guarantee participation, and non–take-up is a persistent feature of the social policy landscape.

A complementary literature examines why eligible individuals fail to enroll, emphasizing administrative burdens, information gaps, and psychological barriers. Currie (2004) highlights how even modest documentation requirements or complex eligibility rules can reduce participation, while Herd & Moynihan (2019) conceptualize “administrative burden” as the learning, compliance, and psychological costs of interacting with public programs. Behavioral and experimental studies show that relatively small changes—such as

simplifying notices, clarifying eligibility, or offering hands-on assistance—can meaningfully increase benefit take-up, indicating that seemingly minor hassles matter (Bhargava & Manoli, 2015; Finkelstein & Notowidigdo, 2019). Together, this work underscores that non–take-up often reflects more than simple disinterest or lack of need: it is shaped by how programs are communicated and administered, and by the small hassles, information gaps, and psychological barriers that potential participants face.

3.0 Theoretical Framework

The problem CalKIDS aims to address is that postsecondary education attainment rates are much lower for young adults who grew up in low socioeconomic status (SES) households than for their higher-status peers. While researchers studying this issue have identified several potential explanations for the gaps in educational attainment,[33] a key issue is that students from families with limited resources have difficulty saving for and paying for postsecondary education. Concerns about college expenses and amounts of financial aid available strongly affect decisions to apply to and enroll in a 4-year college (Advisory Committee on Student Financial Assistance, 2010). Further, once in postsecondary school, students from low-income households have greater financial

[33] Factors related to low postsecondary enrollment rates include the following: lower academic preparation in K-12 schools due to inequalities in school quality (Carbonaro et al., 2023; Condron & Roscigno, 2003; Reardon et al., 2022), challenges with the postsecondary transition due to cumbersome processes and information challenges (Cabrera & La Nasa, 2000; Choy, 2001; Hartley & Garfinkel, 2020; Ikenberry & Hartle, 1998; Page & Scott-Clayton, 2016), and greater family responsibilities that affect their enrollment decisions (Ober et al., 2020). Barriers continue after enrollment in postsecondary school; first-generation college students (such status is correlated with low family income) tend to value interdependence, in contrast to the academic norm of independence (Stephens et al., 2012), making it more difficult to fit in in a college setting.

burdens placed on them, which can result in students balancing employment and course loads in college (Hamilton, 2013; Walpole, 2003). Low-SES students even face difficulties with the costs of traveling to campus (B. L. Castleman & Page, 2014a). By providing savings accounts and some initial funds that a student can count on, CDAs help students pay for college to *some* extent. Further, by exposing students to the fact that such resources exist, CDAs might increase students' knowledge about financial aid eligibility more generally or encourage more savings for postsecondary education. Both of these factors might change students' perception of their ability to afford postsecondary education, increasing the chances they apply or enroll, increasing access to college among children who lack substantial financial support from their families.

Given that the amounts provided by CDAs are not typically nearly sufficient to fully pay for a child's postsecondary education, additional psychological mechanisms are arguably crucial for the policy to be effective. Theory suggests that CDAs promote postsecondary education attainment among low-SES households not only by providing financial resources but also by fostering a *college- or career-training-bound identity*– a concrete vision of one's future self (Markus & Nurius, 1986) that includes enrolling in postsecondary education (Elliott et al., 2011). Such identities might include, for example, seeing one's future self performing a job that requires a vocational degree or being a college graduate.

Leaning on a theory from psychology- Identity-Based Motivation (IBM, Oyserman & Destin, 2010), Elliott et al. (2011) explains the mechanisms through which CDAs theoretically shape student identity and behavior with contextual clues. In their framework, the existence of financial resources available to pay for college provides contextual clues that

influence students' postsecondary identity and behavior. They explain that children are more likely to hold a future identity that requires postsecondary education "if the costs of college feel manageable and the benefits feel salient" (Elliott et al., 2011, p.1). The same researchers further elaborate that such judgments should *not* be understood as children making decisions per traditional economic theory, where agents are rational and act with complete information (Becker, 1962; Paulsen, 2001). Instead, access to resources provides contextual information that "sends explicit and subtle cues" influencing children's perception of their future identity. Thus, providing students with assets in the form of CDAs can help them feel that post-secondary education is financially attainable, encouraging them to adopt a future identity that includes postsecondary education. Other researchers have also proposed that access to savings precedes perceptions about what opportunities are available (Shobe & Page-Adams, 2001).

A second way CDAs may provide contextual cues that shape behavior in their theoretical model is by establishing in-group behaviors and norms. IBM, as well as other identity theories used in social psychology,[34] purport that in-group behaviors and norms guide the actions of in-group members. Elliott et al., (2011, p. 16) explain how this concept applies in the context of CDAs, "When children and their families save money for college, the meta-message asserts 'we save,' 'we go to college' reinforcing the college-bound identity through its congruence with the actions and goals of the larger group." In other words, saving for

[34] Other examples of identity theories in social psychology include Identity Theory (IT) (Stryker, 1980; Burke & Stats, 2009), Social Identity Theory (SIT) (Tajfel, 1978; Turner, 1975), Self-Categorization Theory (SCT) (Turner et al., 1987), and Development Intergroup Theory (Bigler & Liben, 2007).

college is an expression of parental encouragement to pursue a college degree (Hossler et al., 1999). Arguably, this same concept can be applied to situations where the government saves for the child instead of (or in addition to) the parents. In summary, IBM suggests that both the act of saving for college (from parents or the government) and having access to savings can affect the likelihood that a student develops future identities that require postsecondary education.

3.1 Evidence on CDA and Education Outcomes

Because many of the RCTs of CDAs began with young children, and sufficient time has yet to pass before those students reach the age for postsecondary education, there is limited evidence on how CDAs affect Educational Outcomes. However, there is evidence from one program—San Francisco's Kindergarten to College (K2C) program. K2C is a universal opt-out[35] CDA program that began in 2011, establishing and seeding CDA accounts for all public school kindergartners with a $50 contribution. The first cohort graduated from high school in 2024, and the results suggest that universal, early-seeded college savings accounts can have a positive impact on postsecondary enrollment (Elliott et al., 2025). The first cohort of students was 6 percentage points more likely to enroll in college than the prior cohort who did not receive the benefit. Notably, the effect was even larger—12 percentage points—for underrepresented students, indicating that early investments in

[35] K2C automatically opens a deposit-only savings account in the child's name at Citibank with a starter deposit of $50 in each account. There is no paperwork to fill out, and the program does not use social security numbers.

CDAs may be particularly impactful in reducing educational disparities and promoting college-going among disadvantaged populations.

Further, related research suggests that having a savings account for postsecondary education in general (not specifically a CDA) is associated with better educational outcomes, even when the amount saved is small (C. Z. Charles et al., 2007; Elliott et al., 2013). Using propensity score weighted data from the Panel Study of Income Dynamics (PSID), Elliott et al. (2013) find that low-to-moderate income (LMI) children were much more likely to graduate from college if they had a dedicated savings account. They found that only 5% of LMI children with no dedicated school savings graduated from college, compared to 25% of LMI with $1 to $499 in school savings and 33% of those with school savings of $500 or more. Because the largest difference was between having nothing and having between $1-499, this suggests that having an account even with a small amount of money is particularly important. According to Elliott et al. (2011, p. 46), CDAs (also called CSAs) "help connect children to their future selves by providing them with an institutional structure that makes having more money in the future more likely, even if small-dollar CSAs do not substantially change (i.e., one cannot spend the money today) their current circumstances." Similarly, Charles et al. (2007) examine the relationship between parent school savings and college attendance. They find that having any savings for college is significantly related to both two-year and four-year college attendance. In contrast, the *amount* of school savings is significantly related only to whether their children attend a four-year college. Taken together, the findings from these studies suggest that the process of accumulating school savings may have effects beyond financing education.

Related evidence from Canada's education-savings ecosystem—which includes the Registered Education Savings Plan (RESP), the Enhanced Canada Education Savings Grant (ECESG), and the Canada Learning Bond (CLB)—indicates that savings programs can promote higher postsecondary enrollment (Frenette, 2017; Employment and Social Development Canada, 2023). RESP is an opt-in policy analogous to U.S. 529 college-savings accounts, ECESG matches savings with public dollars, and the CLB aligns with U.S. birth-seeded CDA models.[36] Frenette (2017) finds that 19-year-olds with an RESP are 5.9 percentage points more likely to be enrolled in college than those without, with larger gaps for young men. Canada's evaluation of the program (Employment and Social Development Canada, 2023) estimates ECESG beneficiaries had enrollment rates 14–70 percentage points higher than comparable youth without RESPs (2011–2016), depending on year and

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[36] The national Registered Education Savings Plan (RESP) began in 1972, analogous to U.S. 529s, introduced in 1996. In 1998, the Canada Education Savings Grant (CESG) added a 20% government match (up to $500/year). After a 2003 review flagged low uptake among low-income families, two targeted, opt-in policies followed: the Enhanced CESG (enacted in 2004) and the Canada Learning Bond (CLB, enacted in 2005). The ECESG provided additional matched savings to low- and middle-income families, and the CLB seeds the RESP of low-income children at birth with $500 (Canadian) and provides yearly contributions of $1000 for up to 15 years. For a more detailed explanation of Canada's policies, see Girdharry et al. (2010).

matching method. Because ECESG boosts savings for families able to contribute, the effects apply to that subset. Evidence on the CLB is still emerging because CLB began with children born in 2004; thus, the first cohorts only recently reached postsecondary age.

3.2 Evidence of Psychological Mediators of CDAs

Across U.S. and international settings, CDAs are linked to greater hope, future orientation,[37] and development of postsecondary identities. In Uganda, a longitudinal cluster-randomized CDA experiment found that participation in a CDA program reduced feelings of hopelessness, enhanced students' self-concept, and improved their confidence about their educational aspirations (Karimli & Ssewamala, 2015). In the SEED Oklahoma CDA experiment, mothers reported feeling optimistic about their children's future; For example, one treatment mother stated that the CDA made her feel "a whole lot better" and caused her to "have some hope" for her child (Gray et al., 2012, p. 65). At another SEED experiment in San Francisco (Juma Ventures), one-third of the youth reported that SEED savings increased their tendency to think about the future financial and educational goals, despite minimal average balances of only $48.15 (Scanlon & Adams, 2009). Complementing these findings, Canadian interviews with CESG participants note that "the availability of education savings, even in relatively small amounts, encourages children to see postsecondary education as a likely part of their future" and helps them "develop

[37] Future orientation is an important component of identity development; it is defined as "a process through which future-related behaviors are influenced by both cognitive and motivational/affective factors" (Johnson et al., 2014, p.15). This includes, for example, students' optimism about the future and the frequency with which they think about it.

aspirations, attitudes, and behaviors favorable to PSE," with some parents observing that as early as middle school children consider whether "people like me" pursue such education (Employment and Social Development Canada, 2023, p. 47-50).

Quantitative evidence shows that CDAs are associated with higher postsecondary expectations, especially among lower-income families. In Promise Indiana (an opt-in CDA with a $25 seed at birth), parents without college degrees became thirteen times more likely to expect their child to attend college after the program was introduced, with little change among higher-income families (Rausher et al., 2017).[38] In SEED OK (a universal CDA with a $1,000 seed at birth), parents in the treatment group were more likely to maintain or increase their expectations for their child's postsecondary education over a four year period, with the strongest effects among the lowest-income households (Huang et al., 2021; Kim et al., 2015; M. Sherraden et al., 2018).[39] Cross-sectional analyses from Maine's Harold Alfond College Challenge (a universal CDA with a $500 seed at birth and a 50 percent match up to $300 per year) similarly provide evidence the program increased educational expectations. After enrolling, parental expectations increased among lower-

[38] The program also included a marketing campaign and activities that promote a college-going culture and career readiness, such as taking children to local colleges and encouraging them to share their career goals. The researchers surveyed parents of children in kindergarten through 3rd grade before and after the initiation of the Promise Indiana program in each county where it was rolled out. The researchers found that, among high-income families, the program did not appear to influence parental educational expectations for their children. In contrast, parents without college degrees were thirteen times more likely to expect their child to attend college than before the program.

[39] In 2007, the SEED OK program in Oklahoma seeded state-established and state-run 529 accounts of 2,704 treatment group participants with $1,000 at birth. The program also encouraged savings into separate opt-in individually-run 529s accounts by supplying the $100 requirement to open the account and providing 1:1 deposit matches. The program was opt-in at first, but then changed to opt-out.

income participants but not higher income participants); families receiving public assistance who participated were about 2.28 times more likely to expect their child to complete at least a bachelor's degree compared to families who do not opt in, while there were no differences for higher-income families (Chen et al., 2023; Clancy & Sherraden, 2014; Huang et al., 2013).

Qualitative findings point to a communication-driven mechanism at work. Researchers studying a CDA experiment in Michigan found that when parents communicated with their children about their accounts, their children were more likely to speak in ways that were specific, detailed, active, and included a future self involving higher education. The authors took this as evidence of the development of college-going identity formation: "Our finding that communication mattered to the educational aspirations of the children supports the concept of identity congruence" (Blumenthal and Shanks, 2019, p. 19).

In summary, evidence from CDA studies in the US and international contexts suggests that CDAs have a positive impact on psychological mechanisms linked to educational outcomes. This is crucial, given that the amounts provided by CalKIDS are relatively small compared to the cost of attending college. CDAs serve as catalysts for postsecondary identity development, instilling optimism, hope, and confidence in students' educational prospects. Overall, the findings suggest that CDAs can contribute to improved educational outcomes.

4.0 This Study

This research aims to improve our understanding of the implementation process of the CalKIDS program. This study involves documenting how the intervention is being implemented and identifying ways the implementation can be improved, what Rogers & Woolcock (2023, p. 296) refers to as both 'Chronicle' and 'Improvement' evaluations.

To my knowledge, no published implementation (process) evaluation of CalKIDS or a comparable statewide CDA exists. This study helps fill that gap by assessing fidelity, reach, and bottlenecks, with particular attention to participants who have claimed an account but not yet used funds. In addition to generating decision-relevant evidence for CalKIDS and other CDA implementers, it contributes to academic literatures on CDAs, implementation, and the take-up of social programs by providing one of the first detailed accounts of how a CDA program is implemented in practice and why some eligible participants do not use their benefits. The goal is to generate decision-relevant evidence to improve delivery now, so later impact evaluations test a program that is reaching and engaging its target population. I have six research questions related to these broad goals:

1. What are the key resources, activities, and processes involved in program delivery?
2. What types of communication channels (e.g., outreach events, social media, informational sessions) and methods (e.g., direct communication, advertising, community partnerships) are staff using to communicate with the target population?

3. How well is CalKIDS reaching (as measured by accounts claimed and use of funds) its target population, overall and by geographic area and demographic sub-groups?
4. How do program participants who are eligible for a distribution (have claimed their account and are age-eligible to use it) perceive the purpose and benefits of CalKIDS?
5. Has CalKIDS influenced how the population eligible for a distribution think about or plan for college- or career training?
6. What are the challenges (e.g., financial, logistical, informational, or institutional) associated with account-claiming, accessing and using CalKIDS funds to pursue postsecondary education?

This evaluation was conducted in collaboration with CalKIDS program staff to ensure operational relevance. In initial conversations about the study, CalKIDS staff identified near-term operational priorities—the school-age component and the subgroup of participants eligible for distributions (who have claimed their account and are age-eligible to use it) who had not yet requested one. I used these priorities to prioritize the focus of this analysis. I made all decisions about study design, measures, analyses, and interpretation.

This report proceeds in the following way. First, I explain the data and methods I used. Next, I summarize the results from the data I collected and the analysis I conducted. I then synthesize these results and discuss their implications for practice, policy, and researchers studying CDAs and benefit take-up. Lastly, I offer recommendations for CalKIDS program staff, policymakers beyond California, and future researchers.

5.0 Data and Methods

This research is a formative process evaluation focused on the school-age program done in partnership with the CalKIDS program staff. Formative evaluations are useful for informing changes and improvements to program operations, as opposed to summative evaluations that support stop/go decisions (Rogers & Woolcock, 2023)

5.1 Data Sources, Collection, and Preparation

My data includes qualitative and quantitative data from several sources. I collected qualitative data from the CalKIDS staff administrator and program recipients using semi-structured interviews. The quantitative data includes tabulated administrative data from CalKIDS, population data from the American Community Survey (ACS), and survey data I collected from program participants. Together, these datasets allow me to triangulate findings from multiple perspectives—administrators, participants, and comparisons against external demographic benchmarks.

Survey with CalKIDS Participants

To examine the experiences of CalKIDS program participants, I collected data through a survey and follow-up qualitative interviews. CalKIDS administrative staff created a random sample of 20,000 CalKIDS participants who had claimed their accounts according to the following sample criteria: they were at least 18 years old, age-eligible for a distribution, but

had not yet taken a distribution.[40] The survey took approximately 7 minutes to complete, and I received 243 responses. At the end of the survey, respondents were asked if they were interested in talking further about this topic with a researcher for $20. The survey instrument is in Appendix II.

Before surveying or interviewing program participants and staff, I secured Institutional Review Board (IRB) approval for this research involving human subjects through the University of Washington. The research was deemed 'exempt' – meaning that the research qualifies as no risk or minimal risk to subjects. The recruitment email for the survey explained what the survey was about, that data would be kept strictly confidential and not shared with anyone, and that they would be entered into a raffle for $300 if they completed the survey.

To improve representativeness, I weighed the survey data using raking (iterative proportional fitting) so that the weighted distributions aligned with known population characteristics for race, gender, high-school-graduation year, and county. Raking adjusts sample weights through an iterative process until they match target proportions, reducing bias from under- or over-representation of specific subgroups. This method adjusts for measured characteristics but cannot correct for unmeasured factors.

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[40] Prior to developing the final survey, I conducted 10 qualitative interviews lasting 30 minutes to 1 hour to explore participants' experiences in depth. I then used this information to design the survey questions and options. When refining the wording of survey items, I applied best practices in survey design to ensure question clarity, minimize ambiguity, and reduce respondent burden (Dillman et al., 2014). This process resulted in a more nuanced and empirically grounded survey instrument than could have been created otherwise that accurately captured participants' perspectives. The pre-survey interview data are not used in the analysis.

Qualitative Interviews with CalKIDS Participants

I also conducted follow-up interviews with 15 individuals who volunteered for the qualitative interviews at the end of the survey. These interviews explored additional details behind respondents' survey responses, uncovering additional context not captured in the quantitative data. The interview questionnaire is in Appendix II.

Each interview lasted about 30 minutes. I provided participants with a $20 incentive to thank them for their time. At the start of each interview, I informed them that participation was voluntary and that they could skip any question. I obtained verbal consent before recording. I stored all recordings and transcripts in encrypted, password-protected folders that only I could access. Before analyzing the data, I removed personal identifiers and assigned unique IDs to each transcript. I saved the crosswalk file linking identifiers to IDs in a separate, password-protected folder on my personal hard drive.

Semi-Structured Interviews with Staff

I conducted three interviews with the CalKIDS program administrator in January and February of 2025, who is one of four program staff members. Each interview lasted 30 minutes to 1 hour. I also recorded and transcribed these interviews. The interviews with staff served two purposes in this evaluation – they informed the logic model, and they were used to answer some of the research questions. The interview questions related to the logic model are taken from an interview guide created by Gugiu & Rodríguez-Campos (2007), which is designed to facilitate the development of a logic model with program staff. The questionnaire is in Appendix II.

Administrative Data

CalKIDS provided aggregate statistics describing students eligible for the school-age program through February 2025. The data include the number of accounts claimed, the number of participants age-eligible for distributions, and the number of distribution requests. I examined these data by county, ethnicity, race, gender, and high-school-graduation year. The data is not cross tabulated by combinations of these characteristics, limiting the analysis possible.

Population Data from the American Community Survey (ACS)

I used the 1 percent sample from the 2022 ACS, sourced from IPUMS USA (Ruggles et al., 2023), to estimate the number of California students likely eligible for CalKIDS based on age, household income, and public-school enrollment. This sample includes approximately 3 million records—about 1% of the total U.S. population—and when weighted, is representative of the national population.

The ACS collects data annually through mail, phone, and in-person surveys. It covers a wide range of topics, including geographic location, household income, school enrollment (distinguishing between public and private schools), employment, demographic characteristics, and relationships within households. While the ACS includes weights for national estimates, it does not provide state-specific weights, which introduces some estimation error. However, because the ACS has a large sample size, this error is expected to be relatively small.

Using the ACS, I created two eligibility proxies and summed them to estimate the number of school-age students who could qualify for CalKIDS: (1) The number of public-school students whose household income qualifies them for free or reduced-price school meals in the 2021 census year (a proxy for the 2021-2022 school year), and (2) 1st graders who qualify for free or reduced-price school meals in census years 2022 and 2023. Notably, the ACS does not capture detailed eligibility criteria related to English learner status, foster care, or migrant status; this limits the accuracy of the eligibility approximation I can create using this data.

Public and Non-Public Documents

Appendix I: Document Review contains a list of public and non-public documents used in this analysis. The public documents are in the public domain and available online. This category includes the text of enacted legislation, websites, social media accounts, program manuals, and quarterly Scholarshare meeting minutes. The non-public documents are documents I obtained from CalKIDS directly or from the marketing consultants working with CalKIDS.

5.2 Analytic Strategy

I employed a convergent parallel mixed-methods research design, utilizing the data described in the prior section, to address the six research questions outlined in the introduction. In this type of mixed-methods design, qualitative and quantitative data are collected simultaneously but analyzed separately; the results are then merged for a comprehensive understanding (Creswell & Plano Clark, 2018).

While the overall approach is convergent, my data collection had a sequential component. I used summary results from surveys conducted by CalKIDS or their marketing consultants, as well as qualitative interviews with program participants and staff, to inform the development of the survey. For example, one survey conducted by CalKIDS marketing consultants found that program participants perceived the program's purpose as inspiring a college-going identity. As a result of this finding, I included that as an option for the survey question that asks, “What do you think the purpose of CalKIDS is?” I also used the qualitative interviews to delve deeper into specific survey questions, clarifying participants’ reasoning behind their responses and uncovering additional context not fully captured in the quantitative data.

I analyzed these data sources separately and interpreted them together, maintaining the convergent approach. To analyze the weighted quantitative survey data, I first removed duplicate responses; if the same respondent submitted multiple surveys, I kept the survey response with the greatest number of questions answered. I then produced data visualizations summarizing the survey responses for each question. When charting survey responses, I divide the number of people who chose a particular answer by the total number of responses to the question. That is, I exclude non-responses; For example, a value of 20% on a chart indicates that 20% of those who answered the question chose that answer. To analyze the qualitative data, I used thematic analysis, systematically examining participants' responses to identify common patterns and key themes, following the structured approach described by Graneheim et al. (2017). Finally, I synthesized the survey data with qualitative findings from staff and follow-up interviews with program participants

to identify key themes. I addressed each research question using a combination of qualitative and quantitative data.

Research Question #1 is “What are the key resources, activities, and processes involved in program delivery?”

To answer this question, I analyzed staff interviews, the Child Development Account (CDA) literature, and survey responses from program participants. I used the structured interview approach described earlier to identify key program inputs, activities, outputs, and intended outcomes. I compared these findings with academic insights from the CDA literature, as described in the Theoretical Framework section. I then synthesized these data to construct a program logic model illustrating how CalKIDS activities are expected to lead to desired outcomes for participants.

Research Question #2 is “What types of communication channels (e.g., outreach events, social media, informational sessions) and methods (e.g., direct communication, advertising, community partnerships) are staff using to communicate with the target population?”

I synthesized information from staff interviews with details from public and non-public documents, including marketing plans and outreach materials. I used the interviews with staff to understand the program's context and their perceptions of the program's purpose. I also interviewed staff about their communication and advertising strategies and their perceptions of challenges related to students’ ability to access and use CalKIDS funds to

pursue postsecondary education. This combination provided a comprehensive picture of how CalKIDS staff engage families.

Question #3 is "How well is CalKIDS reaching (as measured by account claiming and use of funds) its target population, overall and by geographic area and demographic subgroups?"

I assessed program reach using CalKIDS administrative data and population estimates from the American Community Survey (ACS). I examined patterns in account-claiming rates and distribution request rates in the CalKIDS administrative data, aggregated by county and demographic group. Because the program operates in two stages—first claiming an account, then requesting a distribution—I use different denominators for these two figures. I calculate account-claiming rates as the share of the eligible population who have claimed a CalKIDS account. I calculate distribution request rates as the number of students who have submitted at least one distribution request divided by the number of students who have both *claimed an account* and are *age-eligible* for a distribution. Using the same denominator (the full eligible population) or just the age-eligible population instead would make it difficult to interpret changes in distribution request rates over time because account-claiming rates have changed substantially across cohorts. In addition, this denominator for distribution requests aligns with my survey sample, which consists only of students who have claimed their accounts and are age-eligible, making it easier to relate administrative patterns to participants' experiences and perceptions. For completeness, I also report distribution requests as a share of all age-eligible students in each group, which combines information on claiming and fund use to summarize overall reach among those who could, in principle, draw on CalKIDS funds if they claim their

account. However, I do not focus on these latter figures. Finally, I compared CalKIDS' estimates of the eligible population with my own ACS-based estimates of the potentially eligible population to identify any points of divergence.

Question #4 is: How do program participants with claimed accounts who are age-eligible for a distribution perceive the purpose and benefits of CalKIDS?

I used quantitative survey data and follow-up interviews to examine how participants understand the purpose and benefits of CalKIDS. From the survey, I tabulated responses to closed-ended items such as "How do you think CalKIDS helps low-income students?" and "What do you plan to use your CalKIDS funds for?" to quantify how participants conceptualized the program's goals and uses.

I then synthesized these survey results with qualitative interviews conducted with a subset of survey respondents. During the interviews, I used each participant's survey responses as prompts to invite deeper reflection on how they learned about CalKIDS, what they believed the program was designed to accomplish, and how they would describe it to others. I then synthesized the interview transcripts to identify themes.

Research Question 5: Has CalKIDS influenced how the eligible population thinks about or plans for college or career training?

To assess whether CalKIDS influenced participants' educational expectations or planning, I analyzed survey data and interview narratives in parallel. I tabulated responses to survey items such as "How likely are you to ever enroll in college?", "As things stand now, how far in school do you think you will actually get?", and "Has CalKIDS influenced how you think

about or plan for college or career training?" to summarize participants' reported intentions and perceptions.

I then integrated these quantitative data with qualitative interviews that explored these topics in greater depth. Using participants' survey responses as context, I asked follow-up questions about how CalKIDS affected their motivation, confidence in affording college, and approach to financial planning. Example questions included: "How did CalKIDS influence your college plans, if at all?", "After learning about CalKIDS, did it affect your financial preparations, such as your search for financial aid?", and "When deciding about college, were student loans a factor in your decision?" I examined recurring patterns in participants' reflections and combined these findings with the quantitative survey data to gain a more nuanced understanding of how CalKIDS fits into students' educational planning processes.

Research Question 6: What challenges are associated with claiming, accessing, or using CalKIDS funds to pursue postsecondary education?

To examine the challenges participants experienced in claiming, accessing, or using CalKIDS funds, I analyzed quantitative survey data and qualitative interviews with both participants and staff. From the survey, I tabulated responses to closed-ended questions such as "How easy or difficult was it to register for your CalKIDS account?", "Did you experience any of the following issues?", and "Have you taken money out of your CalKIDS account?" to identify the frequency and types of reported barriers.

I then combined these quantitative data with qualitative interviews to gain a more detailed understanding of the obstacles that participants faced. During the interviews, I used participants' survey responses as prompts and asked follow-up questions such as "On the survey, you said you experienced [__] issues when you went to register. Can you explain that a little?" and "Have you had any difficulties accessing or using your funds?" I also asked the program administrator about his perceptions of the logistical, informational, and institutional challenges that might affect participants' ability to access their accounts or use the funds as intended. I then categorized and coded these qualitative responses. Combining the survey and interview data provided a more nuanced understanding of the types of challenges participants faced and the contexts in which they occurred.

6.0 Results

This section presents the results of the analyses I conducted using the data and methods described in the prior section. Here, I focus on presenting the results but do not fully interpret or explain them. I begin by describing the CalKIDS program's underlying theory of change. I then summarize findings on program outreach activities and communication channels. Next, I present evidence on account claiming rates, ScholarShare 529 linkages, and any challenges to account claiming and fund use. I then describe participants' experiences accessing and using CalKIDS funds. I end by describing program participants' broader financial circumstances and how they understand the purpose and benefits of CalKIDS. After presenting the results, I synthesize the main findings and discuss their implications for practice and policy in the discussion section that follows.

6.1 CalKIDS Program Theory

A detailed explanation of how CalKIDS theoretically affects postsecondary outcomes of low-income adolescents is shown in the logic model (see Figure 1 at the end of this subsection). This logic model is informed by the theoretical framework described earlier and conversations with staff. In brief, by providing funds for postsecondary education, CalKIDS increases one's perceived ability to pay. By increasing the perceived ability to pay, CalKIDS fosters higher achievement in grades 1-12, promotes a college- or career-oriented identity, increases information about other financial aid, reduces financial barriers, and ultimately increases post-secondary enrollment and attainment. The logic model also details the resources, activities, and outputs that come before these outcomes.

The **resources** for CalKIDS include program staff, the existing Scholarshare system, government funding for seed money and financial incentives (claiming an account and linking 529 accounts), schools, and community-based organizations that provide information about CalKIDS, and eligible 1st-12th grade students and their parents. As of June 2024, the budget allocated four program staff members to CalKIDS. These staff included a program manager, an outreach specialist, a data specialist, and a managerial-level staff member to support procurement needs.[41] Other staff at Scholarshare manage the process of opening CalKIDS accounts for eligible students (including those who have not yet claimed their account), seeding them, and managing the funds for participants. The funds

[41] Othe staff at SIB also help with the CalKIDS program on an ad-hoc basis. Beginning in July 2025, the new budget allocates funds for an additional 3 staff members.

are put in the ‘Scholarshare 529 Plan Passive Portfolio’, with separate portfolios for each cohort. This portfolio is initially invested in high-risk, high-return assets and is designed to become more conservative as the children approach their anticipated college enrollment date. This approach offers participants the opportunity to grow their savings when the child is young, while providing better safeguards against market fluctuations when the child nears college age. After families claim their accounts online at CalKIDS.org, they can see their balances and access the money once the student becomes eligible for a distribution.

In the 2023-24 fiscal year, the program spent $3.9 million on program operations. The schools and community-based organizations are inputs because the CalKIDS program explicitly relies on such partnerships to raise awareness of the program.[42] The eligible 1st-12th grade students have already been defined above. Their parents are also inputs. Sometimes, students claim their own accounts; in other cases, parents claim their children’s accounts on their behalf. Parents may save additional funds and discuss post-secondary education options, plans, or expectations with their children.

The logic model includes several activities related to creating systems and running program operations, including communication with and providing services to students and parents. One activity in the diagram is not included in this analysis- school and partner organizations' outreach. Instead, this research assumes that CalKIDS can successfully forge and cultivate such relationships.

[42] This information was ascertained from preliminary conversations with CalKIDS staff.

A substantial part of CalKIDS program operations includes communication because legislation requires the program to seek to inform students and parents of the money in their accounts. The communication activities involve the following:

- CalKIDS' program staff and their consultants develop marketing materials and launch marketing campaigns, including general information about the program, how to claim their account, and what the eligibility criteria are.
- CalKIDS, schools, and partner organizations communicate about the program to potentially eligible students and their parents.

Expanding on these communication activities, CalKIDS communications strategy currently involves informing potentially eligible populations *directly* and *indirectly*. Their direct communications to date have involved working with consultants to develop marketing materials for advertisements and mailing letters to addresses of eligible students (using data from the California Department of Education). Indirectly, they are also communicating the program through partner institutions such as schools. These communication activities are discussed in detail in the 'Outreach' section, which comes next.

There are several key assumptions underlying the direct communication activities done by CalKIDS. One key assumption behind such efforts is that marketing campaigns can reach the eligible population. For example, addresses must be accurate for letters in the mail to be received by those eligible. Likewise, the target population must be exposed to and watch or listen to paid advertisements. Another assumption is that the marketing teams can develop effective marketing materials that work to get the target population's attention and

induce them to claim their accounts. Last, the logic model assumes that the information provided by communication activities elicits the intended behavior, which is typically claiming one's account.

In addition to communicating the program to potentially eligible students and their parents, CalKIDS must create systems and run program operations related to eligibility determination, account claiming, and benefits distribution. The California Department of Education determines eligibility, but CalKIDS must collaborate with them to obtain the contact information of potential participants. Scholarshare manages the benefits distribution, but CalKIDS must establish this process. To claim an account, students need three pieces of information- the student's date of birth, the county where the student was enrolled in primary school, when eligibility was determined on Census Day, and either the student's Statewide Student Identifier (SSID) or a CalKIDS Code that is provided on a letter sent to the families of students identified as eligible. Students can claim their account themselves, or parents can claim their account on their behalf.

There are several assumptions embedded in the eligibility determination activities. One assumption is that the staff can successfully access the school system data that classifies the students into the various eligibility categories previously described according to the local control funding formula so that they can direct Scholarshare to open accounts for the correct set of eligible students. A second assumption is that staff can obtain the funds from the state's general fund without issue and distribute them to the accounts. A third assumption is that CalKIDS can effectively establish an online account claiming process free from errors or issues that make registration difficult, and that students/parents have all

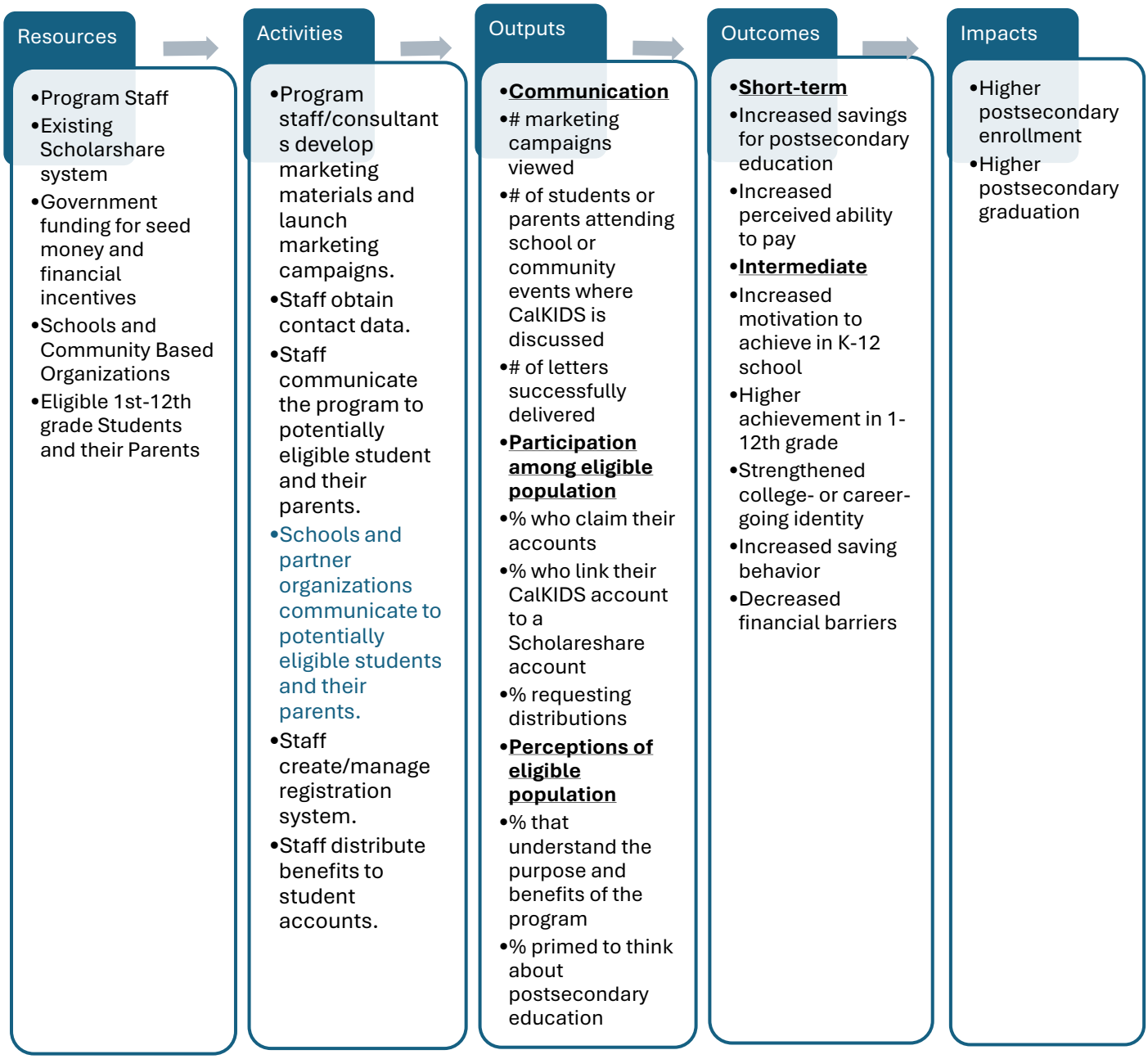
three pieces of information they need to claim their account. Indeed, one potential issue that could arise with this process is that students may struggle to find their unique ID, which is required to identify their account (either their SSID, which is not something everyone knows off the top of their head, or the unique CalKIDS code sent to them via mail, which can be lost easily or never successfully delivered). Students and parents might also have trouble claiming their account if they don't speak English. While CalKIDS makes most of its materials available in both English and Spanish, it may still be challenging for non-native English speakers to navigate the system.

The **outputs** measure the activities and are divided into three categories: communication-related outputs, student/parent perceptions, and student/parent participation. The method for measuring these outputs is explained in the next section, Data Collection. Related to communication efforts, outputs include the following: the number of marketing campaigns viewed, the number of students or parents attending events hosted by schools and community-based organizations where CalKIDS is discussed, and the number of letters successfully delivered and read by students. Student and parent participation is measured as the share of eligible students who claim their accounts, link their CalKIDS account to a Scholarshare account, and request distributions. Student and parent perceptions include the share who understand the purpose and benefits of the program and the share nudged to plan postsecondary education, including how to pay for it. This critical output presumably happens when students learn about the program through one of the various communication channels used by CalKIDS or when their parents discuss the program with them. Indeed, research examining other CDA programs has found evidence that

communication about the program between parents and children is critical to building college-going expectations (Blumenthal & Shanks, 2019b).

The program theory posits that, in the short term, CalKIDS provides savings for postsecondary education, thereby increasing students' and their parents' perceived ability to pay and helping them believe postsecondary education is financially possible. These short-term outcomes theoretically motivate students to achieve high grades in 1-12th grade and strengthen students' college- or career-going identity. Notably, the length of time students are exposed to the program could affect the extent to which these short-term outcomes occur and thus the program may have a limited effect on the older students included in this evaluation who were only exposed to the program between 0 and 3 years. As a result of exposure to the program, students and parents also change their savings behavior, saving more for postsecondary education. Further, the CalKIDS funds themselves decrease financial barriers to enrolling in and completing post-secondary education. Finally, these intermediate outcomes lead to higher enrollment and graduation rates at postsecondary education institutions.

Figure 1: Logic Model



Note: the model assumes 1) Funding, staff time, and skills are sufficient to accomplish all activities for all eligible students. 2) Staff can successfully link to the school system data that classifies the students so that they can open accounts for the correct set of eligible students. 3) Staff can obtain the funds from the state's general fund without issues and distribute the funds to the accounts. 4) CalKIDS can effectively establish an online registration process free from errors or issues that make registration difficult, and ensure that students have all three pieces of information they need to claim their account. 5) Parents and students pay attention to the ads, receive and read the letters sent in the mail, and attend events where the program is communicated. 6) The information provided elicits the intended behavior of claiming their account and spurring thought processes about postsecondary education.

6.2 Outreach

This section documents the communication activities used to influence participation and any associated challenges. As outlined in the logic model, awareness-building and outreach are central activities that enable students and families to access the program's benefits. I document how CalKIDS staff have implemented communication strategies, identify how students and families have learned about the program, and what barriers or facilitators shape outreach efforts.

The successful operation of CalKIDS depends on several core assumptions: that staff can accurately identify eligible students, that families can navigate the account claiming process, and that distribution systems operate smoothly. When these assumptions do not hold, implementation barriers can arise, limiting both reach and effectiveness. The findings presented here and in the subsequent sections highlight which elements of the program are functioning effectively and where breakdowns occur, providing insights for refining outreach, strengthening communication, and enhancing access for all eligible students.

Most communication efforts have focused on increasing account-claiming.

According to the CalKIDS administrator interviewed, most of CalKIDS communication efforts have focused on increasing awareness of the program and increasing account claiming. Secondary messaging efforts include promoting ScholarShare 529 college savings plans and reminding students that they have access to or will soon have access to CalKIDS funds. Some of their messaging efforts also have included broader financial literacy, such as college planning and college savings tools available on the ScholarShare

529's website. For example, ScholarShare 529 has a college countdown website with information to help juniors and seniors (and their parents) navigate the college application process. They also have several calculators to estimate college costs and how much they need to save each month to reach their savings goals.[43]

Staff primarily use three broad approaches to communicate with the school-age population: direct mail notifications, partner-driven outreach through relationships with institutions that serve high school and college students (e.g., schools), and paid advertising and social media. In line with these communication methods, participants primarily learn about the program through school or direct mail communications.

Direct Communication

State law requires CalKIDS to notify those who are potentially eligible. The notification letter intends to inform the participant of their eligibility, the award(s) available, how to access the account, opportunities to continue saving through ScholarShare 529, and how to opt-out of the program entirely. It also contains a unique CalKIDS code that students can use to claim their account; this method means they don't need to find their SSID. To make it easier to find more information about the program, the letter also includes a QR code that links to the CalKIDS website. It is also written in English and Spanish, the two most commonly spoken languages in California.

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[43] The websites for these three tools are: https://collegecountdown.scholarshare529.com/, https://www.scholarshare529.com/resources/tools/college-savings-calculator/, and https://www.scholarshare529.com/resources/tools/plan-estimator.

To contact the millions of eligible students, CalKIDS staff worked quickly to establish a system to obtain addresses for the eligible school-age population and a process for mailing letters. Within a few months after the August 2022 launch, CalKIDS staff began sending letters. By the end of the 2022-2023 fiscal year, they had sent notifications to 3.4 million 1st–12th graders of their eligibility for the program.

After establishing this process and notifying the initial group of 1st-12th graders, CalKIDS only needs to send letters to newly eligible 1st graders. In the 2023-2024 fiscal year, they sent notifications to approximately 300,000 first graders (2024 Annual Report). While the letters have been found to be highly effective, they do not reach everyone due to issues such as lost mail and outdated addresses. At the time of this evaluation, they did not have a way of reaching students when the mail was returned. However, they are collaborating with data providers and internal data analysts to develop a method for updating student addresses annually; this should increase their ability to reach students through mail if needed.

The cost of sending notifications to newborns and school-age students made up a significant portion of CalKIDS' operating budget in 2022-2023 school year, but far less in subsequent years. In the 2022-2023 fiscal year, CalKIDS spent $2.5 million dollars on eligibility notifications (2024 Annual Report), representing about half of their operating costs. In the 2023-204 fiscal year, the cost of direct notifications made up only about 11% of their operating ($471,981). It's important to note that operating expenses do not include contributions to CalKIDS accounts. As a share of total contributions to newborn and

student accounts, the costs of notifications in 23-24 were just 0.15% of the amount the state contributed to CalKIDS accounts.

CalKIDS has also used direct mail for targeted outreach. In July 2024, they mailed letters to the homes of high school seniors with deliverable addresses who had not claimed their accounts. They used attention-grabbing phrases like, "You currently have at least $500, and up to $1,500 waiting for you in your CalKIDS account – all you have to do is claim it." This approach aimed to increase awareness among students preparing for postsecondary transitions and may have significantly increased account claiming. Out of the 167,265 letters sent, 45,000 claimed their account shortly after, during a period when no other paid media efforts were made.[44] CalKIDS directly contacted program participants using the email address they obtained when people claimed their accounts. They have mostly leveraged these email addresses to send reminders that the account exists when students become eligible to use their funds.

Partner-Driven Outreach through Relationships with Institutions

To supplement direct mail efforts, which do not reach everyone, CalKIDS partners with various institutions to help raise awareness about the program. Specific to the school-age program, staff mostly work with local education agencies (e.g., school districts), K-12 schools, county superintendents, community organizations (e.g., health centers, United

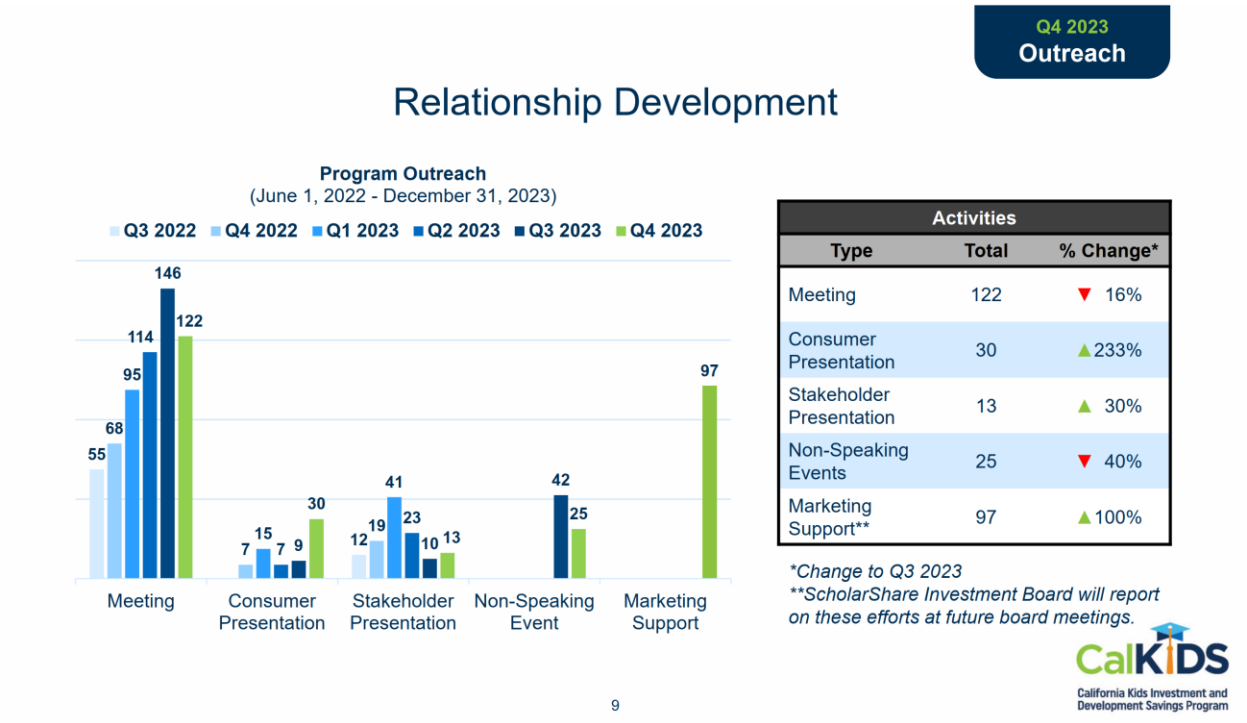
[44] Unfortunately, there was no group of people who did not receive the letter and I do not know how many of these seniors would have claimed their accounts in the absence of the letters. Thus, it's not possible to create a control group or draw a causal inference here.

Ways, credit unions), and higher education institutions (i.e., UC, CSU, and community colleges). To build these networks, they cold-call people at these organizations and attend conferences and community events. To support the communication efforts of these organizations, CalKIDS provides digital outreach materials such as flyers, email templates, newsletter content, and social media posts on their website. CalKIDS also participates in events hosted by these organizations, such as speaking engagements or offering information at vendor tables. Figure 2 below provides an overview of their outreach efforts, including the number of meetings and events they attended between Q3 2022 and Q4 2023. In Q4 2023, they had 287 touchpoints across their various outreach efforts. Most of these efforts were conducted by their one outreach staff member and the CalKIDS program administrator.

According to the CalKIDS administrator, partner organizations vary in their usefulness. He considers public schools and public-school districts the most valuable partners because they have direct contact with the eligible population and have access to Statewide Student Identifiers (SSID), which students need to claim accounts if they don't have the letter sent through the mail. CalKIDS staff works with trusted messengers within these institutions to communicate directly with families. According to the CalKIDS administrators, school counselors introduce CalKIDS when meeting with students, and schools incorporate messaging into school communications. While schools and school districts have been the best partners so far, according to the CalKIDS administrator, there is significant variation in the amount of engagement. Some schools and school districts (and their staff) are very happy to help communicate the program, while others don't see communicating the

program as a priority for their school or school district. Credit unions have also been good partners, possibly because they can establish new client relationships at the same time. Among the higher education community, the community college system has been the most supportive in helping promote the program to its students. The CalKIDS program administrator explained that higher education institution outreach was especially important to reach the first cohort of CalKIDS eligible for a distribution, who had already graduated from high school when the program was established- "it was a challenge to get to those students, which is why we needed to work more with higher education institutions."

Figure 2: Outreach Efforts in through Q4 2023



Source: Scholarshare Board Meeting, April 16, 2024

Paid Advertising and Social Media

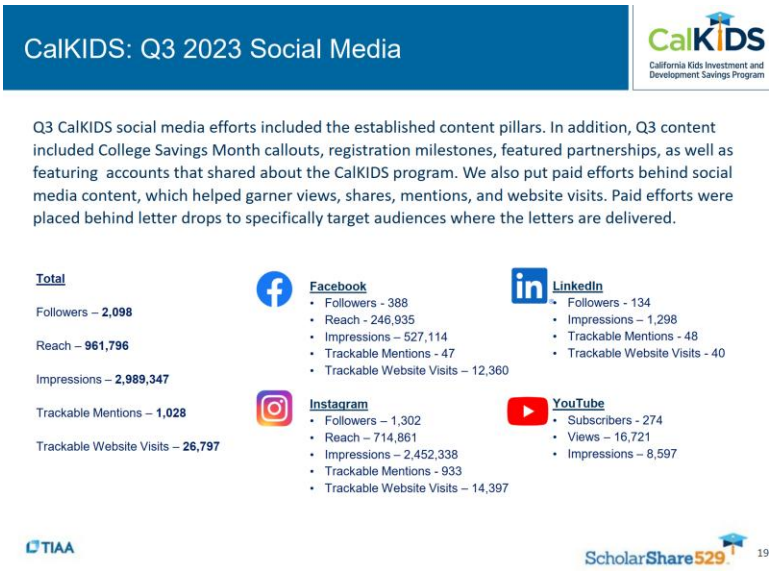
Beyond direct mail and partner-driven outreach, CalKIDS uses paid advertising and social media to enhance engagement. Staff work with marketing agencies to collect survey data on user experience and messaging and develop paid advertising campaigns and social media content across multiple advertising and social media platforms. These efforts ramped up over time as their marketing budget increased. In FY 2022-2023, CalKIDS spent $59,248 on such efforts; in FY 2023-2024, they spent $1,383,933 (California Department of the Treasurer, ScholarShare Investment Board, 2024). By Q3 2023, they had accumulated 2098 followers and had nearly 3 million impressions[45] across all social media platforms where they posted material from an official CalKIDS account (see Figure 3). They have leveraged these various channels to spread awareness about the program and to run campaigns targeted at high school seniors and recent high school graduates. Additionally, CalKIDS and other Scholarshare Investment Board staff host monthly webinars, reaching over 2,800 webinar attendees since the program's launch.

Over time, CalKIDS has refined its approach over time by utilizing various engagement metrics. They have experimented with radio advertisements, bus stop ads, YouTube, Instagram, LinkedIn, Twitter (now X), and TikTok. See Figure 3 for an overview of their social media efforts in Q3 2023. Based on their experience so far, they have chosen to prioritize their efforts on YouTube and social media, where engagement is highest. Their current strategy involves using paid advertisements on YouTube to focus on direct action (e.g.,

[45] Impressions are the number of times a piece of content is displayed to users, including multiple views from the same user.

"claim your account") and utilizing social media posts to provide broader financial education and program information.

Figure 3: Social Media Advertising



Source: Scholarshare Board Meeting, Dec 19, 2023

They have also engaged in targeted campaigns. In the spring of 2024, they launched a program focused on high school seniors. Their approach included letters in the mail (as discussed previously), social media posts, and digital media advertisements. Their posts included both pictures and short-form videos on TikTok, Instagram, and YouTube. They also paid social media influencers. According to the program director, one advantage of using digital media is that it enables the targeted delivery of ads to specific populations, such as individuals within a particular age group. The program director explained, “What we found is speaking to a direct audience and calling them out was really important in increasing engagement.” He also elaborated that these targeted ads produced a noticeable large

increase in account-claiming, relative to before the ads were shown and relative to other attempts at social media engagement.

Their social media campaigns use trend-based content and relatable messaging to engage students. For example, following a current trend of comparing generations, they created a social media post showing how Gen Z looks for scholarships, featuring a girl relaxing on her bed while claiming her account from her phone and laughing about how easy it is (See Figure 4). More recently, at the suggestion of a new Executive director and advice of marketing consultants, they adjusted their messaging aimed at seniors to describe CalKIDS not only as a savings program but also as "the easiest scholarship to get in California" in the hopes that this messaging would resonate with college-intending students.

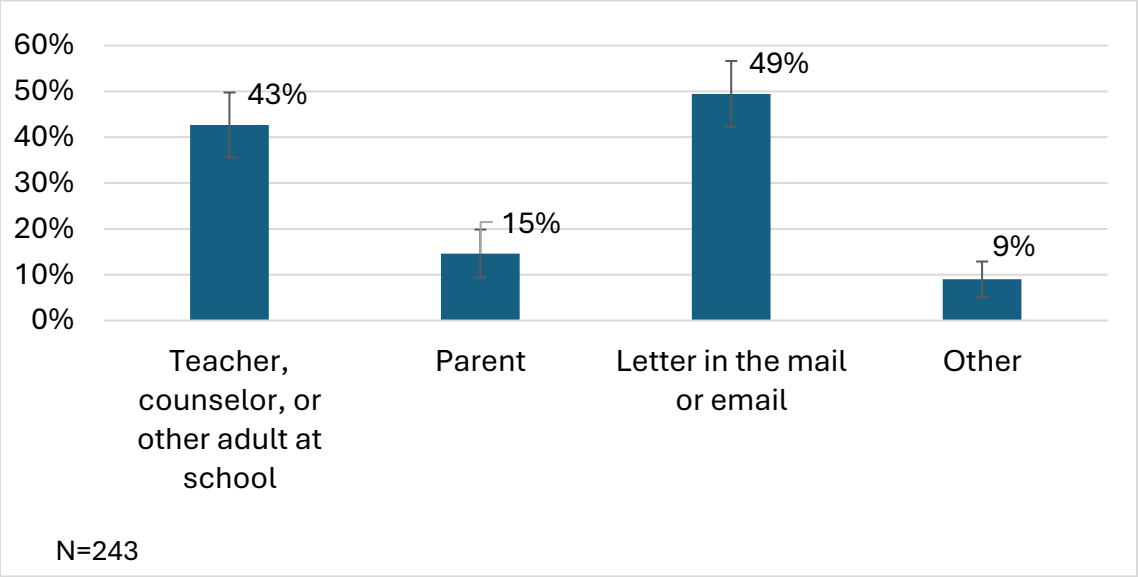
Figure 4: Example of a Social Media Post

Source: Instagram

CalKIDS participants primarily indicated learning about CalKIDS at school or through the letter in the mail.

When asked how they learned about CalKIDS, most survey participants indicated they learned about the program from a letter in the mail sent by CalKIDS, an email from CalKIDS, or from a teacher, counselor or other adult at school (see Figure 5). Nine percent of people selected 'other', and most described this alternative source as either 'social media' or specifically mentioned TikTok or Instagram. In follow-up interviews, many CalKIDS participants elaborated that their school had an event after school, a workshop during school, or a meeting with a counselor where they went over financial aid for college, and that CalKIDS was mentioned alongside other sources of financial aid and the FAFSA application. For example, one student explained, "We had this thing at school where they talked about FAFSA and financial aid, and they mentioned CalKIDS too. It was part of a workshop during class where they helped us figure out how to apply for stuff." Similarly, another student explained, "I learned about CalKIDS when our school had a college and career week. There were presentations about paying for college, and they included it in the slides with FAFSA and scholarships." Another student explained, "There was a financial aid night at my school where they talked about grants, loans, and CalKIDS."

Figure 5: How CalKIDS Participants Learned about the Program



Source: CalKIDS participant survey; Note: Data are weighted to represent the CalKIDS population. Error bars represent 95% confidence intervals.

CalKIDS staff administrator cites challenges with raising awareness about the program, which is necessary for people to claim their account.

The CalKIDS staff administrator repeatedly emphasized that raising awareness of the program is critical to increasing the number of accounts claimed. As the program director succinctly put it, "It's unrealistic to think that just because we build it, they'll come." He explained that the greatest barrier to participation is awareness itself: "The biggest challenge is just awareness and understanding how easy it is to claim and use the funds." This lack of awareness is especially pronounced for older students. The first eligible class of high school seniors was the hardest to reach, as CalKIDS did not receive eligibility data from the Department of Education until May or June of 2022—just as those students were graduating from high school.

The program administrator also reported that their very limited staff and California's large geographic area make outreach particularly challenging, "Outreach especially is a challenge when we have the whole state to cover." CalKIDS staff is only four people, and ScholarShare—the larger organization they sit inside and which provides some staff support—is also very small. "The team does receive some support from other staff within the ScholarShare Investment Board, but the overall agency remains small: …about 14 or 15 people in total."

Moreover, the program's marketing budget is not permanent, which the program administrator said made it difficult to plan long-term communications strategies. He explained, "Our marketing budget is not ongoing, it's one time in nature. And if there's an expectation that this becomes a long-term investment, we need families to know this exists, and we need an ongoing budget to support that."

Despite these challenges, the CalKIDS team remains optimistic that growing awareness and partnerships with schools and colleges will improve participation over time. As the program director noted, "Once the program becomes more of a household name," it will be easier to persuade school districts and trusted messengers to spread the word more consistently to eligible students and families.

6.2 Account Claiming

This section evaluates the extent to which CalKIDS is reaching and serving its target population. Using administrative data, I assess account claiming rates and linkages to Scholarshare529 accounts across counties and demographic groups. I also compare the

number of students identified as eligible by CalKIDS to my own estimates, which I derive from the American Community Survey (ACS). I do this to assess the method CalKIDS uses to determine eligibility for their target population. Last, I examine the challenges—financial, logistical, informational, and institutional—associated with claiming CalKIDS funds. These challenges may be experienced either by CalKIDS program participants or by program staff working to implement key components of the program.

Account claiming varies by demographic group and has grown over time.

Table 1 presents key indicators of program reach and usage among school-age CalKIDS participants, disaggregated by race/ethnicity, gender, and high school graduation cohort. The table includes five measures: the number of students eligible for CalKIDS; the share of eligible students who have claimed their accounts; the share of CalKIDS claimed accounts that have been linked to a separate 529 savings account owed by the student (which permit parents or others to contribute to the account); the share of all CalKIDS claimed accounts that eligible for a distribution; the share of students who have both claimed an account and are age-eligible for a distribution who have requested at least one distribution; and distribution requests as a share of all age-eligible students. These metrics offer a detailed view of how various participation and funding measures vary across demographic groups, shedding light on the program's reach to different groups. My analysis mostly focuses on the first five measures; the last measure combines two distinct stages of the process—claiming and using funds—that are difficult to disentangle when using this denominator, but I include it in the table because it provides a useful overall summary of program reach among age-eligible students.

As Table 1 illustrates, account claiming rates — the share of eligible students who have claimed their accounts as of February 2025—vary substantially by high school cohort and have increased over time. As of February 2025, among students eligible in the first cohort—those who graduated from high school in 2022—only 10% had claimed their accounts. This share rose to 16% for the 2023 cohort and 33% for the 2024 cohort. While only 17% of all eligible students from the 2025 cohort had claimed their accounts as of February 2025, the CalKIDS program administrator stated in interviews (conducted in the Winter of 2025) that he expects this figure to increase following a targeted outreach campaign planned for spring 2025.

According to the program director, the lower registration rate (share of accounts claimed) among the first cohort is largely attributable to the timing of program implementation. Because CalKIDS launched in the summer of 2022, outreach to the 2022 cohort—who had already graduated by that point—was limited. As the program director explained, “The first cohort was very hard to reach due to timing.” Many students in this group had already started college before learning about the program.

Account claiming rates also vary across demographic groups. Some groups stand out as having higher rates than others. Asian students (17% across all cohorts) were more likely to claim their accounts than those of non-Asian and unknown racial backgrounds, with American Indian or Alaskan Native having the lowest account claiming rate (8%). Women were slightly more likely to claim their accounts than men (13% vs. 11%, respectively). Differences by race/ethnicity and gender could indicate different college preferences, different degrees of financial savviness, or different amounts of trust in the government.

Table 1: Demographics of School-Age Program Participants

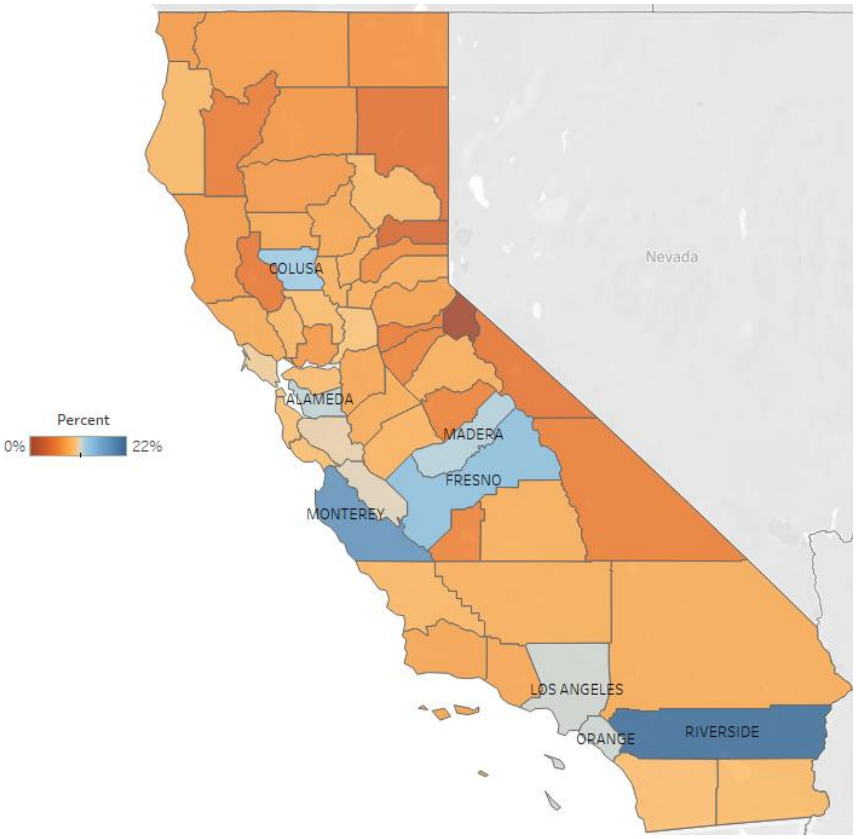
	Number Eligible for CalKIDS	Account Claiming Rate: Share of the eligible population who have claimed their accounts	Account Linking Rate: Share of claimed accounts that are linked to a Scholarshare account	Distribution Request Rate: Share of the age-eligible population with claimed accounts who have made a distribution request	Distribution Requests as a Share of all Age-Eligible
Race or Ethnicity					
Hispanic or Latino	2,751,093	11%	3%	54%	8%
White	445,501	11%	7%	48%	5%
Asian	332,141	17%	8%	54%	11%
African American	233,075	11%	4%	55%	7%
Two or More Races	100,811	12%	8%	51%	6%
American Indian or Alaskan Native	19,034	8%	4%	47%	4%
Pacific Islander	17,766	9%	4%	45%	5%
Unknown	33,577	10%	6%	49%	6%
Gender					
Women	1,907,373	13%	4%	56%	10%
Men	2,023,982	11%	5%	50%	6%
Nonbinary	1,643	13%	6%	46%	5%
HS Grad Year					
2022	286,609	10%	6%	67%	6%
2023	284,567	16%	4%	50%	6%
2024	299,170	33%	2%	52%	13%
2025	298,039	17%	2%	N/A	N/A
2026+	2,764,613	9%	6%	N/A	N/A

Note: Data as of February 2025. Source: CalKIDS Administrative Data

Account claiming rates vary across the state.

Figure 6 illustrates geographic variation in the account claiming rate- the share of eligible students who have claimed their CalKIDS accounts. Statewide across all cohorts, the account claiming rate is 11.7%. Only eight counties (14%) have higher average rates and are labeled in Figure 6. Two counties stand out with substantially higher rates: Monterey, at 18.7%, and Riverside, at 22.5%. The other higher-than-average counties - Colusa, Fresno, Alameda, Madera, Los Angeles, and Orange - have account claiming rates ranging from 11.9% to 14.4%. These patterns suggest that schools in some counties have been more successful than others in promoting the program and engaging eligible families.

Figure 6: Account Claiming Rates by County



Note: Data as of February 2025. Source: CalKIDS Administrative Data

Claiming CalKIDS accounts is generally easy, but minor barriers remain.

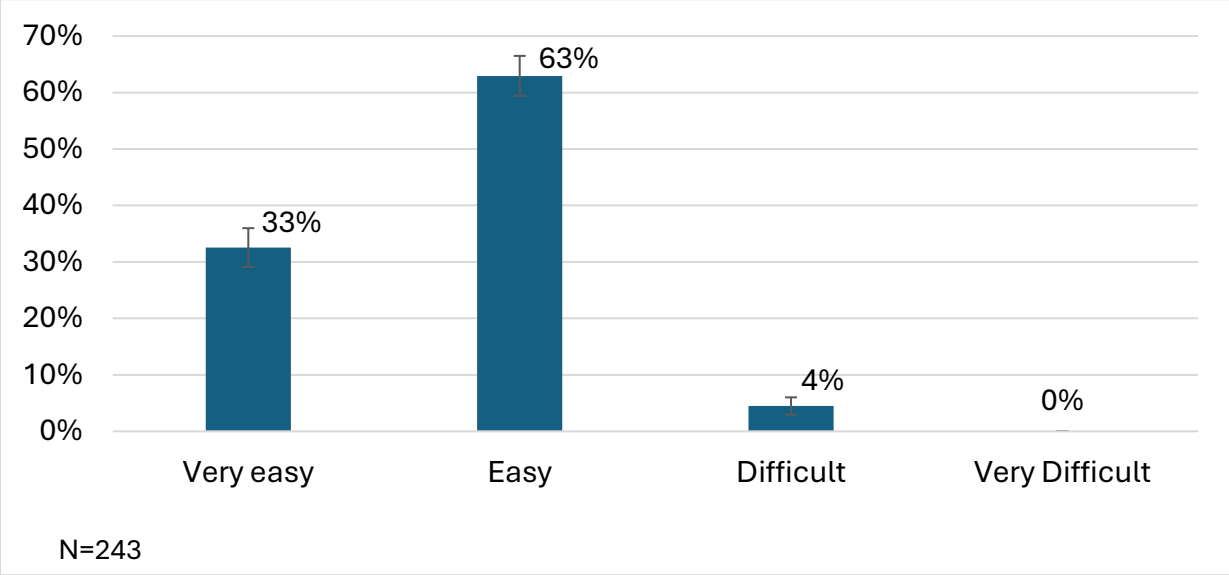
In the survey of sample program participants (recall, the sample included those who had claimed their account but not taken a funds distribution), 96% reported that the process for claiming their account was “easy” or “very easy” (see Figure 7), and about two-thirds reported experiencing no issues with claiming their account (see Figure 8). Among those who did face challenges, the two most common concerns were (1) locating their Statewide Student Identifier (SSID), and (2) determining whether the program was legitimate. Students who struggled to find their SSID often reported checking high school transcripts or contacting a teacher or counselor for assistance. One student (who is currently at a UC school), explained, “I thought it was a scam at first until I looked it up on the California government website.”

These challenges were echoed by the CalKIDS program manager, who explained that because schools don't widely use the SSID in a transparent manner, students often don’t know where to find it. “Most families have never had a need for the SSID… so it’s how do we work with schools to make it accessible?” To address this, the program began working with school districts to promote visibility of SSIDs. They also created an eligibility tool to simplify the process for determining CalKIDS eligibility, which did not require the SSID. “That tool is really important for families to just quickly determine if they are eligible or not… Without that tool, I think our program would be a bit harder [to access].”

Additionally, to increase confidence in the program’s legitimacy, CalKIDS has focused on building brand awareness. As the program manager explained, “Especially with lower-

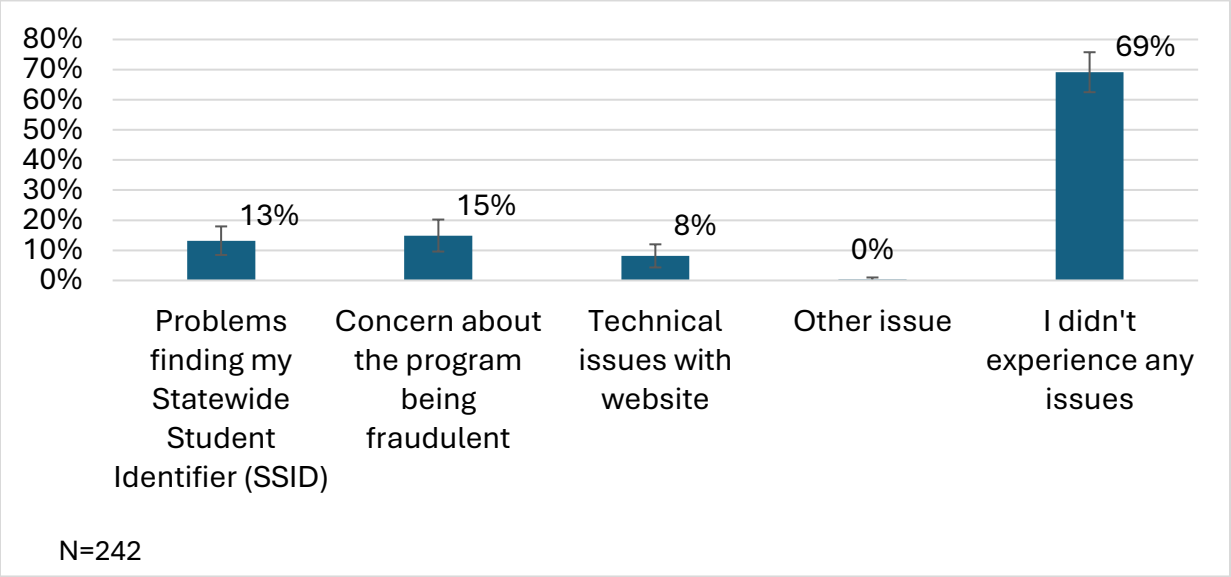
income populations, it's always, 'What's the catch?' So, we really tried to market the program to build credibility." As described in the Communication Strategy Sections, CalKIDS has used direct notification letters, partnerships with schools, digital ads, and social media content to increase awareness and help students claim their accounts.

Figure 7: Ease of Claiming a CalKIDS Account



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Figure 8: Problems Encountered When Claiming a CalKIDS Account



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. Survey respondents can select multiple responses. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Scholarshare account linkage rates vary somewhat by demographic group.

Linkage rates to a ScholarShare 529 college savings accounts also varied somewhat by demographic group. Notably, these account linkage rates were highest for Asian American students and students who identified with two or more races (8%), followed closely by White students (7%). In comparison, the account linkage rates for Hispanic or Latino students were 3%, and 4% for African American, American Indian or Alaska Native, and Pacific Islander students. Linkage rates were similar across gender (4% for women, 5% for men, and 6% for nonbinary individuals). In terms of cohort differences, students who graduated in 2022 had the highest linkage rate (6%), with rates falling to 4% for the 2023 cohort and 2% for the 2024 and 2025 cohorts.

Eligibility determination numbers are in line with estimates from population data

Using data through the 2023–2024 school year, approximately 3.9 million individuals were deemed eligible for the school-age CalKIDS program based on school district records. In contrast, my ACS-based estimate, using a 200% of the federal poverty level threshold for eligibility, suggests that about 2.5 million school-age children would be eligible. The fact that the CalKIDS administrative count is significantly higher than the ACS-based estimate suggests that the ACS may not provide a complete benchmark for program reach. However, this does imply that CalKIDS is deeming at least as many individuals eligible as would be expected based on population data—and likely many more—which is a positive sign for program coverage.

There are several reasons to believe the ACS data may either overcount or undercount the number of individuals eligible for CalKIDS. Undercounting in the ACS may occur because households might be reluctant to report undocumented children living in the household, even though these children would be eligible for school meals—and therefore CalKIDS—in California. On the other hand, ACS may overcount some people because it relies on self-reported household income and does not capture the administrative processes required to qualify at the school level. Specifically, CalKIDS eligibility is determined by school district records that require students to complete specific forms on a designated day, which can result in undercounts of true eligibility (as described in the Background section). On the other hand, the ACS may undercount eligibility because it is based solely on income, whereas CalKIDS eligibility extends to other groups—such as foster and homeless youth—that I cannot identify using ACS data. While these groups are relatively small as a total

share of CalKIDS accounts, their inclusion would increase the administrative count of eligible students.

Taken together, these factors suggest that the differences between the two estimates are understandable, and that the CalKIDS program is likely correctly identifying its intended population—and possibly more—based on available data.

6.3 Accessing CalKIDS Funds

This section summarizes key findings related to the extent to which the CalKIDS funds are being utilized, as measured by the percentage of individuals eligible for a fund distribution who have requested one. This section also examines the challenges—financial, logistical, informational, and institutional—associated with using the funds to pursue postsecondary education. These challenges may be experienced by either CalKIDS program participants or program staff working to implement key program components.

Distribution request rates vary by demographic groups and geography.

Table 1 above shows that distribution request rates—measured as the share of the age-eligible population with claimed accounts who have made a distribution request across all cohorts—were highest among African American (55%), Asian (54%), and Hispanic/Latino (54%) students. Women students were also more likely to request a distribution (56%) compared to men (50%) and nonbinary (46%) students. Notable differences also emerge across high school graduation cohorts. The 2022 cohort had the highest distribution request rate at 67%, followed by 52% for the 2024 cohort and 50% for the 2023 cohort. Later, I will explain a potential reason for the differences in these figures using the

qualitative data. Data for the 2025 and 2026+ cohorts are not yet meaningful, as most students in these groups are still in high school and have not yet had the opportunity to use their funds.

Notably, the denominator in the distribution request rate (the second-to-last column of Table 1) includes students who have claimed their accounts and are age-eligible for a distribution (whether or not they are enrolled) and excludes age-eligible students who have not claimed their accounts. The last column of Table 1 presents a related measure—distribution requests as a share of all age-eligible students, regardless of claiming status—which yields levels that are numerically closer to the account-claiming rates. Later in the results, drawing on survey data on postsecondary enrollment, I report an even narrower distribution request rate that uses as the denominator only those students who have claimed their accounts, are age-eligible, and are enrolled in a postsecondary institution. Examining these three measures side by side helps distinguish how much of the observed pattern reflects non-claiming, lack of enrollment, or non-use among students who are fully eligible to draw on their CalKIDS funds.

Only a small share of students cited barriers to accessing their funds.

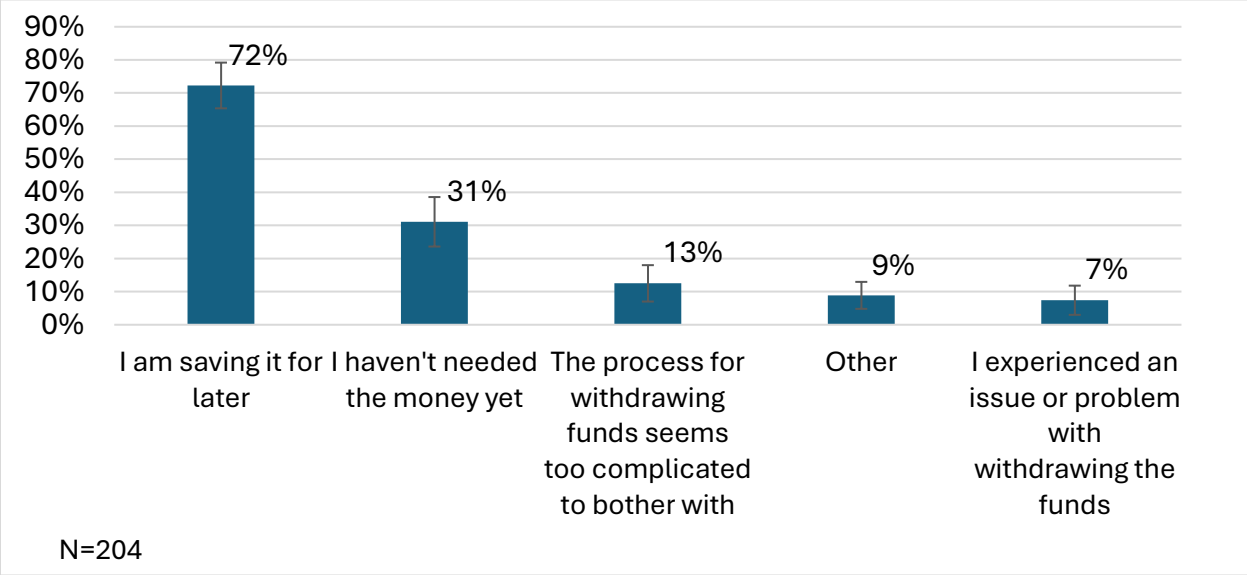
Only 7% of these respondents who had taken a distribution reported issues with withdrawing the funds (see Figure 9). An additional 9% selected "other" reasons for not using the funds, with many of these students explaining various types of issues accessing their funds in open-field response boxes provided. Among the students who explained their issues further, several expressed confusion about the withdrawal process or uncertainty

about how the funds could be utilized. For example, one person wrote, “I’m not sure how it works.” Some did not realize that CalKIDS payments are sent directly to the institution or were unsure if proof of spending was required. As one student shared, “On the website, it says the funds must be directly sent to my school, but I need to use the money for transportation to get to school. How am I supposed to get an education if I can’t even get to school?” Further, some respondents mentioned technical or administrative issues. One student explained, “My name on my CalKIDS account does not match my name. My parents had me enrolled with only one of my last names, and I have not been able to change it.” A few people reported forgetting their username or password.

One issue highlighted by the program administrator, but only mentioned once in the survey, was the process for distributing the funds through a college or university. Currently, CalKIDS funds are disbursed via paper checks mailed directly to colleges, and delays can occur during processing. The program director described the process as “cumbersome” and explained, “It takes some time for us to send the check physically to the University of Washington for someone there to grab it in the mail and then to literally process it to the student’s account”. This process can take time, and CalKIDS communicates this to students, informing them that it typically takes a few weeks from the time they submit the request to when it is received by the school and processed. In some cases, students switch schools after requesting the funds. When this happens, the check must be returned to CalKIDS and reissued to the new institution, further extending the timeline. Despite this several-weeks-long process, only one survey respondent mentioned that a check issued to the university expired before it was deposited.

In addition, some students reported simply forgetting about the funds even though he/she had claimed them. For example, one respondent stated, “I kind of forgot about it.” A few students also expressed concern about how CalKIDS might affect their financial aid packages, noting uncertainty over whether the funds would count against them in aid calculations: “I’m worried it’ll affect my current financial aid and instead of being a help, it’ll be a burden.”

Figure 9: Reasons for Not Using CalKIDS Funds Yet



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. Survey respondents can select multiple responses. The chart excludes non-responses. Error bars represent 95% confidence intervals.

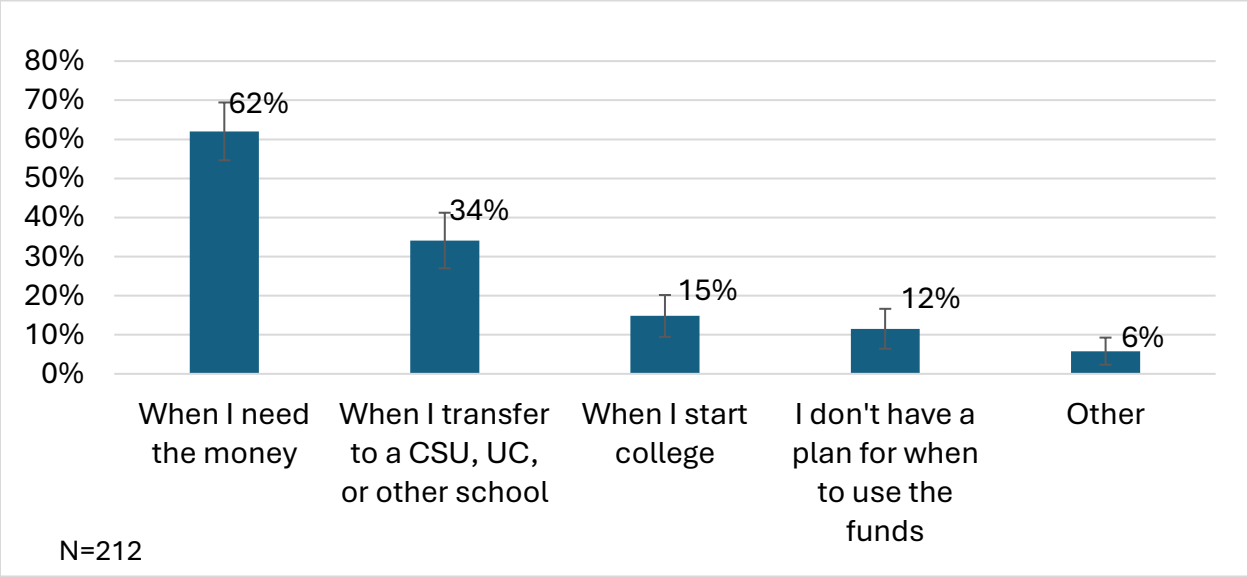
While there are some barriers to using CalKIDS funds, most students have not yet utilized them because they are saving them for later use—especially for transfers to 4-year universities.

The majority of students who have claimed their CalKIDS account have not yet withdrawn funds—not because of access issues, but because they are intentionally saving the money

for future educational expenses. According to survey results, 72% of respondents indicated that they were saving the funds for later use, and 31% stated that they had not yet needed the money (see Figure 10). As one student explained in a follow-up interview, “I didn’t end up needing to use the CalKIDS money yet because my financial aid already covers my tuition and most of my living expenses.”

Notably, about one-third of students reported that they plan to use their CalKIDS funds when they transfer to a four-year institution, such as a CSU or UC campus. In interviews, several students explained that their current costs at community college are already covered by financial aid, so they are choosing to reserve the funds for anticipated expenses after transfer. This aligns with prior findings showing lower distribution rates among community college students, suggesting that students are generally planning ahead.

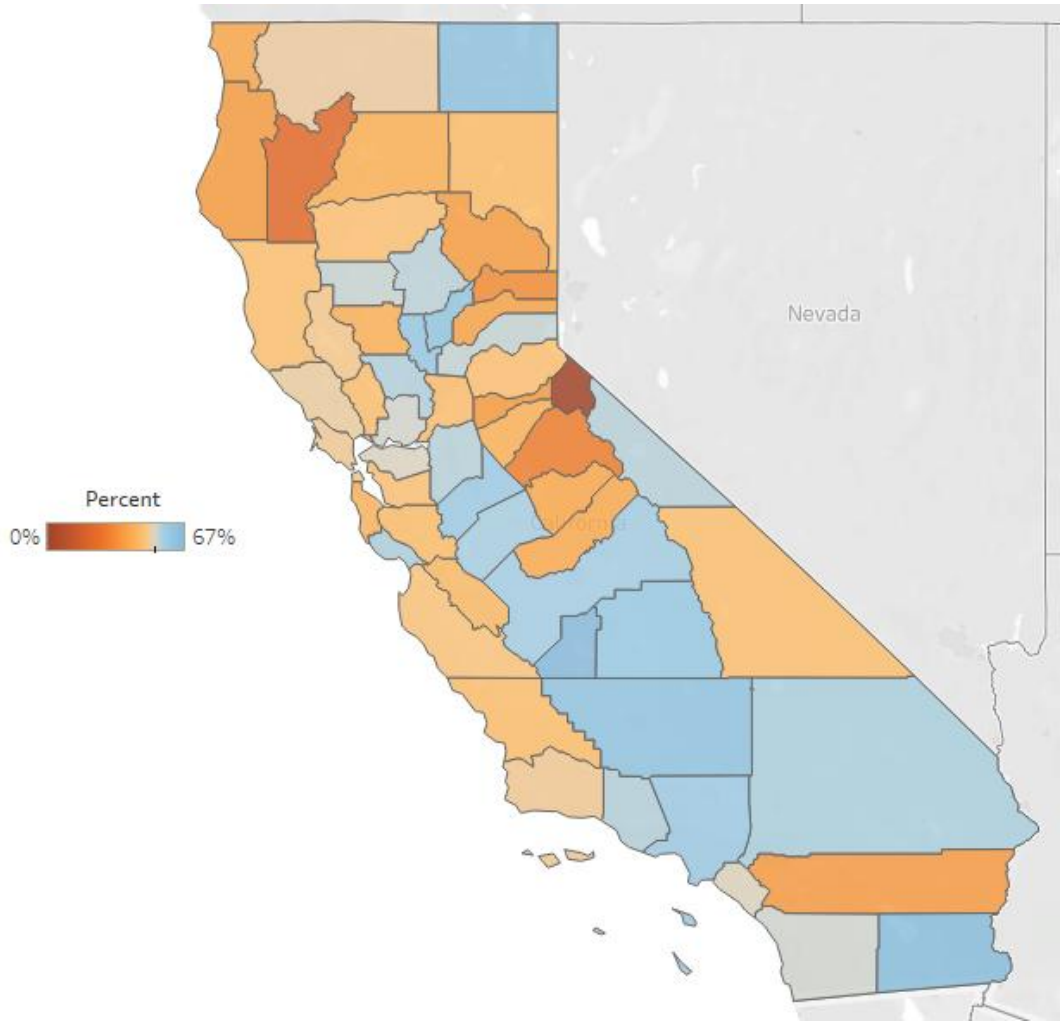
Figure 10: When Participants are Planning to Use Their Funds



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Figure 11 illustrates the geographic variation in the distribution request rate – the percentage of students who have taken a distribution among those age-eligible for a distribution and who have claimed their accounts. Statewide, this distribution request rate is 52%. Only 38% of counties have average distribution request rates that exceed the statewide average. These counties are colored light grey and blue on the chart.

Figure 11: Distribution Request Rates, by County

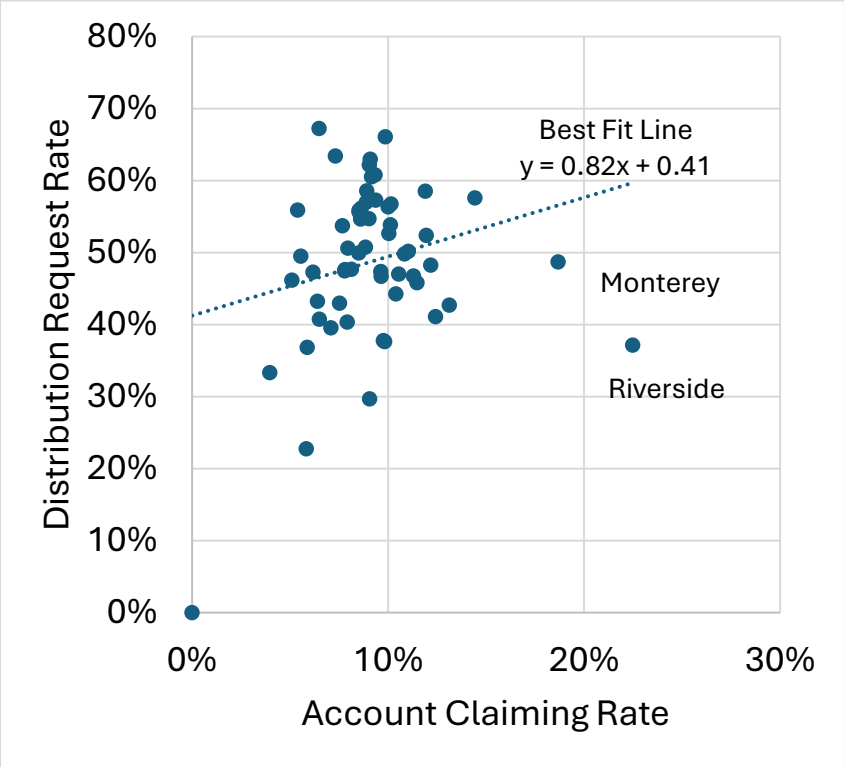


Note: Data as of February 2025. Source: CalKIDS Administrative Data. The counties in blue- with higher than average distribution rates are Contra Costa, Solano, San Diego, Glenn, Placer, Butte, San Joaquin, Mono Ventura, Yolo, Santa Cruz, San Bernardino, Merced, Fresno, Los Angeles, Stanislaus, Tulare, Sutter, Yuba, Kern, Modoc, Imperial, and Kings County.

Relationship between account claiming rates and distribution request rate

Figure 12 below shows the relationship between the account claiming rate and the distribution request rate by county. Comparing account-claiming rates and distribution request rates by county helps pinpoint where in the delivery chain participation breaks down—whether counties struggle more to get eligible students to claim accounts in the first place or to use funds once they are age-eligible and enrolled. Notably, the two counties with the highest account claiming rates—Riverside (22%) and Monterey (19%)—had lower-than-average distribution request rates (37% and 49%, respectively). This pattern may reflect demographic factors and cohort composition. For example, counties that have been especially successful in promoting account claiming may have a larger share of younger students, who are less likely to be enrolled in college and therefore not yet eligible to request distributions. It may also reflect differences in outreach strategies: some counties may focus primarily on encouraging families to claim accounts, while others may place more emphasis on using funds once students are in college. If these factors do not account for the discrepancy, it may suggest a nonlinear relationship between account claiming and distribution request behavior. Further research using county- or individual-level data is warranted to better understand this relationship, including whether there may be trade-offs between promoting account claiming and encouraging fund use.

Figure 12: Relationship Between Account Claiming Rate and Distribution Request Rate by County



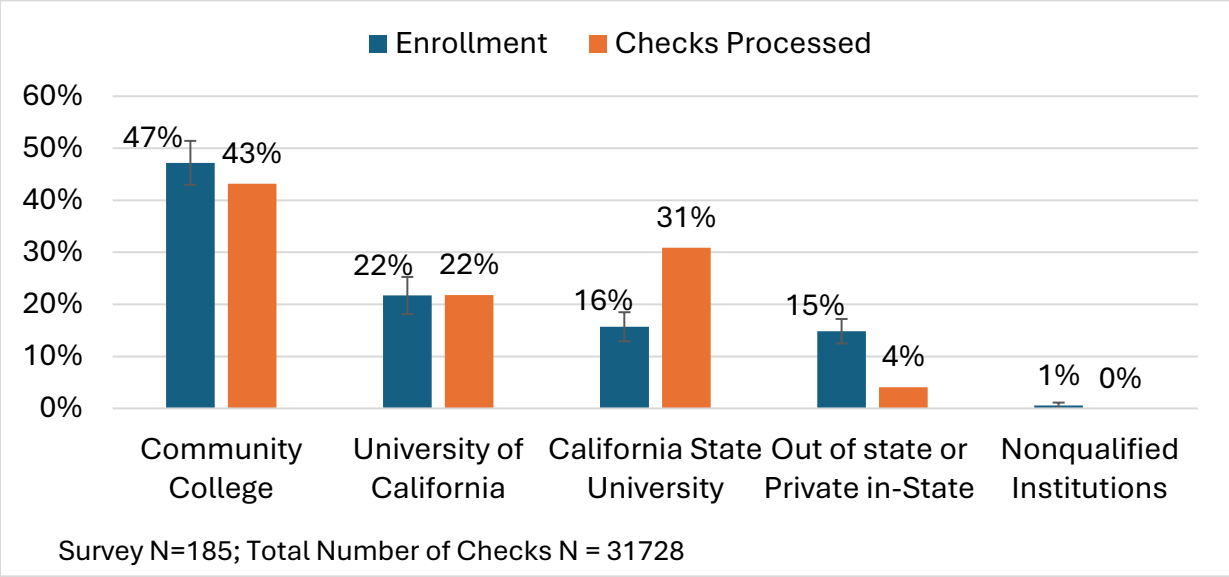
Source: CalKIDS Administrative Data; Notes: Data as of February 2025. Each dot represents a county.

Distribution requests by type of college (July 2022-June 2024)

Between July 2022 and June 2024, CalKIDS sent 31,728 checks to higher education institutions, including California community colleges (CCs), California State University (CSU) schools, University of California (UC) schools, and private colleges in California or out-of-state schools. The distribution of checks sent (an indicator of use of CalKIDS funds) somewhat matches where survey respondents said they were enrolled, or were recently enrolled, with a couple of notable differences. Students were relatively more likely to request a distribution than to report enrollment at CSUs, and the reverse was true at CCs and among the group including out-of-state and private in-state universities (See Figure

13). Notably, one student was attending a postsecondary institution that was a non-qualified institution, meaning it was not eligible for CalKIDS funds.[46] As discussed below, survey respondents often report saving CalKIDS funds to use after they transfer from Community College to a 4-year school when costs increase, which could contribute to this pattern.

Figure 13: Type of College Attending or Recently Attended Compared to Distribution of CalKIDS Checks Deposited



Sources: CalKIDS participant survey and CalKIDS Administrative Data. Note: Survey data are weighted to represent the CalKIDS population. Survey data shown in the chart exclude non-responses. Error bars represent 95% confidence intervals.

[46] Students can only use their CalKIDS funds at eligible postsecondary education schools. According to published CalKIDS manuals reviewed, eligible institutions are defined for the Program as "Eligible Educational Institutions" as that term is defined by Section 529(e)(5) of the Internal Revenue Code and generally include postsecondary schools that are eligible to participate in federal financial aid programs (Internal Revenue Code, 2024). CalKIDS staff also indicated they use this online tool to determine which schools qualify under section 529(e)(5)tool: see https://studentaid.gov/fafsa-apply/colleges.

6.5 Program Participants' Financial Context and Perceptions of CalKIDS

This section examines how CalKIDS participants eligible to request a distribution perceive the program and its benefits, which is crucial for assessing whether the logic model's intended pathways are occurring in practice. For example, the logic model posits that CalKIDS will increase students' perceived ability to pay for postsecondary education, thereby strengthening their college- or career-bound identities and shaping their educational planning. It also provides insight into the value participants place on CalKIDS, which can inform marketing strategies to increase account claiming and fund use, and shed light on additional non-financial ways in which CalKIDS can support participants. To assess participants' perceptions of CalKIDS, the section explores how participants describe the program's purpose, how they plan to use the funds, the perceived benefits the program provides to low-income students, and how it could be improved to offer even greater assistance in non-financial ways. To provide context for these findings, I begin by describing the financial circumstances of participants, including the extent to which they rely on their family versus financial aid. These financial constraints, particularly the limited capacity of families to contribute to college costs, are central to understanding how students perceive and plan to use their CalKIDS funds.

Students face significant financial constraints to attending college, but also benefit greatly from California's extensive financial aid landscape.

Overall, 83% of the survey sample (claimed their account, age-eligible, but had not taken a funds distribution) and who had already graduated from high school were currently

enrolled in college. Among those who were not currently enrolled, the vast majority (72%) indicated that they expected to enroll at some point. When asked to identify the two most important factors in choosing a college, affordability was the most commonly cited (see Figure 14). Furthermore, the vast majority of respondents (over 80%) came from families that could contribute less than $5,500 per year toward college expenses, and nearly one-quarter reported that they believed their families could contribute nothing (see Figure 15). In addition, nearly half of the respondents (45%) reported CalKIDS was their only savings for college.

Geographic constraints related to financial issues also influence college-related decisions. Half of all college-going or college-intending respondents identified location as one of the two most important factors in choosing a college (see Figure 14). Many students explained in interviews that they chose to live at home while attending college to save money, and only 44% reported having regular access to a car. A first-year civil engineering major at UC Merced described the challenge of relying on limited transportation options: “You really have to plan out your whole day because the whole route itself takes like an hour.”

Consistent with the reported financial constraints, the majority of enrolled survey respondents said they were receiving financial aid or scholarships other than CalKIDS. When asked, currently enrolled students indicated the types of financial aid they had ever received. Seventy-five percent indicated that they had received institutional aid, 69% reported receiving the CalGrant, and 68% stated that they received the Pell Grant (see Figure 16). In follow-up interviews, many survey respondents explained that their financial aid covered their full tuition and, in many cases, their living costs as well. For example, one

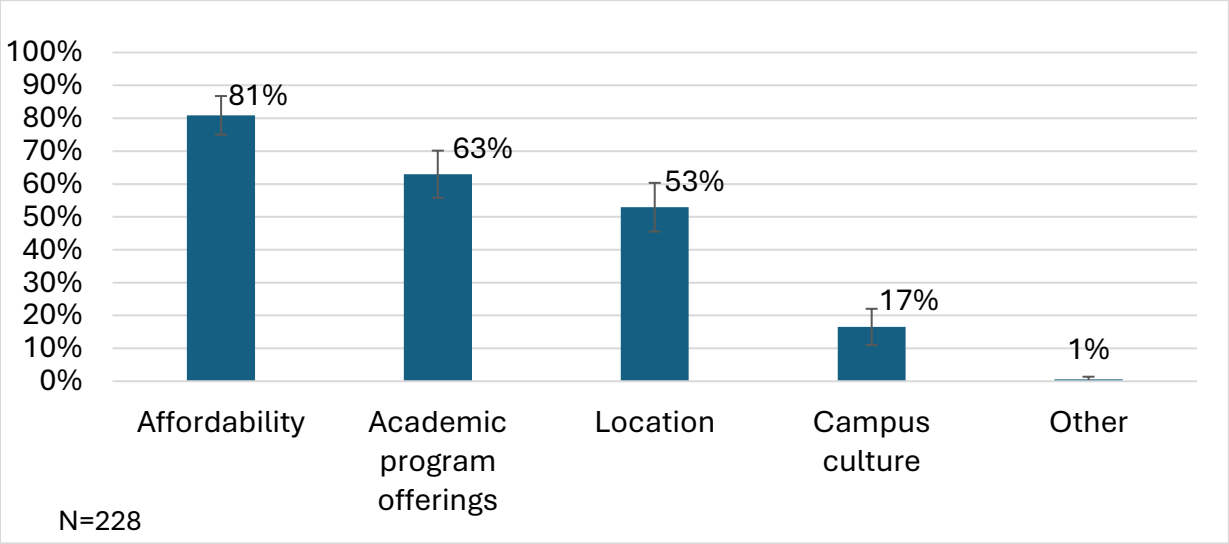
very low-income UC student explained, “With the grants and FAFSA, I don’t really have to pay anything out of pocket right now. I’m actually getting a refund check that helps with rent.” While many survey respondents were benefiting greatly from financial aid, most (71%) respondents indicated they did not realize they would be able to afford college until after they completed the FAFSA in their senior year of high school or after graduation (see Figure 17).

Students also expressed uncertainty about maintaining financial support to complete their degree. When asked how certain they were about having sufficient financial resources to complete their current degree plan, only 15% said they were very certain. In follow-up interviews, many respondents who said they were very uncertain in the survey explained their financial precarity. One low-income UC student said, “I don’t know what happens next. I’m just figuring it out one semester at a time.” Another said, “I had to take a break last year because I couldn’t afford housing.”

Several students explained that this uncertainty stemmed from the unpredictability of financial aid. In interviews, many explained that they were uncertain about the amount of financial aid they would receive the following year, as the FAFSA-determined amounts of aid a student qualifies for can change annually, depending on their family’s reported financial resources, number of siblings in college, and eligibility rule policy changes. Furthermore, many were attending community colleges but aiming for a 4-year degree, meaning they would need to transfer to a 4-year institution. Others were attending community college with plans to transfer, but did not know how much a four-year university would cost or whether they would receive enough aid to afford the transition. For example,

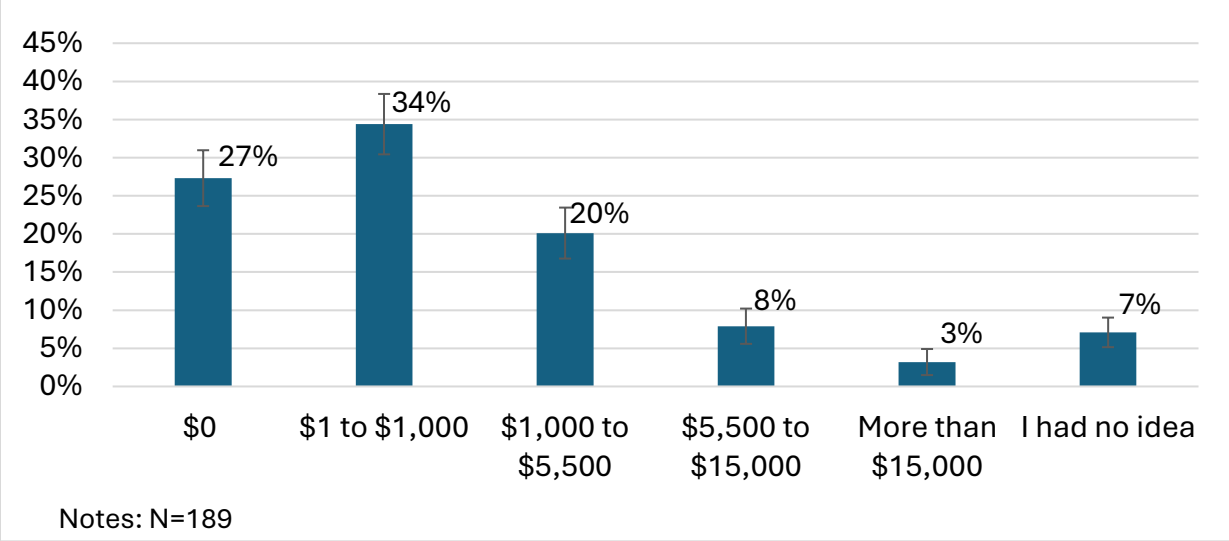
one student explained, “Right now I’m at community college, and it’s covered, but I don’t know what’s going to happen when I transfer. I haven’t figured out how much the next school is going to cost or if I’ll still get the same amount of aid.”

Figure 14: Two Most Important Factors for Choosing a College



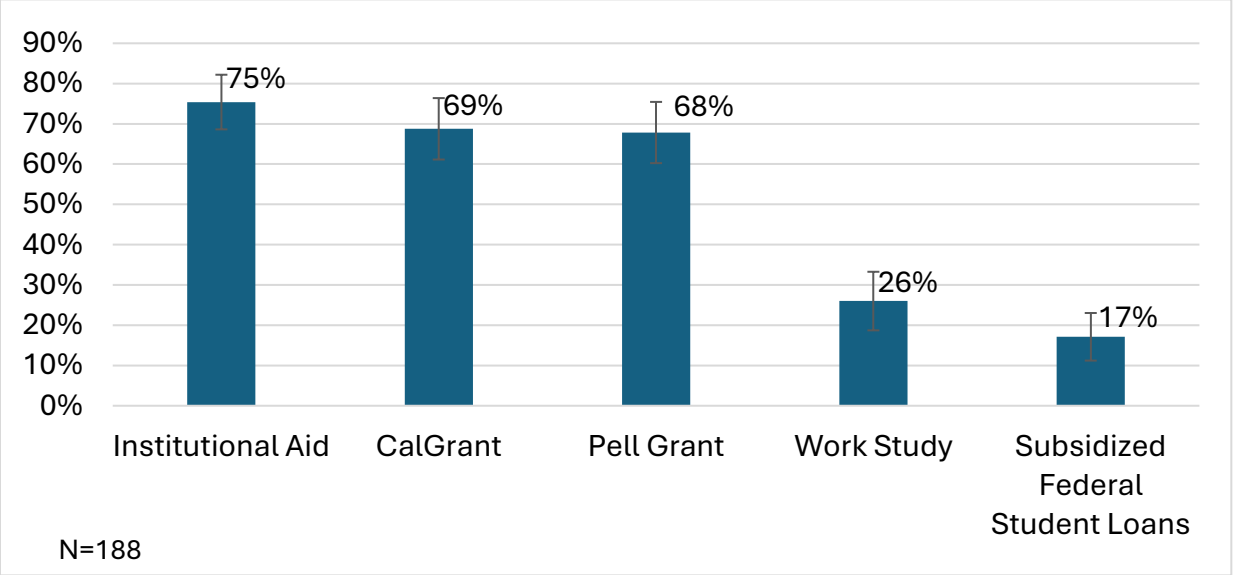
Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. Survey respondents can select multiple responses. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Figure 15: Amount Family Able and Willing to Pay Per Year for College



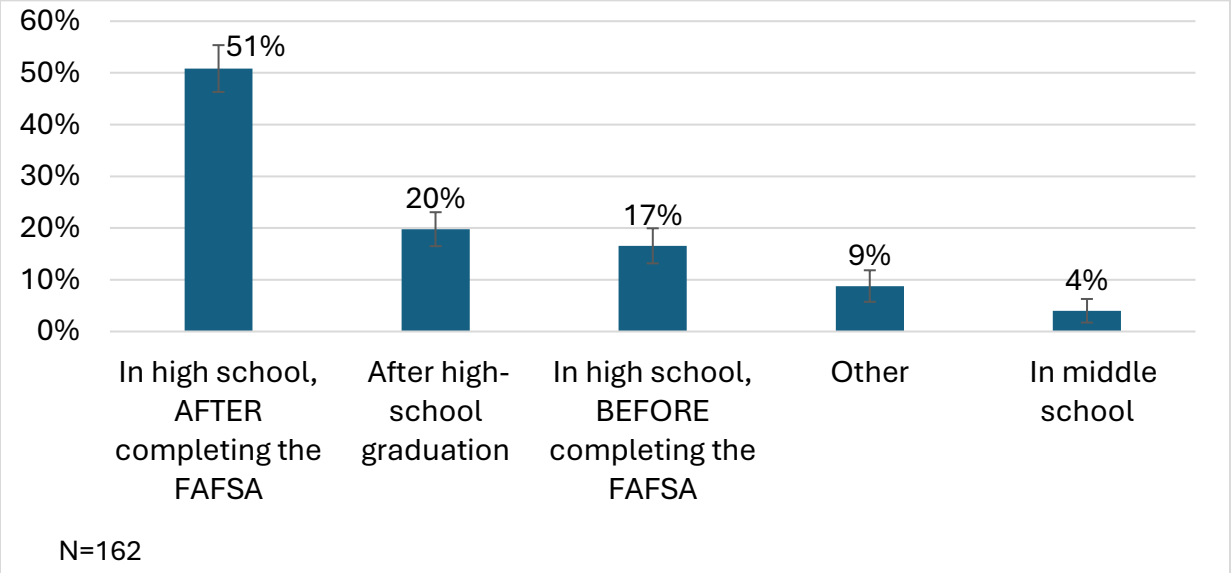
Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Figure 16: Sources of Financial Aid Received



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. Survey respondents can select multiple responses. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Figure 17: When Students Realized They Could Afford College



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Students view CalKIDS as a helpful program for inspiring students to attend college and for helping them pay for college, but it's unclear whether the program affects their savings behavior or college-going behavior.

When asked about how CalKIDS helps low-income students, less than 1% stated that the program has no impact on low-income students. Instead, the majority of survey respondents indicated that CalKIDS helps low-income students like themselves afford college (74%), provides hope for attending college (68%), or encourages low-income students to see themselves as future college students (66%) (see Figure 18). However, perceptions about its broader impact on family financial behavior are more mixed— only about half indicated that they thought the program motivated their families to save for college.

Students commonly viewed CalKIDS as a grant or an emergency savings account intended for low-income students that grows over time. When asked in the survey what they planned to use their CalKIDS funds for, 45 percent selected "emergency savings" (see Figure 19). While "emergency savings" is not one of the official distribution request categories, whatever students are worrying about in an emergency is likely to fall under a qualified education expense—such as tuition and related fees, books, required supplies, a computer, or room and board. In interviews, students often explained how they view CalKIDS as a flexible source of backup funds while in school. For example, when asked to explain CalKIDS in their own words, one community college student living with their parents said, "It's like another grant, just smaller. But it still helps, especially if you don't have a lot of money." Another first-generation sociology major at a community college

described the program as an emergency fund, noting, “I’ve known I have that money in there… It’s a nice thing to have because I know if I were to be short on funds in any way, I can always resort to that money.”

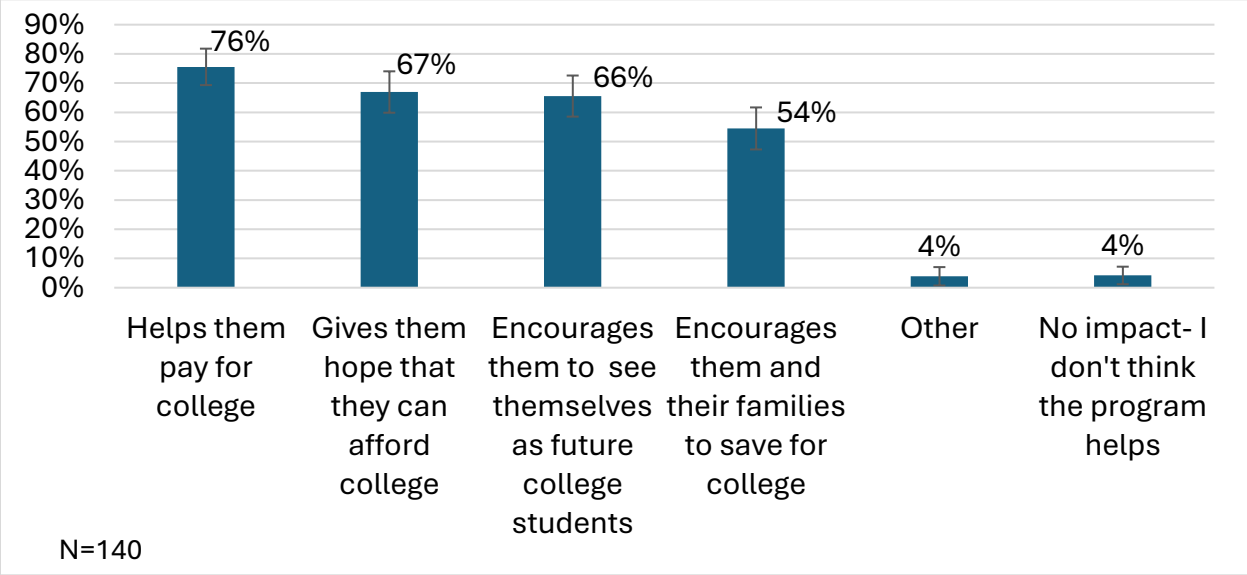
In interviews, CalKIDS participants consistently expressed enthusiasm about the program's usefulness. This sentiment was supported by survey responses, in which students rated CalKIDS as “somewhat helpful” on average, ranking it more helpful than “money from your family” or “work-study” (see Figure 20). Students shared various ways they found the program useful. As one UC Davis student put it, “It’s just really making me feel secure. So, in case I don’t get enough financial aid… I’ll always be able to go back and pull out those 500 bucks.” Another student at a four-year college who is living away from parents noted, “I feel like financially it is helping me with being able to be more independent… being able to be secure and like, OK, like I can continue doing this because I have that support.”

Despite survey respondents indicating that CalKIDS was helpful in many dimensions, in follow-up interviews, none of the participants reported that CalKIDS changed whether or where they pursued higher education when asked, “How has the CalKIDS program influenced your plans to attend college or not?” As one community college student put it, “I was already going to college—it didn’t affect that. It’s just money I can use now that I’m here.” Another said, “It didn’t change my plans, but it did make me feel like there’s support out there for people like me.” These perspectives could be due to the short amount of time those in the study have been exposed to the program. The program director emphasized this point: “The increased motivation to achieve and pursue higher education, I think, is

more of the hope of this program and realization for younger families than older families. I think the older kids already knew whether they would go or not go."

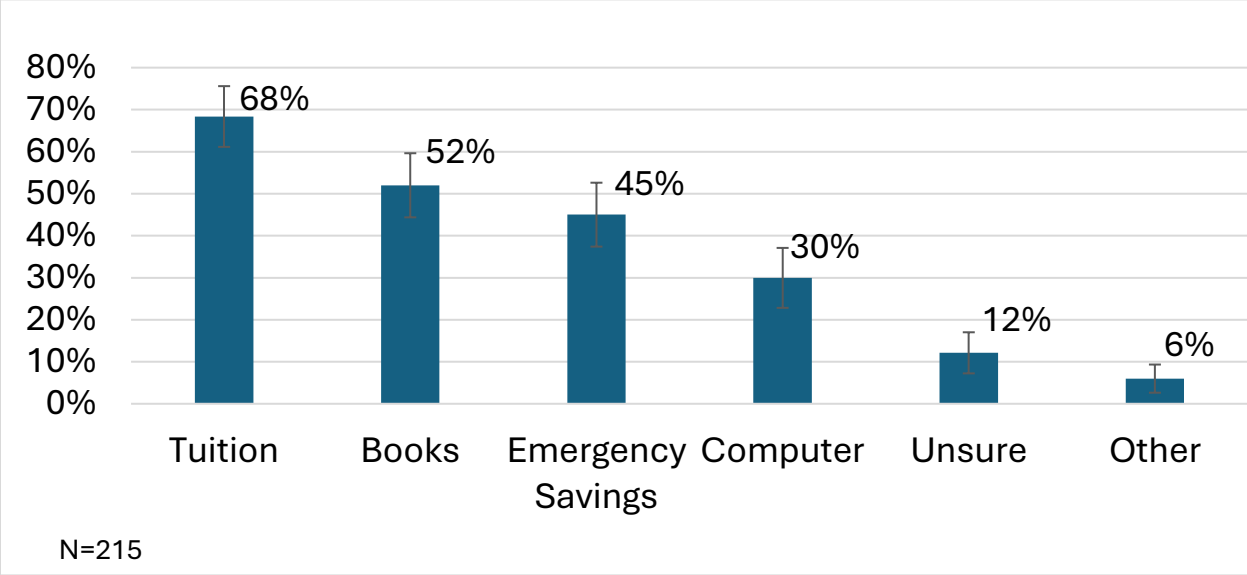
There is some evidence that the program might have also encouraged participants to search for other types of financial aid. In interviews, when asked, "Once you learned about the CalKIDS program, did that affect how you started to prepare for college financially, including your search for financial aid?", some students said that learning about CalKIDS helped them realize there might be other scholarship opportunities available, and it encouraged them to seek out additional financial support. As one UC student explained, "After I found out about CalKIDS, I started looking for more scholarships. It made me think—maybe there's more money out there if you look for it."

Figure 18: How CalKIDS Helps



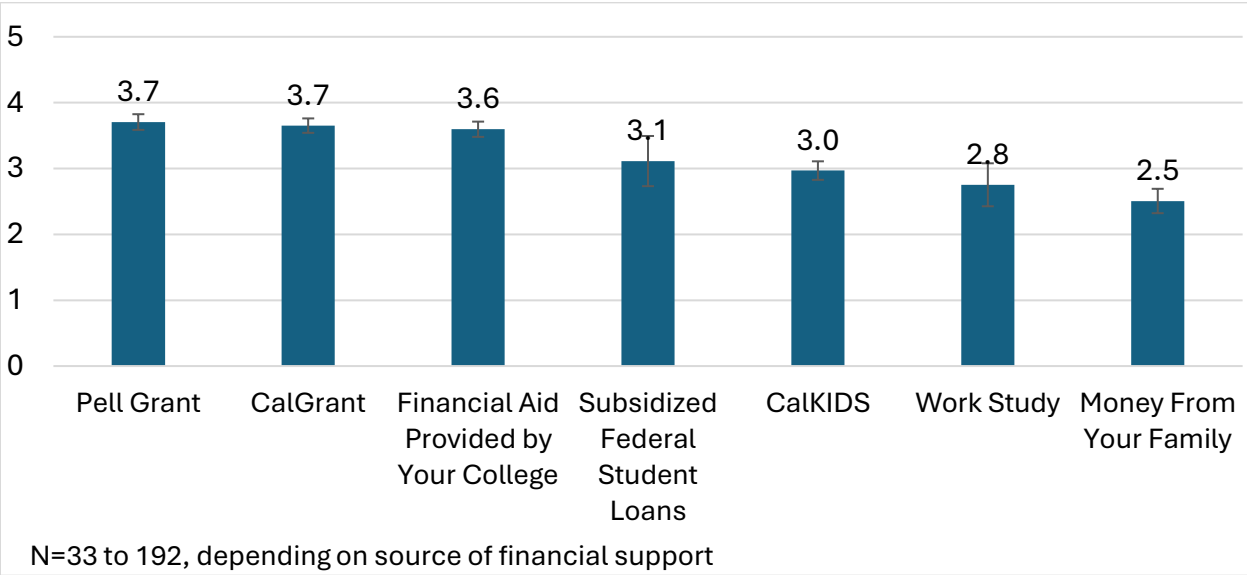
Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. Survey respondents can select multiple responses. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Figure 19: How Enrolled Students Plan to Use their CalKIDS Funds



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. Survey respondents can select multiple responses. The chart excludes non-responses. Error bars represent 95% confidence intervals.

Figure 20: Helpfulness of Various Sources of Financial Support



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. The chart excludes non-responses. Values are the average on a scale of 1=Not Helpful, 2=A little Helpful, 3=Somewhat Helpful, 4=Very Helpful. Error bars represent 95% confidence intervals.

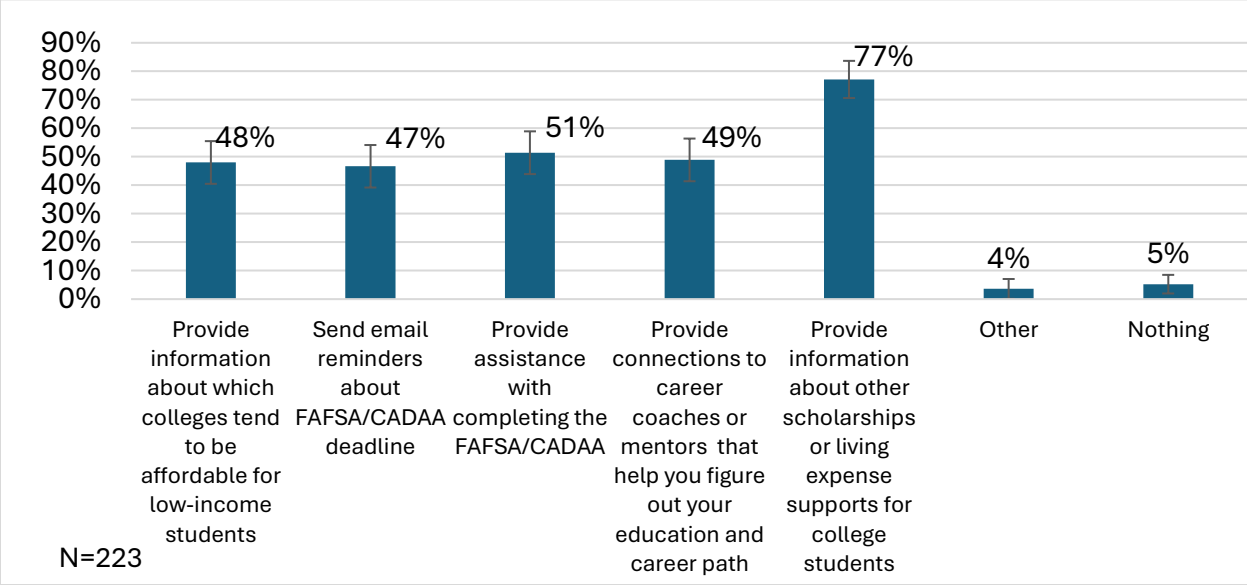
Students Expressed a Strong Interest in Non-Financial Supports, and May Themselves Serve as a Resource for Each Other

Survey results revealed strong demand for non-financial supports to help students reach their educational goals. When asked whether they would like additional non-financial support, an overwhelming 95% of respondents said yes—only 5% indicated they did not want or need any. The most commonly requested support was information about other scholarships or living expense supports for college students (77%). In addition, about half of the students expressed interest in each of the following types of support (see Figure 21):

- Information about which colleges tend to be affordable for low-income students
- Email reminders about FAFSA/CADAA deadlines
- Assistance with completing the FAFSA/CADAA
- Connections to career coaches or mentors to help navigate education and career pathways

Notably, CalKIDS participants themselves may be a valuable resource in meeting some of these needs. When asked whether they would be interested in serving as mentors to younger CalKIDS participants, 25% said yes, and another 44% said maybe—indicating significant potential for peer-support components within the program.

Figure 21: Requests for Non-Financial Support



Source: CalKIDS participant survey. Note: Data are weighted to represent the CalKIDS population. Survey respondents can select multiple responses. The chart excludes non-responses. Error bars represent 95% confidence intervals.

7.0 Results Synthesis and Discussion

CalKIDS account-claiming has increased steadily across high school graduation cohorts, rising from 10 percent for the 2022 HS graduate cohort to 33 percent for the 2024 cohort. This pattern is consistent with growing awareness over time; many students in the earliest cohorts learned about CalKIDS only after graduating from high school or after starting college. Most students report that claiming is straightforward—over 90 percent described the process as easy or very easy, and two-thirds reported no issues. However, a minority cited difficulty in locating their Statewide Student Identifier and initial skepticism about the program's legitimacy.

Viewed in the broader context of social policy, CalKIDS claiming rates already resemble the lower end of take-up observed in other benefit programs for some populations, and if they

continue to grow at their current trend, they will be consistent with take-up rates typical once programs are well established. For example, overall SNAP participation among the eligible population is around 80 percent, but participation among eligible older adults is closer to 40 percent (Finkelstein & Notowidigdo, 2019). To increase account-claiming, CalKIDS has gone to considerable lengths to make the process easy—for example, by making the claiming process short, online, and documentation-light; however, limited awareness, skepticism about program legitimacy, and uneven local outreach remain key reasons for non–take-up, aligning with the learning costs emphasized in the administrative burden literature (Herd & Moynihan, 2018).

Even after CalKIDS becomes a well-known and established program, it may still have lower account-claiming rates while students are in primary school due to program design. The only financial benefit a person receives for claiming their account is $25. If others want to contribute to the child's college savings fund, they would need to contribute to the child's separate Scholarshare 529 account, which is separate from the CalKIDS account (which can be linked). For these reasons, eligible individuals may not see a reason to claim their account until they need the funds.

A small, four-person staff and the absence of a dedicated first-year marketing budget have also constrained account-claiming, resulting in a heavy reliance on indirect outreach (primarily through willing school districts), which has produced uneven results across counties. Students most often report hearing about CalKIDS from school personnel, at school events, or through letters from CalKIDS. Because school district participation is voluntary and uneven, and California's size makes centralized in-person outreach

impractical, local effort drives much of the variation. Riverside County illustrates this pattern: its overall claiming rate (22.5 percent) is nearly double the statewide average. At a statewide conference on wealth-building policies in California, a Riverside School District representative described how the district is working with CalKIDS to promote the program. They have held more than 60 webinars, host frequent community events, and tailor engagement methods to their audience, which has likely amplified awareness in their area.

To increase account claiming, the program has increasingly relied on targeted social media campaigns. They found that targeted digital media ads using trend-based content and influencers on TikTok, Instagram, and YouTube were the most effective, as evidenced by an immediate increase in account claiming. Importantly, this expanded digital effort was feasible because the program received a temporary marketing budget in FY 2023-2024. Looking forward, two recently enacted laws—integrating CalKIDS into the high school financial literacy curriculum and requiring local educational agencies to notify students and families about CalKIDS during FAFSA/CADAA completion—should help the program gain broader household name recognition over time, increase program reach, decrease skepticism about the program's legitimacy, and reduce reliance on ad hoc local effort.

Despite staff concerns that students were not requesting fund distributions as often as expected, the pattern reflects the time required for a student to decide to request a contribution—rather than technical issues or perceptions of the program’s value—and most students take time to request distributions. Survey evidence indicates that 72 percent of respondents are deliberately saving CalKIDS funds for future educational expenses (many plan to use them when they transfer from a free community college to a more costly

four-year institution), and 42 percent view CalKIDS as emergency savings. These perceptions likely reflect the program's design and students' financial context: seed amounts are modest relative to total college costs and are often overshadowed by Pell, Cal Grants, and institutional aid—unlike aid that is automatically applied—CalKIDS requires students to submit a request to them that is tied to a specific eligible expense. As a result, recipients are waiting for a specific reason to use it. This finding is not a program weakness, but rather an insight into its perceived value, contributing a new perspective to the CDA literature. It highlights a pathway through which small amounts of savings may foster college persistence and has implications for how CalKIDS should be communicated to participants.

Consistent with this, distribution request rates among those who had claimed their CalKIDS accounts were highest among the oldest cohort: 67% for the class of 2022, compared with 50% for the 2023 cohort and 52% for the 2024 cohort. These figures suggest three things: first, the fact that the oldest cohort has a much higher distribution request rate suggests that many students may not need the funds until their third year of college. Second, the fact that use by the cohort of students in their first year of college is higher than that of those in their second year suggests that colleges and universities are now promoting the program during students' first year (and doing so more than in prior years), helping to boost distribution rates among students in their first year of college. Third, considering that 17% of these students were not enrolled in college and thus not yet eligible for a distribution, the vast majority (81%) of CalKIDS participants with claimed

accounts and eligible for a distribution (age-eligible and enrolled at a qualified institution) are requesting one by the third year after high school.

The use of CalKIDS funds is broadly consistent with the use of other programs among enrolled participants. For example, households that are registered for SNAP redeem the vast majority of the benefits issued to them, in the order of the high 90 percent range of dollars loaded onto EBT cards each month (Finkelstein & Notowidigdo, 2019). Thus, the primary challenge of participation for CalKIDS lies in getting eligible individuals to claim their accounts. After all, among those identified by CalKIDS as eligible for the school-age program and age-eligible for a distribution (including those not enrolled in college and those who have not claimed their account), only 8% have taken one. This suggests that the informational and procedural barriers shaping the timing and manner in which enrolled participants use their benefits explain a smaller portion of the low overall use of the funds among those age-eligible for a distribution (relative to the issue of account claiming).

Fund distributions are being processed, but the process is slow, unclear to program participants, and requires coordination among multiple parties, taking at least two weeks. CalKIDS staff must process requests, verify eligibility, and mail checks to colleges and postsecondary institutions. Postsecondary institutions, in turn, must credit student accounts and mail checks to students. Delays sometimes occur if institutions are unfamiliar with the program or when student contact information is outdated. In a few cases, checks expired before processing. Despite the slow process and logistical challenges, most students did not report facing technical issues or view the process as not worthwhile. Students, however, did express uncertainty about eligible uses of CalKIDS

funds and were often unaware that receipts are not required at the request stage. These frictions conflict with students' mental model of CalKIDS as a resource for emergency savings, potentially suppressing take-up for time-sensitive needs.

Students overwhelmingly view CalKIDS positively and as a helpful source of college funding—despite the relatively small dollar amount relative to the full cost of college. On average, they rated CalKIDS as less helpful than larger aid programs like the Pell Grant or Cal Grant, but more helpful than family support. This aligns with respondents' financial context: over 80% reported their families could contribute less than $5,500 per year, and nearly 25% believed their families could contribute nothing to their college expenses (see Figure 15). Nearly half (45%) said CalKIDS was their only college savings. Affordability was the most common factor in their college choice (see Figure 14), and students were heavily reliant on financial aid (75% on institutional aid, 69% Cal Grant, 68% Pell Grant; see Figure 16). Yet only 15% felt "very certain" they had enough resources to complete their degree, often citing delays or confusion around financial aid. In this context, even modest CalKIDS balances provide some meaningful peace of mind. This aligns with CalKIDS program theory and the theoretical framework in this paper, which suggests that such savings accounts can promote college expectations, perceived ability to pay, and postsecondary enrollment (Elliott et al., 2013; Rauscher et al., 2017).

CalKIDS' effect on college or career planning appears limited among the earliest age-eligible cohorts because of delayed awareness: many learned about the program late in high school or after starting college. Still, the program resonates—74% of the students surveyed said CalKIDS helps low-income students afford college, 68% said it provides

hope, and 66% said it encourages seeing oneself as a future college student; only 1% reported no impact. These patterns underscore the need for earlier awareness to activate identity-based pathways described in the logic model and theoretical framework to improve the effect of the program on college plans.

Beyond funding, students emphasized they want additional low-cost, high-impact supports—scholarship guidance, FAFSA and enrollment deadline reminders, tools for comparing colleges' affordability, and access to mentors or career advisors. Such supports could help them make informed decisions, stay on track, and enhance the overall impact of CalKIDS. These supports are consistent with the program's goals and could help students translate intent into action. Other CDA programs, such as those in Indiana, Oakland, CA, and New Mexico, have successfully integrated similar services to complement the financial assets provided. Further, CalKIDS is well-positioned to pilot such new initiatives at scale, given its existing contact lists and partnerships; many participants also expressed interest in serving as mentors themselves. However, CalKIDS staff may face challenges finding time to implement such new programs given their limited numbers.

7.1 Conclusion

This process evaluation aimed to enhance our understanding of the implementation of the school-age CalKIDS program, a statewide child development account policy in California that closely aligns with the optimal CDA design as described by Clancy et al. (2019).[47]

[47] CalKIDS closely aligns with the major components described by Clancy et al. (2019) because it is universal, largely automatic, and features progressive policy designs that yield larger benefits for lower-income

Specifically, it aimed to understand how CalKIDS theoretically works to improve educational outcomes, how staff communicate with their target population, and the extent to which they are reaching them. It also sought to identify the challenges associated with students' accessing and utilizing CalKIDS funds, as well as how program participants perceive the CalKIDS program.

To understand these aspects of the CalKIDS program, this research employed a mixed-methods approach, combining data from several sources. This approach included analyzing account claiming rates and funds distribution request rates by demographic groups and county, interviewing the CalKIDS program manager, surveying 243 CalKIDS participants with claimed accounts who had not yet requested a distribution, and interviewing 25 CalKIDS participants who completed the survey. The report's findings, along with the recommendations that follow, provide insights for CalKIDS staff, future evaluators, and state policymakers seeking to implement CDA programs in their state.

This evaluation found that CalKIDS has successfully started a universal, progressive education savings account program for low-income Californians. The program has scaled rapidly, with millions of students having claimed their accounts (i.e., registered with the state so they can later seek a distribution of funds), and account-claiming rates have increased steadily across cohorts. Students in the survey sample generally found the account claiming process straightforward, with few technical barriers. Instead of technical

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households. However, it adds one element not yet explored in CDA design: CalKIDS accelerates the time between program launch and when funds can support postsecondary students by initially enrolling all 1st–12th graders at program inception.

obstacles, the low account claiming rates across the state remain a challenge due to limited marketing resources, a small staff, and the program's large geographic coverage area. Efforts to increase awareness and engagement are ongoing, and two recent pieces of legislation are expected to strengthen program visibility and participation. Distribution requests indicate that the majority of college-enrolled, age-eligible students who have claimed their accounts are using their funds, but many delay accessing their money until several years after high school. A complex coordination process for distributing funds limits the program's ability to function as students wish, especially given that they often perceive the funds as an emergency savings resource. Despite the small amounts involved and slow distribution process, students surveyed view CalKIDS as a valuable source of financial support and believe it broadly encourages a college-going identity among low-income students.

Together, these findings suggest that CalKIDS is making meaningful progress toward its long-term goal of increasing postsecondary attainment, but still room to increase program participation. The program is reaching and assisting a large number of students, many of whom face persistent financial and informational barriers. At the same time, this evaluation identifies several areas for improvement that can enhance the program's reach and value: more strategic outreach, streamlined operations for distribution requests, and the addition of non-financial supports that nurture students' confidence, planning, and persistence. While many of these enhancements would require additional resources or legislative authorization, CalKIDS is uniquely well-positioned to lead in this space given its partnerships with many organizations if these resources are provided. With thoughtful

investment and strategic design improvements, the program could become a national model for large-scale CDA programs that aim to reduce educational inequality and promote upward mobility.

7.2 Study Limitations

This study is subject to several limitations that should be taken into account when interpreting its findings. These limitations reflect constraints in the types of data used—including documents, administrative records, interviews, and surveys—as well as the methods used to interpret these data and limited time the program has been in effect.

First, regarding the survey and interviews with CalKIDS participants, my sample was limited to those who had claimed their accounts, and there is a risk of sampling bias, response bias, and data reliability concerns. Because I was only able to interview and survey those who had claimed their accounts, I was not able to obtain much information about why account claiming rates are low, and thus I cannot comment much on this issue. Individuals who volunteered to participate may have held particularly strong positive or negative opinions about the program, potentially skewing the findings. Additionally, participants may have offered what they perceived as socially desirable responses—a form of social desirability bias—or withheld sensitive information. To mitigate these risks, participants were assured of confidentiality, and rapport-building strategies were used during interviews. To strengthen data reliability and reduce interpretation variability, the survey instrument was informed by ten qualitative interviews conducted beforehand. These interviews used open-ended versions of planned survey questions, allowing participants to

articulate their experiences freely. Insights from these interviews were used to refine survey question wording and response options. Where possible, survey questions were adapted from previously validated instruments.

Second, the study is vulnerable to recall bias and the effects of program evolution. Conducted nearly two years after the program's launch, staff reflections in the interviews may focus more on recent experiences than on earlier ones. In addition, the program has changed over time, which may affect consistency in participant responses. Interview questions were designed to probe across all years of implementation, and document review was used to contextualize these changes. In the student survey, some items asked respondents to reflect back to high school, which is also subject to recall bias.

Third, data availability limited the depth of analysis in the program reach section. CalKIDS staff were only able to provide one cut of demographic data, restricting disaggregation. Additionally, comparisons with American Community Survey (ACS) data were limited due to imperfect alignment between ACS variables and CalKIDS eligibility criteria, constraining the precision of reach estimates.

Fourth, document review limitations must be acknowledged. Documents may reflect the assumptions or biases of their authors and cannot be probed for clarification or follow-up. To address this, staff interviews and email correspondence were used to supplement the document review and validate key facts.

Fifth, the generalizability of some of the findings may be limited. CalKIDS is a unique program operating within California's distinct policy and economic environment, so some

of the findings may not be directly transferable to other contexts or CDA programs elsewhere. For example, in this study, students reported receiving a lot of state and institutional financial aid. Students in other states may not be as fortunate, and thus may lean more heavily on savings for financial support. In addition, this evaluation captures CalKIDS only a few years into implementation and focuses on a subset of the population who were first exposed to the program late in adolescence. As a result, the patterns documented here—especially participants' perceptions of the program—may differ from those observed for future cohorts. While there are some generalizable limitations, much can be learned from this evaluation and applied to other contexts; this is discussed in more detail in the following recommendations section.

Finally, this evaluation represents a partial assessment of the CalKIDS program, focused on a specific subset of research questions. Not all aspects of the program were evaluated. Nevertheless, this study lays essential groundwork for future research and broader evaluations of CalKIDS as it continues to evolve.

8.0 Recommendations

The findings from this evaluation provide insights to CalKIDS program staff and to policymakers in California and beyond. For program staff, the evaluation clarifies how the program is designed to work (in theory) and assesses the extent to which the program theory is working in practice. This evaluation also highlights any potential areas for improvement. For example, this evaluation gathered information on student perceptions of the purpose and benefits of CalKIDS. Knowing this information provides insights into how

CalKIDS might improve its marketing to improve connections with its audience and can help it understand whether CalKIDS is influencing participants' college- or career-going identity, which is an essential component of the theory of change. Further, this evaluation gathered information about any challenges associated with using the funds provided. Identifying these challenges is crucial for program staff to make informed decisions about how to adjust processes to remove or mitigate any impediments that might jeopardize the program's effectiveness.

For policymakers considering the design of new CDA programs, this process evaluation should help inform the development of future CDA programs spreading rapidly at state and local levels across the US, and Trump Accounts- a new policy at the national levels similar to CDAs. The details about how CalKIDS is being implemented, including any challenges faced, are important lessons learned from the CalKIDS program that could lead to more effective implementation of CDA programs nationwide, ultimately contributing to increased educational attainment and economic mobility among underserved populations.

8.1 For CalKIDS Program Staff

Pilot Additional Non-Financial Supports

Notably missing from the CalKIDS program is dedicated non-financial supports to help students build a college- or career-going identity—an element common in other Children's Development Account (CDA) programs and important in the theory of change they embody. For example, Promise Indiana provided activities that promote a college-going culture and

career readiness, such as taking children to local colleges and encouraging them to share their career goals (Rauscher et al., 2017). Oakland Promise in California helps students apply for college, find internships, and provides mentoring, counseling, and financial coaching services to parents (Oakland Promise, n.d.). The Kickstart to Career Newaygo County, Michigan included annual financial literacy lessons (Elliott et al., 2023). Last, the Prosperity KIDS program in New Mexico provided financial education to participants (Abt Associates & Prosperity Now, 2023).

This evaluation found that CalKIDS already has valuable resources that could support such non-financial services with minimal additional cost. The program has built strong partnerships with state agencies and nonprofit organizations that already assist young adults with financial aid, college transitions, and career exploration. It also has program participants who are interested in becoming mentors. Further, CalKIDS maintains a mass email marketing system and has contact information for all individuals who have claimed their accounts. However, while these resources are in place, limited staffing capacity may constrain implementation, their partners may not be interested in supporting such efforts, and legislative changes may be necessary to authorize or facilitate expanded engagement efforts. Based on the findings, CalKIDS should consider implementing the following two additional elements:

1. **Pilot peer mentoring and career workshops:** Collaborate with nonprofits or business groups with overlapping goals and utilize volunteers from their own program to pilot peer mentoring and co-host virtual workshops focused on career exploration, scholarship searches, and college planning. For example, the California Career

Development Association already offers webinars and networking events targeted at young adults. These events could leverage the expertise of career counselors, college financial aid offices, or partner organizations that assist students with navigating financial aid and scholarship opportunities.

2. **Create opt-in email campaigns for key deadlines:** Allow students to opt in to email campaigns with reminders about FAFSA/CADAA deadlines, utilizing their existing email marketing platform to increase engagement and help students stay on track.

While CalKIDS provides meaningful financial support, the program might have even greater impact if paired with these additional elements, which can help support students' financial confidence and their career-training or college-bound identity, and lead to more participants attending college and using their CalKIDS funds. In turn, this can help CalKIDS deliver on its ultimate goal—to increase postsecondary education outcomes for low-income kids in California.

Create a Multi-Point Marketing Plan to Strengthen CalKIDS Engagement with Students

Two recent legislative developments have created important opportunities for CalKIDS to increase awareness of and engagement with its resources and activities among students. First, California has enacted legislation requiring a financial literacy course for high school students, which will include mention of CalKIDS. Second, new legislation requires that CalKIDS information be provided to students after they complete the FAFSA or CADAA. These policy changes should be viewed not as a substitution for CalKIDS outreach, but the foundation for a multi-touchpoint outreach strategy that can help CalKIDS not only reach more students but also deepen its long-term impact. In addition to the mandated contact

letter sent when students become eligible for the program in the first grade, the following three additional touchpoints are recommended.

1. **The first touchpoint could occur when students complete the financial literacy course, in which they will learn about CalKIDS**. This course can introduce CalKIDS as a real, tangible resource students already have available and emphasize the importance of contributing to the account, which accrues earnings and grows over time. CalKIDS may be able to obtain a list of students (specifically their SSIDs, which can be matched to their email addresses) who complete the course from local education agencies that may be collecting this data for other purposes, such as reporting requirements to other state agencies. If they can obtain that information, they can send a follow-up message. The purpose of this touchpoint would be to inform the student of their account balance, encourage them to claim their account, encourage them (and their family) to contribute, and offer them additional non-financial supports previously discussed, such as options to connect with a mentor, a career counselor, or attend a webinar that explains the extensive postsecondary financial aid system in California. These supports are wanted by CalKIDS participants and can help them solidify their postsecondary plan and build their college- or career-training identity.
2. **The second touchpoint could be delivered shortly after students complete the FAFSA or CADAA**. As required by the new law, students will receive CalKIDS information at this stage—but to make the most of this moment, CalKIDS should also contact students and try to head off some of the issues found related to claiming accounts and requesting funds. Interviews revealed that many students don't

understand what the funds can be used for, how to access them, or which schools are eligible. Further, one student was attending an institution that was not eligible. Complicating matters, many students lose access to their high school email accounts after graduation, making follow-up with them difficult. To address these challenges, CalKIDS can use this touchpoint to request a non-school email address, share a clear list of currently eligible institutions[48], and provide a step-by-step guide for requesting a distribution. This outreach can also include opt-in options for FAFSA completion reminders, the FAFSA must be done each year that the student is in college, and information about the same non-financial support elements suggested in the first touchpoint.

3. **The third touchpoint could** occur two years after high school graduation, aimed at students who have not yet used their CalKIDS funds. At this point, many may be transitioning from community college or re-engaging with post-secondary education. This outreach can reassure students that their funds are still available and provide the same step-by-step guide for requesting a distribution. It can also remind students of the maximum age for a request and encourage action.

Tweak Information and Messaging to Increase Account Claiming

While most students have had no trouble claiming their CalKIDS accounts, a small share reported challenges that the program could address with relatively simple adjustments.

[48] This list could be the link to the website CalKIDS uses to determine which institutions are eligible- https://studentaid.gov/fafsa-apply/colleges .

Further, survey findings show that many students think of their CalKIDS account as a form of emergency savings, something they are saving for the future in case of need. This perception presents an opportunity to frame the program in language that resonates with students' lived experiences. To address these issues and leverage student perceptions of the program, CalKIDS should consider:

1. **Updating its initial outreach letters to include practical, student-tested tips.** For example, many students who struggled to locate their Statewide Student Identifier (SSID) later discovered it on their high school transcript. Others found success by asking a teacher or counselor for help. Including suggestions drawn from these findings in outreach materials may increase confidence and reduce friction in the account claiming process. Even if students misplace the original letter, these types of practical tips are more likely to stick with them. In addition, some students expressed concern that the CalKIDS program might be a scam, especially given the large dollar amount and unsolicited nature of the outreach. To address this, the letter can include clear instructions on how to verify the program's legitimacy by visiting the official CalKIDS.gov website. Since many students already in college have access to their high school transcripts—often required during the college application process—they may still be able to retrieve their SSID and claim their account retroactively if they are guided appropriately.
2. **CalKIDS should also consider revisiting the broader messaging used across all communication touchpoints.** CalKIDS should consider messaging that emphasizes the account as "a flexible, emergency education fund that offers peace of mind."

Framing the program this way, in addition to positioning it as an easy-to-access scholarship, can strengthen both its perceived value and its emotional relevance—ultimately potentially increasing engagement and account claiming rates. At the same time, such messaging could raise concerns about perceived wasteful spending, a common concern among critics of social safety net programs.

Make Use of Unspent Funds

Because far fewer than 100% of eligible students have claimed their CalKIDS accounts or accessed their available funds, a substantial share of allocated dollars remains unspent. This presents an opportunity to reallocate existing funds in ways that further support student success and align with the program's long-term objectives. To use these funds, CalKIDS could:

1. **Provide an additional contribution to students transitioning from community college to a four-year institution**, a financially demanding and critical point in many students' educational pathways. A bonus at this juncture could reduce financial barriers to transfer, incentivize continued enrollment, and improve overall college completion rates. Implementing this policy change would require legislative action to modify existing program rules regarding fund use. However, it is a reform that CalKIDS could actively advocate for, as it would allow the program to make more strategic use of unclaimed funds in direct service of its core mission.

Make It Easier to Access and Use Funds

To improve utilization of CalKIDS funds, the program can work with the state legislature to seek increased flexibility in how funds are accessed and used. Currently, distributions to students must go through postsecondary institutions, which can create unnecessary delays and administrative hurdles—especially considering the relatively small-dollar award. This process could be burdensome if students need funds urgently, such as to purchase a laptop or pay for books just before classes begin. I recommend that CalKIDS consider pursuing necessary legislative changes so they can:

1. **Allow funds to be deposited directly into students' linked Scholarshare 529** college savings accounts as soon as they enroll in a qualifying institution, instead of going through a higher education institution. This would enable them to use the money for any education-related purpose without needing to provide receipts or documentation. This would also likely encourage students to create a ScholarShare 529 account and perhaps to make contributions. Making the funds more flexible and accessible could increase program impact and ensure students can use the money when it matters most.

8.2 For Policymakers Beyond California

This evaluation offers valuable insights for policymakers and practitioners beyond California, particularly as interest in Child Development Account (CDA) programs grows nationwide. CalKIDS represents a distinctive model of CDA implementation—one that provides financial benefits without additional wraparound services such as mentoring,

academic advising, or structured financial education. By documenting the implementation process of CalKIDS, including the challenges and successes encountered, this evaluation contributes important knowledge that can inform the design and rollout of similar programs in other jurisdictions.

The lessons learned from CalKIDS may help other states develop more effective CDA programs that ultimately support increased educational attainment and upward economic mobility among underserved populations. In particular, CalKIDS' experience with outreach and engagement strategies offers actionable guidance for programs currently in development. The program found that trend-based content and influencer marketing on platforms such as TikTok, Instagram, and YouTube were particularly effective in increasing visibility and interest among youth. These learnings can help other CDA programs effectively educate the target population about education savings accounts.

At the same time, more traditional outreach channels—such as school-based partnerships and direct mail notifications—proved most effective in increasing account claim rates. These methods allowed CalKIDS to reach students and families through trusted institutions, reinforcing legitimacy and promoting action. Together, the program's experience demonstrates the value of combining digital and institutional outreach strategies to engage a diverse student population.

As CDA programs continue to proliferate across the United States, the implementation insights provided by this evaluation can serve as a practical resource for federal, state, and local leaders. By learning from the CalKIDS model, future programs-including the new

Trump Account policy-can adopt a more targeted, evidence-informed approach to outreach and engagement, improving participation and maximizing the long-term benefits of early college savings initiatives

8.3 For Future Researchers

As the first process evaluation of the CalKIDS program, this study offers foundational insights that can inform both programmatic refinement and future research. CalKIDS represents a substantial policy investment by the State of California, with the 2021–22 state budget allocating $1.8 billion in federal funds and $107.8 million in state General Fund resources—primarily designated for the school-age population. Given this significant public expenditure, it is likely that one or more rigorous impact evaluations will be undertaken in the coming years to assess the program's effectiveness in advancing educational equity and access to postsecondary education. Notably, the newly established CalKIDS Institute at UCLA has received a $3 million grant to support program enhancement and evaluation activities, signaling sustained institutional interest in this area. This process evaluation may serve as a valuable resource in the design and implementation of future impact evaluations. In light of the findings presented here, several areas merit particular attention:

Examination of Legislative Efforts to Increase Program Awareness

Future evaluations should assess the implementation and effectiveness of recent legislative initiatives aimed at increasing student and family awareness of the CalKIDS program. Specifically, evaluators should investigate the timing and content of CalKIDS-

related messaging within the mandated high school financial literacy curriculum. Key questions include: (1) At what stage in their educational trajectory are students learning about CalKIDS? (2) How is the program presented and portrayed within the financial literacy course? and (3) To what extent does exposure to CalKIDS information influence students' college-going identities or postsecondary expectations? These questions are critical for understanding the program's potential to shape student aspirations and behavior.

Assessment of Fund Disbursement Preferences and Administrative Barriers

Another area for inquiry concerns the process through which students access their CalKIDS funds. Qualitative data from this evaluation suggest that the current disbursement mechanism—requiring coordination with postsecondary institutions—may be perceived as overly burdensome or ill-suited to students' immediate needs. Several participants reported delays or confusion when attempting to access their funds, particularly when funds were needed for time-sensitive purchases such as laptops or course materials. Future evaluations should examine students' preferences for receiving funds and assess whether alternative disbursement models, such as the proposed direct transfers to linked savings accounts discussed earlier, might enhance program accessibility and effectiveness.

Comparative Analysis with Other Child Development Account (CDA) Programs

This evaluation meaningfully contributes to the growing body of literature on Child Development Account (CDA) programs by examining a large-scale initiative—CalKIDS—

that provides financial benefits to students without accompanying wraparound services such as mentoring, academic advising, or structured financial education. In contrast, other CDA programs have incorporated identity-building components, including college and career readiness activities and required financial literacy curricula. This evaluation uniquely focused on the perspectives of participants who have only been exposed to CalKIDS for a few years in late adolescence. As such, this evaluation of CalKIDS offers a valuable case study for understanding the operations of a large-scale, money-only CDA and the perspectives of participants who have been exposed for only a few years.

To situate CalKIDS within the broader landscape of CDA initiatives, future research should conduct comparative analyses of CalKIDS (but with participants exposed to the program for longer) with programs that include more robust student supports and college-going identity development features, such as Oakland Promise, which emphasizes mentorship and academic advising, along with seeded college savings accounts. Comparing CalKIDS to other models can help illuminate how different program designs influence student engagement, perceptions of the program, account utilization, and ultimately, postsecondary outcomes.

Such comparative work has the potential to generate critical insights into which features are most effective in advancing key policy goals, including increased rates of college enrollment, persistence, and completion among underserved populations. Differences in implementation context, target populations, and outreach strategies across programs can also reveal important considerations for replication and scaling.

In sum, this process evaluation provides an empirical foundation for future evaluators and researchers seeking to understand the mechanics and impacts of CDA programs and offers possible design improvements. As interest in asset-based interventions continues to grow at the local, state, and national levels, rigorous comparative research will be essential for guiding program evolution and ensuring that initiatives like CalKIDS realize their potential to promote equitable postsecondary access and economic mobility

9.0 Appendices

Appendix 1: Document Review

List of public documents

- Scholarshare Investment Board- Quarterly Meeting Materials (Agenda, Minutes, and Presentations). CalKIDS has presented at the following meetings. The presentation slides are publicly available online.
    - December 2021, December 2022, December 2023, March 2023
- California Assembly Bill 132 - the enacted legislation containing a description of the CalKIDS program.
- Program Information Guide—This is a guide for potentially eligible populations. It explains the eligibility criteria for both the newborn and school-age programs, how to register and access the CalKIDS account online, and how to link to a

Scholarshare 529. It also provides information on how to request a distribution, including what institutions are eligible and how the funds can be used.

- Annual Reports—Beginning in 2023, the CalKIDS program is required to produce annual reports. The reports contain program expenditure information, account information, participation results, marketing efforts, and recommendations to improve the program. There is currently only one annual report (2023). A 2024 annual report will be released this summer.
- CalKIDS.org is a website that contains summarized basic information about the CalKIDS program, such as eligibility information and how to use the funds.
- Schoalshare529.com is a website containing summarized basic information about the Scholarshare 529 program. In addition to information specific to the Scholarshare program, the website also includes at least one resource that may be of use to CalKIDS recipients—a cost-of-college calculator that helps families develop savings plans and see how the full unsubsidized cost of college varies by institution in California.
- Social Media Accounts held by CalKIDS (e.g. X, Instagram, Threads, and Facebook)

List of non-public documents

- Market Research Survey—Aggregated results of a market research survey conducted by consultants of CalKIDS in 2023.

- Distribution Stories Survey—A survey of students who have taken a distribution from their CalKIDS account conducted by CalKIDS. The data contains de-identified individual-level response data. Their survey asks three questions:
    1) Which institution did you send funds to?
    2) How did you feel when you found out you had money for higher education in a CalKIDS account?
    3) How did you use the money? How did the funds make a difference in supporting your higher education?

Appendix 2: Data Collection Instruments & Recruitment Materials

Interview Instrument for Program Staff

Informed Consent for Research Participation

Thank you so much for agreeing to help me with this research study. As a reminder, the study aims to explore various aspects of the implementation of the school-age portion of the CalKIDS program. This interview will take approximately 30 minutes. I plan to record the interview so that I don't have to take notes while we talk. Your responses will be kept confidential and anonymized, and audio recordings will be securely stored and destroyed after analysis. Identifying information will be destroyed at the end of the study or after the records retention period required by state and/or federal law.

Your participation is voluntary, and you may refuse to answer any questions without penalty. Do you have any questions? Do you consent to participate in this study? Can I start the recorder now?

Questions related to the logic model

- Please identify the purpose of the program—What is the purpose or philosophy of the program? Do you agree with this purpose? What problem or set of problems is it designed to correct?
- Please identify any contextual factors that may affect the program or evaluation. Under what conditions or circumstances do you think the program will work best? Worst?
- Please identify any pertinent legislation that bears importance to this program.
- Is there a gap between the resources necessary to operate the program and the available resources? What is the size and nature of the gap? How will this gap be filled or mitigated? If the gap cannot be filled, which program activities or components are in danger of being cut or curtailed?
- Besides the activities listed in the preliminary logic model (show Figure 1), is there anything else CalKIDS does?
- How long after having received program services is it reasonable to expect to observe the desired outcome? For example, for the students that were in 12th grade and received $500 to $1500 in their accounts when the program first kicked off, how many years do you think it will take before we would observe any changes in outcomes? Do you think the students that were younger when the program first kicked off will be more affected by the program?

Questions related to the research questions

Can you describe the communication strategies you are using to communicate the CalKIDS program?

- Follow-up: Are you using TV to spread awareness about the CalKIDS program? If so, can you provide more details about the TV campaigns?
- Follow-up: Are you using radio to inform the public about CalKIDS? If so, can you share more information about the radio spots or programs?
- Follow-up: How is social media being utilized to promote CalKIDS? Which platforms are you using and what type of content are you sharing?
- Follow-up: Are you partnering with schools to communicate about CalKIDS? If so, how many schools are involved and what activities or events are they conducting to support the program?
- Follow-up: Have you partnered with any other organizations to promote CalKIDS? If so, can you elaborate on which community organizations are involved and what they are doing to promote the program?
- Follow-up: Have you sent letters in the mail to inform about CalKIDS? If so, when were the letters sent and what information was included?
- Follow-up: Have communication efforts strictly been focused on increasing registrations?
- Follow-up: Have your communication efforts been targeted in any way (e.g., in low-income communities)?

Can you describe the challenges related to starting up the program?

- Can you describe the challenges related to starting up the program?
- Let's talk briefly about eligibility determination. In the past, you have told me that "Eligibility is determined based on statutory requirements around the Local Control Funding Formula and that SIB receives data from the California Department of Education."
- What challenges did you experience when navigating this process at the program startup?
- Shortly after CalKIDS started, California switched to free lunch for all students. How did that affect the population of eligible students for your program?
- How often and when do you receive updates about eligibility?
- What issues did you experience with creating a registration system?

Can you describe the challenges related to students' ability to access and use CalKIDS funds to pursue postsecondary education?

- Follow-up: What logistical challenges have been reported or noticed regarding students accessing or using CalKIDS funds? Can you share detailed instances?
- Follow-up: What informational challenges do students face in accessing or using CalKIDS funds? Can you give specific examples?
- Follow-up: What institutional challenges have students reported when trying to gain eligibility, access, or use CalKIDS funds? Can you describe these challenges?

Student Interview Instruments

Informed Consent for Research Participation

Thank you so much for agreeing to help me with this research study. As a reminder, the study aims to explore various aspects of the implementation of the CalKIDS program. This interview will take approximately 20 minutes. I plan to record the interview so that I don't have to take notes while we talk. Your responses will be kept confidential and anonymized, and audio recordings will be securely stored and destroyed after analysis. Identifying information will be destroyed at the end of the study or after the records retention period required by state and/or federal law.

Your participation is voluntary, and you may refuse to answer any questions without penalty. Do you have any questions? Do you consent to participate in this study? Can I start the recorder now?

Interview Instrument Used to Develop the Survey used in this Analysis

1. Can you describe what you have been doing related to college since graduating from high-school? (major, program, degree, what they want to do)
2. Can you describe any plans you have to pursue (or continue) college or career training in the future, if any?
3. Why do you want to (or not want to) pursue college or career training?
4. How has the CalKIDS program influenced your plans?
5. Can you describe what you believe the purpose of the CalKIDS program is?
6. Can you share your experiences with registered your CalKIDS account?

7. Have you attempted to use your CalKIDS funds?

   If no

   a. Why have you not attempted to use your CalKIDS funds?

   b. What are you planning to use the CalKIDS for?

   c. When are you planning to use your funds?

   If yes

   d. Can you explain the process you went through to access the funds?

   e. Did you encounter any difficulties with accessing your funds? If so, what were they?

   f. For what purposes did you use the funds?

8. What features of college or career training schools are most important to you?

   a. Follow-up: “Can you explain that more?”

The next few questions focus on affordability

9. When you were in high school, how affordable did you think college or career training was?
10. Did you know of any policies or programs that could help you pay for college?
11. How did you find out about these policies? When? To what extent did each of these impact your perceived ability to pay?
12. How affordable do you think college or career training is now?
13. How has the CalKIDS program has affected your ability to pay for college or career training?

14. What types of college and career training programs do you think you can use CalKIDS for?
15. Do you know how you can spend the funds?
16. How aware are you of the amount in your CalKIDS account?
17. How has the CalKIDS program has affected financial preparations, including your search for financial aid?
18. Are you currently enrolled?

If not enrolled:

19. After considering financial aid and grants, how much do you think it would cost your family to pay for one year's tuition at the following types of college and career training schools?
    a. A public community college in California {provide ranges}
    b. A public 4-year institution in California (for example, University of California or California State University) {provide ranges}
    c. Private vocational or technical school in California {provide ranges}
    d. Private 4-year college in California {provide ranges}
    e. A community college, 4-year institution or vocational/technical school NOT in California {provide ranges}
    f. An online program at an institution NOT on this list {provide ranges}

If enrolled

20. Prior to enrolling, who did you trust to give you advice about college? Prompts: CalKIDS, other gov agencies, colleges, teachers/school counselors, parents, friends parents, other
21. Follow-up for each person they mention: What type of advice did this person give you?
22. When deciding about college, were student loans a factor?
    a. Follow-up: if you had to take on debt, would that have affected your decision about going to college?
23. Where are you enrolled?
24. How much does it cost per year? How does that differ from what you thought it would cost when you were in high school and making decisions about college-going, if at all?
25. Permission to Quote
    a. Is it okay to use anonymized quotes from this interview in the public report about this program?
    b. Is it okay to share anonymized quotes from this interview with the CalKIDS program so they can use them for marketing or other purposes?

Student Survey Instrument

Screeners

1. How old are you?
    - Under 18
    - 18–27
    - Over 27
2. Are you in high school?

- Yes
- No

Awareness, Registration, and Use

1. How did you learn about CalKIDS? (Select all that apply.)
    - Teacher, counselor, or other adult at school
    - Parent
    - Letter in the mail or email
    - Other (please describe)
2. How do you think CalKIDS helps low-income students? (Select all that apply.)
    - No impact — I don't think the program helps low-income students
    - Encourages them to see themselves as future college students
    - Gives them hope that they can afford college
    - Helps them pay for college
    - Encourages them and their families to save for college
    - Other
    - Unsure
3. How easy or difficult was it to register for your CalKIDS account?
    - Very easy
    - Easy
    - Difficult
    - Very difficult

4. When you initially registered your CalKIDS account, did you experience any of the following issues? (Select all that apply.)
    - Technical issues with website
    - Problems finding my Statewide Student Identifier (SSID)
    - Concern about the program being fraudulent
    - Other issue (please explain)
    - I didn't experience any issues
5. (If concerned about fraud) What convinced you that the program was not fraudulent?
    - Open response
6. How did you find your SSID?
    - Open response
7. Have you taken money out of your CalKIDS account?
    - Yes
    - No
    - Unsure (please explain)
8. (If **No/Unsure**) Why have you not taken money out of your CalKIDS account? (Select all that apply.)
    - The process for withdrawing funds seems too complicated to bother with
    - I am saving it for later
    - I experienced an issue or problem with withdrawing the funds (please explain)

- I haven't needed the money yet
- Other (please explain)

9. What are you planning to use your CalKIDS funds for? (Select all that apply.)
    - Tuition
    - Books
    - Computer
    - Emergency savings
    - Other
    - Unsure
    - I don't have a plan for when to use the money
10. When do you plan to use your CalKIDS funds? (Select all that apply.)
    - When I need the money
    - When I transfer to a CSU, UC, or other school
    - When I start college
    - Other (please describe)
11. (If **Yes** to withdrawing) What did you use your CalKIDS funds for?
    - Tuition
    - Books
    - Computer
    - Other (please describe)
12. (If **Yes** to withdrawing) How easy or difficult was it to take money out of your CalKIDS account?

- Very easy
- Easy
- Difficult
- Very difficult

13. (If **Difficult**) Please describe the difficulties you encountered with taking money out of your CalKIDS account.
    - Open response
14. Not including CalKIDS funds, do you have any money saved for college?
    - Yes
    - No
    - Unsure
15. Are you currently taking college classes?
    - Yes
    - No
    - Unsure
16. Have you taken any college classes since completing high school?
    - Yes
    - No
    - Unsure

If Not Currently Enrolled

("College" means any college, university, or vocational school.)

1. How likely are you to ever enroll in college?
    - Extremely unlikely to ever enroll
    - Will probably not ever enroll
    - 50/50 chance
    - Will probably enroll
    - Extremely likely to enroll
    - Decline to answer
2. How much do you agree or disagree with the following statements?
    - My family can afford for me to attend college
    - I can figure out the financial aid process
    - I know how to compare colleges
    - I can balance family responsibilities with the demands of college
    - College is worth the time, money, and effort
    - I know what I want to study in college
    - I see myself graduating from college one day

      Response scale: Strongly Agree / Somewhat Agree / Neutral / Somewhat Disagree / Strongly Disagree
3. If you were to enroll in college, what type of college are you most likely to enroll in?
    - 4-year University of California (UC) school
    - 4-year California State University (CSU) school
    - California community college
    - Private 4-year college in California

- Private vocational or technical school in California
- An online program at an institution not on this list
- Other (please describe)
- Decline to answer

4. If there were no barriers, how far in school would you want to go?
    - Complete Career education (~1 year)
    - Complete an Associate's degree (~2 years)
    - Complete a Bachelor's degree (~4 years) or higher
    - Other (please describe)
    - Decline to answer
5. As things stand now, how far in school do you think you will actually get?
    - Complete Career education (~1 year)
    - Complete an Associate's degree (~2 years)
    - Complete a Bachelor's degree (~4 years) or higher
    - Other (please describe)
    - Decline to answer
6. If you decide to pursue college, what **two** college features will be most important? (Select two.)
    - Academic program offerings
    - Campus culture
    - Affordability
    - Location

- Other (please describe)
- Decline to answer

7. Other than money, how can the CalKIDS program support your education goals? (Select all that apply.)
    - Send email reminders about FAFSA/CADAA deadlines
    - Provide assistance with completing the FAFSA/CADAA
    - Provide information about other scholarships or living-expense supports
    - Provide connections to career coaches or mentors
    - Provide information about which colleges tend to be affordable for low-income students
    - Other (please describe)
    - Nothing

If Currently Enrolled

("College" means any college, university, or vocational school.)

1. Which college are you currently enrolled in, or where were you last enrolled?
    - Open response
2. If there were no barriers, how far in school would you want to go?
    - Complete Career education (~1 year)
    - Complete an Associate's degree (~2 years)
    - Complete a Bachelor's degree (~4 years) or higher
    - Other (please describe)

- Decline to answer

3. As things stand now, how far in school do you think you will actually get?
    - Complete Career education (~1 year)
    - Complete an Associate's degree (~2 years)
    - Complete a Bachelor's degree (~4 years) or higher
    - Other (please describe)
    - Decline to answer
4. What were the **top two** most important factors when choosing a college? (Select two.)
    - Affordability
    - Academic program offerings
    - Location
    - Campus culture
    - Other (please describe)
    - Decline to answer
5. Have you **ever** received any of the following sources of financial aid? (Select all that apply.)
    - Pell Grant
    - CalGrant
    - Subsidized federal student loans
    - Financial aid provided by your college
    - Work-Study

6. How helpful do you believe each of the following sources will be in covering the total cost of completing your education? **Response scale:** Not helpful / A little helpful / Helpful / Very helpful
    - CalKIDS
    - Subsidized federal student loans
    - Pell Grant
    - Financial aid provided by your college
    - Money from your family
    - CalGrant
    - Work-Study
    - Other (please describe)
7. Other than money, how can the CalKIDS program support your education goals? (Select all that apply.)
    - Provide information about other scholarships or living-expense supports available to college students
    - Provide information about which colleges tend to be affordable for low-income students
    - Provide connections to career coaches or mentors
    - Provide assistance with completing the FAFSA/CADAA
    - Send email reminders about FAFSA/CADAA deadlines
    - Other (please describe)
    - Nothing

FAFSA, Background, and Demographics

1. Did your high school encourage or require you to complete the FAFSA?
    - Yes, FAFSA completion was required
    - Yes, FAFSA completion was encouraged
    - No
    - Unsure
2. Do you have access to a car that you can use regularly?
    - Yes
    - No
    - Unsure
3. Are you currently financially supporting anyone else?
    - Yes
    - No
4. Do you have a high school diploma or GED?
    - Yes
    - No
    - Unsure
5. What year did you graduate high school or receive your GED?
    - 2019 / 2020 / 2021 / 2022 / 2023 / 2024
6. Do you identify as Hispanic or Latino?
    - Yes
    - No

- Decline to answer

7. What racial group(s) do you identify with? (Select all that apply.)
    - Black
    - White
    - Native American
    - Pacific Islander
    - Asian
    - Other (describe)
    - Decline to answer
8. What gender category do you most identify with?
    - Woman
    - Man
    - Non-binary or nonconforming
    - Decline to answer
9. Last week, did you do any work for pay or for profit?
    - Yes
    - No
    - Unsure
    - Decline to answer
10. What is the largest emergency expense you could handle right now using only savings?
    - Under $100

- $100–$499
- $400–$999
- $1,000–$1,999
- $2,000 or more
- Decline to answer

11. What is your ZIP code?
    - Open response
12. Please share any other thoughts related to your college decision process.
    - Open response
13. Raffle contact (optional; used only for research)
    - Email:
    - Phone:
    - Name:
14. Do you want to earn $20 by talking to an external researcher from the University of Washington about your experiences with the CalKIDS program?
    - Yes / No
15. Is it okay to reach out to you in a few months to ask a few follow-up questions?
    - Yes, prefer email
    - Yes, prefer text
    - No
16. Please provide your contact information so I can follow up (I will identify myself as "Ellie the researcher").

- Email:
- Phone:
- Nam

17. Do you have 1 minute to answer a few more questions?
    - Yes / No

If 'Yes' to Additional Questions

1. Would you be interested in becoming a mentor to younger CalKIDS recipients?
    - Yes / No / Maybe
2. When did you realize you would be able to pay for college?
    - In middle school
    - In high school, **before** completing the FAFSA
    - In high school, **after** completing the FAFSA
    - After high-school graduation
    - Other (please explain)
3. Who helped you understand how to pay for college? (Select all that apply.)
    - Parents
    - Teacher, counselor, or other adult at school
    - Sibling
    - Friends or friends' parents
    - Colleges
    - The internet
    - Other (please describe)

4. Open responses about help sources (as applicable):
    - How did your parents help you understand how to pay for college?
    - How did your friends or friends' parents help you?
    - How did colleges help you?
    - How did your sibling(s) help you?
    - How did you use the internet (e.g., what websites) to figure out how to pay for college?
    - How did your teacher, counselor, or other adult at school help you?
5. How certain are you that you will have enough financial support to complete the credential or degree you are currently pursuing?
    - Very certain
    - Somewhat certain
    - Very uncertain
6. Besides money, please describe any other factors that might prevent you from completing the credential or degree you are currently pursuing.
    - Open response
7. Out-of-pocket cost (net cost) items: **Response options for each:**
    - $0
    - $1 to $1,000
    - $1,000 to $5,500
    - $5,500 to $15,000
    - More than $15,000

- I had/have no idea (please explain)

a. **When you were in high school**, how much out-of-pocket did you think college would cost at a minimum each academic year?

b. **Now**, how much out-of-pocket do you think college will cost at a minimum each academic year?

c. **Now that you are enrolled**, how much out-of-pocket do you expect to pay each academic year?

Interview Instrument With Students Who Completed the Survey

To get started, can you tell me about how you learned about CalKIDS and why you decided to claim your account?

a. You mentioned [__] in the survey. Did you hear about it any other way ?

If enrolled:

I understand from your survey result that you are [enrolled at _college /not enrolled]

1. When you chose that college, did proximity to your family matter at all? [why/ why not]
    a. Are you living at parents home?
2. Can you tell me a little about what you are doing at college- do you have a major? do you have a career in mind?

a. How did CalKIDS influence your college plans, if at all?

If not enrolled:

3. Can you describe any plans you have to pursue college or career training in the future, if any?
4. Why do you want to (or not want to) pursue college or career training?
    a. How has the CalKIDS program influenced your plans?

Issues & use of funds

5. If a friend asked you about CalKIDS how would you describe the program to them?
    a. Follow up: Had you heard the term child savings account before learning about CalKIDS?

If survey indicates they had an issue:

6. On the survey, you said you experienced [__] issues when you went to register. Can you explain that a little?

If the survey indicates did NOT use CalKIDS funds yet or unsure:

7. In the survey, you said that you haven't used your CalKIDS funds because [__] and that you plan to use it for [__]. Can you explain that in detail. Why is that your plan?

If survey indicates USED CalKIDS Funds

8. On the survey you indicated you used it for __. When did you withdraw these funds? Can you explain your decisions to use it for that purpose at that time?

The next few questions focus on affordability

9. I understand your current college costs are [_] per year, is that right?
    a) Does that differ from what you thought it would cost when you were in high school and making decisions about college-going?
    b) How difficult is it for you to afford college? How are you getting by financially?
    c) You indicated you are [__] certain that you will have enough financial support to complete the degree you are pursuing. Can you explain that more?
        a. Follow-up: Are you unsure of your financial aid amount? The cost of your next college?
    d) From your survey, I also understand that you face other challenges to completing school, including [___]. If you feel comfortable talking about it, can you explain that.

10. How has the CalKIDS program affected your ability to pay for college or career training?
11. Do you know the rules that govern the program?
    a. What types of college and career training programs do you think you can use CalKIDS for?
    b. Do you know the types of things you can spend the funds on?

c. How aware are you of the amount in your CalKIDS account?

d. Are you aware of the process?

12. After you learned about the CalKIDS program did it affect your financial preparations, such as your search for financial aid?

If enrolled

13.When deciding about college, were student loans a factor?

a. if you had to take on debt, would that have affected your decision about going to college?

Permission to Quote

14. Is it okay to use anonymized quotes from this interview in the public report about this program?

15. Is it okay to share anonymized quotes from this interview with the CalKIDS program so they can use them for marketing or other purposes?

Recruitment Materials

Recruitment Email sent by CalKIDS staff to CalKIDS Participants

Subject line: CalKIDS Wants Your Input for a Chance at a $300 Prize

Dear [Participant's Name],

We, the ScholarShare Investment Board, are reaching out on behalf of PhD Student Ellie Terry to invite you to take an independent survey regarding CalKIDS. Your input will be beneficial to the millions of students who will follow in your footsteps.

After completing the short **5-minute survey** you will be entered into a raffle for a **$300 gift card**.

Please **click the following link** to take the survey now:

https://uwashington.qualtrics.com/jfe/form/SV_6Gaw94wXfBNYZvM?UniqueIDforUW=000

By taking the survey, you also can earn a guaranteed $20 by participating in a short interview to be scheduled at a later date.

There will be no reminders **so take the survey today!**

We are sharing this information on behalf of the researcher. The ScholarShare Investment Board, as administrators of the CalKIDS Program, are not responsible for any compensation provided.

The survey is voluntary and in no way impacts your CalKIDS Scholarship. Your responses will be kept strictly confidential and used solely for research purposes, unless you specify otherwise. With your permission, we may also use your insights for marketing purposes.

Note for parents: This survey is for CalKIDS Scholarship recipients. If you are the parent or guardian of a recipient, please forward this email to your child.

We look forward to hearing from you and value your contribution to this important research. If you have any questions, please feel free to reach out to PhD Student Ellie Terry at Elliet85@uw.edu.

Thank You,

ScholarShare Investment Board

Email to CalKIDS staff

Thank you for agreeing to help me with my dissertation research. I am reaching out to you to set up a 30-minute meeting to discuss the CalKIDS program. Here are some suggested times:

[insert times]

Chapter 3: Early Impacts of California's FAFSA Completion Policy: Can a FAFSA Completion Policy without a High School Graduation Requirement Increase Financial Aid Awards or College Enrollment Outcomes?

1.0 Introduction and Motivation

The Free Application for Federal Student Aid (FAFSA) serves as the gateway to federal, state, and institutional financial aid for students. Due to the complexity of aid programs and eligibility requirements, prospective students typically do not receive detailed financial aid offers that clearly outline the cost of specific colleges, tailored to their individual financial situation, until they complete the FAFSA and it is processed.[49] Without such individualized information, students must rely on incomplete information about college affordability. When students lack clarity or are misinformed about their ability to afford college, they may decide not to pursue higher education (Goldrick-Rab & Kolbe, 2016). The availability of aid and cost considerations are especially important for college-qualified low-income high school graduates (Hahn & Price, 2008). Thus, filling out the FAFSA is one of the most important steps students—especially those from low-income households—take in their transition from secondary to postsecondary school (Klasik, 2012).

Despite the importance of the FAFSA, many students fail to complete the form, thereby forfeiting potential financial aid. For example, in the 2011-2012 school year, an estimated

[49] When students complete the FAFSA, they list which colleges they are interested in attending. After their FAFSA is processed, they receive institutional aid information (conditional on acceptance), along with information about federal and state aid.

30 percent of students failed to file a FAFSA, one-third of whom would have qualified for a Pell Grant (Page & Scott-Clayton, 2016). Further, Kofoed (2017) estimated that a lack of FAFSA completion causes college students to forfeit over $5 billion per year in financial aid.

To address this problem, 15 states have enacted FAFSA completion policies that require or encourage all high school seniors to complete the FAFSA or a comparable form for state aid only. State aid only forms are designed for students who are not eligible for federal financial aid but may qualify for state or institutional aid, such as undocumented students or those from mixed-immigration-status families. In California, the state financial aid form is called the California Dream Act Application (CADAA). Eight states—including California—have implemented their policies, providing a unique opportunity to evaluate their early effects. Existing studies of Louisiana and Texas have found that such policies increase federal and state financial aid applications and college enrollment (Deneault, 2023; S. W. Kim, 2025).

California's 2022–23 FAFSA completion policy offers a distinct test case from the FAFSA completion policies adopted in Louisiana and Texas, as it does not require students to complete the form to graduate from high school. Instead, it relies on school counselors to provide one-on-one assistance and uses administrative tracking to monitor completion. This model avoids the political challenges associated with a graduation requirement but raises questions about implementation capacity, cost, and effectiveness. If California's approach succeeds, it could inform states seeking to expand FAFSA completion without imposing high school graduation mandates on students, which —as discussed in the next section —have faced opposition from parents.

To evaluate the effects of California's policy, this study asks two research questions: (1) Did the policy impact FAFSA/CADAA submission rates, Cal Grant award rates, and college-going rates? and (2) Did effects vary by school-level counselor capacity or socioeconomic composition? To answer these research questions, I construct a longitudinal dataset of nearly all California public high schools from the 2017–2018 through the 2023–2024 academic years and apply several quasi-experimental methods. Specifically, I use difference-in-differences and instrumental variable designs to identify the causal impact of the policy and to test whether increases in FAFSA completion translate into higher college enrollment rates.

Following Kim (2025) and Denault (2023), my empirical strategy exploits pre-policy variation in high schools' baseline FAFSA/CADAA submission rates. Intuitively, schools with lower baseline submission rates can experience a greater impact from the policy, because they had more room for improvement and thus higher "treatment intensity." To operationalize this variation, I classify schools into treatment deciles based on their pre-policy FAFSA submission rates and estimate difference-in-differences models comparing each decile to the highest decile, which serves as a quasi-control group with near-universal FAFSA completion prior to the policy. In Appendix 1, I also present estimates using a continuous treatment measure. In addition, I examine whether the effects vary by high school counselor capacity and socioeconomic composition, given that California's implementation model relies heavily on counselor outreach and may produce heterogeneous effects across school contexts.

This paper provides the first empirical evaluation of California's FAFSA completion policy, extending the evidence base on how state-level initiatives can promote college access. The study offers new insights into how FAFSA completion laws can affect student outcomes without making FAFSA completion a high school graduation requirement. The results are useful for policymakers contemplating similar laws in their own states and contribute to several strands of academic literature. The findings add to the body of research on initiatives that aim to increase FAFSA completion (e.g., Kim 2025; Deneault 2023; Bettinger et al. 2012; Castleman & Page 2014b; Bird et al. 2021) and the broader college-access literature that emphasizes the factors that shape postsecondary decision-making (Perna 2006; Dynarski & Scott-Clayton 2006). Overall, the results show that California's policy produced sizable increases in FAFSA/CADAA submission rates—about 7 percentage points on average for schools in the bottom nine baseline deciles—and modest gains in college enrollment of roughly 1 percentage point, relative to top-decile (least-treated) schools. The policy also raised Cal Grant submission rates, with effects of about 5.5 percentage points on average among non-alternative schools in the bottom nine baseline deciles, where the parallel-trends assumptions are best supported. These results demonstrate how statewide, school-based policies can effectively promote college access.

2.0 Background

2.1 Evidence from Texas and Louisiana

Two recent studies have examined the empirical effects of statewide FAFSA completion policies in Louisiana and Texas, providing early evidence on how these policies shape

financial aid uptake and enrollment. Deneault (2023) finds strong positive effects of Louisiana's policy on FAFSA completion, state merit-based aid applications, and college enrollment. In partial contrast, Kim (2025) documents that Texas's policy meaningfully increased FAFSA completion but produced more limited effects on college enrollment. Unlike Deneault, Kim does not investigate outcomes related to merit-based aid.

Both studies use school-level data and a treatment intensity difference-in-differences (DiD) research design that leverages variation in baseline FAFSA filing rates across public schools to estimate the law's effects. In the first year following the Louisiana policy, Deneault (2023) finds the policy increased FAFSA completion by 19 percentage points, with the largest gains in schools serving low-income students. Importantly, she also finds a 1–2 percentage point increase in immediate college enrollment (in the fall after high school graduation) and, using an instrumental variables approach, estimates that a 10 percentage point rise in FAFSA completion rates caused a 3 percentage point increase in college enrollment rates. She also found that the policy increased applications for Louisiana's merit-based state financial aid program. Importantly, the study finds no evidence of harm to graduation rates, alleviating parental concerns that the policy might prevent students from completing high school due to the graduation mandate.

Kim (2025) evaluates the FAFSA completion policy in Texas introduced for the high school graduating class of 2022. He employs two empirical strategies: a difference-in-differences model comparing public and private schools, and a treatment-intensity design similar to Denault (2023). His findings show that the law increased FAFSA completion by 6.3 percentage points in public high schools. Among public schools, those in the lowest

baseline decile of pre-policy FAFSA completion (the most intensely treated) experienced increases of about 7 percentage points, while schools with lower treatment intensity saw smaller gains. Although the law significantly increased FAFSA completion overall, Kim finds no overall statewide effect on college enrollment rates. However, in schools with the lowest pre-policy FAFSA submission rates, the college enrollment rate rose by roughly 2 percentage points, suggesting that the policy's enrollment effects were concentrated in historically under-filing schools.

Taken together, these studies suggest that *mandatory* FAFSA completion policies can substantially increase FAFSA completion and, in some cases, translate into higher college enrollment. Yet the size and scope of the effects differ between Louisiana and Texas. One possible explanation for these differences is variation in policy design, discussed next. This raises an important question for evaluating California's FAFSA completion policy, which adopts a different approach from those of both Louisiana and Texas.

2.2 Comparing Policy Designs

California's statewide FAFSA completion policy shares certain features with both Louisiana and Texas, but also departs from them in important ways. In all three states, school districts are required to report to a state agency the FAFSA (and/or state financial aid form) completion status for every high school senior, and this information is made available to schools. Each state encourages friendly competition by publicly ranking high schools on completion metrics. Policies diverge on whether completion is tied to high school graduation, and on whether and how schools support students in completing the form.

Both Louisiana and Texas made FAFSA completion—or submission of a state aid form or opt-out form[50]—a condition of high school graduation. In contrast, the FAFSA completion law in California does not make it a graduation requirement. Louisiana's graduation requirement will also be repealed beginning with the class of 2025, reflecting political pushback explained in the 'political considerations' section.

The FAFSA policy designs in all three states also differ in how schools support students in completing the FAFSA. The California law emphasizes direct assistance: "The Legislature intends that high school pupils have the support and assistance services to help pupils" (California Education Code, 2022). The law also outlines various ways that school districts (LEAs) should assist high school students and their parents in completing the form. For example, the California law directs school counselors to meet with every high school senior to help them complete federal and state aid forms. Further, a law enacted in the prior year (California Education Code, 2021) directed local educational agencies to provide students and families with *information* on *how* to complete the forms. Similarly, Louisiana requires local education agencies (LEA) to provide information on *why* they should complete the form and to *assist* with FAFSA submission (Louisiana Administrative Code, 2022). For example, Louisiana LEAs are directed to provide information about federal and state financial aid programs. Texas, in contrast, requires schools to provide "detailed instructions for the completion and submission" of the FAFSA or Texas Application for State

[50] The opt-out form allows students or their parents to decline participation in the FAFSA completion requirement.

Financial Aid (TASFA) forms, including information about resources available to support completion and submission. However, Texas law does not require schools to assist with form completion directly (Texas Education Code, 2019). Further, in contrast to the law in Louisiana, Texas does not require LEAs to provide information about federal and state financial aid programs (Kim, 2025).

2.3 Theoretical Rationale of Policy

These various policy designs aim to address the specific reasons students do not fill out the FAFSA, a topic widely examined in the college-access literature. Prior research has identified both informational and psychological barriers that deter completion, including the belief that one is ineligible for financial aid, concerns about incurring debt, and difficulty completing the form[51] (Chen et al., 2010; Davidson, 2013; Kantrowitz, 2011). In particular, students whose parents do not hold a college degree are significantly more likely to report that they did not complete a FAFSA because they lack information on how to fill out the form (Bahr et al., 2018). Using data from the federal High School Longitudinal Survey, Bahr et al. (2018) found that 33.9% of students in the lowest fifth of socioeconomic status (SES) did not complete the FAFSA by the fall of the 11th grade because they did not have enough information on how to complete it, compared to 11.1 % of students in the highest- fifth SES category. This evidence supports theoretical arguments that informational constraints and form complexity contribute to unequal access to financial

[51] Prior to the recent change in the FAFSA form, it featured over 100 questions, many of which were complex questions similar those on tax forms (Education Strategy Group, 2020).

aid (Dynarski & Scott-Clayton, 2006; S. Dynarski et al., 2013). FAFSA completion policies can potentially address all of these issues, as they should encourage students to fill out the FAFSA, even if they think they are ineligible or are discouraged by its complexity.

Prior interventions to increase FAFSA completion suggest that the type of support provided matters (Herbaut & Geven, 2020). Interventions that provide general information about financial aid – such as providing information about FAFSA deadlines or highlighting the potential value of financial aid have been ineffective at increasing receipt of financial aid or college enrollment (e.g., Bettinger et al., 2012; Bird et al., 2021, 2021; Gurantz et al., 2020; Page et al., 2023). For example, Bird et al. (2021) conducted a large-scale experiment that delivered behaviorally informed messages—such as emphasizing the financial benefits of completing the FAFSA—to college-intending high school seniors but found no meaningful impact on FAFSA completion or subsequent college enrollment overall. However, other researchers have found that information nudges can be successful when sent from a source with which the student is familiar (Avery et al., 2020; Bergman et al., 2019; Carrell & Sacerdote, 2017; B. L. Castleman & Page, 2014b, 2014a; Oreopoulos & Ford, 2019). For example, text-based nudges, in partnership with institutions that have established relationships with students such as students' school counselors, have been found to effectively increase financial aid receipt or college enrollment (Avery et al., 2020; B. L. Castleman & Page, 2014b).

Importantly, research suggests that interventions that provide personal assistance with completing financial aid forms may be a more critical policy element than providing information on why or how to complete the form. Researchers have successfully increased

FAFSA submission rates by providing intensive counseling interventions (Avery, 2010; Bos et al., 2012; Carrell & Sacerdote, 2017; B. L. Castleman & Page, 2014b; Sherwin, 2012), and direct assistance with completing the FAFSA (Bettinger et al., 2012; Cannon & Goldrick-Rab, 2016). For example, Bettinger et al. (2012) found that low-income high school seniors were significantly more likely to receive aid, enroll in, and persist in college when tax advisors assisted them with the FAFSA. Likewise, Bettinger et al. (2012, p. 3) found that "individuals who received assistance with the FAFSA and information about aid were substantially more likely to submit the aid application." These methods tackle the complexity of filling out the form issue, which many scholars have noted is a barrier to receiving financial aid and enrollment (S. Dynarski et al., 2013; S. M. Dynarski & Scott-Clayton, 2006; Narayan, 2020; Taylor & Bicak, 2020).[52]

2.4 Potential Implementation Challenges

Because California's FAFSA encouragement policy relies heavily on one-on-one assistance from school counselors to complete the FAFSA—without specifically making it a graduation requirement or providing additional funding to schools—a key question is whether school counselors have the resources, capacity, and training necessary to implement the law effectively. Counselors' multifaceted roles—as college advisors, compliance officers, academic support staff, and social-emotional resources (Blake, 2020; Sattin-Bajaj et al., 2018)—may constrain their ability to focus on FAFSA completion. Many

[52] The FAFSA was substantially redesigned for the 2024–25 application cycle under the FAFSA Simplification Act of 2020 to reduce the form's complexity and administrative burden on applicants.

may already be operating at or beyond capacity before the law's implementation. While California has significantly increased its counselor staffing ratios in recent decades (Brown & Knight, 2024), the state still falls well short of the nationally recommended standard. In California, the student-to-counselor ratio averaged 464:1 in 2022–23, nearly double the profession's recommended standard of 250:1 (American School Counselor Association, 2023; Kemp, 2024). Further, prior research suggests counselors may need targeted training to guide families through complex financial aid forms (Bettinger et al., 2012; McDonough & Calderone, 2006). Thus, it is unclear whether counselors alone will have the time and expertise to provide the individualized FAFSA support envisioned by the law.

However, in California, additional organizations also help support FAFSA completion through state-led programs administered by the California Student Aid Commission (CSAC)[53], which may enable effective implementation of the policy even when school counselors face heavy caseloads, competing demands, or lack specialized training. For example, one of CSAC's goals in their 2025 strategic plan is to ensure 80% of high school seniors complete the FAFSA/CADAA. Two major initiatives run by CSAC—Cash for College and the California Student Opportunity and Access Program (Cal-SOAP)—provide direct assistance to students and families navigating federal and state financial aid applications. Cash for College is a statewide CSAC initiative that organizes and funds hundreds of free workshops each year to help students and parents complete the FAFSA or California

[53] The California Student Aid Commission currently serves over 400,000 students and administers the state's $3 billion portfolio of student financial aid programs and services.

Dream Act Application (CADAA).[54] Local high schools, colleges, and community organizations host these events, while CSAC supplies training, materials, and infrastructure. Cal-SOAP brings together K–12 school districts, community colleges, California State University (CSU) and University of California (UC) campuses, and community-based organizations to deliver college readiness and financial aid advising. These state-backed programs supplement school-based counseling capacity by providing both information and hands-on support with completing financial aid forms. Ultimately, the success of California's version of a statewide FAFSA completion policy may hinge on the combined effect of local counseling resources and these external supports, as well as whether staff are given adequate time and training to fulfill the law's one-on-one assistance expectations.

2.5 Political considerations

California's decision to implement a FAFSA completion policy that does not make FAFSA completion a high school graduation requirement reflects a "softer" policy design that may be more politically feasible. Such an approach can appeal to parents who worry that a student mandate could reduce the chance of students graduating by adding extra hurdles

[54] In 2021-22, Cash for College provided an estimated 900 workshops across the state. The state provides $328,000 ongoing from the General Fund for the program. These funds are allocated to the seven regional coordinating organizations (typically nonprofit entities) that help administer the program, supporting the high schools and colleges that host the workshops.(Legislative Analyst's Office, 2022)

or requiring families to disclose sensitive financial or immigration information to the government.[55]

At the same time, this softer approach creates its own political and practical challenges. This type of policy may also generate pushback from schools and districts, school counselors and staff who already manage heavy caseloads and competing responsibilities, potentially limiting the full implementation of the policy.

Experiences in other states highlight these tensions. For example, in Nebraska the governor vetoed a proposed FAFSA completion law, citing concerns about adding unnecessary hurdles to graduation and requiring families to disclose personal financial data (Ricketts, 2020). Similarly, in Louisiana—despite evidence that the state's original mandatory FAFSA completion law increased FAFSA completion and did not reduce high school graduation rates (Deneault, 2023)—the Louisiana Department of Education recently amended its policy to remove the graduation requirement beginning with the 2024–25 school year (Louisiana Department of Education, 2024). These cases illustrate the political fragility of mandatory designs, even when evidence supports their effectiveness.

[55] For example, a 2020 report found that many undocumented parents filling out the FAFSA worry about identifying themselves to the government (Education Strategy Group, 2020). Such concerns have likely been amplified in recent years given recent federal data-sharing agreements that have given Immigration and Customs Enforcement access to personal data of around 79 million Medicaid enrollees (Kindy & Seitz, 2025).

3.0 This Study

While prior research shows that FAFSA completion policies tied to graduation requirements can increase FAFSA completion and, in some cases, college enrollment, there is limited evidence on whether alternative designs that don't tie completing the form to high school graduation can achieve similar results. While California's softer approach avoids some of the political barriers faced in other states, it may also be less effective as it lacks a high school graduation requirement. At the same time, California's law could still produce meaningful increases in FAFSA completion if schools and external organizations—such as state-led programs—effectively provide the intended one-on-one assistance. As discussed earlier, personalized support is among the most effective strategies for increasing FAFSA completion, according to experimental evidence. California's policy, therefore, represents a critical test case. If this softer design proves effective, it could help guide states such as Maryland, Colorado, Indiana, and Louisiana (after its policy revision) that are pursuing or considering similar non-compulsory approaches.

This study contributes to the literature by estimating the causal effect of California's softer version of a FAFSA completion policy, which took effect in the 2022–23 school year. Specifically, I examine the policy's impact on four outcomes:

(1) FAFSA and California Dream Act Application (CADAA) submission rates, to assess whether the policy increased these financial aid applications.

(2) Cal Grant application rates and (3) Cal Grant award rates, to assess whether the policy translated into higher state financial aid applications and receipt.

(4) College-going rates, to determine whether any changes in the FAFSA/CADAA submissions induced by the policy translated into higher enrollment.

In addition, I assess whether the policy's effects are heterogeneous by school-level counselor capacity and by the share of students from low-income backgrounds, providing evidence on whether local resources and school context condition implementation. By using multiple difference-in-differences strategies, as well as an instrumental- variables design that leverages the policy's intensity-driven variation, this study also isolates the causal effect of the policy. Taken together, these analyses not only provide the first evidence on the impacts of California's softer FAFSA completion model but also inform ongoing national debates over whether states can raise FAFSA completion without imposing additional graduation requirements.

4.0 Data and Methods

4.1 Data and Measures

The data for this analysis is a balanced longitudinal panel of California public high schools, which I construct by merging several datasets from the California Student Aid Commission (CSAC) and the California Department of Education (CDE). I use data from CSAC to obtain school-level 12th-grade enrollment, FAFSA/CADAA Applications, Cal Grant Applications, and Cal Grant Awards. From CDE, I obtain school-level demographic characteristics, staff counts at each school, and the college-going rate from each high school. I restricted the sample in the following ways: First, I drop schools with missing FAFSA/CADAA and Cal Grant data (3,918 observations). The schools without FAFSA/CADAA and Cal Grant data

were notably different across several demographic dimensions. For example, those without this data had a larger share of students with disabilities (42% versus 14% in the matched dataset). Then, I restrict the data to only schools with demographic information and FAFSA/CADAA data for all 8 time periods (graduation year 2018-2023), dropping 2,325 observations. Next, I drop schools with missing college-going rates, resulting in the removal of 3706 observations. The schools dropped in this step were not notably different from the matched sample in terms of their demographic characteristics. Last, I dropped schools with FAFSA/CADAA rates above 100% (199 observations). The final dataset has 10,046 observations. This includes approximately 1,650 schools and 447 thousand students in each year of the data spanning high school graduation years 2018 to 2023 or 2024, depending on the outcome variable.

The outcome variables used in this analysis include (a) FAFSA and California Dream Act Application (CADAA) submission rates, (b) Cal Grant submission rates, (c) Cal Grant award rates, and (d) the college-going rate. All are measured as a percentage of 12th-grade enrollment for each school.

FAFSA/CADAA submission rate: This variable is the number of FAFSA and California Dream Act Applications submitted divided by the number of enrolled 12th graders at each school.[56] Data are annual through the 2024 graduation cohort.

[56] Students sometimes complete both forms. As a result, the FAFSA/CADAA submission rate for a very small portion of schools is over 1. I recode any FAFSA/CADAA completions rates above 1 to 1.

Cal Grant submission rate: This variable is the **n**umber of Cal Grant applications submitted divided by the number of enrolled 12th graders at each school. Data are annual through the 2024 graduation cohort.

Cal Grant award rate: This variable is the number of Cal Grants awarded divided by the number of enrolled 12th graders at each school. Data are annual through the 2024 graduation cohort.

College-going rate: This variable is measured as the percentage of California public high school completers from each school who enrolled in any public or private postsecondary institution (in-state or out-of-state) within 12 months of completing high school. Data are annual through the 2023 graduation cohort.

The following measures capture student composition at schools. This includes the shares of socioeconomically disadvantaged, minority, English-learner, and disabled students.

Share socioeconomically disadvantaged: The share of students at each school who are socioeconomically disadvantaged, as classified by CDE. CDE classifies socioeconomically disadvantaged students as those who are eligible for free or reduced-priced school meals or have parents/guardians who did not receive a high school diploma.

Share minority: Percentage of students at each school who identify as belonging to a racial or ethnic minority group (not non-Hispanic white).

Share English learner: Percentage of students at each school classified as English learners by the CDE.

Share with disability: Percentage of students CDE identifies as having a disability at each school.

To operationalize policy exposure, I create several variables that capture schools' differing levels of exposure to the FAFSA completion policy. I also construct measures to test heterogeneity in policy effects—specifically, school-level measures of counselor capacity and socioeconomic composition prior to the policy.

Post-policy indicator: This binary variable equals 1 for graduation cohorts 2023 and 2024 (after California's FAFSA completion policy took effect) and 0 for graduation cohorts 2018 through 2022.

Treatment Intensity Decile: This categorical variable measures the school's overall pre-policy FAFSA completion rate, averaged across the 2018–2022 graduation years, and groups schools into deciles based on that rate. Schools in lower deciles have lower baseline FAFSA completion rates and, therefore, experience higher treatment intensity. This measure is used in the main analysis.

Binary Treatment Intensity. This binary variable equals one for schools in deciles 1-9 of the pre-policy FAFSA completion distribution and zero for those in decile 10. This measure is used in the main analysis.

Continuous Treatment intensity: This continuous variable is 100- the school's average pre-policy FAFSA completion rate. Higher numbers indicate higher treatment intensity. This measure is used in an alternative specification shown.

Pre-policy counselor capacity: This continuous variable is the average pupil services-to-student57 ratio from graduation years 202058 to 2022, standardized with mean 0 and standard deviation 1. Higher values indicate more counselors per student, or higher counselor capacity.

Pre-policy socioeconomic composition: This continuous variable is the average share of students classified as socioeconomically disadvantaged from graduation years 2018 to 2022, standardized to mean 0 and standard deviation 1.

4.1.1 Descriptive statistics

Table 1 reports weighted means and standard deviations for all key variables before (2018–2022) and after (2023–2024) California's FAFSA completion policy took effect. Appendix 4 summarizes baseline school characteristics by deciles of treatment intensity.

The state-wide weighted average FAFSA/CADAA submission rates rose from 58 percent (SD = 18.6) in the pre-policy period to 66.6 percent (SD = 18.7) in the post-policy period. Cal Grant submission rates increased from 56 percent (SD=18.4) to 62 percent (SD=19.0). Cal Grant award rates increased slightly, from 27.2 percent (SD = 14.3) to 28.4 percent (SD = 15.2), while the college-going rate within 12 months of graduation rose from 65.2 percent (SD = 17.9) to 67.4 percent (SD = 17.7).

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[57] Pupil service employees include those working in a position requiring a standard designated services credential or a health and development credential and who perform direct services to pupils (counselors, guidance and welfare personnel, psychologists, etc.), including those helping students with FAFSA completion. This variable comes as students-to-pupil services but is reversed here for interpretability.
[58] The 2017-2018 and 2018-2019 academic years were not available for this variable..

Student composition changed modestly across the policy period: the share of socioeconomically disadvantaged students increased from 67 percent (SD = 25.9) to 70 percent (SD = 25.2); the share of English learners rose from 13.7 percent (SD = 10.3) to 14.7 percent (SD = 10.7); and the share of students with disabilities grew from 11.6 percent (SD = 4.5) to 12.7 percent (SD = 4.7).

The standardized variables for the heterogeneity analysis - socioeconomic composition and counselor capacity —showed little overall shift in mean or dispersion across the two periods. This stability is expected because these measures are constructed from pre-policy characteristics; they are intended to capture baseline differences in FAFSA completion propensity, socioeconomic makeup, and counseling resources rather than policy-driven changes.

Table 1: Descriptive Statistics: Means Pre- and Post- Policy (standard deviation in parentheses)

	Time Period	
	Pre-Policy (2018-2022)	Post Policy (2023-2024)
Outcome Variables		
FAFSA/CADAA submission rate (%)	57.99 (18.60)	66.55 (18.66)
Cal Grant submission rate (%)	56.36 (18.44)	61.87 (19.03)
Cal Grant award rate (%)	27.20 (14.32)	28.45 (15.23)
College-going rate (%)	65.15 (17.94)	67.36 (17.70)
Covariates		
% Minority (non-White)	75.91 (20.94)	78.07 (19.66)
% with Disability	11.58 (4.50)	12.70 (4.68)

% Socioeconomically disadvantaged	67.06 (25.94)	70.37 (25.20)
% English learner	13.67 (10.29)	14.69 (10.67)
Standardized Heterogeneity Variables		
Pre-policy socioeconomic composition	0.00 (1.00)	-0.00 (1.00)
Pre-policy counselor capacity	0.00 (1.00)	-0.01 (1.00)
Observations (number of schools/ number of 12th grade students)	8,424 / 2,241,531	3,295 / 887,495

Source: California Student Aid Commission (CSAC), California Department of Education (CDE), and Author's calculations

Note: Table reports weighted means and standard deviations (in parentheses) for key outcome variables, covariates, and standardized heterogeneity measures before and after California's Universal FAFSA Policy took effect. The pre-policy period includes school years 2018–2022; the post-policy period includes 2023–2024. Outcome variables are expressed as percentages of 12th-grade students. Heterogeneity variables are standardized to mean = 0 and SD = 1 based on pre-policy values. Observations reflect the number of unique schools and total 12th-grade students in each period, weighted by 2022 enrollment.

4.2 Identification Strategies

I exploit cross-school variation in baseline FAFSA completion rates to identify the causal effects of California's universal FAFSA policy. Schools where few students previously submitted these applications have greater potential to respond to the policy and, therefore, are subject to higher treatment intensity**.** I use two complementary approaches to identify effects. I use a difference-in-differences (DiD) design to estimate the policy's impact on FAFSA/CADAA submission rates and Cal Grant submission rates and award rates; and I use an instrumental-variables (IV) design to estimate how increases in FAFSA/CADAA submission affect college-going.

4.2.1 Differences-in-Differences Models

I estimate difference-in-differences (DiD) models that compare within-school changes in outcomes before (2018–2022) and after (2023–2024) California's universal FAFSA policy,

exploiting variation in baseline FAFSA submission rates across schools. In the main specification, I define treatment intensity using deciles of pre-policy FAFSA submission, where schools in lower deciles had more room to improve and schools in the highest decile (90–100%) serve as the comparison group. This specification allows policy effects to vary flexibly across the distribution of baseline submission and to capture potential nonlinear or nonmonotonic relationships between pre-policy submission and policy impacts.[59] I also estimate a binary version that pools deciles 1–9 together and compares them with the 10th decile, providing an average effect across all treated schools relative to those with near-universal pre-policy submission. The estimating equation for the decile specification is Equation 1:

Equation 1: $Y_{st} = \beta 0 + \lambda_t + \gamma_s + \psi'_{st} +$

$\sum_{d=9}^{d=1} \beta 1_d (1\ x\ \{TreatmentIntensityDecile_s = d\} \times Post_t) + \epsilon_{st},$

Y_{st} is the FAFSA/CADAA submission rate, Cal Grant submission, or Cal Grant award rate for school s in graduation year t. $1x\{TreatmentIntensityDecile_{s=}d\}$ is an indicator that equals 1 if the school belongs to decile d; the highest decile (10th) is omitted as the reference category. $Post_t$ = 1 for the 2023 and 2024 graduation years and 0 before 2023. School-level fixed effects γ_s control for any time-invariant school characteristics and year fixed effects, λ_t absorb any trends over time that are common across schools. ψ'_{st} are school-level demographics that vary over time that could be correlated with the outcome variable (shares of socioeconomically disadvantaged, minority, English learner, and disabled students)[60]. I cluster standard errors at the school level to control for serial correlation (Bertrand et al. 2004; Colin Cameron and Miller 2015). I weight all equations by school enrollment in the graduation year preceding the policy change (2022).

[59] This specification is valid because treatment intensity is determined entirely from the pre-policy period (2018–2022) and is therefore not affected by post-policy outcomes. In other words, the continuous treatment measure is exogenous to the policy implementation and reflects only baseline differences across schools

[60] These covariates are not expected to be directly affected by the policy. Thus, allowing them to vary over time is unlikely to introduce post-treatment bias.

In the decile equation, $\beta 1_d$ provides an estimate of the average treatment effect for each decile from 1 to 9, relative to schools in the omitted decile, 10. For example, a positive and statistically significant $\beta 1_5$ would indicate that schools in the 40th–50th percentile of treatment intensity experienced a greater increase in FAFSA/CADAA submission rates (relative to their own pre-policy baseline) than schools that already had near-universal completion (decile 10). In the binary specification, the summation term $\sum_{d=9}^{d=1} \beta 1_d (1\ x\ \{TreatmentIntensityDecile_s = d\} \times Post_t)$ is replaced with $\beta 1_{1-9} (BinaryTreatmentIntensity \times Post_t)$ and $\beta 1_{1-9}$ estimates the average effect of the policy across schools in deciles 1–9 relative to those in decile 10.

For causal interpretation, the key identifying assumption is that, absent the policy, schools with different treatment intensities would have followed parallel trends in these outcomes. One potential threat to this assumption is that schools are not randomly assigned to treatment intensities. Appendix 4 documents substantial baseline demographic and socioeconomic differences across schools with varying treatment intensities. Although these differences do not necessarily imply divergent trends in the absence of the policy, they raise the possibility that schools serving more disadvantaged students might have followed different trajectories during the study period for reasons unrelated to the reform. Another threat to the parallel trends assumption is that events in time can differentially affect schools by treatment intensity. This concern is especially relevant given that the policy was implemented during the COVID-19 recovery period, when college enrollment was rebounding after earlier disruptions. The identifying assumption may be violated if treatment intensity is correlated with the pace of post-pandemic recovery—for instance, if

schools with lower baseline FAFSA rates were faster to return to pre-pandemic levels of FAFSA completion or college enrollment between 2022 and 2023 for reasons unrelated to the policy.

I take several steps to mitigate these concerns and strengthen the credibility of the causal interpretation. The model (Equation 1) includes school fixed effects to control for all time-invariant differences across schools and time-varying school-level covariates that may be correlated with FAFSA submission rates. Conditioning on these covariates relaxes the identifying assumption by requiring that pre-policy trends are parallel only conditional on observed school characteristics. I also include year fixed effects to absorb statewide shocks common to all schools. Finally, I assess the validity of the identification strategy by testing for pre-policy parallel trends, as described later. While the inclusion of fixed effects and covariates helps address many sources of confounding, I cannot fully rule out the possibility that differential recovery from the COVID-19 pandemic influenced outcomes in ways correlated with treatment intensity. However, because the analysis estimates the policy effect from changes between 2022 and 2023—a single post-policy year following the peak of pandemic effects—the potential influence of lingering COVID-related disruptions is likely minimal.

4.2.1.1 Heterogeneous Treatment Effects

I also examine heterogeneous treatment effects for schools with varying proportions of socioeconomically disadvantaged students and varying counselor capacity. In this specification, I use the binary treatment intensity measure, where schools in deciles 1-9 are equal to 1 and schools in decile 10 are 0. I choose to use the binary measure because it

is both parsimonious and practical: it allows me to estimate how the policy's effect scales with moderator variables (i.e., counselor capacity or socioeconomic composition) without having to split the sample across deciles, which would substantially complicate interpretation. Specifically, to test heterogeneity by each moderator variable pre-policy counselor capacity ($CounsCap_s$) and pre-policy socioeconomic composition (SES_s), I estimate Equation 2 as:

$$Equation2: Y_{st} = \beta 0 + \lambda_t + \gamma_s + \psi'_{st} + \beta 1(Post_t \times BinaryTreatmentIntensity_s) + \beta 2(Moderator_s \times Post_t) + \beta 3(Post_t \times BinaryTreatmentIntensity_s \times Moderator_s) + \epsilon_{st},$$

Where $Moderator_s$ equals either pre-policy counselor capacity ($CounsCap_s$) or pre-policy socioeconomic composition (SES_s) where β_1 captures the main effect of treatment intensity, β_2 captures the main effect of the moderator in the post-policy period, and β_3 (the coefficient of interest) captures the interaction between treatment intensity and the moderator. β_3 shows how the effect of treatment intensity changes with the moderator. For example, when the moderator is counselor capacity, a one-standard-deviation increase in the counselor-to-student ratio (i.e., higher counselor capacity) changes the post-policy effect of treatment intensity by β_3 percentage points. I apply the same weighting and clustering strategy described in Equation 1.

The counselor capacity measure includes counselors, psychologists, and other pupil service professionals. To avoid bias from alternative schools, which tend to employ disproportionate numbers of pupil service staff,[61] I report results excluding such schools. For both equations 1 and 2, I cluster standard errors at the school level to control for serial

[61] The alternative schools measure comes from the same dataset that contains counselor capacity. Alternative schools have an average counselor-to-student ratio of 126:1, compared to 276:1 for non-alternative schools.

correlation (Bertrand et al., 2004; Colin Cameron & Miller, 2015). Furthermore, I weight all equations by school enrollment in the graduation year preceding the policy change (2022).

4.2.1.2 Event Study and Parallel Trends Tests

I estimate event study models to examine how the effect of California's FAFSA completion policy evolves over time and to test for pre-policy parallel trends. For both the main and heterogeneity analyses, the event study replaces the single post-policy indicator in the DiD model with year-specific interactions between treatment intensity and graduation-year indicators. Equation 3 estimates year-by-year deviations in outcomes for schools with different levels of pre-policy FAFSA submission:

> Equation 3: $Y_{st} = \beta 0 + \lambda_t + \gamma_s + \psi'_{st} + \sum_{y=2024}^{y=2018} \alpha_y \, x(1 \, x \, \{Year_t = y\} x \sum_{d=9}^{d=1} \beta 1_d (1 \, x \, \{TreatmentIntensityDecile_s = d\} \times Post_t) + \epsilon_{st},$
>
> where α_y is a vector of coefficients corresponding to each y, from 2018 to 2023 or 2024, depending on the outcome variable and α_{2022} is equal to 0. Otherwise, the equation is the same as in Equation 1.

I also estimate a binary version of this event-study model that pools schools in deciles 1–9 as described in Equation 1. For the heterogeneity specification, the equation is the same as Equation 3, except it uses the binary measure of treatment intensity and includes an additional three-way interaction between year, treatment intensity, and the moderator (counselor capacity or socioeconomic composition): $\sum_{y=2022}^{y=2018} \alpha_y \; 1 \, x \, \{t = y\} x \; BinaryTreatmentIntensity_s \; x \; Moderator_s + \epsilon_{st}$. Here, α_y indicates whether year-specific policy effects vary systematically by the moderator.

To test the parallel-trends assumption, I restrict the sample to pre-policy years (2018–2022) and jointly test whether the pre-policy coefficients differ significantly from zero. Failing to reject this null supports the assumption that, absent the policy, schools with varying pre-policy FAFSA submission levels would have followed similar trajectories.

4.2.2 Estimating the Policy's Effect on College-Going Rates through FAFSA Submissions Using an Instrumental Variable

In the final step of the analysis, I examine whether increases in FAFSA/CADAA submissions caused by California's FAFSA completion policy translate into higher college enrollment. While I could use the same difference-in-differences (DiD) analysis used for the other outcome variables to estimate the policy's reduced-form impact on college-going, that method cannot distinguish among the different mechanisms through which the policy may have operated. In particular, the DiD captures both (1) state- and district-level responses correlated with policy intensity but not directly with FAFSA submission—for example, broad information or college-awareness campaigns, media coverage, or leadership initiatives that encourage college-going independently of FAFSA behavior—and (2) within-school mechanisms correlated with FAFSA submission, such as counselor outreach, peer influences, or students' new information about college costs gained by completing the form. Because these channels may affect enrollment through distinct pathways, the reduced-form DiD cannot isolate the specific contribution of FAFSA submission to college-going.

To better isolate the causal effect of FAFSA submission specifically, I follow Denault (2023) and use exogenous variation in treatment intensity as an instrument for observed

FAFSA/CADAA submission rates. This approach differs slightly from the canonical IV design, in which an external instrument predicts an endogenous treatment. In this case, treatment intensity is generated endogenously by the policy itself, producing quasi-experimental variation in FAFSA completion that can be used to identify the effect of policy-induced FAFSA submission on college enrollment.

The estimation proceeds in two stages. The first stage (Equation 4) estimates how treatment intensity predicts FAFSA submission. For this equation, I collapse the deciles into four broader exposure groups- low, medium, high, and highest. I do this because, when using all 10 treatment-intensity deciles as instruments, I encountered weak-instrument concerns (the first-stage F-statistic fell below conventional thresholds).[62] The highest exposure group (decile 10, schools with near-universal pre-policy completion) serves as the omitted comparison group.

Equation 4: $Stage\ 1: FAFSACompletion\ Rate_{st} = \beta 0 + \lambda_t + \gamma_s + \psi'_{st} + \sum_{y=2024}^{y=2018} \alpha_y\ x(\ 1\ x\ \{Year_t = y\} x \sum_{d=9}^{d=1} \beta 1_d (1\ x\ \{TreatmentIntensityGroup_s = d\} \times Post_t)\ + \epsilon_{st},$

The second stage, equation (5), quantifies the relationship between FAFSA submission rates and college-going rates. The coefficient of interest, θ, represents the causal effect of a one percentage point increase in FAFSA/CADAA submission rates on the share of students enrolling in college within one year of graduation ($CollegeGoingRate_{st}$).

[62] This adjustment reduces noise across categories and increases the explanatory power of the instrument, addressing weak instrument concerns while maintaining variation necessary for identification.

Equation 5: $Stage\ 2$: $CollegeGoingRate_{st} = \beta 0 + \lambda_t + \gamma_s + \psi'_{st} + \theta(\widehat{FAFSA\ CompletionRate_{st}}) + \epsilon_{st}$,

The key assumptions for identification are instrument relevance and the exclusion restriction. The relevance assumption requires that variation in treatment intensity is strongly correlated with FAFSA submission rates, which I verify in the first-stage regression (Equation 4). The exclusion restriction requires that, conditional on school and year fixed effects and observed covariates, treatment intensity affects college enrollment only through its impact on FAFSA submission rates. This exclusion restriction is theoretically supported by the policy's design. California's FAFSA completion law directly targeted application behavior by mandating that schools encourage and assist students in completing the FAFSA or CADAA, without altering other features of college access such as academic requirements, institutional capacity, or admissions policies. Because the law applied to all public high schools, but schools started with different baseline FAFSA submission rates, the law induced variation in treatment intensity through this mechanism rather than through changes in schools' underlying college-going environments. Moreover, during its first year, schools had minimal opportunity to launch unrelated initiatives that could independently affect enrollment. However, the exclusion restriction is partially violated because the IV also captures components of behaviors correlated with increases in FAFSA submission within schools—such as college-identity priming through counselor interactions or peer influences that accompany rising FAFSA completion.

To bolster this identification strategy, I conduct one falsification test designed to assess whether the instruments capture broader school characteristics rather than FAFSA-specific policy exposure. I re-estimate the first-stage specification using an alternative outcome that should not plausibly respond to the policy and that is related to college-going. Specifically, I replace the first-stage outcome variable, FAFSA/CADAA rate, with a standardized measure of counselor capacity, defined as the number of counselors per student at school *s* in year *y*. This test evaluates whether the instruments predict outcomes unrelated to FAFSA completion, providing an additional check on the validity of the exclusion restriction.

Thus, the IV estimate reflects the portion of the policy's effect transmitted through FAFSA submission and its closely linked behavioral pathways while excluding mechanisms that influence enrollment through other channels.[63] This likely leads to some upward bias, but that bias reflects genuine elements of the policy's operation. Therefore, the IV estimate remains both credible and policy-relevant, providing a meaningful approximation of the policy's overall short-run impact on college-going. An additional advantage of the IV specification is that it yields a single, interpretable average effect—the average causal effect of FAFSA submission on college-going among schools whose FAFSA rates were affected by the policy. In contrast, the treatment-intensity DiD design yields a set of effects across policy treatment deciles.

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[63] By contrast, mechanisms correlated with policy intensity but not with FAFSA submission, such as awareness campaigns that raise enrollment independently of FAFSA behavior, are not captured by the IV

5.0 Results

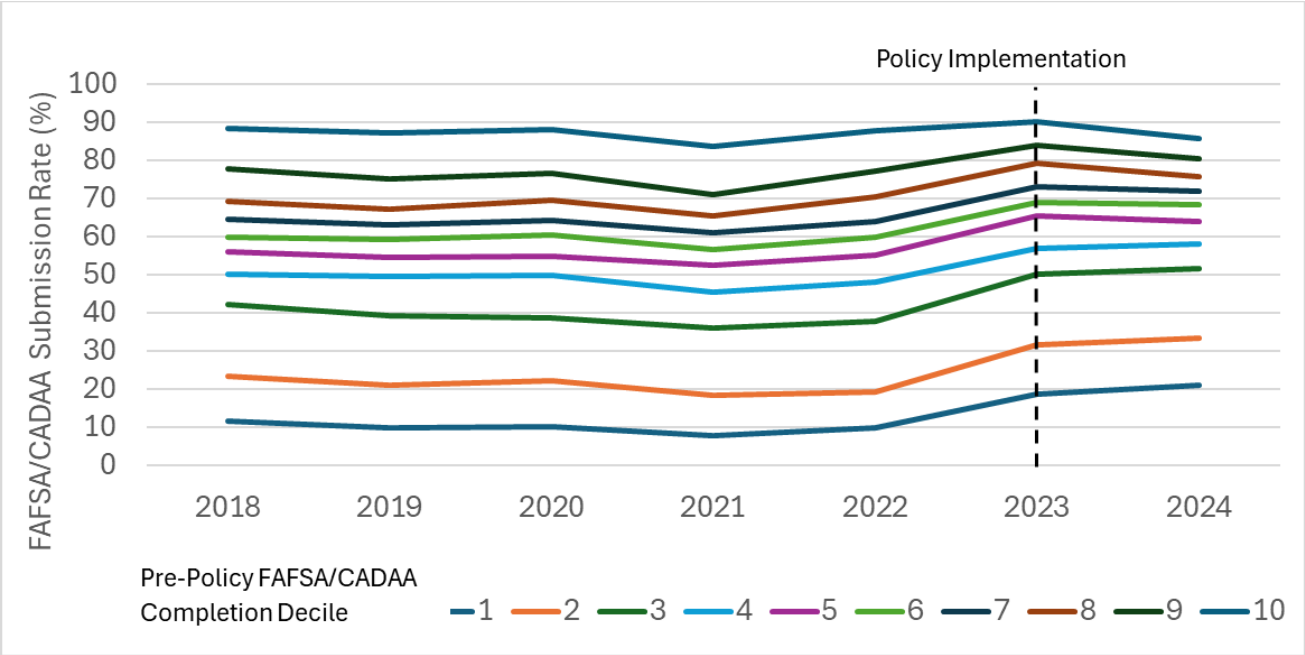
5.1 Descriptive Trends in FAFSA/CADAA Submission Rates, Cal Grant Submission Rates, and Cal Grant Award Rates

Figure 1 plots three outcome variables over time by school's pre-policy treatment decile. Panel A plots FAFCSA/CADAA rates, Panel B plots Cal Grant submission rates, and Panel C plots Cal Grant award rates. These descriptive trends provide an initial check on whether the policy's rollout coincided with meaningful changes in these outcome variables and whether the trends varied by pre-policy treatment decile.

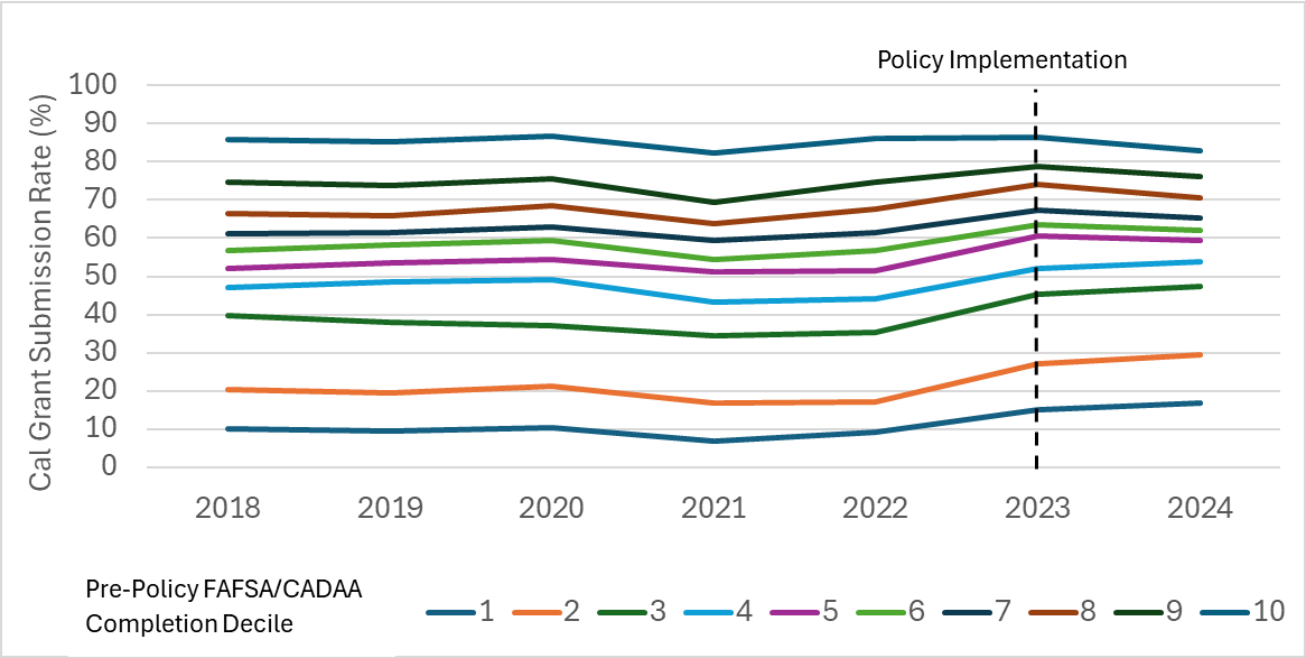
Panel A shows that the gap in FAFSA/CADAA submission rates between top and bottom decile schools was about 76 percentage points before the policy. After implementation in 2023, submission rates appear to rise sharply in the lowest-submission schools, while rates in high-decile schools remain stable or decline slightly; visually, the lowest deciles continue to show steady gains through 2024, suggesting sustained improvement among schools with historically low submission rates. Panel B shows that Cal Grant submission rates visually mirror FAFSA/CADAA patterns: lower-decile schools appear to make larger gains between 2022 and 2023, while higher-decile schools change little, indicating that increases are concentrated among initially low-participation schools. Panel C shows visible increases in Cal Grant award rates between 2022 and 2023, particularly in lower-decile schools, followed by leveling or slight declines in 2024, suggesting visually that the initial post-policy increase may reflect short-term or transitory factors.

Figure 1: Outcome Variables Over Time by Treatment Intensity Decile

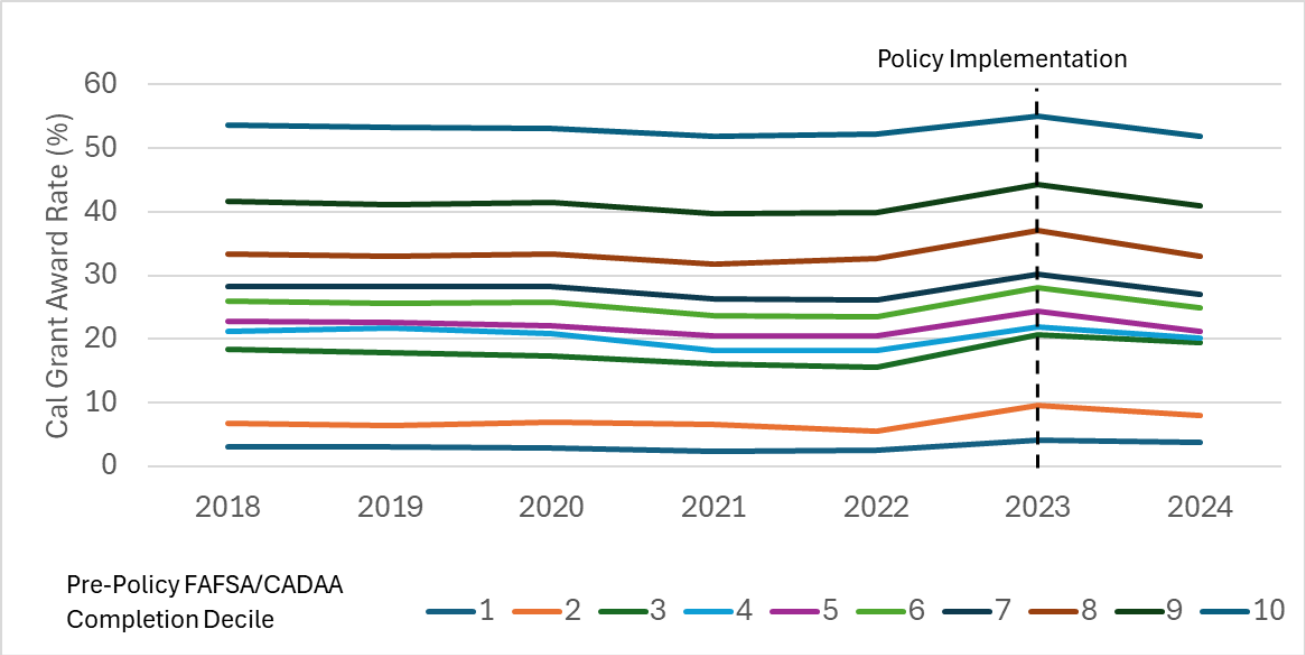
Panel A: FAFSA/CADAA Submission Rates



Panel B: Cal Grant Submission Rates



Panel C: Cal Grant Award Rates



Note: Each panel plots average outcomes by schools' treatment intensity decile (based on pre-policy FAFSA/CADAA submission rate). The shaded region at 2023 marks the first year of California's Universal FAFSA Policy. Data are weighted by 2022 12th-grade enrollment.

5.2 Differences-in-Difference Estimates

Table 2 presents the difference-in-differences (DiD) estimates of the policy's effect on three outcomes: FAFSA/CADAA submission, Cal Grant application submission, and Cal Grant awards. The treatment variable is operationalized both as categorical decile indicators (with the 10th decile—schools with near-universal pre-policy completion—serving as the omitted group) and as a binary specification grouping deciles 1–9 against the 10th decile. The decile model allows for nonlinearities in the policy's impact, while the binary specification provides a parsimonious contrast between schools with room to increase each outcome variable compared to those already close to the maximum of

100%. Appendix 1 reports results using a continuous version of the treatment variable. Appendix 2 reports results for all nine deciles.

Table 2. Regression Coefficients for Estimated Treatment Effects of California's FAFSA Completion Policy (standard errors in parentheses)

Outcome Variable	*1st Decile × Post*	*9th Decile × Post*	*Deciles 1–9 × Post*	*N (Schools, Students)*
FAFSA/CADAA Submission Rate (%)	7.94*** (1.32)	4.32*** (1.14)	6.96*** (0.93)	1,668; 2,997,141
Cal Grant Submission Rate (%)	6.61*** (1.23)	3.30*** (1.07)	5.64*** (0.87)	1,661; 2,968,138
Cal Grant Award Rate (%)	–0.96 (0.74)	0.12 (0.86)	0.29 (0.69)	1,652; 2,941,163

Note: *** p<0.01, ** p<0.05, * p<0.1. All models include year and school fixed effects and covariates listed in the data section. Data are weighted by high school senior enrollment. Standard errors are clustered at the school level. Model fit: R^2 (within) = 0.297 (FAFSA), 0.129 (Cal Grant submit), 0.101 (Cal Grant award).

Schools in the 1st decile of pre-policy FAFSA completion experienced a significantly larger increase in FAFSA/CADAA submissions relative to schools in the highest decile (β = 7.94, t = 6.01). Schools in the 9th decile experienced a smaller but still significant increase of 4.32 percentage points (β = 4.32, t = 3.80). The binary specification confirms these results: schools in deciles 1–9 together increased FAFSA submissions by 6.96 percentage points (SE = 0.93) compared to schools in the top decile.

For Cal Grant submissions, a similar pattern emerges. Schools in the 1st decile showed a gain of 6.61 percentage points relative to the highest decile (β = 6.61, t = 5.38). The 9th decile shows a smaller but still significant effect of 3.30 percentage points (β = 3.30, t = 3.08). The binary specification shows an increase of 5.6 percentage points for schools in deciles 1–9 relative to the 10th.

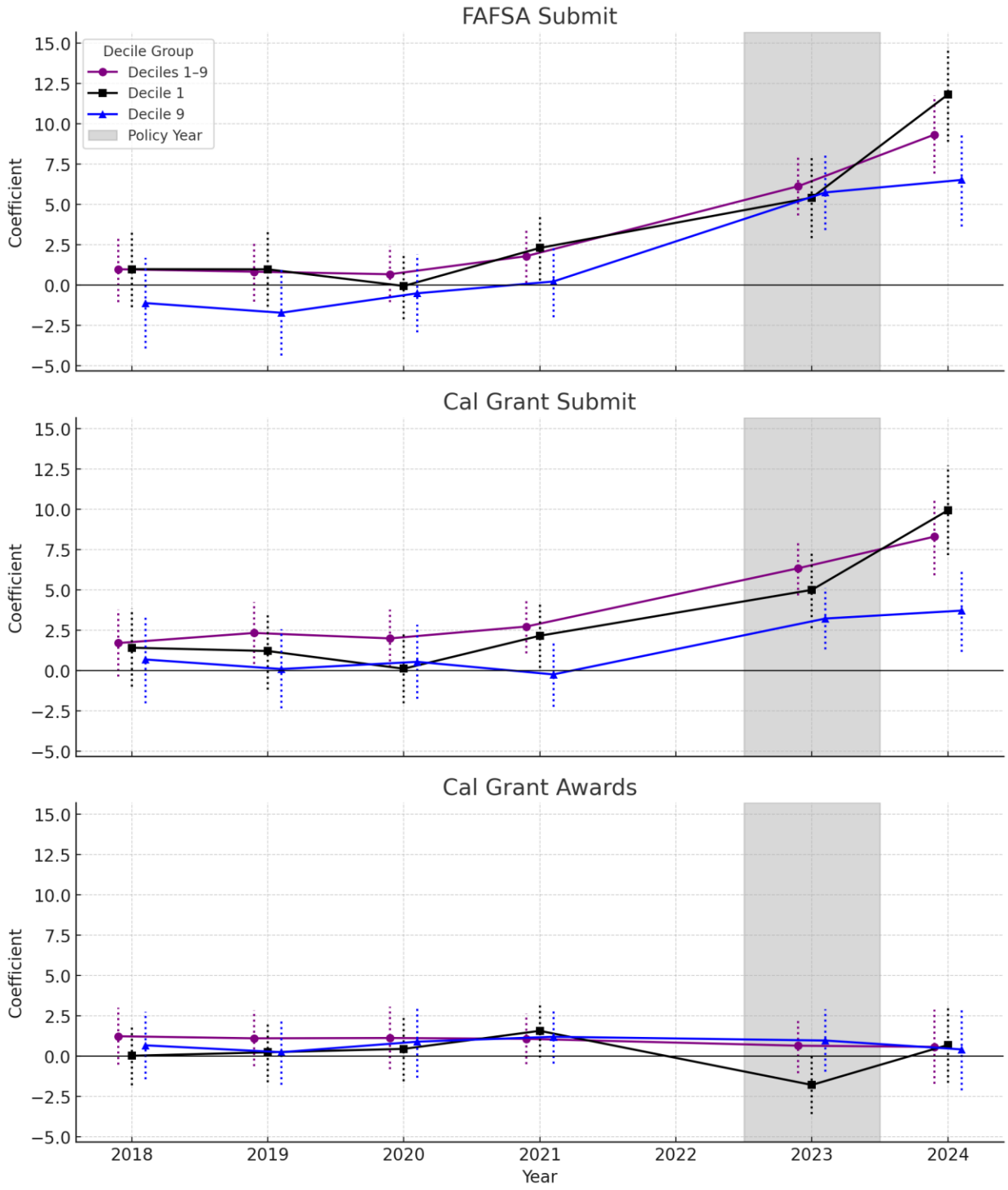
The policy did not significantly affect Cal Grant awards. The 1st decile estimate is –0.96 (SE = 0.74) and the 9th decile estimate is 0.12 (SE = 0.86). The pooled deciles 1–9 vs. 10 estimate is also small and statistically insignificant (0.29, SE = 0.69). These results indicate that while the policy substantially increased FAFSA and Cal Grant applications, it did not translate into a corresponding increase in Cal Grant awards in the two years following the policy's implementation.

These results are robust to alternative specifications using continuous treatment intensity measures (Appendix 1) and to restricting the sample to exclude alternative schools (Appendix 3). The continuous specification, which replaces decile indicators with a continuous measure of baseline FAFSA completion, produces coefficients of similar magnitude and direction to the main results. Excluding alternative schools—whose reporting structures and student populations differ from traditional high schools—yields nearly identical estimates to those reported above.

5.3 Event Studies for DiD Analysis

To test the validity of the research design and to examine how the policy impacts evolve with time, I estimate event-study models for each outcome variable. Figure 2 presents these event studies of the effect of California’s FAFSA completion policy on FAFSA/CADAA submissions (Panel 1), Cal Grant applications (Panel 2), and Cal Grant awards (Panel 3). The grey bar at 2023 indicates the first year of policy implementation.

Figure 2: Event-study estimates of the effect of California's FAFSA completion policy



Notes: Each data point is offset from the year to show the error bands without overlapping. Ranges around each point represent 95% confidence intervals. The shaded region at 2023 marks the first year of California's Universal FAFSA Policy. Data are weighted by 2022 12th-grade enrollment

To assess the validity of the research design, I tested for pre-policy differences (2018–2022) across schools with varying baseline FAFSA submission rates. For FAFSA submission rates, the pooled estimate across deciles 1–9 is small and statistically insignificant (Coef. = 2.90, SE = 2.83, p = 0.306). The first decile shows no evidence of differential pre-policy trends (Coef. = 4.07, SE = 3.53, p = 0.249), consistent with results for decile 9 (Coef. = –2.65, SE = 3.84, p = 0.490). For Cal Grant awards, the pooled deciles 1–9 estimate is also insignificant (Coef. = 3.03, SE = 3.01, p = 0.313), and the first and ninth deciles both show no detectable pre-trends (Decile 1: Coef. = 1.83, SE = 3.21, p = 0.569; Decile 9: Coef. = 1.23, SE = 3.56, p = 0.730). However, for Cal Grant submission rates, the pooled estimate across deciles 1–9 is statistically significant (Coef. = 6.99, SE = 2.96, p = 0.018), while the first and ninth deciles are insignificant (Decile 1: Coef. = 4.48, SE = 3.81, p = 0.240; Decile 9: Coef. = –0.50, SE = 3.82, p = 0.895).

Taken together, the tests indicate that the first and ninth deciles exhibit no evidence of pre-trends across all three outcomes. However, the pooled deciles 1–9 show no pre-trends only for FAFSA submission and Cal Grant award rates. Appendix 2 reports results for all nine deciles, which likewise provide little evidence of systematic divergence in outcomes before the policy took effect.

Heterogeneity Analysis

To assess whether the impact of California's FAFSA completion policy varied across different school contexts, I conducted heterogeneity analyses along two dimensions:

counselor capacity, measured as the number of counselors per student (standardized), and socioeconomic composition, measured as the share of socioeconomically disadvantaged students (standardized). For brevity, I estimate these effects for only one outcome variable – FAFSA/CADAA submission rates.

Table 3 reports the results from the heterogeneity analysis described in equation 2, including the main treatment effect, the main effect of counselor capacity in the post-policy period, and the interaction between treatment intensity and each moderator. The counselor capacity results exclude alternative schools.[64]

Table 3. Heterogeneous effects of California's FAFSA Policy on FAFSA/CADAA Submission Rates (%), standard errors in parentheses

Coefficient on:	*Counselor Capacity (Excluding Alternative Schools)*	*Low-SES Composition (All Schools)*
BinaryTreatmentIntensity × *Post*	6.80*** (0.929)	6.92*** (0.989)
Moderator × *Post*	-1.27*** (0.307)	–0.11 (0.243)

[64] As a robustness check, I re-estimated the model including all schools rather than excluding alternative schools. The coefficient on the treatment indicator (IntensTreat×Post) remains positive and statistically significant (0.097, SE = 0.016, p < 0.001), similar in magnitude to the specification excluding alternative schools (0.134, SE = 0.019, p < 0.001). The triple interaction term (IntensTreat×Post×CounsCapz) remains statistically insignificant (0.008, SE = 0.012, p = 0.504), also consistent with the main results. Although the treatment effect is somewhat attenuated in the full-sample model, the substantive interpretation of the findings is unchanged, suggesting that results are not sensitive to excluding alternative schools.

BinaryTreatmentIntensity × *Post* × *Moderator*	-1.43 (1.16)	-0.06 (1.084)
Number of Students	2,719,613	2,997,141
Number of Schools	1,216	1,668
R^2 *(within)*	0.320	0.296

Notes: ***p < .001, **p < .01, *p < .05. Robust standard errors in parentheses, clustered at the school level. Models include school fixed effects, year fixed effects, and time-varying school covariates (share minority, share with a disability, share low-SES, and share English learners). Counselor capacity is standardized; higher values indicate more counselors per student.

The estimates show that, in both models, the main policy effect of treatment intensity remains positive and highly significant: schools with lower pre-policy FAFSA completion rates experienced larger increases in FAFSA/CADAA submissions following the policy. For counselor capacity, the post-policy main effect is negative (–1.27, $p < 0.01$), indicating that schools with more counselors per student saw smaller overall increases in FAFSA submissions after the policy, net of treatment intensity. However, the three-way interaction (–1.43, $p > 0.10$) suggests no statistically significant evidence that variation in policy intensity effects differed systematically with schools' counselor capacity. In the low-SES model, the moderator and interaction terms (–0.11 and –0.06, respectively) are statistically insignificant, indicating that the policy's effects were broadly similar across schools regardless of their socioeconomic composition.

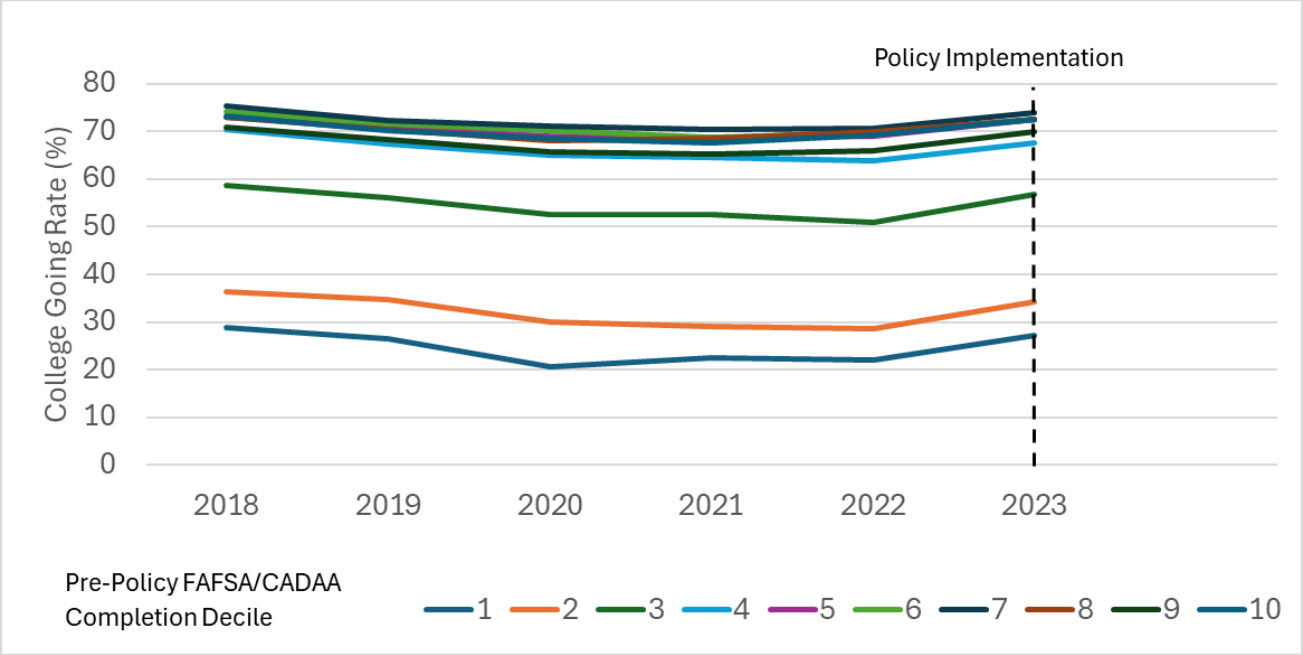
To test for pre-policy parallel-trends in the heterogeneity models, I estimated the event-study specification in Equation 4, which interacts each moderator with treatment intensity

and year indicators for the pre-policy period (2018–2022). In the counselor capacity model, the sum of the pre-policy interaction coefficients is –0.11 ($p = 0.97$), indicating no evidence of differential pre-trends. In the socioeconomic composition model, the corresponding coefficient sum is 6.7 ($p = 0.045$), suggesting a modest but limited deviation from parallel trends. Overall, these results provide little evidence of systematic pre-policy differences across schools by either moderator, supporting the identifying assumption for the heterogeneity analysis.

5.4 Descriptive Trends in College-Going Rates

Figure 3 plots college-going rates by pre-policy FAFSA/CADAA completion decile from 2018 to 2023, illustrating trends before and the year after the implementation of California's FAFSA completion policy (marked by the dashed vertical line at 2023). The college-going rate is measured as the percentage of California public high school completers from each school who enrolled in any public or private postsecondary institution (in-state or out-of-state) within 12 months of completing high school.

Figure 3: College Going Rates by Treatment Intensity Decile



Note: The chart plots average outcomes by schools' treatment intensity decile (based on pre-policy FAFSA/CADAA submission rate). The shaded region at 2023 marks the first year of California's Universal FAFSA Policy. Data are weighted by 2022 12th-grade enrollment.

Visually, the treatment intensity deciles exhibit similar pre-policy trajectories, with college-going rates declining slightly between 2018 and 2020 and recovering modestly in 2021 and 2022. The lowest FAFSA submission deciles (1–2) consistently show much lower college-going rates (around 20–35 percent) relative to higher deciles (around 60–75 percent), yet the slopes appear largely parallel prior to the policy change.

5.5 Instrumental Variable Analysis: College-Going Rates

To estimate the policy's effect on college-going rates through FAFSA/CADAA submission, I employ an instrumental variables (IV) approach that leverages exogenous variation across schools in pre-policy FAFSA/CADAA completion rates. Specifically, I instrument FAFSA/CADAA completion with interactions between pre-policy completion groups (low,

medium, high) and post-policy years. This strategy aims to isolate the policy's effect on the college-going rate through the FAFSA completion channel. The analysis includes two samples: a full sample of all public high schools and a restricted sample excluding alternative high schools, which are less likely to be directly affected by FAFSA outreach and compliance activities. I also conduct a falsification test to provide supporting evidence for the exclusion restriction. I replace the FAFSA completion outcome variable in the first stage with a standardized measure of counselor capacity (number of counselors per student at school *s* in year *y*).

Table 4 reports the IV first-stage results and the associated identification diagnostics. Row 1 shows these statistics for the full sample of public high schools, Row 2 for the restricted sample that excludes alternative schools, and Row 3 for the falsification test in which counselor capacity replaces FAFSA/CADAA completion as the first-stage outcome.

Table 4: IV Results: First-Stage Instrument Strength and Falsification tests

Specification	*Kleibergen–Paap LM χ^2 (df)*	*First-stage Kleibergen–Paap F-statistic*	*Anderson–Rubin Wald F-statistic*	*Number of schools; number of students*
(1) FAFSA submission rate, all schools	66.42*** (15)	5.63+	6.91***	1,654; 2,566,311
(2) FAFSA submission rate, non-alternative schools	75.67*** (15)	6.83++	2.86**	1,321; 2,366,394
(3) Falsification: counselor capacity	14.24 (9)	1.84	5.26***	1,230; 1,911,417

Notes: *** p<0.01, ** p<0.05, * p<0.1. All models include year and school fixed effects and covariates listed in the data section. Data are weighted by high school senior enrollment. Standard errors are clustered at the school level. The Kleibergen–Paap F-test assesses if

instruments are relevant; the Anderson-Rubin test assesses if instruments do not have joint significance. The following symbols indicate instrument strength using the Stock-Yogo critical values for maximal bias: +++ F > 10% bias threshold, ++ F > 20% bias threshold, + F > 30% bias threshold. Row 3 is a falsification test using counselor capacity in place of FAFSA/CADAA completion rates; the instruments in both falsification tests fail standard weak-instrument diagnostics. The sample for the falsification test comprises only non-alternative schools.

The results in rows 1 and 2 show that across both samples diagnostic tests indicate that the instruments are relevant and the models are identified, though instrument strength varies. The first-stage Kleibergen–Paap F-statistic rises from 5.63 in the full sample to 6.83 in the restricted sample, moving from below to slightly above the Stock–Yogo 20 percent maximal-bias threshold. This improvement suggests that the instrumental variables operate more cleanly among traditional high schools than the full sample of schools. For both samples, the Kleibergen–Paap LM statistic rejects the null of under-identification, confirming that the model is identified. Further, in both samples, the Anderson–Rubin Wald tests reject the null that the instrumental variables have no joint effect and that the instruments are invalid, providing additional support for instrument relevance. These diagnostics suggest that the instrument is relevant to FAFSA/CADAA completion rates and are of moderate strength, particularly in the non-alternative school sample.

In the counselor-capacity falsification test (row 3), the first-stage F-statistic is low (F = 1.84), and the instruments fail to satisfy conventional weak-instrument diagnostics—that is, pre-policy FAFSA completion rates are not strong predictors of counselor staffing. This pattern suggests that the exogenous variation exploited in the IV strategy does not operate through changes in counselor capacity, supporting the exclusion restriction in the specifications that use FAFSA/CADAA submission as the first-stage outcome.

Table 5 reports the estimated effects of FAFSA/CADAA submission rates on college-going rates. In the full sample, the IV estimates indicate that increases in FAFSA/CADAA submission rates significantly raise college-going in the first year post-policy. A one-percentage-point increase in FAFSA submissions is associated with a 0.23-percentage-point increase in the college-going rate (β = 0.234, SE = 0.071, p = 0.001). When the sample is restricted to traditional high schools—excluding alternative schools that were less likely to be targeted by FAFSA outreach and compliance activities—the estimated effect remains positive and statistically significant but somewhat smaller in magnitude (β = 0.142, SE = 0.059, p = 0.017).

Table 5. IV Results: Effect of FAFSA/CADAA Submission Rates (%) on College-Going, standard errors in parentheses

	All Schools	*Non-Alternative Schools*
FAFSA/CADAA Submission Rate (%)	0.234*** (0.071)	0.142** (0.059)
Hansen J (χ^2)	72.91***	33.61***
Number of Schools	1,654	1,321
Number of Students	2,566,311	2,366,394

Notes: *** p<0.01, ** p<0.05, * p<0.1. All models include year and school fixed effects and covariates listed in the data section. Data are weighted by high school senior enrollment. Standard errors are clustered at the school level. The Hansen J test assesses if instruments are exogenous (uncorrelated with the error term);.

The Hansen J test in both samples formally rejects perfect instrument exogeneity, indicating that the exclusion restriction may be somewhat violated. However, as discussed in the Methods section, this is expected: the instrument likely affects college-going not only through FAFSA completion but also indirectly through related mechanisms, such as

strengthened college-going identity from counselor interactions or peer influences that arise in the same school context. Further, given the very large sample size, even small, substantively negligible correlations between the instruments and the error term can produce statistically significant test statistics; thus, this rejection of the null should not be interpreted as strong evidence against instrument validity. These findings, in combination with the falsification test results, support the exclusion restriction and reinforce the interpretation that the estimated effect on college-going operates primarily through FAFSA completion and its associated behavioral mechanisms.

6. Discussion and Conclusion

This study contributes new evidence on the effects of FAFSA completion policies by providing the first empirical evaluation of California's version of such a law. While prior studies have examined FAFSA completion policies in Louisiana and Texas, this paper is the first to evaluate California's softer approach, which differs meaningfully from those of these other states. The findings add to the growing body of literature on FAFSA completion initiatives by documenting how such policies can influence financial aid application behavior and college-going outcomes during the initial years of implementation.

6.1 Interpretation of Findings

The results indicate that California's softer version of a FAFSA completion policy substantially increased FAFSA and CADAA submission rates, particularly among schools with the lowest baseline completion rates before the policy. Schools in the first (lowest) decile of pre-policy FAFSA completion—those with the most room to improve—

experienced an increase of approximately 7.9 percentage points relative to schools in the top decile, which had near-universal completion before the policy ($\beta = 7.94$, SE = 1.32, $p < 0.01$). Schools in the ninth decile (second from the top) also saw statistically significant but smaller gains of about 4.3 percentage points ($\beta = 4.32$, SE = 1.14, $p < 0.01$). Overall, schools in deciles 1–9 experienced a 7.0 percentage point increase in FAFSA/CADAA submissions relative to the highest-decile schools ($\beta = 6.96$, SE = 0.93, $p < 0.01$). Pre-policy event-study coefficients suggest mild convergence among some mid-intensity schools (particularly those in deciles 2 and 4), but the average pre-policy relationship across deciles 1–9 is flat and statistically insignificant. This pattern reinforces that the policy clearly increased FAFSA submissions overall and, in some cases, may have accelerated pre-existing upward trends among schools subject to mid-level treatment intensity.

For Cal Grant application submissions, results followed a similar pattern: schools in the lowest baseline decile increased submission rates by about 6.6 percentage points ($\beta = 6.61$, SE = 1.23, $p < 0.01$), while schools in the ninth decile gained roughly 3.3 percentage points ($\beta = 3.30$, SE = 1.07, $p < 0.01$). The pooled estimate across deciles 1–9 indicates a 5.6 percentage point increase relative to the top decile ($\beta = 5.64$, SE = 0.87, $p < 0.01$). However, because the pre-policy trends for this pooled specification were not perfectly parallel, these particular estimates should be interpreted with caution. Even so, the consistent direction and magnitude of results across individual deciles suggest that the policy effectively boosted Cal Grant submissions, especially among historically under-filing schools. Despite the sizable gains in FAFSA/CADAA and Cal Grant submissions, Cal Grant *award* rates did not increase significantly. Schools in the first decile showed a –0.96

percentage point change ($p > 0.10$), while the pooled 1–9 vs. 10 estimate was +0.29 ($p > 0.10$).

Notably, the effects of the policy on FAFSA/CADAA and Cal Grant submissions remain nearly identical when the sample is restricted to non-alternative high schools—that is, schools serving traditional student populations rather than students at alternative schools (Appendix 3). This restriction follows Deneault (2023), who similarly excluded alternative schools in her evaluation of Louisiana's policy. As shown in Table A3.1 in Appendix 3, the pattern of effects across baseline FAFSA completion deciles is highly consistent with the full-sample estimates: on average, schools in deciles 1–9 see a 6.8 percentage-point increase in FAFSA/CADAA submissions and a 5.5 percentage-point increase in Cal Grant submissions relative to the highest-decile schools, with no statistically significant changes in Cal Grant award rates. In addition, the restricted-sample event-study models provide stronger support for the parallel trends assumption—particularly for Cal Grant outcomes—bolstering confidence that the estimated increases in Cal Grant submissions can be interpreted as causal effects of the policy. The consistency of results across these two samples indicates that the inclusion of such nontraditional schools does not drive the observed effects and that the primary impacts occur among standard public high schools.

Results from the continuous specification (Appendix 1) reinforce the main findings. The positive effect on FAFSA/CADAA submissions ($\beta = 0.0906$, $SE = 0.013$, $p < 0.001$) indicates that schools with lower pre-policy submission rates experienced greater post-policy increases in FAFSA/CADAA filing. The coefficient implies that schools with baseline FAFSA rates roughly 60–70 percentage points below the top of the distribution saw post-policy

gains of about 5–6 percentage points—closely aligning with the pooled estimate across deciles 1–9. The estimated effect on Cal Grant submissions ($\beta = 0.102$, SE = 0.014, $p < 0.001$) is slightly smaller in magnitude than the 5–7 percentage-point increases observed in the decile-based models but remains statistically strong, again showing that lower-baseline schools experienced the largest improvements

Event-study results for the continuous specification reveal modest deviations from parallel trends, but they also show a discrete increase in FAFSA/CADAA and Cal Grant submissions beginning in 2023, consistent with the timing of the policy's implementation. The pattern suggests that the policy amplified existing upward trajectories. Cal Grant award rates remain near zero and statistically insignificant ($\beta = -0.0015$, $p > 0.10$), mirroring the decile-based findings that increased filing did not immediately translate into higher award receipt.

A comparison of the continuous and decile-based models suggests that the relationship between pre-policy FAFSA submission and policy impacts is non-linear. In the decile analysis, the largest gains in submission rates occurred among schools in the lowest baseline deciles, while effects diminished sharply among schools with higher pre-policy submission rates. This pattern indicates that the policy primarily benefited schools with the greatest room for improvement. Thus, modeling treatment intensity as a strictly linear function may oversimplify the true relationship between baseline completion and policy responsiveness.

I also examined whether the effects of California's FAFSA completion policy varied across school contexts. The interaction terms between treatment intensity and both context

variables- counselor capacity (β = –1.43, SE = 1.16, p > 0.10) and socioeconomic disadvantage (β = –0.06, SE = 1.08, p > 0.10)—were statistically insignificant. This suggests that the incremental gains in FAFSA completion associated with the policy were not affected by counselor capacity or socioeconomic composition.

The problematic rollout of the new FAFSA likely dampened the observed impact of California's Universal FAFSA policy on financial aid submissions and awards. The redesigned form was released three months late, in December 2023, disrupting both federal and state aid processing (Federal Student Aid, 2024). The effects were especially acute for mixed-status immigrant families, who comprise a large share of California's high school population (Cook et al., 2024).[65] Many parents without Social Security numbers were unable to complete their section of the FAFSA, preventing students from submitting or verifying their applications (Kentor, 2025). In response, the California Student Aid Commission (CSAC) allowed affected students to submit the California Dream Act Application (CADAA) and extended the Cal Grant application deadline for four-year collegiate institutions to May 2, 2024 (Zinshteyn, 2025), but this workaround added complexity and delays. Even with these extensions, students' awareness of the change was likely uneven. As a result of these disruptions, the observed increases in FAFSA/CADAA and Cal Grant submissions likely understate the true behavioral response that would have occurred absent the redesign.

[65] One in five California children live in a household with at least one undocumented member (California Immigrant Data Portal, n.d.).

These same issues also help explain why Cal Grant award[66] rates did not rise significantly on average in the post-policy period. The descriptive trends show Cal Grant award rates increased for the 2023 cohort but plateaued for 2024 graduates, even as Cal Grant applications continued to rise. Because Cal Grants for recent high school graduates are entitlement-based, this stagnation reflects processing bottlenecks rather than funding constraints. One possibility is that the rise in Cal Grant applications consisted of students who were less likely to qualify for Cal Grants, whereas mixed-status students —who may be more likely to qualify on the basis of income—may have faced greater barriers to completing the new FAFSA. This compositional shift could have offset potential gains in award rates, contributing to the lack of an overall increase in Cal Grant awards in 2024. Taken together, these disruptions suggest that the estimated short-run effects of California's FAFSA completion policy likely understate its full potential to increase aid receipt and college enrollment.

The instrumental variables results indicate that California's FAFSA completion policy produced measurable increases in college enrollment, with the clearest effects observed in traditional (non-alternative) high schools. In this restricted sample, a one–percentage-point increase in FAFSA completion is associated with a 0.14–percentage-point rise in college-going ($p = 0.017$). The first-stage F-statistic of 6.83 indicates moderate instrument strength, corresponding to roughly 20 percent maximal relative bias (Stock & Yogo, 2005).

[66] Cal Grants are an entitlement program for HS graduates, need-based, and require a minimum 2.0 high school GPA.

Applying the observed seven–percentage-point policy-induced increase in FAFSA submissions implies about a one–percentage-point gain in college enrollment within 12 months of graduation (approximately 0.8 to 1.2 percentage points allowing for the 20 percent bias range), relative to the least-treated, top-decile schools. These results provide evidence that the policy modestly increased college enrollment among students graduating from traditional high schools. These findings align with prior research showing that FAFSA completion contributes to higher postsecondary enrollment (Deneault 2023; Bettinger et al. 2012).

Notably, college enrollment increased even though Cal Grant awards did not, suggesting that state aid is not the sole mechanism linking FAFSA completion to college-going. FAFSA completion can unlock access to other forms of financial aid and also shape students' perceptions of college affordability. California's higher-education access policy landscape includes two years of free community college tuition for eligible students and generous UC and CSU institutional need- and merit-based aid that substantially reduce net tuition costs even without new Cal Grant funding. However, students typically learn about these aid opportunities only after completing the FAFSA. Moreover, completing the FAFSA may improve students' perceived ability to pay for college and strengthen their college-going identity by clarifying the true cost of attendance and revealing available aid options. This psychological mechanism aligns with research indicating that identity and information availability, rather than financial constraints alone, can influence postsecondary decision-making (Dynarski and Scott-Clayton 2006; Elliott et al. 2011). Thus, even if administrative disruptions temporarily limited Cal Grant awards in 2023, institutional aid, free community

college, and the act of completing the FAFSA itself are possible mechanisms behind the observed modest increase in college-going.

6.2 Comparison with Prior Evidence

The pattern of effects observed in California aligns with those found in Louisiana and Texas, though the magnitude varies with policy design. In Louisiana, Deneault (2023) reports that the Louisiana law increased FAFSA completion by about 19 percentage points overall. In Texas, Kim (2025) finds that the FAFSA completion policy increased FAFSA completion in public high schools by 6.3 points relative to private schools, which were unaffected by the policy. In California, my results suggest that California's policy produced a 7-percentage point increase in FAFSA/CADAA submission rates. Further, the overall levels of FAFSA completion achieved after policy implementation were broadly similar across states—about 72 percent in Louisiana, 67 percent in California, and the mid- to high-60s in Texas. These figures indicate that states can expand FAFSA completion through different policy designs, though none are likely to achieve universal (100 percent) completion.

In all three states, schools with greater treatment intensity—those with lower pre-policy FAFSA completion rates—experienced the largest gains in financial aid applications. In Louisiana, Deneault's (2023) graphical results and descriptive statistics show the largest FAFSA increase was among schools with the lowest pre-policy FAFSA completion rates – with gains up to 25 percentage points. Similarly, Kim (2025) finds that Texas schools in the lowest pre-policy FAFSA-completion deciles saw increases of 7-percentage points, while schools in the 9th decile saw increases closer to 4-percentage points. My California results

reflect the same pattern: the largest improvements occurred among schools with the lowest baseline submission rates—roughly 8 percentage points for schools in decile 1, compared to about 4 percentage points for schools in decile 9.

The finding that California achieved FAFSA completion rate gains comparable to Texas despite lacking a graduation requirement linkage underscores an important insight: voluntary FAFSA-completion policies can still be effective without a graduation requirement. In the case of California, the policy was paired with one-on-one support from counselors and supported by CSAC, a well-resourced organization with two outreach programs –Cal-SOAP and Cash for College. Although speculative, it is possible these programs acted as implementation multipliers, compensating for the absence of a formal student mandate and relatively low counselor-to-student ratios at schools.

The Louisiana policy's stronger effects on FAFSA completion might reflect the graduation requirement and accompanying personal assistance. In contrast, California's softer, counselor-driven model relied more on local discretion and variation in implementation intensity. Some local education agencies (LEAs) appear to have gone beyond the state law by establishing district-level graduation requirements for FAFSA completion, effectively replicating Louisiana's model. Evidence from qualitative interviews and a student survey conducted by the author[67] supports this pattern: many students reported their schools now

[67] This interpretation is supported by qualitative and survey evidence from the author's process evaluation of the CalKIDS program– a child development account policy for low-income students in California. That mixed-methods study included a survey of 243 program participants and 15 in-depth interviews with students eligible for a CalKIDS distribution, who had graduated from high school in the past couple of years. One of the

treat FAFSA completion as a graduation condition even though the state law itself continues to make this non-mandatory. This variation suggests that local implementation capacity and administrative choices may be as consequential as state-level policy design in determining overall policy impact. This is not necessarily a bad thing; in decentralized policy areas such as higher education, local decision-making allows policy priorities to reflect community attitudes and values (see Zumeta, 2011).

Despite differences in policy design, the translation of FAFSA completion gains into higher college enrollment appears broadly consistent across state contexts. In Louisiana, Deneault (2023) finds that FAFSA completion increased college enrollment by roughly 1–2 percentage points among traditional high schools, while my instrumental-variables estimates for California show comparable effects for non-alternative schools—about a one-percentage-point rise in college enrollment. Combining these figures with the observed increases in FAFSA completion suggests that each one-point gain in FAFSA completion corresponds to roughly a 0.14–0.25-percentage-point increase in college enrollment across these contexts.[68] These comparable rates imply that the mechanisms linking FAFSA completion to enrollment decisions operate similarly across states despite

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survey questions asked if their high school made the FAFSA a graduation requirement, and the vast majority responded that it did.

[68] I calculate the enrollment-per-completion ratio as the change in college enrollment divided by the change in FAFSA completion. I calculate the enrollment-per-completion ratio as the change in college enrollment divided by the change in FAFSA completion. In the non-alternative school sample, the IV estimate of 0.14 implies about a 0.14-percentage-point increase in college enrollment for each one-point rise in FAFSA completion. Deneault (2023), using a similar sample of traditional schools in Louisiana, finds comparable ratios of ≈ 0.20–0.25. In Texas, Kim (2025) reports 2.0- and 2.7-percentage-point enrollment gains from 7.0- and 3.4-point FAFSA increases among the lowest-baseline deciles (≈ 0.29 and 0.79 per-point), though these are not statewide averages and reflect localized upper-bound effects.

policy differences—for example, completing a FAFSA may trigger similar behavioral and informational responses regardless of whether the policy is a graduation requirement or not. In each setting, the act of filing the FAFSA likely increases students' perceived affordability of college, eligibility for need-based aid, and engagement with institutional support systems, thereby translating completion gains into comparable enrollment effects.

6.3 Implementation Costs and Generalizability

The implementation cost of California's FAFSA completion policy is difficult to quantify but likely nontrivial. Compliance relies heavily on counselor labor to fulfill one-on-one advising requirements and on district administrative staff to track completion and reporting. Several school districts have voiced concern that these obligations have not been matched with dedicated state funding. For example, the Fremont Unified School District (FUSD 2023) in the SF Bay Area publicly requested that the state provide financial support to offset the additional administrative burden of monitoring FAFSA completion and assisting individual students. Likewise, administrators from Long Beach Unified and Los Angeles Unified School Districts testified before the California Student Aid Commission (CSAC 2024) and the California State Board of Education (2024) about the strain the new policy puts on counseling staff and the need for implementation funding. Without additional resources, schools may be forced to divert counselor time away from academic advising and mental health support to meet FAFSA outreach and reporting expectations.

By comparison, Deneault (2023) estimated that Louisiana's FAFSA completion policy—which combined a graduation requirement with substantial school-based assistance—

cost roughly $1.8 million statewide, or about $45 per high school senior and $4,500 per additional college enrollee induced. Targeted interventions that provide one-on-one FAFSA assistance through external professionals—such as the tax-preparer intervention studied by Bettinger et al. (2012)—achieved comparable or greater enrollment gains at a cost of about $1,100 per additional college enrollee. These comparisons underscore the importance of weighing implementation costs and administrative feasibility alongside political considerations when designing FAFSA completion laws. States pursuing similar policies should consider the impact on counselor workload, data reporting requirements, and the potential need for dedicated implementation funding and/or external partnerships to sustain meaningful results.

California's experience may not generalize directly to other states. The policy's implementation benefited from substantial external infrastructure, including the California Student Aid Commission's large-scale outreach campaigns, local Cal-SOAP consortia, and hundreds of Cash for College events offering hands-on FAFSA help. Other states may lack comparable capacity or funding streams to provide one-on-one support at this scale. Without such infrastructure, the California approach may not yield similar gains elsewhere. Better understanding the role of these support systems is, therefore, crucial: California's success may hinge less on the law itself and more on the organizational ecosystem that surrounds it.

6.4 Future Directions

Future research should build on this analysis by examining how school counselors balance FAFSA requirements with other counseling demands, whether (or to what extent) school- or district-level mandates amplify state-level impacts, and whether variation in local implementation capacity—such as through partnerships with external organizations like Cal-SOAP and Cash for College—enhances policy effectiveness. Researchers should also monitor how Cal Grant award rates evolve in future years (e.g., for the graduating class of 2025 and beyond) once issues related to FAFSA simplification are resolved. Understanding these dynamics would provide a more complete picture of the mechanisms and constraints shaping the effects documented in this study.

Further study is also needed to evaluate the cost-effectiveness of California's FAFSA completion policy. Future analyses should ideally measure staff time, administrative expenditures, and resource reallocation to determine whether "soft" FAFSA completion policies deliver comparable enrollment gains compared to external assistance programs (such as from tax advisors). Such evidence would help policymakers assess whether expanding counselor support or funding external partners offers a more cost-effective model for increasing FAFSA completion.

In addition, follow-up studies conducted several years after implementation should track the college persistence, graduation, and labor-market outcomes of students affected by California's FAFSA completion policy. Linking administrative data from the CA Cradle-to-Career Data System and other emerging state longitudinal databases could enable

researchers to assess whether early gains in FAFSA completion and enrollment translate into lasting improvements in postsecondary attainment and earnings.

Collectively, this research agenda can guide states considering FAFSA completion policies. It can help states design approaches that are politically feasible, equitable, and administratively practical. Policymakers should ensure that implementation supports and resources are aligned with the demands these policies place on schools and staff. Doing so will increase the likelihood of achieving the outcomes they are seeking.

6.5 Conclusion

This analysis of California's "soft" FAFSA completion policy demonstrates a counselor-driven model without a high school graduation requirement can substantially increase federal and state financial aid application rates—particularly in schools that previously had low FAFSA-completion levels—and modestly raise college-going rates. While this design avoids the political challenges of an additional graduation requirement for students, it is not costless: implementation relies heavily on counselor labor and administrative tracking, and the policy's effectiveness in California may have been amplified by well-resourced state partners that provided direct assistance. Prior research underscores that individualized guidance provided to students is central to FAFSA completion and aid uptake (Bettinger et al. 2012; McDonough & Calderone 2006). Ultimately, FAFSA completion policies—whether or not they are required for high school graduation—can meaningfully expand college access when supported by sufficient counseling capacity, implementation infrastructure, and external assistance.

7.0 Appendices

Appendix 1: Continuous Treatment Variable

Equation A1.1 shows the difference-in-difference specification when the treatment variable is operationalized as a continuous measure, measured as 1 minus the average FAFSA/CADAA rate in the pre-treatment years.

$$Equation A1.1: Y_{st} = \beta 0 + \lambda_t + \gamma_s + \psi'_{st} + \beta 1(Post_t \times Intensity_s) + \epsilon_{st},$$

Where Y_{st} is the FAFSA/CADAA rate or the CalGrant award rate for each school in each graduation year between 2018 and 2024. $Intensity_s$ is 1 minus the average FAFSA submission rate between the years 2018 and 2022 for each school. $Post_t$ is equal to 1 in the post-treatment years 2023 and 2024, and 0 before 2023. School-level fixed effects (γ_s) control for any time-invariant school characteristics. Additionally, the year fixed effects, λ_t, absorb any trends over time that are common across schools. The equation also includes observed school-level characteristics that vary over time (ψ'_{st}) that could be correlated with the outcome variable. This includes the share of students who are from a racial or ethnic minority, have a disability, are English learners, and the share who are from socioeconomically disadvantaged families. $Intensity_s$ is not included as a separate variable in this equation because the school-level fixed effects capture it.

The coefficient of interest, β1, captures how much more the outcome changes after the policy for a school that has a one percentage point higher treatment intensity (i.e., had a lower pre-policy FAFSA rate) compared with an average school. A positive and statistically significant β1 indicates that schools with lower baseline filing rates experienced larger gains in FAFSA/CADAA completion (or in subsequent outcomes) after the policy was introduced.

Equation A1.2 shows the event study specification when the treatment variable is operationalized as the continuous measure, measured as 1 minus the average FAFSA/CADAA rate in the pre-treatment years.

$Equation\ A1.22: Y_{st} = \beta 0 + \lambda_t + \gamma_s + \psi'_{st} + \sum_{y=2022\ or\ 2024}^{y=2018} \alpha_y\ 1\ x\ \{t = y\} x\ Intensity_s + \epsilon_{st}$,

where α_y is a vector of coefficients corresponding to each y, from 2018 to 2022 or 2024, and α_{2022} is equal to 0. Otherwise, the equation is the same as in Equation 1.

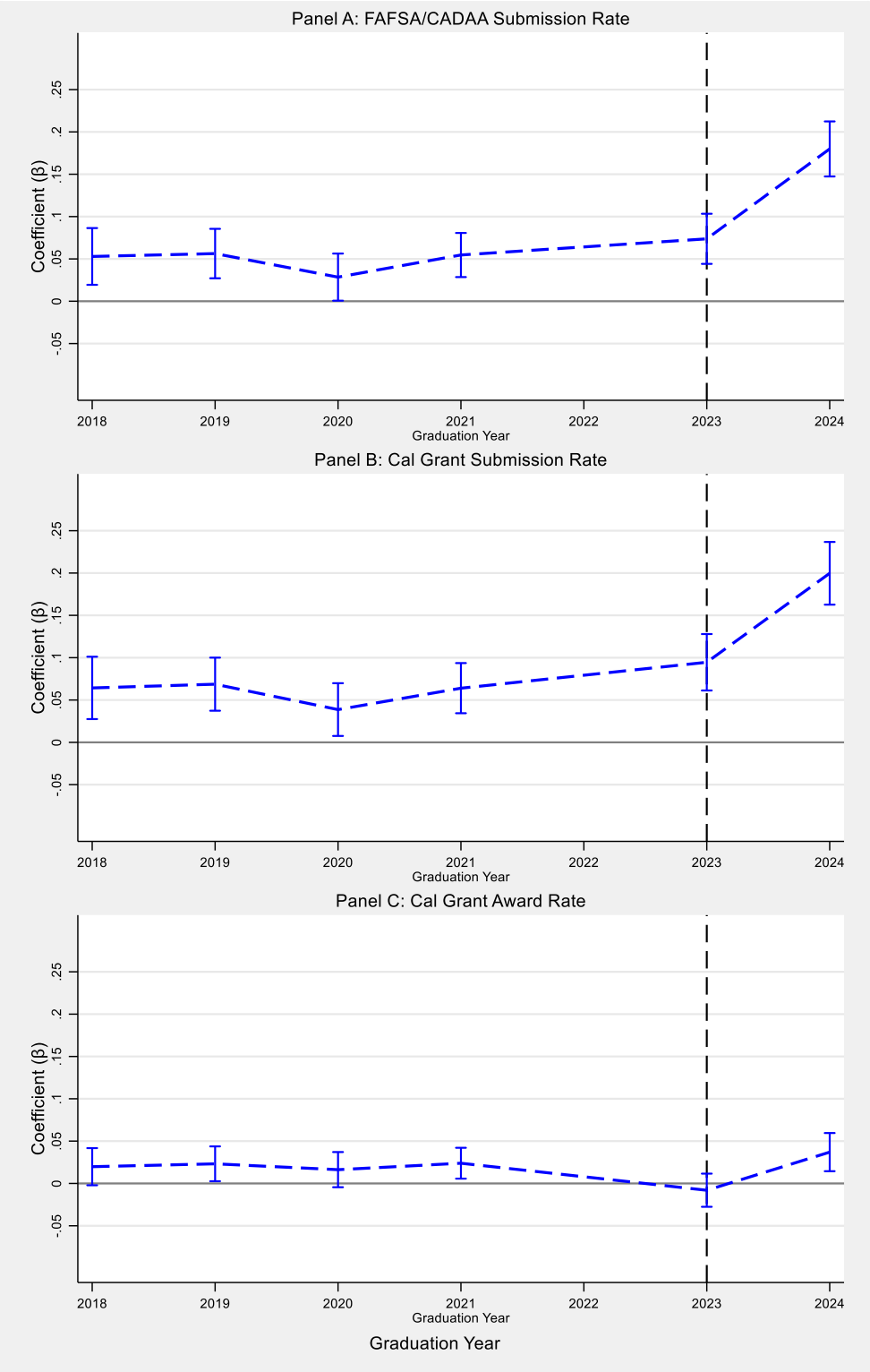
Table A1.1 shows that in the continuous specification, a one percentage point increase in a school's baseline FAFSA/CADAA non-submission rate corresponds to a 0.09 percentage point increase in FAFSA/CADAA submissions post-policy (0.0906*, t = 6.61). Effects on Cal Grant application rates are also statistically significant and positive, with an effect size of 0.10 (0.1023*, t = 7.11). By contrast, the effect on Cal Grant award rates is very small and not statistically distinguishable from zero (-0.0015, t = -0.19).

Table A1.1 Estimated Treatment Effects of California's FAFSA Policy (standard errors in parentheses)

Dependent Variable	*(1) FAFSA Submit (%)*	*(3) Cal Grant App (%)*	*(5) Cal Grant Award (%)*
Continuous Treatment (100 − Pre-Policy Submission % X Posts)	0.0906*** (0.013)	0.1023*** (0.014)	-0.0015 (0.0078)
Observations	2,997,141	2,968,138	2,941,163
R-squared (within)	0.2958	0.1326	0.1005

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, ***p < 0.01. All models include school and graduation-year fixed effects, as well as controls for racial composition, share of students with disabilities, low-SES share, and English learner share

Figure A1.1: Event Study Estimates of Treatment Intensity Effects by Graduation Year



Notes: Ranges around each point represent 95% confidence intervals. The horizontal dotted line at 2023 marks the first year of California's Universal FAFSA Policy. Data are weighted by 2022 12th-grade enrollment

The coefficients in years prior to 2023 are generally above zero, indicating that schools with higher baseline non-submission rates were already experiencing modest relative increases in FAFSA/CADAA submissions and Cal Grant applications prior to the policy. While this pattern suggests a modest violation of pre-policy parallel trends, the discontinuous jump in 2023 is still notable: both FAFSA/CADAA submissions and Cal Grant applications rise substantially after policy implementation, with the largest effects concentrated in the lowest-performing schools. In contrast, effects on Cal Grant awards remain small and statistically indistinguishable from zero, suggesting that the increase in applications did not translate into additional aid awards.

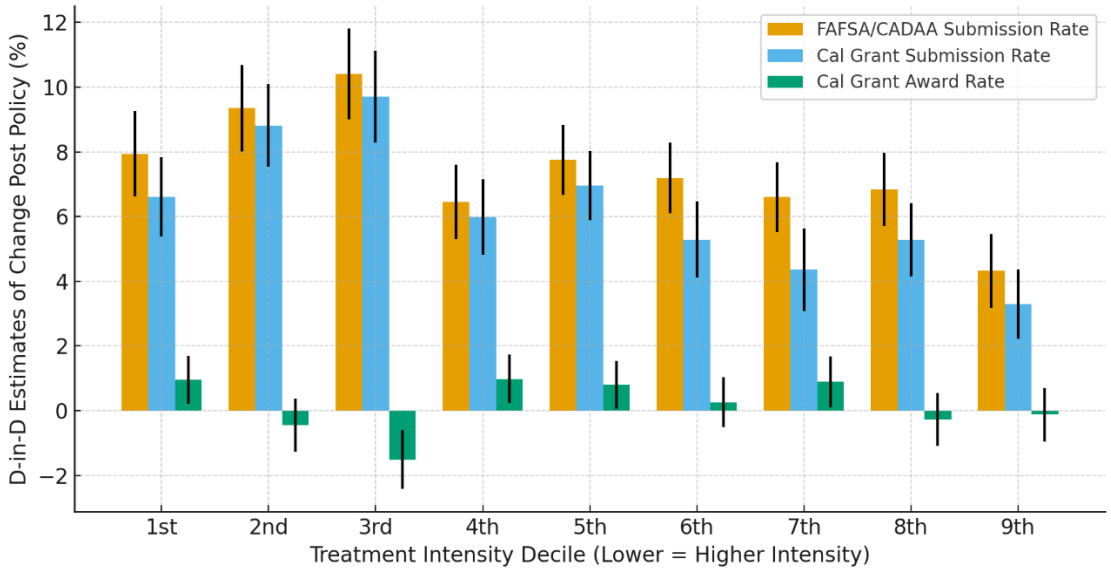
Appendix 2: Results for All Deciles

Table A2.1. Difference-in-Differences Estimates of the Effect of California's FAFSA Completion Policy by Decile of Pre-Policy FAFSA Completion

Decile × Post	*FAFSA/CADAA Submission Rate (%)*	*Cal Grant Submission Rate (%)*	*Cal Grant Award Rate (%)*
1st Decile	7.94*** (1.32)	6.61*** (1.23)	0.96 (0.74)
2nd Decile	9.35*** (1.34)	8.82*** (1.27)	–0.44 (0.82)
3rd Decile	10.41*** (1.40)	9.71*** (1.43)	–1.51* (0.90)
4th Decile	6.45*** (1.15)	5.98*** (1.17)	0.98 (0.75)
5th Decile	7.75*** (1.09)	6.96*** (1.08)	0.80 (0.74)
6th Decile	7.19*** (1.09)	5.29*** (1.18)	0.26 (0.77)
7th Decile	6.60*** (1.09)	4.36*** (1.28)	0.89 (0.79)
8th Decile	6.85*** (1.13)	5.29*** (1.13)	–0.27 (0.82)
9th Decile	4.32*** (1.14)	3.30*** (1.07)	–0.12 (0.83)
N (Schools, Students)	1,668; 2,997,141	1,661; 2,968,138	1,652; 2,941,163

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, ***p < 0.01. All models include school and graduation-year fixed effects, as well as controls for racial composition, share of students with disabilities, low-SES share, and English learner share.

Figure A2.1 Completion Policy by Decile of Pre-Policy FAFSA Completion



Notes: Ranges around each point represent 95% confidence intervals.

Table A2.2: Pre-Trend Tests

Decile × Pre	*FAFSA/CADAA Submission Rate (%)*	*Cal Grant Submission Rate (%)*	*Cal Grant Award Rate (%)*
1st Decile	4.07 (3.53)	4.48 (3.81)	1.83 (3.21)
2nd Decile	15.42 ** (6.26)	16.74 *** (5.94)	4.75 (4.14)
3rd Decile	9.41 * (5.54)	12.62 ** (6.07)	5.39 (4.02)
4th Decile	9.60 ** (3.77)	16.86 *** (5.08)	6.82 ** (3.41)
5th Decile	3.60 (3.62)	10.13 ** (4.68)	3.84 (3.27)
6th Decile	2.60 (3.70)	7.74 * (4.68)	4.34 (3.39)
7th Decile	3.28 (3.49)	4.60 (3.65)	3.48 (3.28)
8th Decile	–5.07 (4.20)	–0.98 (4.36)	–2.44 (3.55)
9th Decile	–2.65 (3.84)	–0.50 (3.82)	1.23 (3.56)
N (Schools, Students)	**1,646; 2,141,971**	**1,633; 2,120,222**	**1,619; 2,100,987**

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, ***p < 0.01. Coefficients close to zero and statistically insignificant indicate no evidence of differential pre-policy trends. Graduation years 2018 to 2022.

Across outcomes, the pre-trend estimates provide little evidence of systematic differences in outcome trajectories prior to California's FAFSA completion policy. For FAFSA submission rates, coefficients are mostly small and insignificant, with only the 2nd and 4th deciles exhibiting modest but statistically significant pre-policy increases, suggesting slightly faster improvement among some schools. For Cal Grant submission rates, several adjacent deciles—the 2nd through 5th—display statistically significant positive coefficients, indicating that schools with lower baseline FAFSA completion were already experiencing somewhat steeper pre-policy gains in Cal Grant submissions. In contrast, Cal Grant award rates show no meaningful pre-policy differences apart from a modestly positive estimate in the 4th decile. Taken together, these findings point to mild pre-policy upward movement among a subset of lower-performing schools but no systematic

divergence in trends, supporting the plausibility of the parallel-trends assumption for causal interpretation.

Appendix 3: Excluding Alternative Schools

This analysis excludes alternative and continuation high schools, which serve students on nontraditional academic paths and often differ markedly in structure, enrollment stability, and reporting practices compared to traditional public high schools. As a result, estimates from this restricted sample reflect the effects of the policy among traditional high schools—the large majority of all California high schools and the type most likely to be directly affected by FAFSA outreach and compliance activities. The purpose of this restriction is to provide an estimate that better represents the population of schools the policy was primarily designed to target. These estimates also provide a better comparison to Deneault (2023), who similarly excluded nontraditional schools such as charter and virtual schools when examining Louisiana's mandatory FAFSA policy.

Table A3.1. Difference-in-Differences Estimates of California's FAFSA Completion Policy by Decile of Pre-Policy FAFSA Completion, Excluding Alternative Schools

Baseline FAFSA Completion Group × Post	*FAFSA/CADAA Submission Rate (%)*	*Cal Grant Submission Rate (%)*	*Cal Grant Award Rate (%)*
1st Decile	10.36*** (2.44)	7.61*** (2.55)	–0.61 (1.22)
2nd Decile	9.59*** (1.66)	10.17*** (1.64)	–1.79* (0.99)
3rd Decile	9.96*** (1.48)	9.23*** (1.44)	–1.16 (0.89)
4th Decile	6.40*** (1.16)	5.97*** (1.18)	1.02 (0.75)
5th Decile	7.72*** (1.09)	7.00*** (1.09)	0.83 (0.75)
6th Decile	7.12*** (1.09)	5.25*** (1.19)	0.29 (0.77)
7th Decile	6.52*** (1.10)	4.31*** (1.28)	0.93 (0.79)
8th Decile	6.79*** (1.13)	5.26*** (1.13)	–0.23 (0.82)
9th Decile	4.28*** (1.14)	3.26*** (1.08)	–0.10 (0.83)
Deciles 1–9	6.76***(0.94)	5.47***(0.88)	-0.33 (0.69)
N (Schools, Students)	*1,330; 2,762,874*	*1,328; 2,754,354*	*1,326; 2,746,549*

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, ***p < 0.01. All models include school and graduation-year fixed effects, as well as controls for racial composition, share of students with disabilities, low-SES share, and English learner share.

Results indicate that California's FAFSA completion policy produced the largest gains among schools with the lowest baseline FAFSA submission rates. Schools in the bottom decile experienced increases of approximately 10 percentage points in both FAFSA and Cal Grant submission rates, while second- and third-decile schools showed gains of about 8–10 percentage points across the two measures. Mid-decile schools (fourth and fifth) saw slightly smaller but still statistically significant improvements of 6–7 percentage points. Schools in the upper-middle range (deciles 6–9) exhibited more modest increases—around 4 to 6 percentage points in FAFSA submissions and 3 to 5 percentage points in Cal Grant submissions—indicating that the policy's effects were most concentrated among lower-performing schools. Changes in Cal Grant award rates were small and statistically insignificant across nearly all deciles. The results for the 1-9 decile group show that, on average, schools experienced a 7-percentage-point increase in FAFSA submission rates, a 6-percentage-point increase in Cal Grant application rates, and no change in Cal Grant award rates.

Table A3.2: Pre-Trend Tests

Baseline FAFSA Completion Group	*FAFSA/CADAA Submission Rate (%)*	*Cal Grant Submission Rate (%)*	*Cal Grant Award Rate (%)*
1st Decile	12.50 (7.66)	9.93 (9.36)	1.81 (4.09)
2nd Decile	24.05 (12.84)	24.89** (12.30)	6.86 (7.57)
3rd Decile	6.10 (5.06)	12.51** (6.17)	6.34 (3.95)
4th Decile	9.92** (3.79)	17.03*** (5.09)	6.96** (3.42)
5th Decile	3.39 (3.60)	9.85** (4.69)	3.63 (3.28)

6th Decile	2.95 (3.71)	7.98 (4.69)	4.39 (3.39)
7th Decile	3.51 (3.50)	4.70 (3.67)	3.56 (3.29)
8th Decile	–5.04 (4.21)	–1.03 (4.37)	–2.36 (3.55)
9th Decile	–2.78 (3.85)	–0.66 (3.82)	1.08 (3.56)
Deciles 1–9	2.61 (2.86)	6.94 (2.99)	3.10 (3.02)
N (Schools, Students)	(1,312; 1,974,883)	(1,312; 1,974,883)	(1,312;1,974,883)

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, ***p < 0.01. Coefficients close to zero and statistically insignificant indicate no evidence of differential pre-policy trends. Graduation years 2018 to 2022. Standard errors clustered at the school level are in parentheses.

Pre-policy trend tests indicate no systematic differences in outcomes across baseline FAFSA completion deciles before the implementation of California's FAFSA completion policy. While several lower-decile groups show modest variation, most coefficients are small and statistically indistinguishable from zero. Specifically, only the fourth decile shows consistent pre-trend statistical significance across all three outcomes—FAFSA submission, Cal Grant submission, and Cal Grant awards—while other significant results (e.g., second and third deciles) appear sporadic and do not follow a monotonic pattern. These findings suggest that schools with different baseline FAFSA completion rates exhibited largely parallel pre-policy trajectories in FAFSA and Cal Grant outcomes, supporting the validity of the difference-in-differences identification strategy.

Appendix 4: Pre-Policy Characteristics by Treatment Deciles

Table A4.1 reports characteristics for high schools grouped by treatment (pre-policy FAFSA/CADAA submission) decile in the pre-policy period. These differences highlight the substantial variation in outcome variables and covariates across treatment deciles, underscoring the importance of controlling for school fixed effects in the empirical specification.

Table A4.1 Characteristics by Treatment Decile (standard deviation in parentheses)

	FAFSA Completion Decile in Pre-Policy Period		
	Lowest Decile	5th Decile	Highest Decile
Outcome Variables			
FAFSA/CADAA submission rate (%)	12.76 (9.72)	57.60 (8.16)	87.27 (9.41)
Cal Grant submission rate (%)	11.22 (8.23)	54.71 (9.14)	85.05 (9.19)
Cal Grant award rate (%)	3.15 (2.96)	22.04 (9.36)	52.96 (12.83)
College-going rate (%)	24.57 (10.65)	70.54 (14.06)	70.15 (14.05)
Covariates			
% Minority (non-White)	83.50 (16.66)	68.74 (21.71)	92.21 (10.75)
% with Disability	14.18 (7.25)	11.90 (3.60)	10.50 (5.16)
% Socioeconomically disadvantaged	83.93 (14.05)	57.21 (27.19)	86.85 (15.95)
% English learner	19.50 (11.25)	12.21 (9.90)	16.04 (9.71)
Standardized Key Analytic Variables			

Treatment intensity	0.56 (0.49)	–0.42 (1.05)	0.77 (0.62)
Pre-policy socioeconomic composition	–1.25 (1.12)	0.02 (0.94)	0.05 (0.99)
Pre-policy counselor capacity:	2.75 (0.21)	0.18 (0.09)	–1.67 (0.27)
Observations (number of schools/ number of students)	1,173 / 138,895	1,173 / 421,890	1,167 / 202,047

Source: California Student Aid Commission (CSAC), California Department of Education (CDE), and Author's calculations.
Note: Table reports weighted means and standard deviations (in parentheses) for key outcome variables, covariates, and standardized heterogeneity measures before and after California's Universal FAFSA Policy took effect. The pre-policy period includes school years 2018–2022; the post-policy period includes 2023–2024. Outcome variables are expressed as percentages of 12th-grade students. Heterogeneity variables are standardized to mean = 0 and SD = 1 based on pre-policy values. Observations reflect the number of unique schools and total 12th-grade students in each period, weighted by 2022 enrollment.

The descriptive statistics reveal clear socioeconomic and demographic differences across these groups. Schools in the lowest-FAFSA submission decile serve a much higher share of socioeconomically disadvantaged (84 percent vs. 57 percent in the middle decile) and minority students (83 percent vs. 69 percent), as well as more English learners and students with disabilities. These schools also display substantially lower college-going rates Cal Grant Submission rates, and Cal Grant award rates before the policy was implemented. In contrast, high-FAFSA submission schools tend to enroll fewer English-learner and disabled students but more socioeconomically advantaged and racially homogeneous (non-White-majority) populations, along with higher counselor capacity and stronger pre-policy college enrollment outcomes.

These pre-existing differences underscore the importance of controlling for school and year fixed effects, as well as relevant time-varying covariates, in the empirical analysis. Without these controls, comparisons across deciles could confound the impact of the FAFSA policy with underlying demographic or resource disparities. By differencing within schools over time, the identification strategy focuses on changes in FAFSA submission and college-going within schools, net of these structural differences. Consequently, while the baseline variation across deciles contextualizes where the policy may have had the greatest scope for improvement, it does not threaten the validity of the causal estimates under the fixed-effects framework used in my analyses.

References

Adams, H. (2025, November 17). What to Know About Trump Accounts. *Charles Schwab*. https://www.schwab.com/learn/story/trump-accounts

Advisory Committee on Student Financial Assistance. (2010). The Rising Price of Inequality: How Inadequate Grant Aid Limits College Access and Persistence. Report to Congress and the Secretary of Education (Report to Congress and The Secretary of Education).

American School Counselor Association. (2023). *Student-to-School-Counselor Ratio, 2022–2023*. https://www.schoolcounselor.org/getmedia/a7f42419-0e91-4166-8c15-84232e9a2eda/pr_ratios-22-23.pdf

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Avery, C. (2010). *The Effects of College Counseling on High-Achieving, Low-Income Students* (No. w16359; p. w16359). National Bureau of Economic Research. https://doi.org/10.3386/w16359

Avery, C., Bird, K. A., Castleman, B., Goodman, J., Lamberton, C., & Page, L. C. (2020). *Digital Messaging to Improve College Enrollment and Success* (No. Working Paper 27897; NBER Working Paper). https://www.nber.org/papers/w27897

Avery, C., & Kane, T. J. (2004). Student Perceptions of College Opportunities. The Boston COACH Program. In C. M. Hoxby (Ed.), *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*. University of Chicago Press.

Bahr, S., Sparks, D., & Hoyer, K. M. (2018). *Why Didn't Students Complete a Free Application for Federal Student Aid (FAFSA)? A Detailed Look*. (NCES Statistics in Brief). U.S. Department of

Education, National Center for Education Statistics. https://nces.ed.gov/pubs2018/2018061.pdf

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bartik, T. J., Hershbein, B., & Lachowska, M. (2021). The Effects of the Kalamazoo Promise Scholarship on College Enrollment and Completion. *Journal of Human Resources*, *56*(1), 269–310. https://doi.org/10.3368/jhr.56.1.0416-7824R4

Becker, G. S. (1962). Investment in Human Capital: A Theoretical Analysis. *Journal of Political Economy*, *70*(5, Part 2), 9–49. https://doi.org/10.1086/258724

Benner, A. D., & Mistry, R. S. (2007). Congruence of mother and teacher educational expectations and low-income youth's academic competence. *Journal of Educational Psychology*, *99*(1), 140–153. https://doi.org/10.1037/0022-0663.99.1.140

Bergman, P., Denning, J. T., & Manoli, D. (2019). Is Information Enough? The Effect of Information about Education Tax Benefits on Student Outcomes. *Journal of Policy Analysis and Management*, *38*(3), 706–731. https://doi.org/10.1002/pam.22131

Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How Much Should We Trust Differences-In-Differences Estimates? *The Quarterly Journal of Economics*, *119*(1), 249–275. https://doi.org/10.1162/003355304772839588

Bettinger, E. P. (2013). Results from the H&R Block FAFSA Experiment and Next Steps. 7.

Bettinger, E. P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2012). The Role of Application Assistance and Information in College Decisions: Results from the H&R Block Fafsa

Experiment*. *The Quarterly Journal of Economics*, *127*(3), 1205–1242. https://doi.org/10.1093/qje/qjs017

Bhargava, S., & Manoli, D. (2015). Psychological Frictions and the Incomplete Take-Up of Social Benefits: Evidence from an IRS Field Experiment. *American Economic Review*, *105*(11), 3489–3529. https://doi.org/10.1257/aer.20121493

Bird, K. A., Castleman, B. L., Denning, J. T., Goodman, J., Lamberton, C., & Rosinger, K. O. (2021). Nudging at scale: Experimental evidence from FAFSA completion campaigns. *Journal of Economic Behavior & Organization*, *183*, 105–128. https://doi.org/10.1016/j.jebo.2020.12.022

Blake, M. K. (2020). Other Duties as Assigned: The Ambiguous Role of the High School Counselor. *Sociology of Education*, *93*(4), 315–330. https://doi.org/10.1177/0038040720932563

Blumenthal, A., & Shanks, T. R. (2019a). Communication matters: A long-term follow-up study of child savings account program participation. *Children and Youth Services Review*, *100*, 136–146. https://doi.org/10.1016/j.childyouth.2019.02.016

Blumenthal, A., & Shanks, T. R. (2019b). Communication matters: A long-term follow-up study of child savings account program participation. *Children and Youth Services Review*, *100*, 136–146. https://doi.org/10.1016/j.childyouth.2019.02.016

Bos, J. M., Berman, J., Kane, T. J., & Tseng, F. (2012). *The Impacts of SOURCE: A Program to Support College Enrollment through Near-Peer, Low-Cost Student Advising* (No. NCJ Number 309297). Department of Justice. https://www.ojp.gov/ncjrs/virtual-library/abstracts/impacts-source-program-support-college-enrollment-through-near-peer

Bowles, S., & Gintis, H. (2002). The Inheritance of Inequality. *Journal of Economic Perspectives*, *16*(3), 3–30. https://doi.org/10.1257/089533002760278686

Bozick, R., & DeLuca, S. (2005). Better Late than Never? Delayed Enrollment in the High School to College Transition. *Social Forces*, *84*(1), 531–554.

Brown, C. H., & Knight, D. (2024). Student-to-school counselor ratios: Understanding the history and ethics behind professional staffing recommendations and realities in the United States. https://doi.org/10.26300/pzh5-6t96

Bruce, D. J., & Carruthers, C. K. (2014). Jackpot? The impact of lottery scholarships on enrollment in Tennessee. *Journal of Urban Economics*, *81*, 30–44. https://doi.org/10.1016/j.jue.2014.01.006

Bulman, G. B., & Hoxby, C. M. (2016). The Returns to the Federal Tax Credits for Higher Education.

Cabrera, A. F., & La Nasa, S. M. (2000). Understanding the College-Choice Process. *New Directions for Institutional Research*, *2000*(107), 5–22. https://doi.org/10.1002/ir.10701

Cairó, I., & Cajner, T. (2014). *Human Capital and Unemployment Dynamics: Why More Educated Workers Enjoy Greater Employment Stability* (Finance and Economics Discussion Series) [2014-09]. The Federal Reserve Board.

California Department of Education. (n.d.). *Data Quest*. 2020-21 College-Going Rate for California High School Students. https://dq.cde.ca.gov/dataquest/DQCensus/CGRLoc.aspx?cds=00&agglevel=State&year=2020-21

California Department of the Treasurer, ScholarShare Investment Board. (2024). *California Kids Investment and Development Savings Program Annual Report: Program year ending June 30, 2024*. https://www.treasurer.ca.gov/scholarshare/publications/CaliforniaKidsInvestment.pdf

California Education Code, 51225.8 § 51225.8 (2021). https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=51225.8.&lawCode=ED

California Immigrant Data Portal. (n.d.). *Indicator Mixed-status Families:* California Immigrant Data Portal. Retrieved October 8, 2025, from https://immigrantdataca.org/indicators/mixed-status-families

Cannon, R., & Goldrick-Rab, S. (2016). *Too Late? Too Little:The Timing of Financial Aid Applications*. Wisconsin HOPE Lab. https://www.luminafoundation.org/files/resources/too-late-too-little.pdf

Carbonaro, W., Lauen, D. L., & Levy, B. L. (2023). Does Cumulative Exposure to High-Poverty Schools Widen Test-Score Inequality? *Sociology of Education*, *96*(2), 81–103. https://doi.org/10.1177/00380407221147889

Carrell, S., & Sacerdote, B. (2017). Why Do College-Going Interventions Work? *American Economic Journal: Applied Economics*, *9*(3), 124–151. https://doi.org/10.1257/app.20150530

Castleman, B., & Goodman, J. (2014). Intensive College Counseling and the College Enrollment Choices of Low Income Students. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2493103

Castleman, B., & Goodman, J. (2018). Intensive College Counseling and the Enrollment and Persistence of Low-Income Students. *Education Finance and Policy*, *13*(1), 19–41. https://doi.org/10.1162/edfp_a_00204

Castleman, B. L., & Page, L. C. (2014a). A Trickle or a Torrent? Understanding the Extent of Summer "Melt" Among College-Intending High School Graduates. *Social Science Quarterly*, *95*(1), 202–220. https://doi.org/10.1111/ssqu.12032

Castleman, B. L., & Page, L. C. (2014b). Summer melt: Supporting low-income students through the transition to college. Harvard Education Press.

Castleman, B. L., & Page, L. C. (2015). Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? *Journal of Economic Behavior & Organization*, *115*, 144–160. https://doi.org/10.1016/j.jebo.2014.12.008

Castleman, B. L., & Page, L. C. (2016). Freshman Year Financial Aid Nudges: An Experiment to Increase FAFSA Renewal and College Persistence. *Journal of Human Resources*, *51*(2), 389–415. https://doi.org/10.3368/jhr.51.2.0614-6458R

Charles, C. Z., Roscigno, V. J., & Torres, K. C. (2007). Racial inequality and college attendance: The mediating role of parental investments. *Social Science Research*, *36*(1), 329–352. https://doi.org/10.1016/j.ssresearch.2006.02.004

Charles, K. K., & Hurst, E. (2003). The Correlation of Wealth across Generations. *Journal of Political Economy*, *111*(6), 1155–1182. https://doi.org/10.1086/378526

Chen, X., & Carroll, D. (2005). *First-Generation Students in Postsecondary Education: A look at their transcripts* (No. NCES 2005–171; Institute of Education Sciences). U.S. Department of Education.

Chen, X., Wu, J., & Tasoff, S. (2010). *Getting Ready for College: Financial Concerns and Preparation Among the HighSchool Senior Class of 2003–04* (No. NCES 2010-204). National Center for Education Statistics, Institute of Education Science, U.S. Department of Education.

Chen, Z., O'Brien, M., Nielsen, S., Zheng, H., & Starks, B. (2023). A Cross-Sectional Examination of Educational Expectation Among Welfare Users in an Asset Building Program. *Global Social Welfare*. https://doi.org/10.1007/s40609-023-00263-0

Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). Where is the land of Opportunity? The Geography of Intergenerational Mobility in the United States *. *The Quarterly Journal of Economics*, *129*(4), 1553–1623. https://doi.org/10.1093/qje/qju022

Choy, S. P. (2001). Students Whose Parents Did Not Go To College: Postsecondary Access, Persistence and Attainment (Nos. 2001–126; pp. 1–38). National Center for Education Statistics.

Clancy, M., Sherradan, M., & Beverly, S. (2019). *Essential Policy Design Elements for Statewide Child Development Accounts* (Nos. 19–47; CSD Fact Sheet). Washington University, Center for Social Development.

Clayton, D., Draeger, J., & Ward, J. D. (2025). *Cost Confusion: Americans' Misconceptions of College Costs*. strada Education Foundation. https://cdn.prod.website-files.com/6777c52f82e5471a3732ea25/68274a0be4b2cde5af99b1d2_Strada_CostConfusion_Report_May162025.pdf

Colin Cameron, A., & Miller, D. L. (2015). A Practitioner's Guide to Cluster-Robust Inference. *Journal of Human Resources*, *50*(2), 317–372. https://doi.org/10.3368/jhr.50.2.317

Condron, D. J., & Roscigno, V. J. (2003). Disparities within: Unequal Spending and Achievement in an Urban School District. *Sociology of Education*, *76*(1), 18. https://doi.org/10.2307/3090259

Conley, D. (2001). Capital for College: Parental Assets and Postsecondary Schooling. *Sociology of Education*, *74*(1), 59. https://doi.org/10.2307/2673145

Cook, K., Jackson, J., & Gomez, S. (2024). *Implementing California's Universal Financial Aid Application Policy*. Public Policy Institute of California. https://www.ppic.org/publication/implementing-californias-universal-financial-aid-application-policy/

Corcoran, M. E., & Chaudry, A. (1997). *The Dynamics of Childhood Poverty* (Children and Poverty). Stanford University.

Currie, J. (2004). The Take-Up of Social Benefits. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.527143

Davidson, J. C. (2013). Increasing FAFSA Completion Rates: Research, Policies and Practices. *Journal of Student Financial Aid*, *43*(1). https://doi.org/10.55504/0884-9153.1003

Deneault, C. (2023). College Enrollment and Mandatory FAFSA Applications: Evidence from Louisiana. *American Economic Journal: Economic Policy*, *15*(3), 465–494. https://doi.org/10.1257/pol.20210360

Diemer, M. A., Mistry, R. S., Wadsworth, M. E., López, I., & Reimers, F. (2013). Best Practices in Conceptualizing and Measuring Social Class in Psychological Research. *Analyses of Social Issues and Public Policy*, *13*(1), 77–113. https://doi.org/10.1111/asap.12001

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th edition). Wiley.

Dynarski, S. (2000). Hope for Whom? Financial Aid for the Middle Class and Its Impact on College Attendance. *National Tax Journal*, *53*(3.2), 629–661. https://doi.org/10.17310/ntj.2000.3S.02

Dynarski, S., Libassi, C. J., Michelmore, K., & Owen, S. (2018). *Closing the Gap: The Effect of a Targeted, Tuition-Free Promise on College Choices of High-Achieving, Low-Income Students* (No. w25349; p. w25349). National Bureau of Economic Research. https://doi.org/10.3386/w25349

Dynarski, S. M., & Scott-Clayton, J. E. (2006). The Cost of Complexity in Federal Student Aid: Lessons from Optimal Tax Theory and Behavioral Economics. *National Tax Journal*, *59*(2), 319–356. https://doi.org/10.17310/ntj.2006.2.07

Dynarski, S., Scott-Clayton, J., & Wiederspan, M. (2013). Simplifying Tax Incentives and Aid for College: Progress and Prospects. *Tax Policy and the Economy*, *27*(1), 161–202. https://doi.org/10.1086/671247

Education Strategy Group. (2020). *Fast Track FAFSA Completion*. https://edstrategy.org/wp-content/uploads/2020/01/Fast-Track-FAFSA-Completion-Final.pdf

Elliott, W., & Beverly, S. G. (2011). The role of savings and wealth in reducing 'wilt' between expectations and college attendance. *Journal of Children and Poverty*, *17*(2), 165–185. https://doi.org/10.1080/10796126.2011.538375

Elliott, W., Choi, E. H., Destin, M., & Kim, K. H. (2011). The age old question, which comes first? A simultaneous test of children's savings and children's college-bound identity. *Children and Youth Services Review*, *33*(7), 1101–1111. https://doi.org/10.1016/j.childyouth.2011.02.001

Elliott, W., Song, H., & Nam, I. (2013). Small-dollar children's savings accounts and children's college outcomes by income level. *Children and Youth Services Review*, *35*(3), 560–571. https://doi.org/10.1016/j.childyouth.2012.12.003

Elliott, W., Sorensen, N., & O'Brien, M. (2025, April 9). *Kindergarten to College (K2C) College Enrollment Findings: Fuel for an Evidence-Based Movement*. California's Early Wealth Account System Summit: Pathways to Promise, Sacramento, CA. https://www.sfgov.org/k2c/media/420/download?inline

Employment and Social Development Canada. (2023). Canada Education Savings Program part 2: Final evaluation report.

Fang, S., Huang, J., Curley, J., & Birkenmaier, J. (2018). Family assets, parental expectations, and children educational performance: An empirical examination from China. *Children and Youth Services Review*, *87*, 60–68. https://doi.org/10.1016/j.childyouth.2018.02.018

Federal Student Aid. (2024, March 12). *Update on Technical Fix to the 2024-25 FAFSA Form for Individuals Without a Social Security Number (SSN) | Knowledge Center*. https://fsapartners.ed.gov/knowledge-center/library/electronic-announcements/2024-03-12/update-technical-fix-2024-25-fafsa-form-individuals-without-social-security-number-ssn

Finkelstein, A., & Notowidigdo, M. J. (2019). Take-Up and Targeting: Experimental Evidence from SNAP. *The Quarterly Journal of Economics*, *134*(3), 1505–1556. https://doi.org/10.1093/qje/qjz013

Freeman, B., & Wilson, S. (2022). *College Affordability Views and College Enrollment* (No. NCES 2022-057; Data Point). https://nces.ed.gov/pubs2022/2022057/index.asp

Frenette, M. (2017). Which Families Invest in Registered Education Savings Plans and Does It Matter for Postsecondary Enrolment? Statistics Canada.

Girdharry, K., Simonova, E., & Lefebvre, R. (2010). *Registered Education Savings Plans – Valuable Opportunities for the Students of Tomorrow* (Issue in Focus). Certified General Accountants Association of Canada.

Goldrick-Rab, S. (2006). Following Their Every Move: An Investigation of Social-Class Differences in College Pathways. *Sociology of Education*, *79*(1), 67–79. https://doi.org/10.1177/003804070607900104

Goldrick-Rab, S., & Kolbe, T. (2016). A Matter of Trust: Applying Insights From Social Psychology to Make College Affordable. *Policy Insights from the Behavioral and Brain Sciences*, *3*(2), 237–244. https://doi.org/10.1177/2372732216656457

Government Accountability Office. (2020). Children's Savings Account Programs Can Help Families Build Savings and Envision College (Report to Congressional Committees).

Gray, K., Clancy, M., Sherraden, M., Wagner, K., & Miller-Cribbs, J. (2012). *Interviews with Mothers of Young Children in the SEED for Oklahoma Kids College Savings Experiment*. https://doi.org/10.7936/K779445X

Grinstein-Weiss, M., Yeo, Y. H., Irish, K., & Zhan, M. (2009). Parental Assets: A Pathway to Positive Child Educational Outcomes. *The Journal of Sociology & Social Welfare*, *36*(1). https://doi.org/10.15453/0191-5096.3406

Grodsky, E., & Jones, M. T. (2007). Real and imagined barriers to college entry: Perceptions of cost. *Social Science Research*, *36*(2), 745–766. https://doi.org/10.1016/j.ssresearch.2006.05.001

Grodsky, E., & Riegle-Crumb, C. (2010). Those Who Choose and Those Who Don't: Social Background and College Orientation. *The ANNALS of the American Academy of Political and Social Science*, *627*(1), 14–35. https://doi.org/10.1177/0002716209348732

Gugiu, P. C., & Rodríguez-Campos, L. (2007). Semi-structured interview protocol for constructing logic models. *Evaluation and Program Planning*, *30*(4), 339–350. https://doi.org/10.1016/j.evalprogplan.2007.08.004

Gunzler, D., Chen, T., Wu, P., & Zhang, H. (2013). Introduction to mediation analysis with structural equation modeling. *Shanghai Archives of Psychiatry*, *25*(6), 390–394. https://doi.org/10.3969/j.issn.1002-0829.2013.06.009

Gurantz, O., Pender, M., Mabel, Z., Larson, C., & Bettinger, E. (2020). Virtual advising for high-achieving high school students. *Economics of Education Review*, *75*, 101974. https://doi.org/10.1016/j.econedurev.2020.101974

Hahn, R., & Price, D. (2008). *Promise lost: College-qualified students who don't enroll in college*. Institute for Higher Education Policy. https://files.eric.ed.gov/fulltext/ED503317.pd

Hamilton, L. T. (2013). More Is More or More Is Less? Parental Financial Investments during College. *American Sociological Review*, *78*(1), 70–95. https://doi.org/10.1177/0003122412472680

Harper, C., Marcus, R., & Moore, K. (2003). Enduring Poverty and the Conditions of Childhood: Lifecourse and Intergenerational Poverty Transmissions. *World Development*, *31*(3), 535–554. https://doi.org/10.1016/S0305-750X(03)00010-X

Hartley, R. P., & Garfinkel, I. (2020). Poverty and Distributional Impacts. *Poverty and Social Policy Brief*, *4*(1), 7.

Heller, D., & Callender, C. (Eds.). (2013). *Student Financing of Higher Education* (0 ed.). Routledge. https://doi.org/10.4324/9780203589953

Herbaut, E., & Geven, K. (2020). What works to reduce inequalities in higher education? A systematic review of the (quasi-)experimental literature on outreach and financial aid. *Research in Social Stratification and Mobility*, *65*, 100442. https://doi.org/10.1016/j.rssm.2019.100442

Herd, P., & Moynihan, D. P. (2019). *Administrative Burden: Policymaking by Other Means*. Russell Sage Foundation. https://doi.org/10.7758/9781610448789

Hillman, N., Gast, M. J., & George-Jackson, C. (2015). When to Begin? Socioeconomic and Racial/Ethnic Differences in Financial Planning, Preparing, and Saving for College. *Teachers College Record: The Voice of Scholarship in Education*, *117*(8), 1–28. https://doi.org/10.1177/016146811511700807

Horn, L. J., Chen, X., & Chapman, C. (2003). *What Students and Their Parents Know About the Cost of College Tuition and What They Are Doing to Find Out* (No. NCES 2003–03; Statistical Analysis Report). https://nces.ed.gov/pubs2003/2003030.pdf

Hossler, D., Schmit, J. L., & Vesper, N. (1999). Going to college: How social, economic, and educational factors influence the decisions students make. Johns Hopkins University Press.

Huang, J., Guo, B., Kim, Y., & Sherraden, M. (2010). Parental income, assets, borrowing constraints and children's post-secondary education. *Children and Youth Services Review*, *32*(4), 585–594. https://doi.org/10.1016/j.childyouth.2009.12.005

Huang, J., Nam, Y., Sherraden, M., & Clancy, M. (2015). Financial Capability and Asset Accumulation for Children's Education: Evidence from an Experiment of Child Development Accounts. *Journal of Consumer Affairs*, *49*(1), 127–155. https://doi.org/10.1111/joca.12054

Huang, Sherraden, Clancy, Beverly, Shanks, & Kim. (2021). Asset Building and Child Development: A Policy Model for Inclusive Child Development Accounts. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *7*(3), 176. https://doi.org/10.7758/rsf.2021.7.3.08

Ikenberry, S. O., & Hartle, T. O. (1998). Too Little Knowledge Is a Dangerous Thing: What the Public Thinks and Knows About Paying for College. American Council on Education.

Internal Revenue Code, Pub. L. No. 529, § 529 26 U.S.C. (2024). https://uscode.house.gov/view.xhtml?req=(title:26+section:529+edition:prelim)&utm_source=chatgpt.com

Jez, S. J. (2014). The Differential Impact of Wealth Versus Income in the College-Going Process. *Research in Higher Education*, *55*(7), 710–734. https://doi.org/10.1007/s11162-014-9332-0

Johnson, S. R. L., Blum, R. W., & Cheng, T. L. (2014). Future orientation: A construct with implications for adolescent health and wellbeing. *International Journal of Adolescent Medicine and Health*, *26*(4), 459–468. https://doi.org/10.1515/ijamh-2013-0333

Kantrowitz, M. (2011). *Reasons Why Students Do Not File the FAFSA*. http://www.studentaidpolicy.com/fa/20110118nofafsareasons.pdf

Karimli, L., & Ssewamala, F. M. (2015). Do Savings Mediate Changes in Adolescents' Future Orientation and Health-Related Outcomes? Findings From Randomized Experiment in

Uganda. *Journal of Adolescent Health*, *57*(4), 425–432. https://doi.org/10.1016/j.jadohealth.2015.06.011

Kemp, H. (2024). *U.S. student-to-school counselor ratio improves but still misses recommended rate*. California School Board Association. https://blog.csba.org/school-counselor-ratios/

Kentor, C. (2025). Broken Promises: How the New FAFSA Failed Midex-Status Families and the Counselors Who Serve Them. Presidents' Alliance on Higher Education and Immigration.

Kim, S. W. (2025). Early impacts of the FAFSA requirement in Texas. *Economics of Education Review*, *104*, 102618. https://doi.org/10.1016/j.econedurev.2024.102618

Kim & Tamborini. (2019). Are They Still Worth It? The Long-Run Earnings Benefits of an Associate Degree, Vocational Diploma or Certificate, and Some College. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *5*(3), 64. https://doi.org/10.7758/rsf.2019.5.3.04

Kim, Y., Sherraden, M., Huang, J., & Clancy, M. (2015). Child Development Accounts and Parental Educational Expectations for Young Children: Early Evidence from a Statewide Social Experiment. *Social Service Review*, *89*(1), 99–137. https://doi.org/10.1086/680014

Kindy, K., & Seitz, A. (2025, July 17). Trump administration hands over nation's Medicaid enrollee data to ICE | AP News. *Associated Press*. https://apnews.com/article/immigration-medicaid-trump-ice-ab9c2267ce596089410387bfcb40eeb7

Klasik, D. (2012). The College Application Gauntlet: A Systematic Analysis of the Steps to Four-Year College Enrollment. *Research in Higher Education*, *53*(5), 506–549. https://doi.org/10.1007/s11162-011-9242-3

Kline, R. B., & Little, T. D. (2023). *Principles and practice of structural equation modeling* (Fifth edition). The Guilford Press.

Klugman, J., Arteta, G. D., & Lee, J. C. (2022a). Income Inequality in College Enrollment and Degree Attainment During and After the Great Recession Years. *Socius: Sociological Research for a Dynamic World*, *8*, 237802312211176. https://doi.org/10.1177/23780231221117659

Klugman, J., Arteta, G. D., & Lee, J. C. (2022b). Income Inequality in College Enrollment and Degree Attainment During and After the Great Recession Years. *Socius: Sociological Research for a Dynamic World*, *8*, 23780231221117659. https://doi.org/10.1177/23780231221117659

Kofoed, M. S. (2017). To Apply or Not to Apply: FAFSA Completion and Financial Aid Gaps. *Research in Higher Education*, *58*(1), 1–39. https://doi.org/10.1007/s11162-016-9418-y

Kroger, J., Martinussen, M., & Marcia, J. E. (2010). Identity status change during adolescence and young adulthood: A meta-analysis. *Journal of Adolescence*, *33*(5), 683–698. https://doi.org/10.1016/j.adolescence.2009.11.002

Kurlaender, M. (2006). Choosing community college: Factors affecting Latino college choice. *New Directions for Community Colleges*, *2006*(133), 7–16. https://doi.org/10.1002/cc.223

Legislative Analyst's Office. (2022, February 18). *The 2022-23 Budget: Student Financial Aid*. https://lao.ca.gov/Publications/Report/4548

Long, B. T. (2004). Does the Format of a Financial Aid Program Matter? The Effect of State In-Kind Tuition Subsidies. *Review of Economics and Statistics*, *86*(3), 767–782. https://doi.org/10.1162/0034653041811653

Louisiana Administrative Code, CXV.901.B.5 § CXV.901.B.5 (2022). https://www.doa.la.gov/media/kazfvelb/28v115.pdf?utm_source=chatgpt.com

Louisiana Department of Education. (2024). *Louisiana Department of Education Removes FAFSA Graduation Requirement Beginning in 2024–25 School Year*. https://doe.louisiana.gov/docs/default-source/links-for-newsletters/2024-2025-fafsa-policy-memo.pdf

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation Analysis. *Annual Review of Psychology*, *58*(1), 593–614. https://doi.org/10.1146/annurev.psych.58.110405.085542

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969. https://doi.org/10.1037/0003-066X.41.9.954

Mazumder, B. (2005). Fortunate Sons: New Estimates of Intergenerational Mobility in the United States Using Social Security Earnings Data. *Review of Economics and Statistics*, *87*(2), 235–255. https://doi.org/10.1162/0034653053970249

McDonough, P. M., & Calderone, S. (2006). The Meaning of Money: Perceptual Differences Between College Counselors and Low-Income Families About College Costs and Financial Aid. *American Behavioral Scientist*, *49*(12), 1703–1718. https://doi.org/10.1177/0002764206289140

Mckay, A., & Lawson, D. (2003). Assessing the Extent and Nature of Chronic Poverty in Low Income Countries: Issues and Evidence. *World Development*, *31*(3), 425–439. https://doi.org/10.1016/S0305-750X(02)00221-8

McKay, S., Tian, L., & Lymer, A. (2023). Whatever happened to the CHILD TRUST FUND? The abandonment of universal savings for UK children. *Social Policy & Administration*, spol.12941. https://doi.org/10.1111/spol.12941

Nam, Yunju; Kim, Youngmi; Clancy, Margaret; Zager, Robert; Sherraden, Michael. (2011). Do Child Development Accounts Promote Account Holding, Saving, and Asset Accumulation for Children's Future? Evidence from a Statewide Randomized Experiment. https://doi.org/10.7936/K7BC3Z2R

Narayan, A. (2020). Does simplifying the college financial aid process matter? *Economics of Education Review*, *75*, 101959. https://doi.org/10.1016/j.econedurev.2020.101959

National Center for Education Statistics, Institute of Education Sciences. (n.d.). *IPEDS Trend Generator: Student Enrollment: How many students enroll in postsecondary institutions annually?* [Dataset]. Retrieved September 10, 2025, from https://nces.ed.gov/ipeds/trendgenerator/app/answer/2/2?sideid=57--%7C2%7C1

Ober, T. M., Ahn, J., Ali, A., Homer, B. D., Moner, A., Azam, A., & Ramos, N. (2020). A mixed-methods analysis of mechanisms to support college enrollment among low-income high school students. *Translational Issues in Psychological Science*, *6*(2), 118–131. https://doi.org/10.1037/tps0000226

Oliver, M. L., & Shapiro, T. M. (2006). *Black wealth, white wealth: A new perspective on racial inequality* (10th anniversary ed). Routledge.

One Big Beautiful Bill Act, Pub. L. No. Public Law No. 119-21, 139 Stat. 72 (2025). https://www.congress.gov/bill/119th-congress/house-bill/1

Oreopoulos, P., & Ford, R. (2019). Keeping College Options Open: A Field Experiment to Help all High School Seniors Through the College Application Process. *Journal of Policy Analysis and Management*, *38*(2), 426–454. https://doi.org/10.1002/pam.22115

Ortaliza, J., Lo, J., Claxton, G., Amin, K., & Cox, C. (2023, January 10). Millions of Uninsured People Can Get Free ACA Plans. *Kaiser Family Foundation*. https://www.kff.org/affordable-care-act/millions-of-uninsured-people-can-get-free-aca-plans/

Oyserman, D. (2014). Identity-Based Motivation: Core Processes and Intervention Examples. In S. A. Karabenick & T. C. Urdan (Eds.), *Advances in Motivation and Achievement* (Vol. 18, pp. 213–242). Emerald Group Publishing Limited. https://doi.org/10.1108/S0749-742320140000018006

Oyserman, D., Bybee, D., & Terry, K. (2006). Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology*, *91*(1), 188–204. https://doi.org/10.1037/0022-3514.91.1.188

Oyserman, D., & Destin, M. (2010). Identity-Based Motivation: Implications for Intervention. *The Counseling Psychologist*, *38*(7), 1001–1043. https://doi.org/10.1177/0011000010374775

Page, L. C., Iriti, J., Lowry, D., & Anthony, A. M. (2017). The Promise of Place-Based Investment in College Access and Success: Investigating the Impact of the Pittsburgh Promise. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3071727

Page, L. C., Sacerdote, B. I., Goldrick-Rab, S., & Castleman, B. L. (2023). Financial Aid Nudges: A National Experiment With Informational Interventions. *Educational Evaluation and Policy Analysis*, *45*(2), 195–219. https://doi.org/10.3102/01623737221111403

Page, L. C., & Scott-Clayton, J. (2016). Improving college access in the United States: Barriers and policy responses. *Economics of Education Review*, *51*, 4–22. https://doi.org/10.1016/j.econedurev.2016.02.009

Paulsen, M. B. (2001). The economics of human capital and investment in higher education. In M. B. Paulsen & J. C. Smart (Eds.), *The finance of higher education: Theory, research, policy, and practice*. Agathon Press.

Perna, L. (2024). Transitioning From High School to College in the United States. *Journal of Postsecondary Student Success*, *3*(2), 1–17. https://doi.org/10.33009/fsop_jpss134577

Perna, L. W. (2006). Studying college access and choice: A proposed conceptual model. In J. C. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 21, pp. 99–157). Kluwer Academic Publishers. http://link.springer.com/10.1007/1-4020-4512-3_3

Pfeffer, F. T. (2018). Growing Wealth Gaps in Education. *Demography*, *55*(3), 1033–1068. https://doi.org/10.1007/s13524-018-0666-7

Prosperity Now. (2024). A Landmark Moment For the Movement.

Rauscher, E., Elliott, W., O'Brien, M., Callahan, J., & Steensma, J. (2017). Examining the relationship between parental educational expectations and a community-based children's savings account program. *Children and Youth Services Review*, *74*, 96–107. https://doi.org/10.1016/j.childyouth.2017.02.005

Reardon, S., Weathers, E., Fahle, E., Jang, H., & Kalogrides, D. (2022). *Is Separate Still Unequal? New Evidence on School Segregation* (No. CEPA Working Paper No.19-06). Stanford Center for Education Policy Analysis.

Reynolds, J. R., & Pemberton, J. (2001). Rising College Expectations among Youth in the United States: A Comparison of the 1979 and 1997 NLSY. *The Journal of Human Resources*, *36*(4), 703. https://doi.org/10.2307/3069639

Ricketts, P. (2020). *Governor Ricketts Vetoes LB 1008 and LB 1089*. Office of the Governor, State of Nebraska. Office of the Governor, State of Nebraska

Rogers, P. J., & Woolcock, M. (2023). Process and Implementation Evaluation Methods. In A. Rangarajan (Ed.), *The Oxford Handbook of Program Design and Implementation Evaluation* (1st ed., pp. 294–316). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190059668.013.15

Rosa, D. L., Luna, M., & Tierney, W. G. (2006). Breaking through the Barriers to College: Empowering Low-Income Communities, Schools, and Families for College Opportunity and Student Financial Aid. Center for Higher Education Policy Analysis, University of Southern California. https://files.eric.ed.gov/fulltext/ED498745.pdf

Ruggles, S., Flood, S., Sobek, M., Brockman, D., Cooper, G., Richards, S., & Schouweiler, M. (2023). *IPUMS USA: Version 13.0* (Version 13.0) [Dataset]. Minneapolis, MN: IPUMS. https://doi.org/10.18128/D010.V13.0

Sattin-Bajaj, C., Jennings, J. L., Corcoran, S. P., Baker-Smith, E. C., & Hailey, C. (2018). Surviving at the Street Level: How Counselors' Implementation of School Choice Policy Shapes Students' High School Destinations. *Sociology of Education*, *91*(1), 46–71. https://doi.org/10.1177/0038040717751443

Scanlon, E., & Adams, D. (2009). Do Assets Affect Well-Being? Perceptions of Youth in a Matched Savings Program. *Journal of Social Service Research*, *35*(1), 33–46. https://doi.org/10.1080/01488370802477048

Scott Clayton, J. (2012). Information Constraints and Financial Aid Policy. *NBER Working Paper*, *No. w17811*. https://ssrn.com/abstract=1998609

Sherraden, M., Clancy, M., Nam, Y., Huang, J., Kim, Y., Beverly, S., Mason, L. R., Williams Shanks, T. R., Wikoff, N. E., Schreiner, M., & Purnell, J. Q. (2018). Universal and Progressive Child Development Accounts: A Policy Innovation to Reduce Educational Disparity. *Urban Education*, *53*(6), 806–833. https://doi.org/10.1177/0042085916682573

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

Sherwin, J. (2012). Make Me a Match: Helping Low-Income and First-Generation Students Make Good College Choices. mdrc. https://www.mdrc.org/sites/default/files/policybrief_24.pdf

Shobe, M., & Page-Adams, D. (2001). Assets, Future Orientation, and Well-Being: Exploring and Extending Sherraden's Framework. *The Journal of Sociology & Social Welfare*, *28*(3). https://doi.org/10.15453/0191-5096.2745

Sjoquist, D. L., & Winters, J. V. (2015). State Merit Aid Programs and College Major: A Focus on STEM. *Journal of Labor Economics*, *33*(4), 973–1006. https://doi.org/10.1086/681108

St. John, E. P. (1991). The Impact of Student Financial Aid: A Review of Recent Research. *Journal of Student Financial Aid*, *21*(1). https://doi.org/10.55504/0884-9153.1483

Stock, J. H., & Yogo, M. (2005). Testing for Weak Instruments in Linear IV Regression. In D. W. K. Andrews & J. H. Stock (Eds.), *Identification and Inference for Econometric Models* (1st ed., pp. 80–108). Cambridge University Press. https://doi.org/10.1017/CBO9780511614491.006

Taylor, Z. W., & Bicak, I. (2020). First-Generation College Student Financial Aid: Results From A National Financial Aid Jargon Survey. *College Student Affairs Journal*, *38*(1), 91–109. https://doi.org/10.1353/csj.2020.0006

Texas Education Code, 28.0256 § 28.0256 (2019). https://tea.texas.gov/state-board-of-education/sboe-meetings/statutory-citations/tec-28.0256-.pdf

Tolbet, J., Cervantes, S., Bell, C., & Damico, A. (2024, December 18). Key Facts about the Uninsured Population. *Kaiser Family Foundation*. https://www.kff.org/uninsured/key-facts-about-the-uninsured-population/

Topel, R. (1991). Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority. *Journal of Political Economy*, *99*(1), 145–176. https://doi.org/10.1086/261744

U.S. Department of Labor. (2023, September 6). *Education Pays*. https://www.bls.gov/emp/chart-unemployment-earnings-education.htm

Velez, E. D., & Horn, L. (2018). *What High Schoolers and Their Parents Know About Public 4-Year Tuition and Fees in Their State* (No. NCES 2019404; Statistics in Brief). NCES. https://nces.ed.gov/use-work/resource-library/report/statistics-brief/what-high-schoolers-and-their-parents-know-about-public-4-year-tuition-and-fees-their-state?pubid=2019404

Waldner, C. (2022). In Defense of College Savings Plans: Using 529 Plans to Increase the Impact of Direct Federal Grants for Higher Education to Low- and Moderate-Income Students. *Florida Tax Review*, *11*(2). https://doi.org/10.5744/ftr.2011.1022

Walpole, M. (2003). Socioeconomic Status and College: How SES Affects College Experiences and Outcomes. *The Review of Higher Education*, *27*(1), 45–73. https://doi.org/10.1353/rhe.2003.0044

Wang, Y., & Benner, A. D. (2014). Parent–Child Discrepancies in Educational Expectations: Differential Effects of Actual Versus Perceived Discrepancies. *Child Development*, *85*(3), 891–900. https://doi.org/10.1111/cdev.12171

Williams Shanks, T. R., & Destin, M. (2009). Parental Expectations and Educational Outcomes for Young African American Adults: Do Household Assets Matter? *Race and Social Problems*, *1*(1), 27–35. https://doi.org/10.1007/s12552-009-9001-7

Woodhouse, L. (2024). *The Growing Gap: Public Higher Education's Lack of Affordability for Pell Grant Recipients* (The Growing Gap). National College Attainment Network. https://www.ncan.org/news/681687/New-Report-Cost-Remains-the-Largest-Barrier-to-Higher-Ed.htm

Yadama, G. N., & Sherraden, M. (1996). Effects of assets on attitudes and behaviors: Advance test of a social policy proposal. *Social Work Research*, *20*(1), 3–11. https://doi.org/10.1093/swr/20.1.3

Yamamoto, Y., & Holloway, S. D. (2010). Parental Expectations and Children's Academic Performance in Sociocultural Context. *Educational Psychology Review*, *22*(3), 189–214. https://doi.org/10.1007/s10648-010-9121-z

Zang, E., Gibson-Davis, C., & Li, H. (2024). Beyond parental wealth: Grandparental wealth and the transition to adulthood. *Research in Social Stratification and Mobility*, *89*, 100878. https://doi.org/10.1016/j.rssm.2023.100878

Zempleni, F., Campa, I., & Hansen, M. (2025). *Initial Report: An Examination of Post-Secondary Students Who Have Used CalKIDS Funds*. UCLA CalKIDS Institute. https://ucla.app.box.com/s/hu9x0xituonofn4jqgkujh1su8xrz5sp

Zhan, M. (2006). Assets, parental expectations and involvement, and children's educational performance. *Children and Youth Services Review*, *28*(8), 961–975. https://doi.org/10.1016/j.childyouth.2005.10.008

Zhan, M., & Sherraden, M. (2002). Effects of mothers' assets on expectations and children's educational achievement in female-headed households. https://doi.org/10.7936/K72R3R6C

Zheng, H., Starks, B., Ellis, J., O'Brien, M., & Elliott, W. (2020). An Examination of Parental College Expectations' Mediating Role between Children's Savings Accounts and Children's Educational Attainment by Income Level. *Sociology Mind*, *10*(03), 165–186. https://doi.org/10.4236/sm.2020.103011

Zinshteyn, M. (2025, July). Why these families are willing to risk deportation for college financial aid. *CalMatters*. https://calmatters.org/education/2025/07/financial-aid-immigration-deportation-fears/

Zumeta, W. M. (2011). What Does It Mean to Be Accountable?: Dimensions and Implications of Higher Education's Public Accountability. *The Review of Higher Education*, *35*(1), 131–148. https://doi.org/10.1353/rhe.2011.0037