

Developing a Best Fit Framework for Postsecondary Success

November 2023



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ABOUT THE UNIVERSITY OF CHICAGO INCLUSIVE ECONOMY LAB

For generations, government policies and institutional structures of inequity have excluded many Americans—notably Black and Hispanic communities—from opportunities for social mobility through the vehicles of education, employment, and wealth creation. Ending intergenerational poverty and building an inclusive economy—one that provides real economic opportunities for all communities—requires collaboration across sectors, as well as scientific evidence about what levers have the greatest impact on opportunities for economic stability and mobility. Traditional research can take years, and the results often do not reach those who need the information most—the people living with and working on these issues. The UChicago Inclusive Economy Lab solves this by working with policymakers, organizations, and communities to identify their most urgent and pressing challenges, co-generate evidence about what works, and translate that evidence into real policy changes that expand economic opportunity for communities that have experienced disinvestment.

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Executive Summary

Many high school students aspire to earn a college degree regardless of background. These students see college as an important lever for economic mobility. Individuals with some college or an associate degree earn approximately 14 percent more than those with only a high school diploma and those with a bachelor's degree earn approximately 65 percent more (U.S. Bureau of Labor Statistics, 2015).

However, racially and socioeconomically minoritized students face systematic barriers to college access and completion. Despite the prevalence of college aspirations, prior research shows that only 20 percent of Chicago Public Schools (CPS) freshmen earn a bachelor's degree within ten years. Moreover, only 10 percent of Black men, 18 percent of Black women, and 14 percent of Latino men will likely reach that milestone (Nagaoka & Seeskin, 2019). Along the lines of income, a 2016 study by the Pell Institute found that just 15 percent of students from the bottom socioeconomic quartile earn a bachelor's degree within eight years of graduating high school, compared with 60 percent of students from the top quartile (Calahan, Perna, Yamashita, Ruiz & Franklin, 2016).

The decision of whether and where to attend college is a critical input into whether students ultimately reach their goal of degree attainment. Three primary factors interact as students decide if and where to attend college:

- **Academic match** – how the academic credentials of a student align with the selectivity of the college or university.
- **Social Fit** – The environmental aspects and additional supports that a student is looking for in a postsecondary institution based on personal preferences and identity.
- **Affordability** – a student's financial ability to pay for the net cost of attending a postsecondary institution, incorporating the difference between a student's financial resources (including financial aid) and the full cost of attendance.

These factors are important because they influence not only a student's perceived and actual college options, but also their likelihood of applying, enrolling, persisting, and ultimately graduating. Prior research has shown that **academic match** or attending the most selective institution possible based on a

students' academic record (often referred to as "academic match") is associated with higher completion rates (Bowen et al., 2009; Roderick et al., 2011). More selective institutions tend to be better resourced and thus better positioned to provide the kind of student supports known to lead to high retention and graduation rates (Goolsbee et al., 2019). **Social fit** and developing a sense of belonging has also been shown to be important for students' well-being and persistence in college, particularly for underrepresented students who too often confront racism, microaggressions, and more subtle cues in academic setting that signal one's group is not normative there, such as numeric underrepresentation on a college campus (Banks & Dohy, 2019; Moragne-Patterson & Barnett, 2017; Murphy, Steele, & Gross, 2007). And the rising cost of college has made **affordability** a key consideration for many students deciding whether to enroll and stay in college. These increasing costs have been felt most acutely by students from families with lower household incomes, Black and Hispanic students, and first-generation college students. These students are not only likely to have fewer familial resources to cover the rising cost of tuition, but also tend to attend under-resourced high schools that are unable to provide as much support to students in navigating the confusing mix of federal, state, institutional, and private financial aid options (The Partnership for College Completion, 2019).

CONTRIBUTION AND METHODOLOGY

CPS has also made significant strides in its approaches to supporting students with their college application and selection process in recent years, with specific focus on supporting students in navigating the academic match, social fit, and affordability aspects of college choice. At the same time, the college landscape that students face continues to evolve. Admissions criteria at many institutions have become increasingly selective, the costs of college have continued to rise, and available financial assistance has lagged behind. Concerns about accruing large amounts of debt have led some to ask if enrolling in college is even worth it.

Given all of this change, this paper is intended to provide an update on our understanding of how academic match, social fit, and affordability interact to influence college application, enrollment, and persistence. To this end, the research team drew on both quantitative and qualitative data as follows:

1. An analysis of CPS student records, as well as data from Naviance, the National Student Clearinghouse (NSC), CPS' Senior Exit Questionnaire (SEQ), the Integrated Postsecondary Education System (IPEDS), the U.S. Census, student financial aid award letters, and an estimation of the net costs of all the colleges students applied to and enrolled in for the class of 2018 (n=27,148).

2. Semi-structured interviews with CPS alumni who attended City Colleges of Chicago (CCC) focused on student background (K-12 education, parent/guardian information, SES); college readiness (course taking, high school support, other resources), college choice/ social fit (what college characteristics were important), and obstacles and financial considerations (EFC from FAFSA, loan options) (n=51).

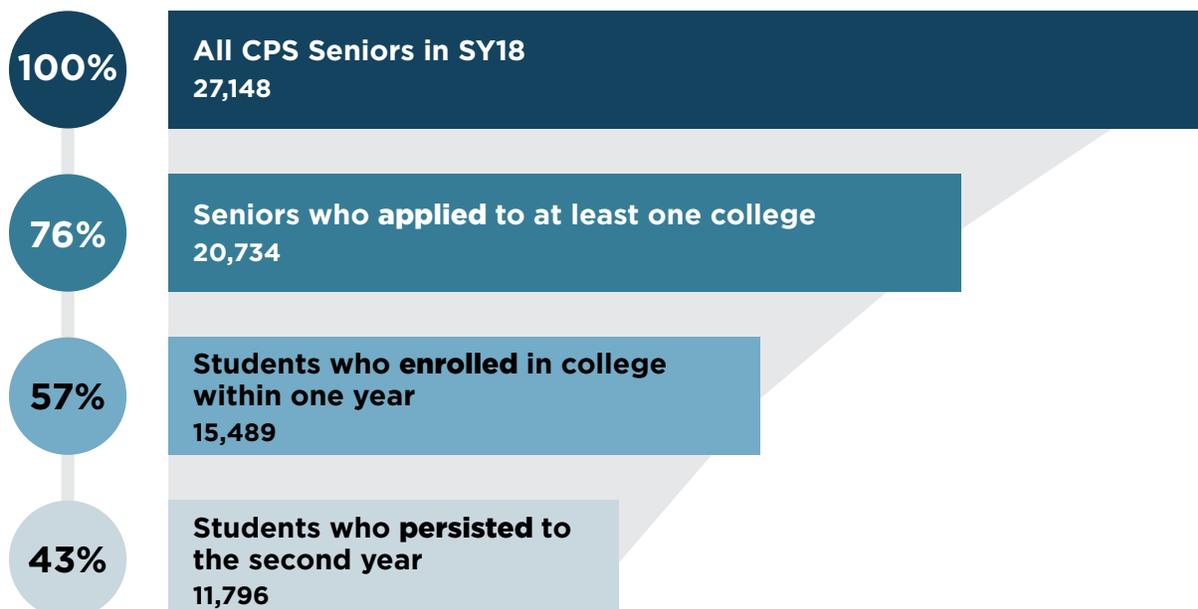
KEY FINDINGS

Our mixed methods study led researchers to unveil nine key findings on the various phases of the college journey, spanning from aspirations to access, application, enrollment, and persistence. These findings serve as a compass for understanding the barriers, trends, and disparities that influence the educational trajectory of CPS students and provide a basis for informed discussions and targeted interventions.

College Access and Application

A college degree remains the goal for the vast majority of CPS students, but barriers continue to thwart this goal for many. While 81 percent of the class of 2018 intended to enroll in college when they were seniors, only 57 percent enrolled in college within one year of their high school graduation, and 43 percent returned to college for a second academic year (76 percent of those who initially enrolled).

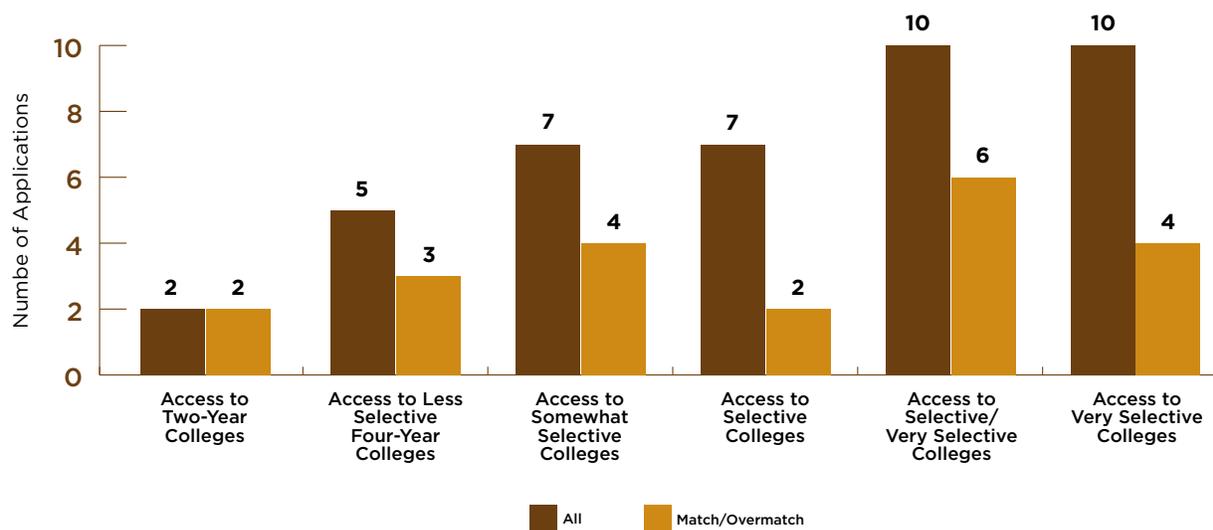
College Access Pipeline



While most students applied to at least one college, many expressed a desire for more time and support in applying to a set of colleges that would be a social, academic, and financial fit. Roughly 76 percent of the class of 2018 applied to at least one college. This suggests that most of the 81 percent of seniors who report that they intend to enroll directly in a post-secondary institution following their high school graduation are completing this critical step to making that goal a reality. On average, students from the class of 2018 submitted six applications. However, interview respondents stressed that while they understood the basic outlines of the college application process, they did not have a good sense of how much time the process would take and wished they had developed a well thought out list of schools to apply to to ensure that they would have had multiple strong options when it came time to choose where to enroll.

Students with higher GPAs and test scores submitted more college applications overall, and more applications to institutions that were an academic match. Students who based on their high school GPAs and test scores were likely to be admitted to more selective colleges, applied to more schools overall and more schools that were an academic match than their peers with lower GPAs and test scores. This suggests that targeting application support to students in the academic middle could be a valuable investment of district and non-profit resources.

Average Number of All Applications and Match/Overmatch Applications by Student Selectivity Level (n=8,922)



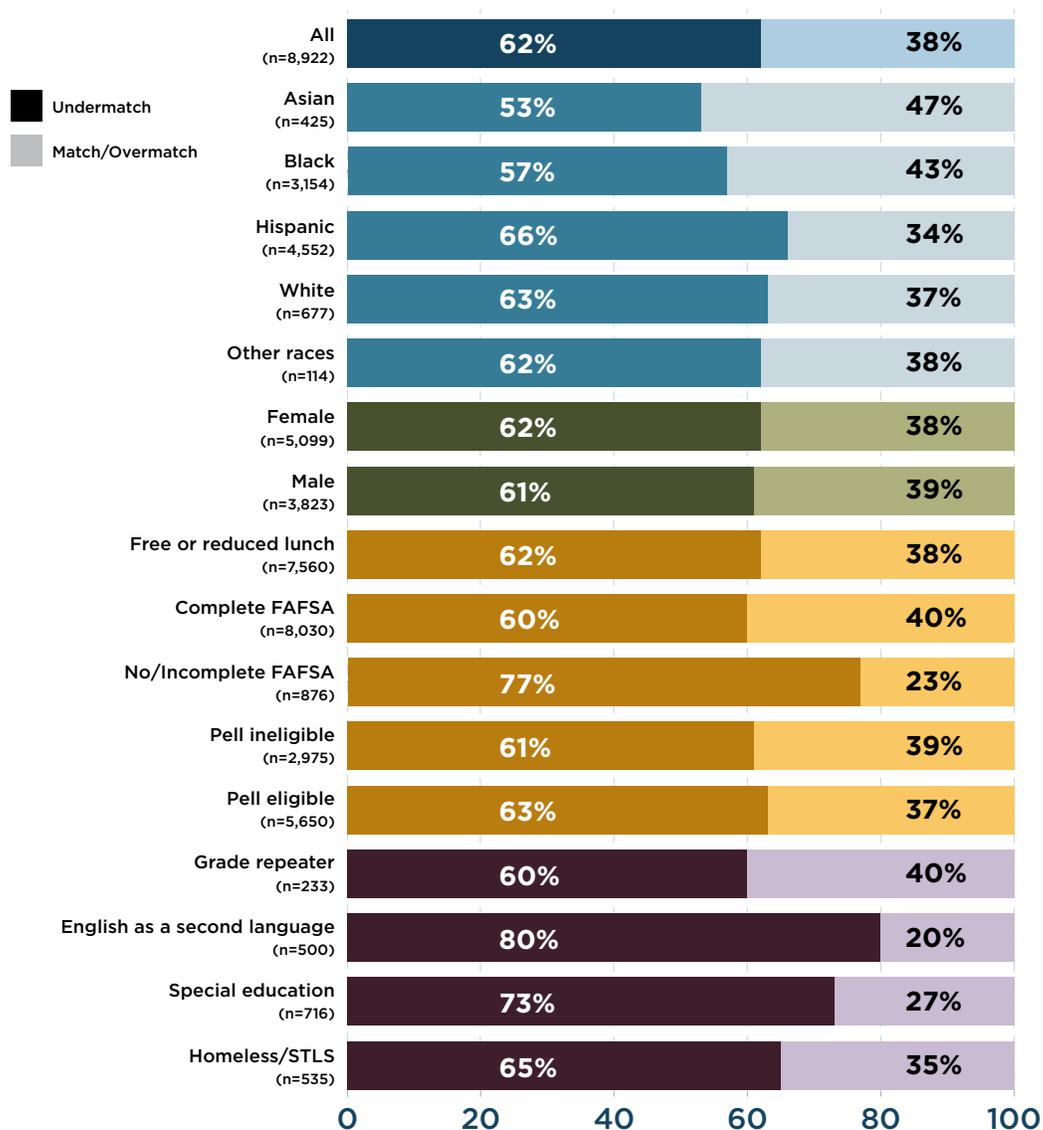
Students from low-income backgrounds submitted a majority of applications to institutions that would be considered unaffordable even after accounting for expected financial aid. Drawing on data from IPEDS and students’ estimated household income based on data from the census, the research team estimated the annual net cost (tuition and fees less financial aid) students would likely face at each

institution they applied to. Moneythink, a national non-profit organization focused on college finance, defines net costs of over \$7,000 unaffordable for students who are Pell eligible. Based on this metric, 67.5 percent of applications submitted by Pell eligible CPS seniors were submitted to institutions that are unaffordable.

College Enrollment

Over half (62 percent) of students who enroll in college do so at a school that is an academic undermatch. Students for whom English is a second language, those who do not complete the FAFSA, and whose high school credentials gave them access to less selective four-year colleges are most likely to enroll in an undermatch institution. A substantial share of this undermatch was driven by enrollment in two-year colleges.

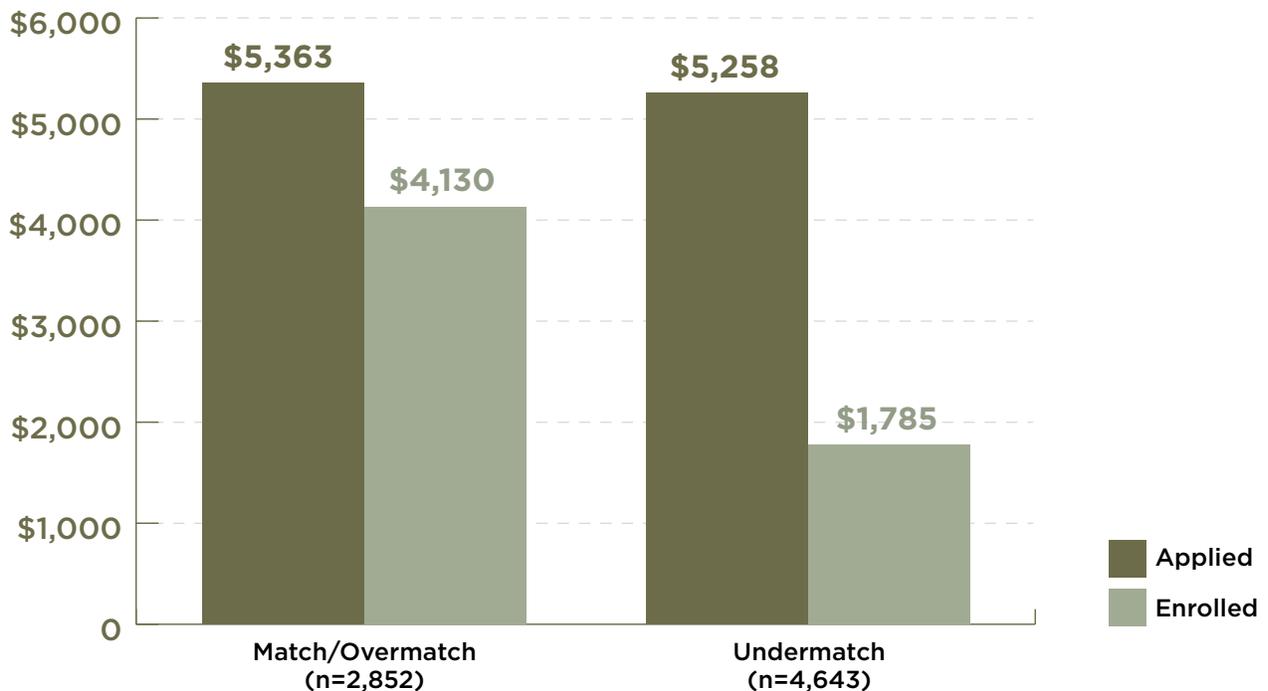
Percent of 2018 CPS Seniors Who Enrolled in Undermatch vs. Match/Overmatch Colleges in Total and by Subgroup (n = 8,922)



Black students were substantially less likely to enroll in college in the year following high school than their peers. Only half of Black students enrolled, compared to 78 percent of Asian students, 68 percent of white students, and 59 percent of Hispanic students. Similarly, roughly half of male students (49.7%) enrolled in college in the year following high school compared to 64.3 percent of female students. This suggests that targeting college enrollment support to Black young men, in particular, might be an important strategy to consider.

Students, especially those who undermatched, enrolled in institutions where they would face lower net costs than the other institutions they applied to, suggesting that financial considerations are driving undermatch. Financial considerations, including a desire to remain debt-free, were the driving factors for students who enrolled in CCC despite having the academic credentials to access more selective institutions. As one student put it, “It’s like the first thought is what school best fits me financially? It’s not, what school best fits me for my degree or for my personal choice? Unfortunately, it is financial.”

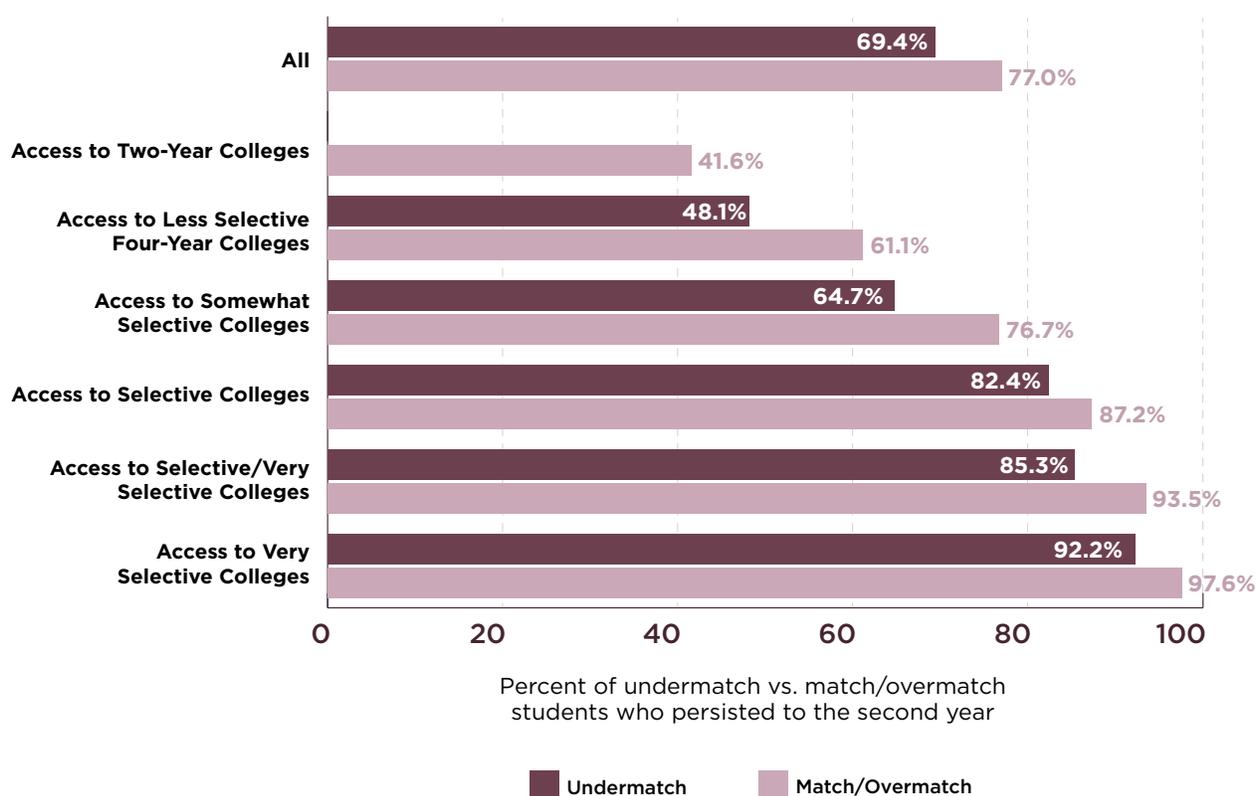
Average Net Price for Applied and Enrolled Colleges by Match Selectivity (n=7,495)



College Persistence

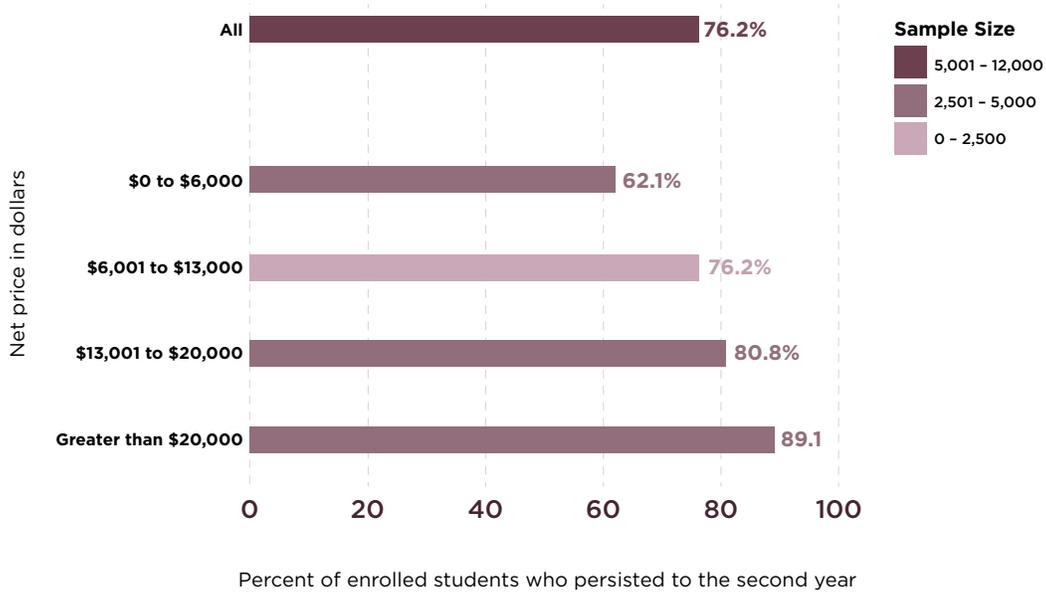
Students who enrolled in a school that was an academic match or overmatch were more likely to persist to a second year of college than students who enrolled in a school that was an academic undermatch. Overall, 77 percent of students who enrolled in a college that was a match or over match compared to 69.4 percent of students. The persistence advantage associated with enrolling in a match institutions held for students access levels. However, students who, based on their high school GPAs and test scores had access to somewhat selective colleges and less selective four-year colleges saw the biggest difference in persistence rates by match/undermatch enrollment.

Percent of Undermatch vs. Match/Overmatch Students Who Persisted to the Second Year in Total and by Student Selectivity Level (n=8,922)



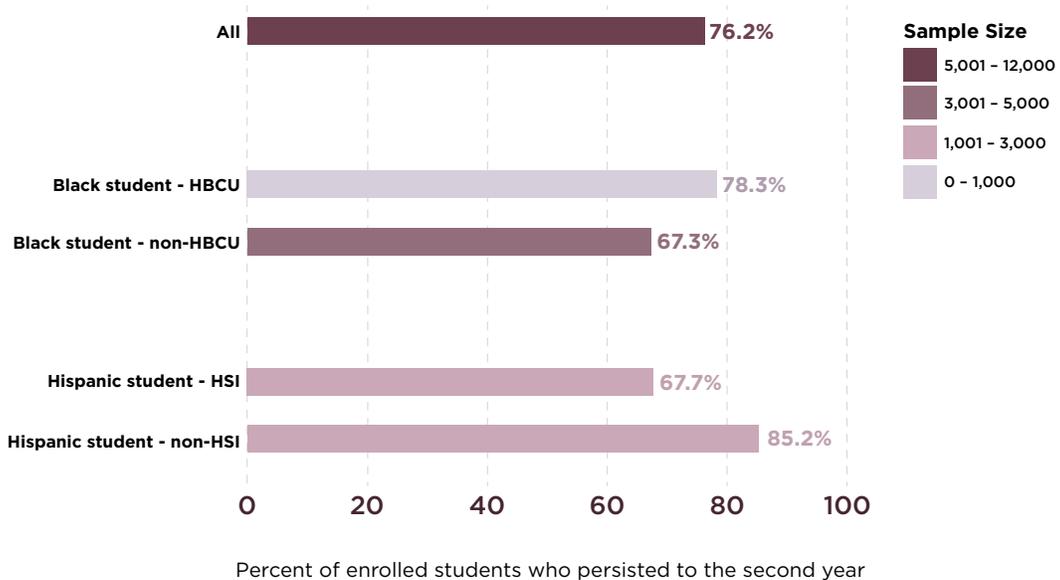
Institutions that charge high net prices also have higher rates of persistence, suggesting students face a tradeoff between the costs of college and the likelihood that they will receive a degree. Student interview respondents stressed the importance of affordability and avoiding debt in their college decisions. However, institutions with lower the out of pocket costs also had lower year-to-year persistence rates. This may in part be driven by the fact that less expensive institutions also have fewer resources available to support students through to completion.

Percent of Enrolled Students Who Persisted to the Second Year in Total and by Net Price Level (n=15,489)



Black students who enroll in Historically Black Colleges and Universities (HBCUs) are more likely to persist in college than Black students who enroll in non-HBCUs. Over 78 percent of Black students who attended an HBCU persisted to a second year of college compared to 67.3 percent of Black students who attended non-HBCUs. These differences in persistence rates could be driven by a variety of differences between these two types of institutions, including campus cultures that promote greater social belonging, greater institutional resources, and the fact that all HBCUs that CPS students attended were out of state. Interestingly, the same relationship did not hold for Hispanic students who attended Hispanic Serving Institutions (HSIs).

Percent of Enrolled Students Who Persisted to the Second Year in Total and by College Designation and Student Race (n=15,489)



DISCUSSION AND NEXT STEPS

Findings from this report demonstrate that the perceived and actual costs of college are constraining students' college choices, too frequently pushing them to either not enroll in college or to enroll in colleges where they may be less likely to persist and ultimately graduate. To address these challenges, we recommend the following:

Providing students information about the costs of college earlier in the college application process. Our research suggests that once students have received their acceptance letters, they are too often deciding between schools that are an academic match or social fit and schools that are affordable. By considering cost earlier in the application process, students may be able to identify schools to apply to that are both the best fit for them individually and likely to offer the financial support needed to make them affordable.

Target additional financial resources to students who stand to benefit most. Our research shows that students who, based on their high school grades and test scores, have access to somewhat selective and less selective four-year colleges tend to face the sharpest tradeoffs between academic match and affordability. By better understanding the unmet financial needs among CPS graduates and which students are likely to face the steepest costs, funders could craft financial supports that enable students from low-income households to attend the colleges that are the best fit for them regardless of cost.

Simplifying the financial aid process. Our country's decentralized and complicated system of attaining financial support for college-going is an added barrier for students and their families, who must navigate a complicated financial aid application process and sort through inconsistent communications from schools and scholarship programs that often obscure the true cost of college. Future work by our research team will focus on exploring how financial award letters themselves might be standardized and streamlined to ensure that students can make sense of the financial supports schools are offering.

A growing research literature, including a randomized controlled trial conducted by IEL of the One Million Degrees program, finds that providing comprehensive support services can dramatically improve outcomes for students attending less selective institutions (Weiss et al., 2019; Sommo et al., 2018; Evans et al., 2017; Bertrand et al., 2022). Expanding access to these supports should be a central component of ensuring that every CPS graduate enrolls in a college that is both affordable and where they have the support they need to succeed.

Glossary

ACADEMIC MATCH

How the academic credentials of a student align with the selectivity of the college or university.

AFFORDABILITY

A student's financial ability to pay for the net cost of attending a postsecondary institution, incorporating the difference between a student's financial resources (including financial aid) and the total cost of attendance.

CHICAGO PUBLIC SCHOOLS (CPS)

The fourth-largest school district in the United States.

CITY COLLEGES OF CHICAGO (CCC)

The most extensive community college system in Illinois, whose colleges offer associate degrees, certificates, free courses for the GED, and free English as a second language courses.

COLLEGE ENROLLMENT

Enrollment at a two-year or four-year college within nine months of high school graduation.

CPS MATCH GRID

A grid that displays the minimum GPA and ACT scores that CPS graduates would need for a high likelihood of acceptance to certain selectivity classifications of colleges.

EXPECTED FAMILY CONTRIBUTION (EFC)

An index number used to determine a student's eligibility for federal student financial aid.

FREE APPLICATION FOR FEDERAL STUDENT AID (FAFSA®)

A form completed by current and prospective college students in the United States to determine their eligibility for student financial aid.

LEARN.PLAN.SUCCEED. (LPS)

A CPS high school graduation requirement intended to help guide students in reaching postsecondary success.

MATCH

A student's GPA and SAT/ACT scores meet a school's admission criteria and are similar to those of the average incoming freshman in this category of schools.

OVERMATCH

A student's GPA and SAT/ACT scores do not meet a school's admission criteria are lower than those of the average incoming freshman in this category of schools, or the school is a "selective institution" that admits a small percentage of the students who apply for admission.

UNDERMATCH

A student's GPA and SAT/ACT scores exceed a school's admission criteria and those of the average incoming freshman, and the school is one in which a student is very likely to be accepted.

PERSISTENCE

Students who directly enroll in a two-year or four-year college within nine months of high school graduation and are still enrolled at any point during the following academic year.

SOCIAL FIT

The environmental aspects and additional supports that a student is looking for in a postsecondary institution based on personal preferences and identity.

INTRODUCTION

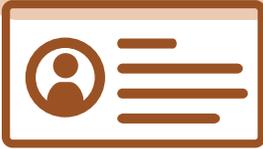
Introduction

Many high school students aspire to earn a college degree regardless of background. These students see college as an important lever for economic mobility. Individuals with some college or an associate degree earn approximately 14 percent more than those with only a high school diploma and those with a bachelor's degree earn approximately 65 percent more (U.S. Bureau of Labor Statistics, 2015).

In the Chicago Public Schools (CPS), a district where more than three out of four students (76.4 percent) are eligible for free lunch and about 90 percent of students are non-White, approximately 69 percent aspire to enroll in a four-year college. However, racially and socioeconomically minoritized students face systematic barriers to college access and completion. Despite the prevalence of college aspirations, prior research shows that only 20 percent of CPS freshmen earn a bachelor's degree within ten years. Moreover, only 10 percent of Black men, 18 percent of Black women, and 14 percent of Latino men will likely reach that milestone (Nagaoka & Seeskin, 2019). Along the lines of income, a 2016 study by the Pell Institute found that just 15 percent of students from the bottom socioeconomic quartile earn a bachelor's degree within eight years of graduating high school, compared with 60 percent of students from the top quartile (Calahan, Perna, Yamashita, Ruiz & Franklin, 2016).

The decision of whether and where to attend college is a critical input into whether students ultimately reach their goal of degree attainment. As a part of the district's broader Learn.Plan.Succeed (LPS) initiative, designed to ensure students in the public education system develop and commit to a postsecondary plan prior to high school graduation, CPS provides supports to college-intending students as they weigh three important features of potential colleges:

ACADEMIC MATCH:



How the academic credentials of a student align with the selectivity of the college or university.

SOCIAL FIT¹:



The environmental aspects and additional supports that a student is looking for in a postsecondary institution based on personal preferences and identity.

AFFORDABILITY:



A student's financial ability to pay for the net cost of attending a postsecondary institution, incorporating the difference between a student's financial resources (including financial aid) and the full cost of attendance.

These factors are important because they influence not only a student's perceived and actual college options, but also their likelihood of applying, enrolling, persisting, and ultimately graduating.

This report, as part of a larger research partnership with CPS's Office of School Counseling and Postsecondary Advising (OSCPA), explores how **academic match, affordability, and social fit structure students' college choices and whether students ultimately enroll and persist in college.** To this end, we follow the CPS class of 2018 from the college application process to two years after their expected high school graduation drawing on rich administrative

¹ Note: CPS' counseling framework uses the term "fit" in lieu of social fit.

data collected by CPS². We also interview a group of students who are typical of more than a quarter of CPS graduates, those who enroll in an open-access, two-year college, despite having the academic credentials for admission to more selective, four-year institutions. These interviews provide insights into how they experienced the college application and selection process and how they think about their college choice after spending some time on campus.

The report proceeds as follows: We begin by briefly reviewing the research literature on the factors influencing students' college selection and their relationship with postsecondary success. We then provide an overview of the methodological approach employed in this report, describing the qualitative and quantitative data sources as well as our approach to analysis. Next, we turn to the main findings of our report, first providing a high-level overview of the CPS college access pipeline and then diving more deeply into the role academic match, affordability and social fit play in college application, enrollment, and persistence. Throughout, we interweave findings from the quantitative and qualitative data sources to support making connections across. We conclude by summarizing our findings through key determinations and articulating their implications for policy, practice, and future research.

LITERATURE REVIEW

Even for high school students who are certain that college is in their future, the process of applying to and selecting which college to attend is complicated. Students must select from a diverse array of postsecondary institutions, navigate a complicated and often opaque application process, apply for financial aid, and weigh multiple options to determine which institution is most aligned with their postsecondary goals. The complexity of this process creates advantages for students whose schools and families have social capital, connections and links to individuals with experience navigating the process (Ceja, 2006; Coleman, 1988; Dyce et al., 2013; Kim & Schneider, 2005; Pérez & McDonough, 2008; Perna & Titus, 2005).

Among CPS graduates, prior research reveals significant disparities in college enrollment rates, further contributing to racial disparities in college completion and degree attainment. Black and Latinx students who graduated in 2015 enrolled in college at rates that were 15 to 25 percentage points lower than their White and Asian counterparts (Coca, Nagaoka, & Seeskin, 2017).

² Note: The research followed the CPS class of 2018. The advising framework mentioned above was not developed until school year 2020-2021.

Further, students from low-income backgrounds are also more likely to attend under-resourced schools with high student-counselor ratios where, despite their best efforts, college counselors often have capacity to provide only limited guidance (Choy, 2001; McDonough & Calderone, 2006). As a result, many first-generation college students and students from low-income backgrounds may end up “undermatching”—missing opportunities by applying to only a few colleges or to colleges that do not fit their academic profile or intended career path.

While the college enrollment rate for CPS graduates has steadily increased over the last decade, college completion and degree attainment rates haven't seen much change (Nagaoka, Lee, Usher & Seeskin, 2021). OneGoal, a college access and success organization, conducted a year-long qualitative study to identify the root causes behind students withdrawing from their postsecondary pathway, or taking a semester off with the possibility of re-enrollment, a common occurrence otherwise known as “stopping out” (Teng, 2021; Nagaoka, Sun Lee, Usher, & Seeskin, 2021). Among the root causes that contributed to stop out, 26 percent reported academic factors, 25 percent reported aspirational factors, 7 percent reported financial factors, and 6 percent reported social-emotional factors. The issues that contributed to academic barriers were reported as systemic racism and under-resourced high schools, which may have led students to feel inadequately prepared for college (Teng, 2021). The underlying factors influencing social-emotional barriers included challenges with mental health, a lack of social belonging, and parents lacking college knowledge. Aspirational barriers were influenced by minimal information about the full scope of post-secondary pathways, and general struggles with motivation for degree attainment, specifically for those who were first-generation and struggling with internalized failure. Financial barriers were influenced by a lack of college acumen including knowing which classes to take (and possibly taking and thus having to pay for classes that weren't needed for their degree of choice), having a thorough understanding of financial obligations, affordability and the hurdle of paying off account balances, difficulty meeting basic needs, and transportation. While these barriers present challenges that indeed resonate with many students, some of the sources of inequity in educational attainment begin with students' college selection process, and more specifically, the college selectivity and academic match of their colleges of choice.

This section will provide a high-level overview of what is known about how students (especially students of color and students from low-income households) weigh academic match, affordability, and social fit in their application and enrollment decisions and how these factors correlate with college persistence and graduation.



COLLEGE SELECTIVITY AND ACADEMIC MATCH

One characteristic that students consider when they are determining which colleges to apply to, and ultimately enroll in, is selectivity. Colleges range in selectivity from open enrollment institutions, which admit any student with a high school diploma or equivalent, to highly competitive institutions, which select only a small portion of applicants based on their academic record (standardized test scores and grade point average or GPA) as well as participation in extracurricular activities, college essays, recommendations, and other factors.

Prior research has shown that attending the most selective institution possible based on a student’s academic record (often referred to as “academic match”) is associated with higher completion rates (Bowen et al., 2009; Roderick et al., 2011). More selective institutions tend to be better resourced and thus better positioned to provide the kind of student supports known to lead to high retention and graduation rates (Goolsbee, Hubbard, & Ganz, 2019). These institutions may also provide access to richer social capital networks that support students in getting to graduation and in tapping employment opportunities upon completion (Harper, 2009).

The research on college selectivity, its benefits and outcomes, are mixed. Kang and Garcia-Torres (2021) drew on the nationally representative 2002-2012 Educational Longitudinal Study to examine the relationship between attending a school that is an undermatch based on one’s academic record and degree attainment. They found that students who attend undermatch institutions are 80 percent less likely to graduate within four years and 70 percent less likely to graduate in six years than similar students who attended match institutions. Notably, the relationship was strongest for students who had a relatively higher probability of graduating and students who identify as Hispanic. Black, Denning, and Rothstein (2020) used the introduction of the Top Ten percent rule in Texas to examine the effect of access to a selective college on students’ likelihood of graduating and their post-college earnings. They found that students who gained access under Texas’s new rule were more likely to graduate and saw some increases in post-college earnings. Their findings suggest that students who attended high schools with less robust college supports were most sensitive to the selectivity of the college they attended. However, a study by Mountjoy and Hickman (2021) found that among students who were accepted to the same colleges, but enrolled in different institutions, selectivity was a less salient predictor of college value-added on earnings than instructional spending and faculty-student ratio.

As evidenced by substantial investment in college application and essay writing supports, many higher income students and their families place substantial weight on securing a spot in as selective an institution as possible (Killgore, 2009). In fact, 69 percent of students enrolled at the most selective colleges and universities come from families in the top socioeconomic quartile (The Pell Institute, 2016). In contrast, students from low-income households and first-time college students are more likely to undermatch. Roderick, Coca, and Nagaoka (2011) estimated that roughly two-thirds of CPS students in the class of 2005 who had access to highly selective, very selective, and somewhat selective colleges enrolled in an institution that was an undermatch. Smith, Pender, and Howell (2013) found similar rates of undermatching nationally, especially among students from households with lower socioeconomic status, those in rural areas, and those whose parents did not have a college degree.

There are several reasons why students from low-income households and first-time college students might be less likely to enroll in selective institutions. One possibility is that because these students are more likely to attend under-resourced high schools, they may not be receiving as robust college application supports as their higher income peers. Thus, they may be applying to fewer schools and fewer selective schools. Roderick, Coca, and Nagaoka (2011) found evidence that for the CPS class of 2005 that not engaging in a comprehensive college search meant that students may not have been aware of their potential to enroll in more selective institutions. Similarly, not having a network of peers who are considering selective institutions or close contacts with alumni from these institutions, students from low-income households and first-generation college students may place less weight on an institution's selectivity, seeing college as college regardless of the institution type. To this end, Hoxby and Avery (2012) found that many high-achieving, low-income students often did not even consider applying to highly-selective colleges or universities. Finally, selective institutions often come with higher "sticker prices" which may dissuade students from considering them even if they could qualify for substantial need and merit-based support (Hoxby & Avery, 2012).

Since the initial publication of Roderick, Coca, and Nagaoka's (2011) work highlighting the importance of academic match, CPS and educators around the country have made substantial efforts to expand the set of colleges students from low-income households and first-time college students consider. **This report provides an update on the extent to which undermatching remains a social phenomenon in the college-going process for CPS students, explores reasons for undermatching, and examines contemporary implications of college selectivity on enrollment and persistence.**



SOCIAL FIT

Beyond academics, students often consider aspects of campus life that are harder to quantify as part of their college selection process such as proximity to home, student population size, fields of study offered, and overall campus culture and climate. Students assess whether their attitudes, behaviors, and values align with that of a school, its faculty, and other students. “Social fit,” refers to the alignment of environmental aspects with a students’ personal preferences and identity.

Gilbreath, Kim, and Nichols (2011) surveyed students at two commuter colleges in Indiana using a psychological theoretical framework referred to as “person-environment fit”— which assesses how an individual’s social, physical, and cognitive interests and desires mesh with those of their organization. Students were asked about the importance to them of 18 characteristics of the social, academic, and physical environment of a school as well as the extent to which each characteristic was true of their institution. They found that students with higher level of alignment between their needs and the perceived offerings of their college had higher levels satisfaction with their school and increased psychological well-being, which they posit is likely important for student retention in college.

Social belonging is an important component of social fit. All students face challenges and setbacks in the transition to college, but awareness of negative stereotypes and underrepresentation may prompt students from socially disadvantaged backgrounds to conclude that the challenges they encounter are in fact a sign that they, or people like them, do not belong in college (Schmader et al., 2008; Spencer et al., 1999; Steele & Aronson, 1995; Steele, 2011; Murphy, Steele, & Gross, 2007). In this way, worry about belonging can render an inaccurate lens through which students make sense of their college experiences and thus undermine their likelihood of finishing college (Walton & Cohen, 2007).

Students from underrepresented groups on college campuses are less likely to report a perceived sense of belonging than their peers on campus. Research suggests that direct experiences with racism on campus contribute to feelings of loneliness, disengagement, and, more specifically, function as a barrier to retention and graduation for students of color (Banks & Dohy, 2019). These issues can come in the form of overt racism from peers and faculty, but also in the form of microaggressions, the effects of which are particularly acute when coming from instructors and administrators (Banks & Dohy, 2019; Moragne-Patterson & Barnett,

2017). Further, students need not experience overt racism or microaggressions to experience belonging uncertainty. For example, cues in an academic setting that signal one's group is not normative there, such as numeric underrepresentation on a college campus (Murphy, Steele, & Gross, 2007), combined with encountering negative stereotypes of one's identity in a college setting, may prompt students in these groups to conclude they do not belong in college (College Transition Collaborative, n.d.; Schmader et al., 2008).

When a student enters a setting where their identity group is negatively stereotyped, they may experience belonging uncertainty, repeatedly questioning if they will truly belong in that setting and if others will respect, value, and include them (Walton & Brady, 2017). When students fear that school could be a place where they may be devalued or excluded, everyday challenges can take on a threatening meaning and can lead to social and academic withdrawal which, in turn, lead to lower academic achievement and persistence (Steele & Aronson, 1995; Milem & Berger, 1997; Schmader et al., 2008). Thus, these concerns can become self-reinforcing and deprive students of the supports needed to succeed in a challenging academic environment in the long-term (Walton & Cohen, 2007).

The role predicted social belonging and social fit plays in students' decision making about whether and where to attend college has not been the focus on much study to date. This report and other ongoing research from our partnership with CPS is intended to begin to fill this gap.



AFFORDABILITY

The cost of attendance also plays an important role in students' decision of whether and where to attend college. College costs have been increasing significantly for decades leading the large majority of high school students to cite affordability as a major factor in their college decision making process (College Savings Foundation, 2019).

These increasing costs have been felt most acutely by students from families with lower household incomes, Black and Hispanic students, and first-generation college students. These students are not only likely to have fewer familial resources to cover the rising cost of tuition, but also tend to attend under-resourced high schools that are unable to provide as much support to students in navigating the confusing mix of federal, state, institutional, and private financial aid options (The Partnership for College Completion, 2019).

Low-income students lag behind their higher income peers in completing the Free Application for Federal Student Aid (FAFSA), resulting in many not claiming available financial aid (Selingo, 2017). These gaps are compounded for students in the lowest income quartiles who are increasingly likely to be flagged for financial aid verification, a process in which a student's FAFSA is flagged for an audit to determine the applicant's accuracy in filling out the form. The verification process can take several weeks or months to resolve, pushing past enrollment deadlines and, in some cases, the start of the academic year. This delay prevents some students from being able to compare financial aid packages and from receiving first-come, first-serve grant money, like the Illinois MAP grant (Mulhere, 2017).

Even students who enter college with the support of federal aid confront a wide array of financial challenges, including paying for tuition, books, or living expenses (Broton & Goldrick-Rab, 2016). Facing mounting debt, low-income students may feel pressure to work more, taking time away from studying (Welbeck et al., 2014). Others drop out in response to high tuition bills (Stinebrickner & Stinebrickner, 2008). As a qualitative study of the experiences of Black and Latinx students from low-income households from two inner-city high schools in the Northeastern United States found, these students face “choices that the traditional college choice framework renders invisible. For many of the students in the study, complicated guardian arrangements, transitory housing, and other economic obstacles compelled students to subordinate their college aspirations to the material realities of their lives” (Cox, 2016).

Attending more selective institutions may require students to take on more student debt. Median federal student debt at graduation at the four higher education institutions where CPS graduates most commonly match or overmatch ranges from \$20,350 to \$26,416, while the average student debt at the five institutions where CPS students most frequently undermatch ranges from \$4,250 to \$7,500 (U.S. Department of Education, 2020). This debt can decrease the financial rewards associated with college and increase the financial risk associated with the decision to attend college. This is especially true for students who do not graduate and are most likely to default (Dynarski, 2016).

As a result, students are often left to weigh the benefits of attending schools that might maximize their likelihood of graduation against the risk associated with accruing student debt. This tradeoff is most pronounced for students of color, who as a result of the racial gap in college completion rates, are more likely to accrue student debt without the economic benefit of a college degree (Jackson & Reynolds, 2013). To the end, a mixed methods study drawing on data from the National Longitudinal Survey of Youth and interviews with Black youth from disadvantaged households in Baltimore found that, “students who have faced

instability or hardship in the form of disruptive events, or ‘adverse shocks’ (e.g., violence, eviction or incarceration of a family member), anticipate future shocks that could derail their educational plans. In response, they opt for shorter, more flexible educational programs that they expect they can complete despite anticipated shocks” (DeLucha et al., 2021)

The research to date does not provide clear guidance to students and those who are advising them as to how they should balance the academic, social, and financial aspects of choosing a college. This project aims to fill this gap, providing much-needed insights into how students are currently grappling with tradeoffs in these areas and laying the groundwork to begin examining the relationship between unmet financial need and college completion, ultimately providing empirical guidance to students making college decisions.

CONTRIBUTION OF THIS PAPER

As noted above, since the publication of the original Potholes on the Road to College report (Roderick, Coca, & Nagaoka, 2011), CPS has seen growth in high school graduation and college enrollment rates. CPS has also made significant strides in its approaches to supporting students with their college application and selection process, with specific focus on supporting students in navigating the academic match, social fit, and affordability aspects of college choice. In 2020, the district implemented a district-wide graduation requirement, known as Learn. Plan. Succeed. (LPS), which requires students to develop and commit to a postsecondary plan prior to high school graduation. The district has implemented a variety of strategies to support students in meeting this requirement, including the development of a College and Career Competency Curriculum (C4), now titled CPS Success Bound, the introduction of senior seminars focused on preparing students for postsecondary success, and partnerships with a wide array of non-profit college access and success providers.

At the same time, the college landscape that students face continues to evolve. Admissions criteria at many institutions have become increasingly selective, the costs of college have continued to rise, and available financial assistance has lagged behind. Concerns about accruing large amounts of debt have led some to ask if enrolling in college is even worth it.

Given all of this change, this paper is intended to provide an update on our understanding of how CPS students weigh academic match, social fit, and affordability as they decide whether and where to enroll in college.

We also aim to understand how important these factors are in predicting whether

students are likely to persist in college once they enroll. To that end, we aim to answer the following research questions:

- 1. How are CPS high school students preparing for the college application process?**
- 2. Which students apply to college and where do they apply? What role do academic, social, and fit factors play in the decision of where to apply?**
- 3. What does City Colleges of Chicago (CCC) offer to students who choose to enroll in a two-year institution even though it is an academic undermatch?**
- 4. What post-secondary factors are most salient for students who go on to enroll in CCC?**
- 5. Which students enroll in colleges and where do they enroll? How do academic, social, and financial factors interact to influence whether and where students enroll in college within one year after graduation?**
- 6. What is the college experience like for CPS students who undermatch at CCC?**
- 7. Which students persist in college in the two years after high school graduation? What is the relationship between academic match, social fit, and affordability and student persistence?**

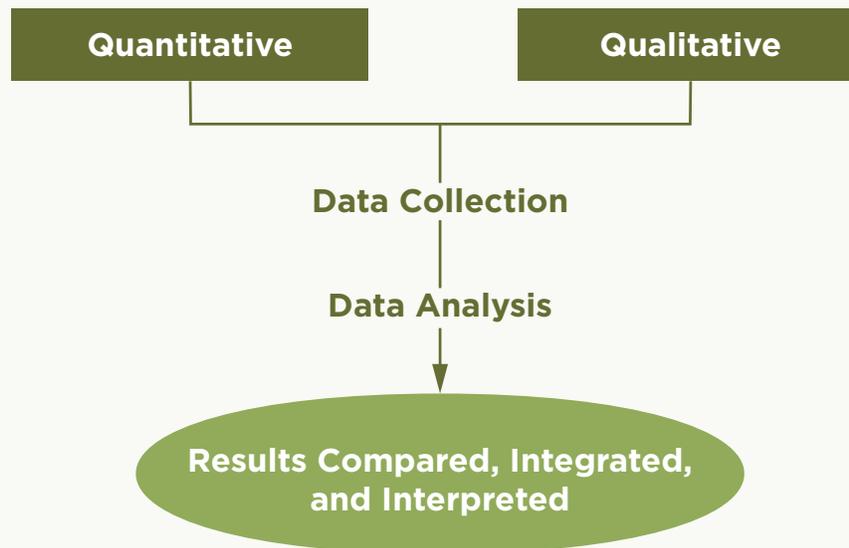
METHODOLOGY

Methodology

To answer the study’s guiding questions, the research team drew on both quantitative and qualitative data.

A mixed method study was chosen as the design for this research to enable an in-depth exploration of how CPS students weigh academic match, social fit, and affordability, and how important these factors are in predicting a student’s likelihood of persisting in college. Through a process of triangulation, the research team was able to present multiple findings, with the qualitative component giving context to the quantitative results, and a synthesis of the two components occurring thereafter.

Figure 1. Mixed Method Triangulation Process



The two components of the study were as follows:

1. An analysis of CPS administrative data, as well as data from Naviance, the National Student Clearinghouse (NSC), CPS’ Senior Exit Questionnaire (SEQ), the Integrated Postsecondary Education System (IPEDS), the U.S. Census, student financial aid award letters, and an estimation of the net costs of all of the colleges students applied to and enrolled in for the class of 2018..
2. Interviews with CPS alumni who attended City Colleges of Chicago (CCC).

This section describes the samples, measures, and analytic approaches employed in the quantitative and qualitative components of the study.

STUDY SAMPLE

Quantitative

The quantitative component of the study focused on tracking the progress of the CPS graduating class of 2018 through their second-year post-high school. We focus on the class of 2018 because it is a relatively recent cohort of students for whom enough time has passed to track college enrollment and persistence. It is important to note, however, the college enrollment patterns for this cohort may differ from more recent cohorts who made the decision of whether and where to attend college in the midst of a global pandemic. Future work of our research team will examine the extent to which more recent CPS graduates mirror those of our study sample.

Table 1 details the characteristics of the 27,148 students in the analytic sample. Like the district as a whole, the vast majority of our sample identified as Black or Hispanic³ (39.9% and 45.6%, respectively) and qualify to receive free or reduced-price lunch (83.3%). Drawing on data from the U.S. Census to identify where a student lived during high school, we estimate that roughly 71.8 percent of the sample come from households with a family income of below \$75,000. Some 7.8 percent of students in the sample repeated at least one grade and 17.1 percent received special education services during their senior year of high school.

Qualitative

The qualitative component of the study focused on interviews with CPS alumni who were enrolled in CCC in the Spring of 2021. The sample was typical of more than a quarter of CPS graduates who enroll in an open access, two-year college, despite having the academic credentials for admission to more selective, four-year institutions. These interviews provided insight into the experiences of CPS graduates who had recently gone through the college selection and enrollment process, and how they made meaning of their college choice after taking classes and spending time on campus.

With the support of administrators at CCC, we aimed to recruit credit-seeking students who were enrolled across CCC's seven campuses. Students who were interested in participating were screened for eligibility across several attributes.

³ The data source uses Hispanic, so when describing data, we will align with this terminology.

Eligibility for participation required students to have graduated from CPS and undermatched at CCC. To determine this, students were asked to self-report their GPA and SAT/ACT scores, and using the College Match Grid, researchers were able to compare students' self-reported data to determine if they undermatched. After filtering out responses for incompleteness and ineligibility, we were left with a sample of 159 eligible participants. Among those who were eligible to participate, many had graduated from neighborhood and selective enrollment schools on the North and West sides of Chicago. Our aim was to have a sample that was inclusive of different student perspectives across the district. Therefore, we prioritized students using the following characteristics: (1) Recent graduates; (2) Representative across selectivity bands with priority given to students in the somewhat selective/selective band; (3) Representative across high school type and location with priority given to students from the South and West sides of Chicago; (4) Enrollment status with priority given to full-time students; and (5) Students who attended CCC as their first college as opposed to students who transferred to CCC from another institution.

Table 1 details the characteristics of the resulting 51 students in the qualitative sample. While these students are clearly not a representative sample of CPS alumni, they represent an important subset of the district's graduates. Similar to the study's quantitative sample, the majority of students in the qualitative sample identified as Hispanic (58.8%), were female (68.6%), and qualified to receive free or reduced-price lunch (68.6%). We estimate that roughly 76.5% of the sample come from households with a family income of below \$75,000, the majority of the sample (82.4%) filed their FAFSA, 62.8 percent were estimated to be Pell Grant-eligible.

Table 1. Demographic Characteristics of Quantitative and Qualitative Study Sample

Demographics	Quantitative Sample (n = 27,148)	Qualitative Sample (n = 51)
Gender		
Female	50.5%	68.6%
Male	49.5%	31.4%
Race/Ethnicity		
Black	39.9%	*
Hispanic	45.6%	58.8%
Asian	4.1%	*
Asian or Pacific Islander	0.01%	None
Hawaiian or Pacific Islander	0.1%	None
Native American	0.3%	None
White	9.0%	*
Multi-racial	1.0%	*
Lunch Status		
Free or reduced lunch	83.3%	68.6%
Denied FRL	12.1%	23.5%
None	4.1%	*
Estimated Family Income		
\$0 to \$30,000	6.6%	*
\$30,001 to \$48,000	32.1%	33.3%
\$48,001 to \$75,000	34.2%	41.2%
\$75,001 to \$110,000	10.4%	*
Greater than \$110,000	6.4%	*
Education Funding Status		
FAFSA filed	70.8%	82.4%
FAFSA filed - but incomplete	3.2%	*
No FAFSA filed	24.0%	*
Estimated Pell Grant-eligible**		
Yes	57.9%	62.8%
No	30.5%	35.3%
Others		
Grade repeater	7.8%	*
English as a second language	6.2%	None
Special education	17.1%	*
504 Status	4.6%	*
Homeless	8.6%	*

Note: Estimated family income is determined by census tract level median family income derived from U.S. Census data associated with student addresses. "FAFSA filed - but incomplete" refers to cases when student filed the FAFSA but there was missing/incorrect information in the application that prevented the EFC calculation. Estimated Pell-grant eligibility is determined by having estimated family income below \$60,000.

Values with counts <10 have been suppressed to preserve anonymity.

QUANTITATIVE DATA AND MEASURES

To track the progress of the class to 2018 through the college access pipeline, we linked together multiple data sets. First, we identified the study sample as well as their academic and demographic characteristics by drawing on standard administrative data collected by the district. As noted above, we use students' home address in their senior year of high school to estimate their family income using data from the U.S. census.

To track students' application efforts, we drew on data from the Naviance system. At the time of our study, Naviance was the tool used district-wide to help students navigate their post-secondary college and career plans. Students used the system to search a variety of post-secondary options. The system is also used to request high school transcripts be sent to colleges as a part of the application process and log students' postsecondary plans to meet the district's LPS graduation requirement. As such, Naviance provides the most comprehensive data on which colleges students applied to and whether they were accepted.

While Naviance serves as a valuable tool for tracking applications, we also supplemented the Naviance data with data from NSC. First, while the Naviance system tracks whether a student's transcript was sent as part of the application process, there is currently no mechanism to confirm whether a student completed the other pieces of the application, potentially leading to overcounting applications. Second, the requirement for students to submit a high school transcript as a part of the application process is not consistent across all colleges. This is especially true for open access institutions, like community colleges. This means that students who apply to these institutions can do so without using the Naviance system, and without their application being recorded in Naviance. By supplementing Naviance data with data from NSC we were able to fill these potential gaps. Specifically, we considered a student to have applied to a college if they enrolled in that college in either the summer or fall semester immediately following their high school graduation. Our decision to incorporate the enrollment record was based on the assumption that a student must have applied if they enrolled. While these factors do introduce some measurement error, conversations with school-level staff involved in supporting students in the application process lead us to believe that, on the whole, the Naviance data provide a fairly complete picture of the schools to which students applied.

The data on acceptances appears to be less reliable. Largely based on student self-report, data on the admissions decisions for 40 percent of applications that were submitted is missing. Further, examining the data that are available led us

to suspect that acceptances were overrepresented. For this reason, the analyses presented in this report do not rely on the Naviance acceptance data.

Data on college enrollment and persistence come from the NSC. NSC data provides term-level enrollment data for over 90 percent of institutions of higher education in the United States and over 99 percent of four-year public universities (Dynarski et al., 2015). CPS contracts with NSC to receive data on all district graduates. We defined a student as having enrolled in a given year if they appear to have ever enrolled in one of the three terms during that year. In our analysis, we focused on college enrollment within one year of high school graduation. If a student enrolled in more than one institution during this period, we focused on the school that has a higher selectivity level or in other cases, the first school they enrolled in. We also tracked college persistence for students who enrolled within one year after graduation and studied the persistence patterns. Specifically, we identify a student as having persisted if they enrolled in college in the year after high school and returned the following academic year. This is consistent with the definition used by CPS to track persistence.

To understand students' postsecondary intentions at the end of high school, we draw on the SEQ—a survey administered to CPS seniors annually prior to graduation to collect information about their experiences in high school and their plans for after graduation. In 2018, 18,591 students, or 68.5 percent of our sample, completed the SEQ. Much of the missing SEQ data were for students who attended charter, rather than district-run high schools, where administering the survey is not required.

To understand the characteristics of the institutions that students applied to and enrolled in, we drew on data from IPEDS, which collects aggregate data on postsecondary institutions through a series of surveys. Using IPEDS data from the 2018 – 2019 academic school year allowed us to understand a variety of institutional characteristics, including student demographics, financial aid, admissions, and graduation.

By linking each of these data sets together we were able to not only track student progress to and through college, but also the factors students consider when weighing the decision of whether and where to enroll in college: academic match, affordability, and social fit.

To measure academic match, we grouped students into categories based upon the selectivity level of colleges that they would likely be accepted to given their GPA and test scores according to the CPS College Match Grid (Figure 2). The match grid was originally developed in 2016 by CPS and the

To&Through Project based on admissions data from past cohorts of CPS graduates combined with information on institutional selectivity from Barron’s. Because identifying a student’s access level required knowing both their GPA and SAT/ACT score, we were only able to determine academic match for the 15,943 students (roughly 58% of the sample) for whom we observed GPA and SAT/ACT scores. Much like the limitations of the SEQ data, most of the missing data for academic match are for students enrolled in charter high schools, as these schools are not required to submit GPA data to the district.

Figure 2. CPS College Match Grid for the 2017 - 2018 Academic School Year

Test Scores		Unweighted GPA				
SAT	ACT	<2.0	2.0-2.4	2.5-2.9	3.0-3.4	3.5-4.0
Missing	Missing	Two Year Colleges	Less Selective Four-Year Colleges			Selective Colleges
<940	<18					
940-1050	18-20	Less Selective Four-Year Colleges	Somewhat Selective Colleges			Selective/ Very Selective Colleges
1060-1150	21-23				Selective Colleges	
1060+	24+		Selective Colleges	Selective/ Very Selective Colleges	Very Selective Colleges	

Note: The original CPS college match grid uses unweighted GPA in core courses. However, we used unweighted GPA in all courses in this analysis. An updated version of the College Match Grid has since been implemented during the 2021 - 2022 school year (Appendix A).

We combined 2019, 2018, and 2012⁴ data from Barron's Profiles of American Colleges to obtain Barron's college selectivity level for all post-secondary institutions in the United States. In consultation with CPS, we then used the CPS-Barron college rating mapping table provided by OneGoal to map Barron's college selectivity levels to CPS college ratings listed in the above CPS College Match Grid (Figure 2). We provided the CPS-Barron college rating mapping table, along with the most enrolled college by 2018 CPS students, for each Barron's college rating category in Appendix B. We then merged Naviance and NSC data with the selectivity data using college name and IPEDS ID to assign Barron's college selectivity level to colleges applied to and enrolled in. Consistent with the literature on academic match, an institution was considered a match if the selectivity level of an institution matched that of the student's GPA and SAT/ACT, an overmatch if the selectivity level was more selective than the student likely had access to given their GPA and SAT/ACT scores, and an undermatch if the student could have had access to a more selective institution (Roderick, Coca, & Nagaoka, 2011).

Existing literature does not have clearly defined metrics of social fit factors, as it is a construct that is likely to be understood and interpreted differently by students with various needs. These social factors can include but are not limited to locations, campus activities, special academic programs, and peer composition. Although we do not have full visibility into students' perceptions of social fit, we do have SEQ data that reveals the factors the students reported as driving forces in their postsecondary decision making. Specifically, college-intending students were asked explicitly what influenced them to select the school they are planning to attend, allowing us to disaggregate these results to assess the weight students give to what we identified as social fit factors.

In addition, we can intuit the characteristics students value by looking at the types of schools that students applied to and choose to enroll in drawing on IPEDS data. Given the importance of social belonging for racially minoritized students, we will specifically examine the extent to which Black and Hispanic students seek out Historically Black Colleges and Universities (HBCUs) and Hispanic Serving Institutions (HSIs).

4 The original Consortium research on the academic match framework was based on the 2006 edition of Barron's Profile of American Colleges. In an effort to employ the most recent data, we use the 2019 Barron file from the Gates Foundation (who received it from OneGoal), and supplemented the missing colleges with the 2018 data provided by Noble Network of Charter Schools and the 2012 Barron's Profiles of American Colleges

To better understand how affordability is influencing students' enrollment decisions, we drew on two data sets. To provide a representative picture of the financial tradeoffs students in the district are facing, we estimate the net costs of all of the colleges that students applied to and enrolled in for the class of 2018. To do this, we first estimated student family income using census tract level median family income derived from U.S. Census data associated with student addresses, as described above. The estimated student family income then allowed us to approximate the financial aid package that a student might have received based on data from IPEDS on the average amount of grant and scholarship aid awarded by income level from the colleges they applied to and enrolled in. We proceeded to calculate the net price for each college by subtracting financial aid from tuition and mandatory fee⁵. Finally, we calculated the difference in net price between each of the other colleges applied to and the college enrolled, and then calculated the average of these differences.

In addition to examining overall net price, we categorized the affordability of each institution using an adaptation of Moneythink's (2021) definition of college affordability. Moneythink, an education non-profit, provides a variety of tools to ensure students are knowledgeable about their financial options before enrolling in school. While affordability may vary for different types of students, Moneythink examines affordability from the perspective of Pell-Eligible students. A college is determined as being affordable if the net price⁶ a student is expected to pay is less than \$7,000 per year, somewhat affordable if the net price is between \$7,000 and \$11,000 per year, and not affordable if the net price is more than \$11,000 per year (Moneythink, 2021). Moneythink calculated these labels by first analyzing financial aid awards to get at an estimated bottom-line cost, and then based on the amount a student would need to work and take out in loans to cover all direct costs of attending a given college, decided if the remaining gap makes a college affordable, somewhat affordable, or not affordable. For 'affordable' colleges specifically, while grants and scholarships may not fully cover all direct costs, the gap is deemed manageable. While students attending 'affordable' colleges may have to work, the commitment is expected to be no more than 10 hours per week; and although a student may have to take out loans, the burden is limited to less than \$5,500 per year. For the purposes of our analysis, we align with Moneythink's definition of 'affordable' as meaning a net price below \$7,000, but categorize 'not affordable' as a net price above \$7,000, for simplicity.

5 We did not use average net price provided by IPEDS because this measure takes into account books, supplies, room and board and other expenses, and these expenses are likely to vary significantly across students.

6 Unlike the previous measure of net price noted above, we use average net price provided by IPEDS to match with Moneythink's definition of net price which takes into account books, supplies, room and board and other expenses.

To have a more accurate picture of the financial tradeoff that students made, we examined the financial award letters collected from a non-representative set of students at three CPS high schools: Lindblom Math and Science Academy, Wendell Phillips Academy High School, and Eric Solorio Academy High School in 2018. The analytic sample consisted of 303 student financial aid award letters from 62 graduating seniors. We observed the colleges that students were accepted to, the corresponding tuition and fees, and the different types and amounts of financial aid offered to students. The data on the financial award letters facilitated the comparison of net prices for the full set of colleges that students had the opportunity to attend. This allowed us to compare the net price of the colleges that students go onto enroll in and those that they did not decide to attend. While the data allows us to examine the exact costs that students faced, it is important to note that this is a small sample that is not representative of the district as a whole. We present the analysis of the financial awards letter in Appendix C.

QUALITATIVE APPROACH AND MEASURES

Semi-structured interviews were the primary method of data collection for the qualitative sample. A semi-structured interview approach allowed for a guided conversation rather than the rigid inquisition that accompanies a highly structured set of questions. The interviews elicited the participant's stories and experiences surrounding their desire to attend college, their high school preparation and support, and the interplay of various concerns that guided their post-secondary choices. The research team designed the semi-structured interviews to gain information from students on five primary domains: background (K-12 education, parent/guardian information, SES); college readiness (course taking, high school support, other resources); college choice/ social fit (what college characteristics were important); and obstacles and financial considerations (EFC from FAFSA, loan options). These questions created space for students to share all of their concerns, joys, challenges, and excitement surrounding the college going process, and the myriad factors that structured their decision-making.

We aimed to interview as many students as possible in order to reach saturation—a point in the data collection process where the same themes are recurring and it can be reasonably assumed that further data collection would yield similar responses.

Once data collection was complete, each interview was transcribed, and the research team then used a combination of deductive and inductive coding to analyze the data. We first looked to existing literature to create an initial

codebook. Used in qualitative data analysis, a codebook is a detailed list of themes that emerged from the interviews and are derived from relevant theories related to the study. For example, given our focus on students enrolled at CCC, we applied prominent higher education theories—such as the three-stage model of college choice (Hossler & Gallagher, 1987)—focusing on evidence in our data that corroborated or contradicted these themes. Second, we engaged the data with an inductive approach, allowing new themes to emerge from the data itself. We used team-based triangulation to validate the results of all themes. Triangulation “involves corroborating evidence from different sources to shed light on a theme or perspective” (Creswell, 2013, p. 251). Combining similar themes, creating relationships between them, and comparing themes intra-and-inter domain resulted in our findings.

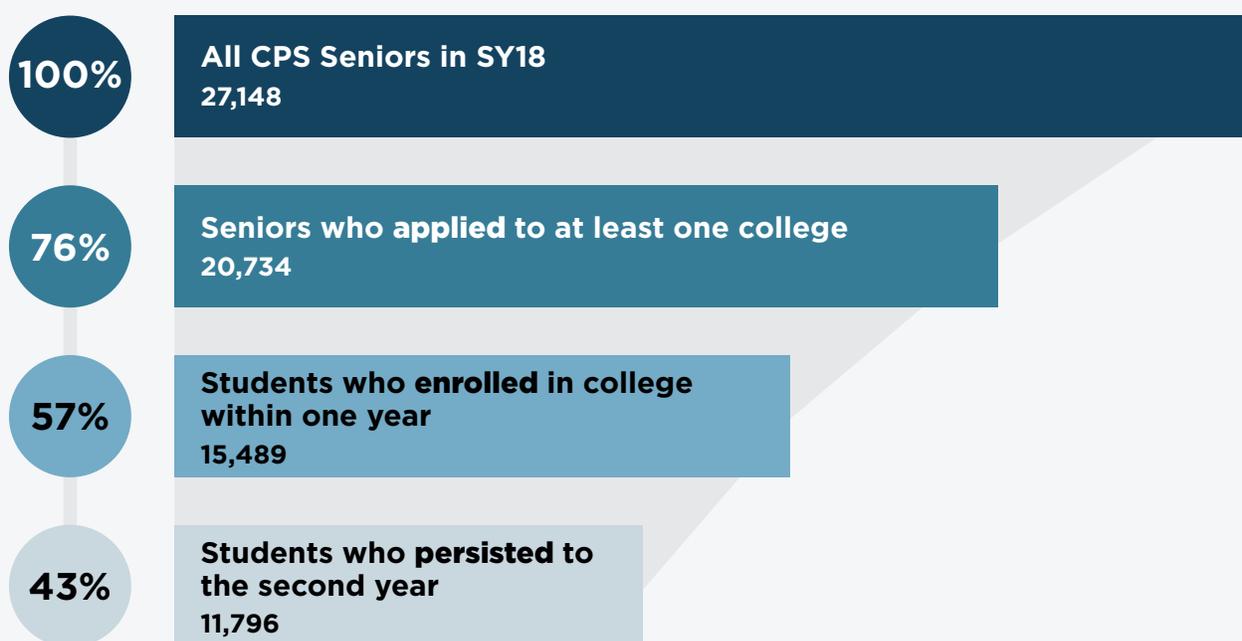
We present the findings from this study in the following sections in two ways: with direct answers and narratives regarding the established, listed research questions in the **Key Findings** section; and broad, overarching findings that are detailed in the **Discussion** section.

KEY FINDINGS

Key Findings

Figure 3 provides an overview of the college access pipeline for the class of 2018. Some 27,148 students were seniors during the 2017-2018 academic year. **Based on the subset who completed the SEQ, we estimate that roughly 81 percent of these students intended to enroll in college after graduation when they were seniors in high school.** Roughly 76 percent of the class of 2018 applied to at least one college, 57 percent enrolled in college within one year of their high school graduation, and 43 percent returned to college for a second academic year (76 percent of those who initially enrolled). This report will examine each step in this pipeline in more detail, explicitly exploring the role academic match, social fit, and affordability play in shaping students' choices throughout.

Figure 3. College Access Pipeline



Note: Students who enrolled in college within one year after graduation include those who enrolled in any terms between Summer 18 and Spring 19. We use NSC 2020 file, which tracks enrollment up to Fall 2020. A small portion of 2.5 percent of CPS seniors did not enroll within one year after graduation but enrolled in the subsequent year. These students are excluded from the analysis.

COLLEGE APPLICATIONS

A critical milestone on the pathway to college is the decision of whether and where to apply. We know that 76 percent of seniors in the class of 2018 applied to at least one college. This section interrogates how they approached this process. We first drew on qualitative data from the interviews we conducted with CPS alumni who went on to enroll in CCC to understand how they prepared for the college application process. We then examined Naviance and IPEDS data for the CPS class of 2018 to examine in more detail the applications they submitted.

RQ1: How are CPS high school students prepping for the college application process?

The decision of whether and where to go to college is a significant one that all students must make. In our sample, we interviewed students from diverse backgrounds, including those who attended a variety of high school types, including Options and Selective Enrollment schools. Some students took traditional classes, while others participated in advanced programs like Advanced Placement (AP) or International Baccalaureate (IB). Even the students in our sample who attended well-resourced selective enrollment schools faced challenges and inequalities in the college application process. Despite their diverse experiences, all of our participants shared a strong belief in the value of education and saw it as a valuable investment in their futures.

Our participants described learning about the college application process during their freshman and sophomore years and then really focusing on it during their junior and senior years. They all understood the core tenets of the college-application process: work hard in your classes, make good grades, score well on standardized tests, apply to a variety of higher education institutions, and make a decision based on your acceptances. However, as they reflected on their high school experiences, many of them expressed regret for not taking the college application process more seriously earlier on. When senior year arrived and students started taking senior seminar courses and attending financial aid workshops, they realized the various factors they still had to think through and with application deadlines quickly approaching, the process left students feeling overwhelmed.

As mentioned previously, **students had a good understanding of what the college application process looked like but did not fully grasp how much thought and time it would take to think through all the decision points.** Many participants shared the challenges that came with being a first-generation

“

We figured out [college prep] stuff really late in the game compared to say other students and other people. But that's kind of when I started to realize oh, people are actually preparing to go into college and even freshman year, they would join really selective clubs or pathways in the high school. There's something called the alpha program or omega and omega is more humanities based and alpha is more stem based. And you can only get into those programs freshman year. If I realized you knew you, I wanted to get into it, I couldn't because it was too late. But I realized that the people, my friends would actually do that now, they have all this awesome stuff once they graduate. So then it's more impressive and this and that. I'm not judging, it's super cool. But definitely it's just hard because not everyone knows at the beginning like oh, this is what colleges are looking for, this and that. I don't know if that answers the question, but definitely I could tell that some people kind of knew how to go through high school. ”

—Lupita

student and how difficult it can be navigating the process mostly on their own, find resources, apply to FAFSA, and make sense of financial aid letters. Within these scenarios, some students were able to find a devoted counselor or teacher but shared that it was challenging to receive individualized attention particularly at larger high schools. Others mentioned tapping into their friend group was a vital source of support, with students sharing strategies and resources on how to tackle college applications and peer reviewing each other's personal statements.

“

I had a very hard time trying to figure out how to apply for financial aid. What was the process to applying for schools and a lot of stuff because first-generation graduating from my family. So my parents didn't go to college. My parents didn't have these opportunities and asking them about their financial records and everything, and they had no idea how to really do anything. So it wasn't anything I could ask for at home for help. It was mostly that science teacher that helped me out and friends that were also going to school were helping me out. So it was a lot of us in our age group trying to figure things out ourselves. ”

—Isabella

It is clear that students devoted a significant amount of time to preparing for college, and the district invested resources to assist students in the process. This led to almost 90 percent of participants reporting they had applied to a 4-year college. Although we did not ask in our intake survey if students received acceptances to the colleges they applied to, it was a question that came up frequently during the interview, with a large majority reporting that they had received multiple acceptance letters. Our participants were well-prepared to attend a 4-year college, but when it came time to weigh their options, the cost of attending was an outsized factor. Having an implicit understanding that they would be responsible for any loans taken out to cover the cost of college or being ineligible for a federal loan because of undocumented status, students had to make constrained choices with the deciding factor being whether or not they could afford the college of their choice.

RQ2. Which students apply to college and where do they apply? What role do academic, social, and fit factors play the decision of where to apply?

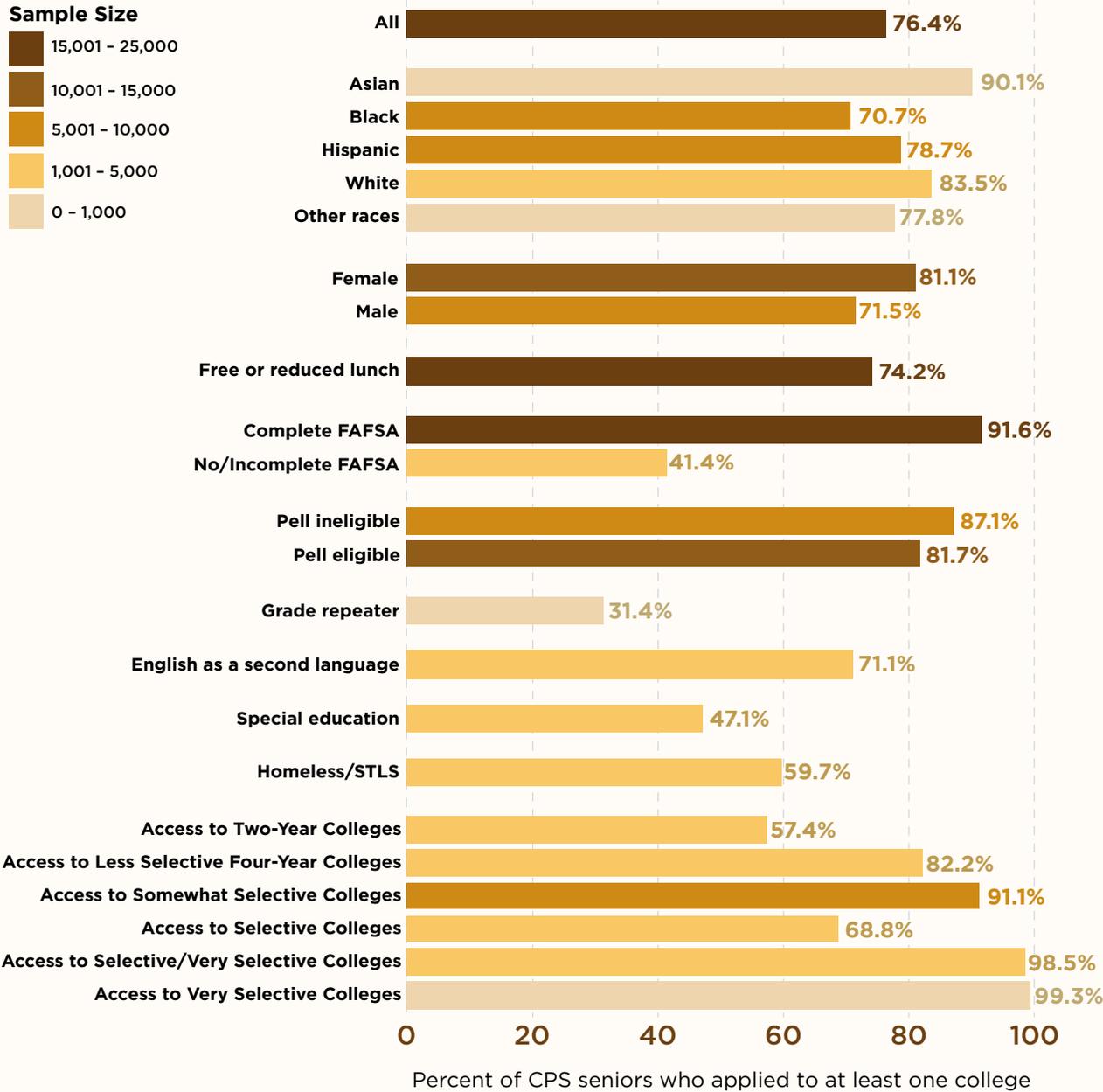
The support CPS alumni report receiving in high school can be seen in how they engaged in the college application process. As we noted above, roughly 76 percent of the class of 2018 applied to at least one college. This suggests that most of the roughly 81 percent of seniors who report that they intend to enroll directly in a post-secondary institution following their high school graduation are completing this critical step to making that goal a reality. On average, students from the class of 2018 submitted six applications.

Figure 4 compares the students who applied to at least one college to the class of 2018 as a whole. **While students who applied to at least one college are relatively similar to the class of 2018, some differences are worth noting.** For example, students who identified as female were slightly more likely than their male-identifying counterparts to have applied to at least one college⁷. Likewise, compared to the class as a whole, students who identified as Asian and White were slightly overrepresented among college applicants, while students who identified as Black were slightly underrepresented. Perhaps unsurprisingly, students who successfully completed the FAFSA were noticeably more likely to have applied to at least one college than students who did not submit or submit incomplete FAFSA. Students who submitted at least one college application were less likely to have repeated a grade, to have English as a second language, to have special education status, and to have experienced housing instability than the average CPS student in

⁷ It should be noted that in 2018, CPS administrative data did not include options for students identifying outside of the gender binary.

the class of 2018. College applicants also had slightly higher GPA and SAT scores as evidenced by the selectivity levels of colleges applied to.

Figure 4. Percent of CPS Seniors Who Applied to at Least One College in Total and by Subgroup (n=27,148)



Note: Other races include Asian/Pacific Islander, Native American/Alaskan Native, Multiracial, Pacific Islander/Hawaiian, and not available. Incomplete FAFSA indicates that a student filed the FAFSA but there was missing/incorrect information in the application that prevented the EFC calculation. Pell-grant eligibility is estimated by having estimated family income below \$60,000. Homeless/STLS indicates students who live in a shelter or are otherwise classified as homeless or Students in Temporary Living Situations.

Figure 5 provides a high-level overview of the types of institutions to which CPS students apply. **In total, students in the class of 2018 submitted 199,984 applications.** About half of the applications were submitted to public institutions and half to private institutions (49.8 percent and 50.2 percent, respectively). Slightly more than half of applications were submitted to institutions in the state of Illinois (56.6 percent). As for college designation, 18.8 percent of applications submitted went to HSIs, and 9.4 percent of applications went to colleges designated as HBCUs. We did not include applications submitted to two-year vs. four-year colleges in Figure 5 because applications submitted to two-year colleges might not be accurately captured in Naviance data. The measurement error is due to the fact that most two-year colleges do not require students and counselors to submit application materials through Naviance.

Figure 6 below illustrates the college selectivity levels of the colleges to which students submitted applications. The plurality of applications were submitted to somewhat selective (30 percent), followed by submissions to selective (22 percent) and very selective colleges (15 percent). Application patterns were similar for two-year and less selective four-year colleges (11 percent).

Figure 5. Institutional Characteristics of the Applied Colleges (n=199,984)

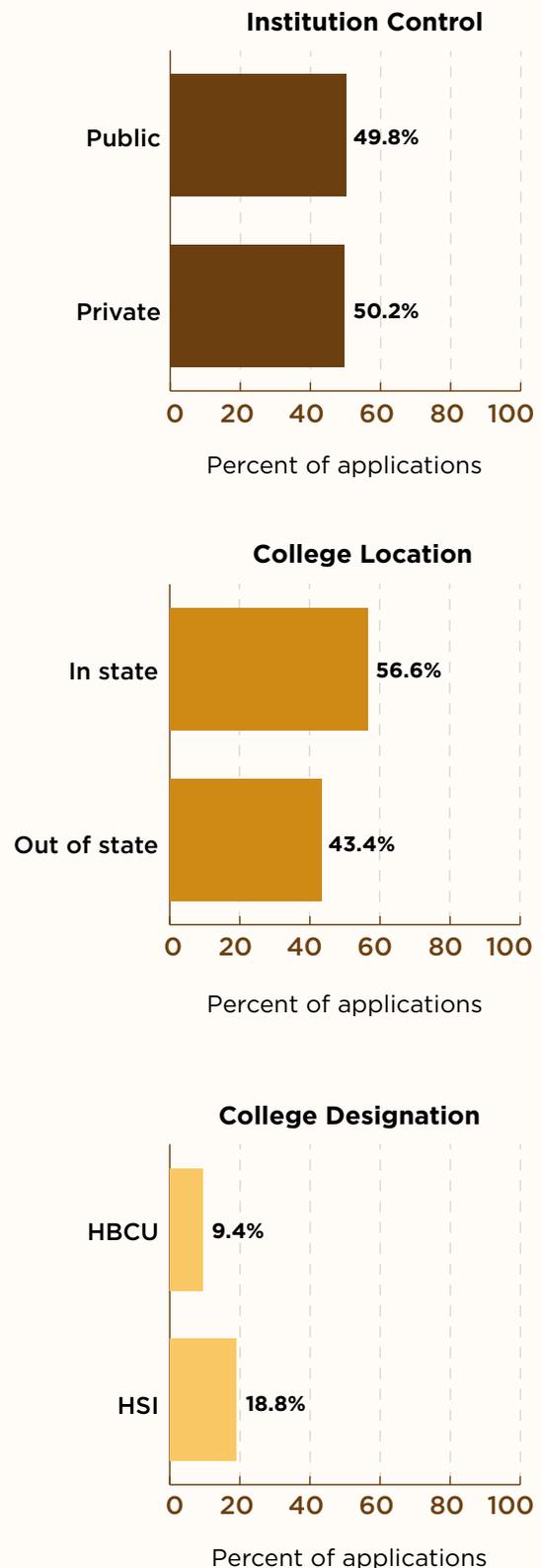
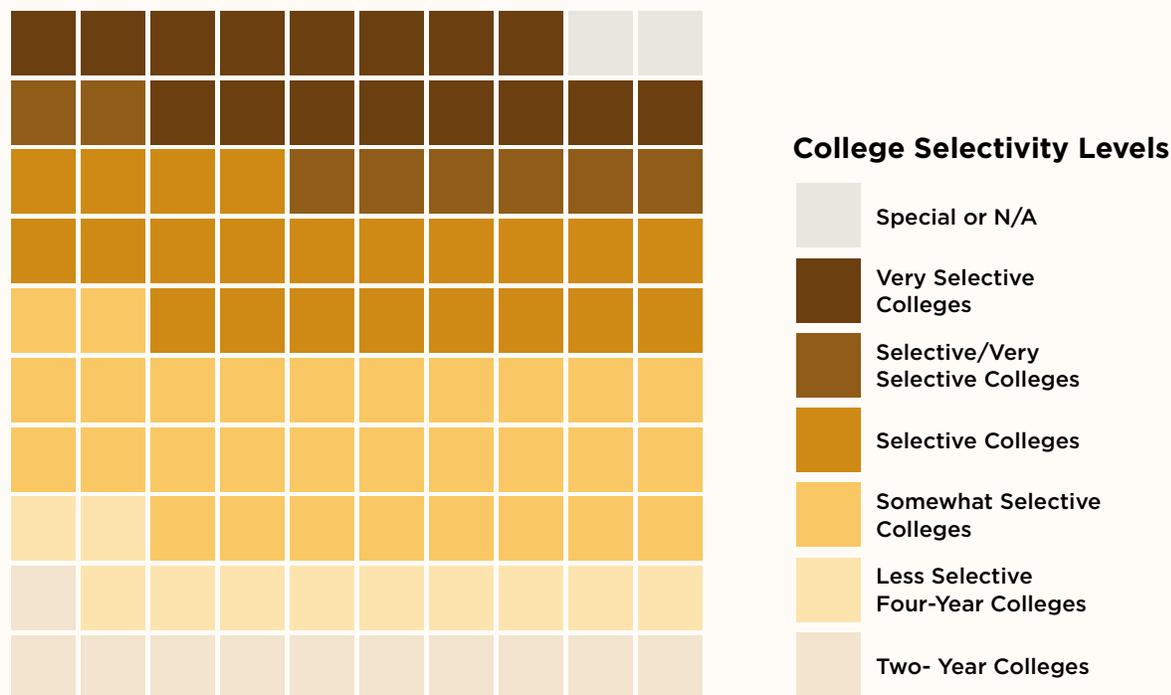


Figure 6. College Selectivity Levels for Colleges Applied (n=199,984)



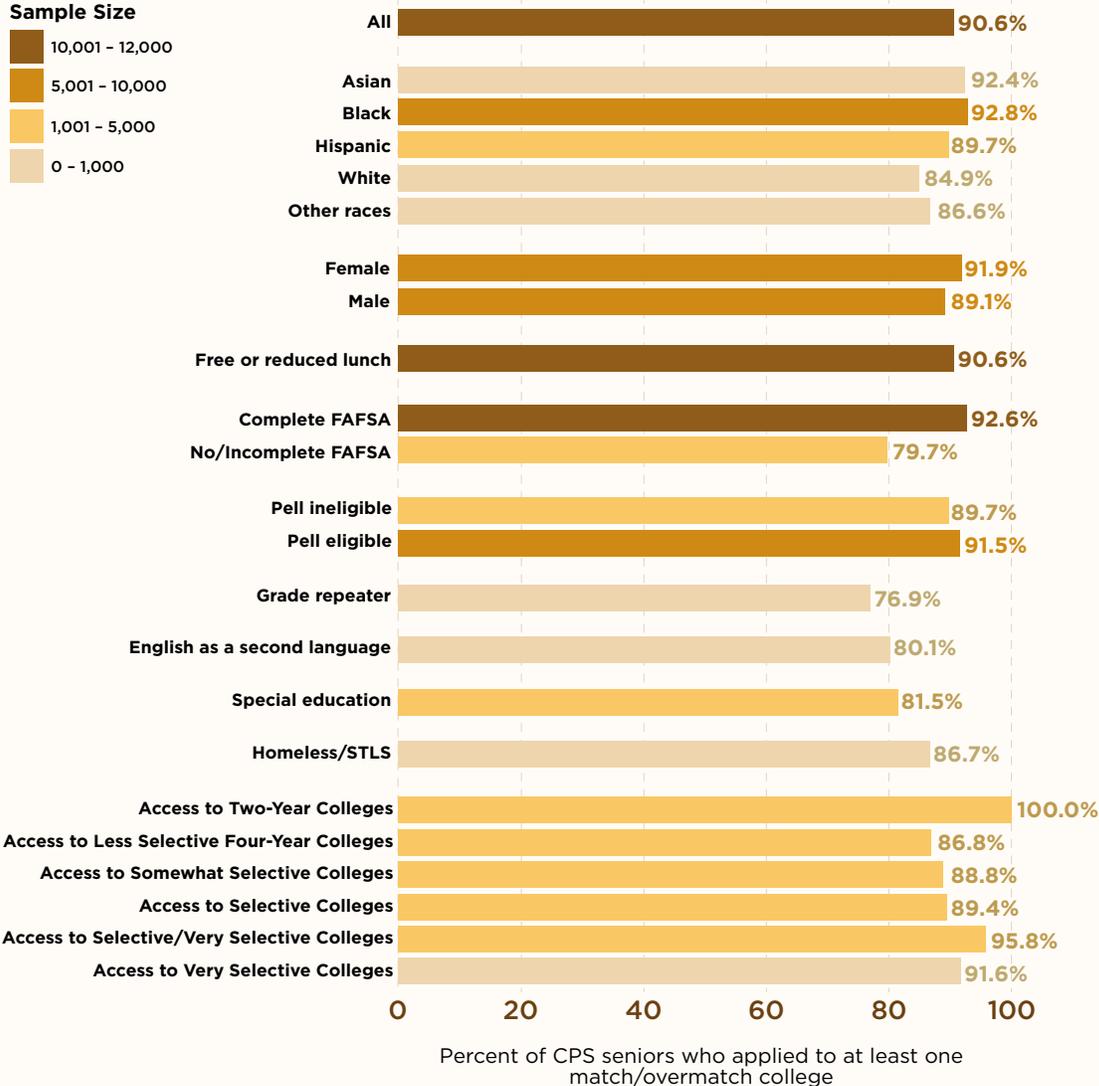
Note: Each square represents 1% of applications submitted to a given college. Special or N/A category encompasses colleges with undetermined Barron’s ratings, colleges with specialized programs, or professional schools of art, music, nursing, and other disciplines.

College Selectivity and Academic Match. As we noted above, college selectivity is one aspect of a college that students may consider as they decide where to apply. Students may consider their credentials, in terms of their high school GPA and test scores, and assess their likelihood of getting into a given school when deciding whether to apply. They are often counseled to apply to a set of schools that include schools they are relatively assured that they will get into (or “safety” schools), those that are an academic match to their credentials (or “match” schools), and those that they could get into, but admission is far from assured, often referred to as an overmatch (or “reach” schools).

To understand the extent to which students are heeding this guidance, we examined the number of students who applied to at least one school that was an academic match or overmatch. We restricted the sample to students who had non-missing academic match selectivity. In 2018, we found that 90.6 percent of the senior class applied to at least one academic match or overmatch institution. However, not all students were equally likely to have applied to at least one match or overmatch institution. **Figure 7** depicts the portion of students who applied to at least one match or overmatch institution by demographic group. **Interestingly, White students were less likely to apply to at least one match/overmatch college than Asian, Black, Hispanic and students of other races.**

Students' Pell eligibility status did not seem to have an impact on the likelihood of a student applying to at least one match or overmatch school, nor did economic disadvantage as proxied by free or reduced lunch status. The rate of application to at least one match or overmatch college was the lowest among students who did not submit or submit incomplete FAFSA, students who were grade repeaters, who had English as a second language, or had special education status. In general, students who, based on their GPA and test scores, were more likely to be admitted to more selective/very selectivity institutions were most likely to have applied to at least one match or overmatch college.

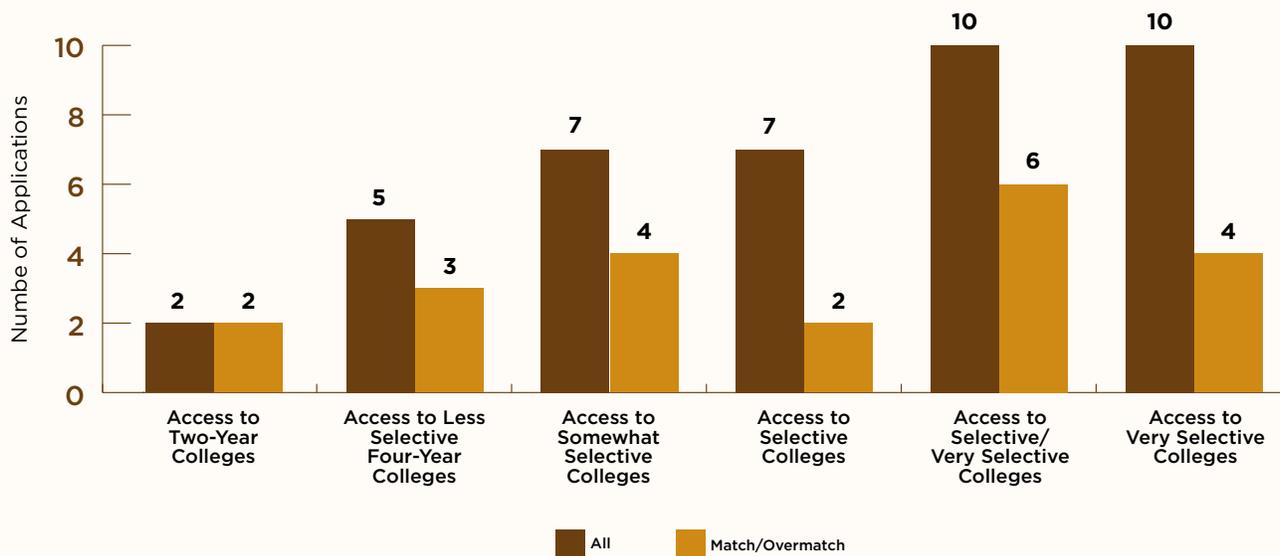
Figure 7. Percent of CPS Seniors Who Applied to at Least One Match/Overmatch College in Total and by Subgroup (n=13,107)



Note: This figure excludes observations with no match applied selectivity values (either due to missing GPA or SAT score or students applying to unranked or special colleges). Other races include Asian/Pacific Islander, Native American/Alaskan Native, Multiracial, Pacific Islander/Hawaiian, and not available. Incomplete FAFSA indicates that a student filed the FAFSA, but there was missing/incorrect information in the application that prevented the EFC calculation. Pell-grant eligibility is estimated by having estimated family income below \$60,000. Homeless/STLS indicates students who live in a shelter or are otherwise classified as homeless or Students in Temporary Living Situations.

While students are likely to have access to an institution that is considered an academic match or overmatch, admission is not guaranteed. To ensure that a student is admitted to at least one institution that meets or exceeds their expected selectivity and that matches other considerations of interest, students may apply to more than one academic match or overmatch institution. **On average, students in CPS applied to six colleges.** Among students who applied, the number of applications averages to nine, two of which were a match or an overmatch. However, this varies by the selectivity of institutions students were likely to be admitted to (Figure 8). On average, students whose high school grades and test scores indicated they were likely to only be admitted to two-year/open enrollment institutions applied to two colleges, all of which were considered a match by definition. In contrast, students who were likely to be admitted to very selective colleges averaged ten applications, four of which were to match or overmatch institutions.

Figure 8. Average Number of All Applications and Match/Overmatch Applications by Student Selectivity Level (n=8,922)

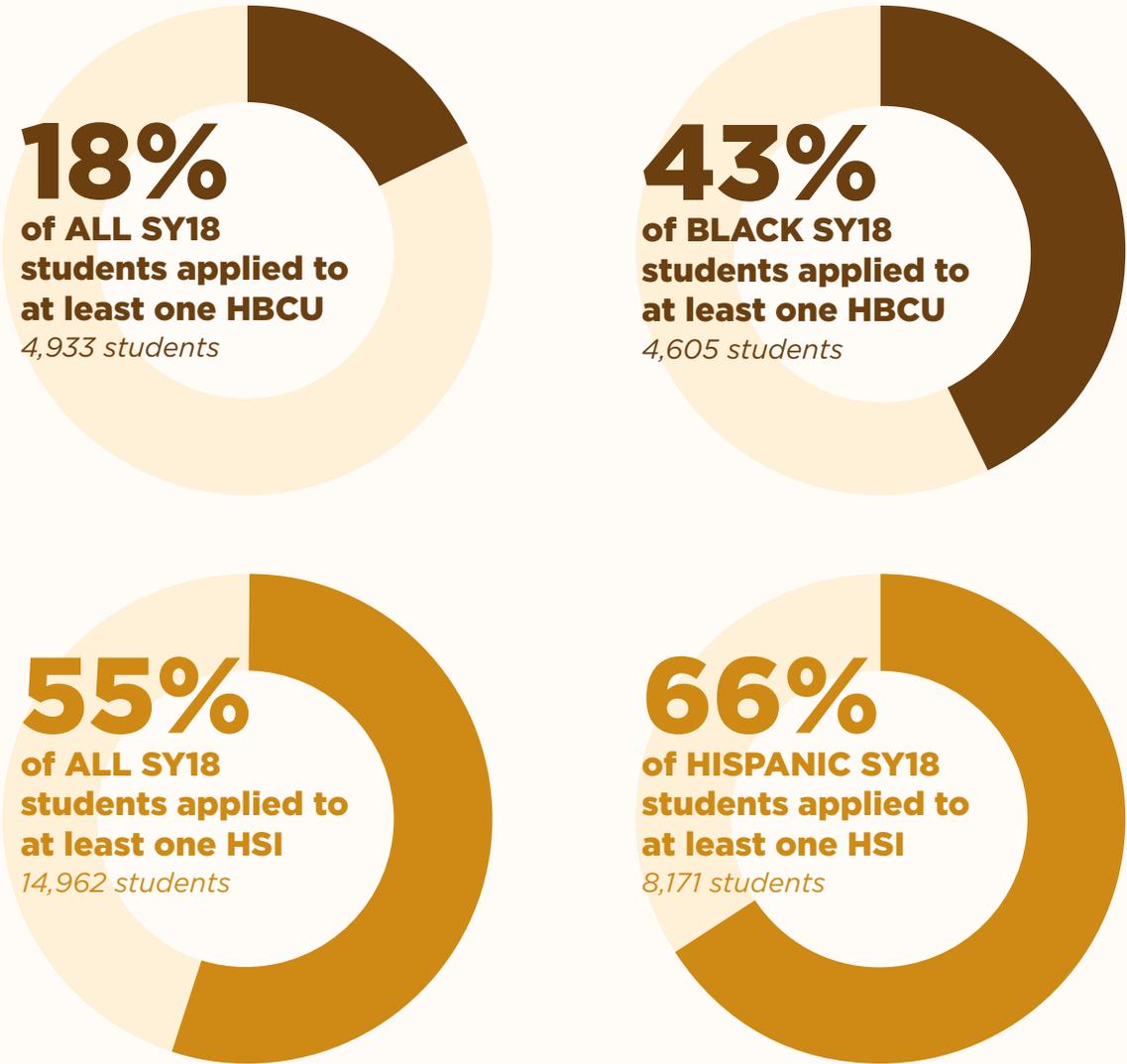


Note: This figure uses median as a measure of average number of applications.

Social Fit. Students also consider a multitude of other social factors in deciding where to apply to college. Most of these factors were not directly observable in the data we had access to. One social factor that we could indirectly observe is the extent to which students were applying to institutions in which their demographic group

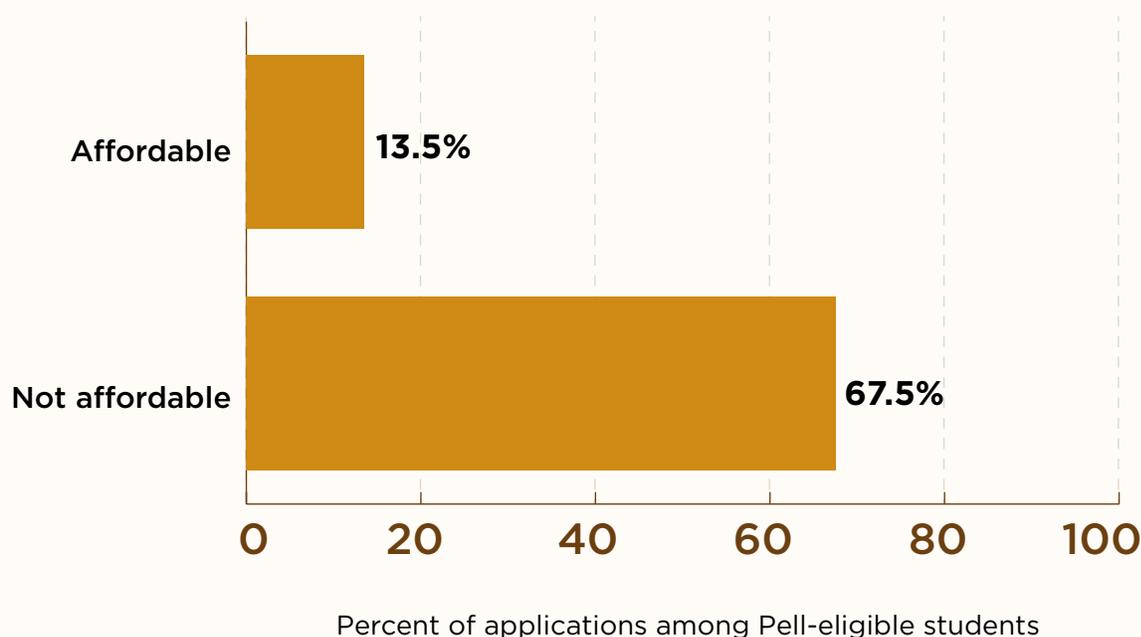
is numerically represented on campus. Given the prevalence of concerns about social belonging and racism experienced by traditionally underrepresented groups on campus, we examined the portion of Black and Hispanic students who applied to at least one HBCU or HSI respectively. **We found that 18 percent of the class of 2018 and 43 percent of Black students applied to at least one HBCU. Likewise, 55 percent of the class of 2018 and 66 percent of Hispanic students applied to at least one HSI (Figure 9).**

Figure 9. Percent of CPS Students in Class of 2018 Who Applied to at Least One HBCU and at Least One HSI in Total and by Race/Ethnicity (n=27,148)



Affordability. As Figure 10 indicates, we examined whether students applied to schools that were likely to provide financial aid packages that would make them affordable based on criteria developed by Moneythink (2021). Focusing on applications submitted by students who were likely to be eligible for a federal Pell grant, we found that **the majority of college applications were submitted to institutions where students would face a net price that would be considered unaffordable even when expected financial aid was taken into account.**

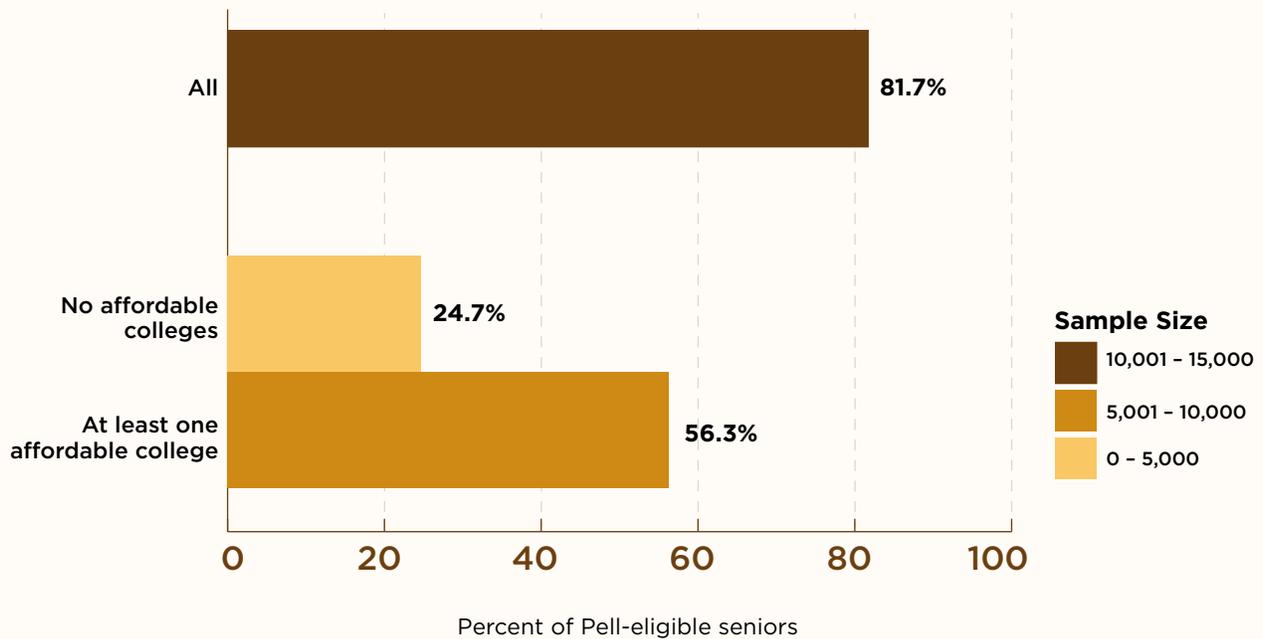
Figure 10. College Affordability Among Pell-eligible Students (n=124,357)



Note: This figure does not include Pell-eligible students who applied to colleges with missing net price information from IPEDS. College affordability is defined using Moneythink's (2021) metric for affordability.

We then looked at the portion of Pell-eligible students who were applying to at least one institution that is expected to be affordable. Figure 11 shows the percent of CPS Pell-eligible seniors who applied to at least one college and how the percentages vary by the affordability of the institution. We found that **56.3 percent of Pell-eligible students applied to at least one college that was affordable.** This figure is noticeably lower than the 81.7 percent of Pell-eligible seniors who applied to at least one college.

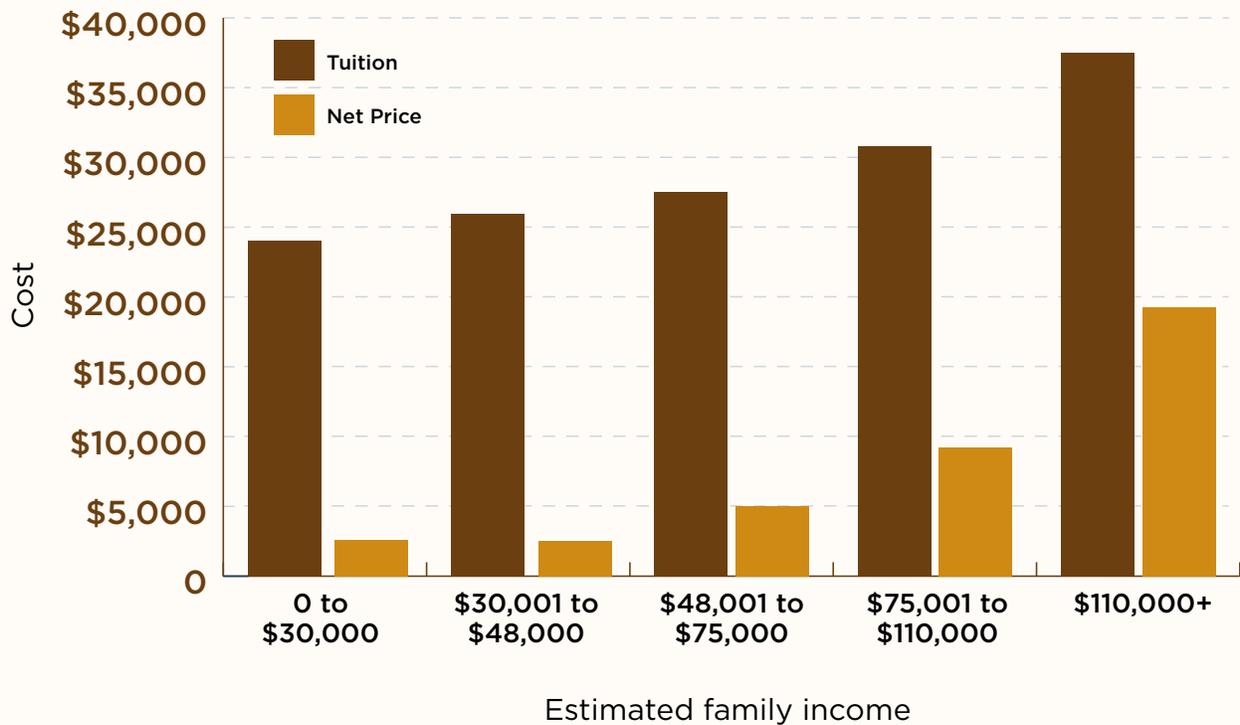
Figure 11. Percent of Pell-eligible Seniors Who Applied to at Least One College in Total and by Affordability Status (n=15,710)



Note: This figure does not include Pell-eligible students who applied to colleges with missing net price information from IPEDS. College affordability is defined using Moneythink's (2021) metric for affordability which places a net price below \$7,000.

We were also interested in the role of the perceived cost of attending an institution in the decision students made on where to apply for all applied students. To examine this question, we first looked at the sticker price and expected net price of the institutions to which students applied. As noted in the Methodology section, our net price measure differs from Moneythink's (2021) definition of net price used to proxy affordability in that we did not consider room and board and other personal expenses. **Figure 12 shows that as estimated family income increases, there is also an increase in the cost of tuition and net price of the colleges students applied to.** This finding suggests that the cost of attendance at an institution is a key factor in the types of colleges students apply to and that on average, students tend to keep their options in-line with their family income.

Figure 12. Average Tuition and Net Price for All Colleges Applied by Estimated Family Income (n student-college pairs = 154,643)



Note: The figures only include student-college pairs with non-missing data for both tuition and net price.

COLLEGE ENROLLMENT

Once students successfully navigate the college application process, they must decide whether and where to enroll. This section explores how CPS students navigate this choice. We first turned to the voices of CPS alumni who chose to enroll in CCC despite having the academic credentials to likely have been admitted to more selective institutions. Data from these interviews provide valuable insights into what drew these students to choose CCC specifically and the factors that are most salient in their college enrollment decisions more generally. We then turned back to the administrative data to examine the college enrollment patterns of the class of 2018 more broadly. Specifically, we examined which students enrolled in college, where they enrolled, and the characteristics of the institutions that they selected.

RQ3. What does City Colleges of Chicago (CCC) offer to students who choose to enroll in a two-year institution even though it is an academic undermatch?

While many CPS students gear their college application efforts towards schools that are an academic match, many students' pathways lead them to apply, enroll in, and sometimes undermatch at CCC. Our analysis of interview responses revealed several key themes that helped us to understand more about why some students chose to enroll in CCC when they had access to more selective institutions. The primary theme that we found placed finances as the driving factor in the decision-making process. Additionally, a sub-theme that we found was that financial decisions made now, even with some sacrifices, were seen as more important for the sake of their future. For students who undermatch at CCC, the choice offers them several key benefits.

Obtaining a credential while staying debt-free

Figure 13 shows the words most frequently used by participants as they described reasons for why they chose to enroll in CCC. **Students view obtaining credentials as important, but staying debt-free while obtaining them is seen as even more critically important, and a key factor in why some students choose to attend CCC.** CCC offers students who lack the financial resources to attend a 4-year institution or who do not want to burden their families with the cost of college a chance at still receiving an education in a financially conscious way. For students facing financial constraints, CCC can be a means to obtain a credential and improve their job possibilities, as well as a way to make a plan to maximize their credential. One student discussed their thought process when weighing the choice between their default pathway or pursuing an opportunity at obtaining a credential to increase their likelihood of future career opportunities. Another student mentioned that CCC was their best choice because it was a good choice from a budget perspective, and they knew that their family did not have the financial resources to support them at a 4-year institution. Even though this student had financial aid, it wasn't enough to cover the full cost of their college attendance, leading them to choose CCC as a financially conscious alternative.

The Star Scholarship offered by CCC is a valuable resource for CPS students who want to pursue higher education but face financial constraints. The scholarship is a merit-based award that covers the full cost of attending for up to three years, as long as students continue to meet the program's eligibility criteria.

“An education is an education.”

Some students believe that “an education is an education,” regardless of where they attend college. One student, who was accepted to the University of Illinois at Chicago (UIC), but chose to attend CCC instead, prioritized completing the first two years of college debt-free. They felt that CCC offered a viable option for them because they were unsure of their major and wanted to take general education courses before committing to a specific field of study. This student planned to save money at CCC and then transfer to a 4-year college if they wanted to continue their education. The idea that “an education is an education” suggest that all educational credentials or opportunities are essentially equivalent in their significance or value. CCC not only provides students with an education, but it also offers those planning to attend a 4-year college the opportunity to take general education courses without incurring debt while they decide on their major.

A stepping stone

Cultural factors can also play a role in a student’s decision of where to enroll in college. Coming from a Mexican household, one student mentioned educational and career aspirations that didn’t align with their familial ideologies and the career paths of those within their family which largely fell into the medical field. The basis of this misalignment was rooted in the expected financial gain from the career path of the student. To avoid delaying their educational journey, this student decided to make a responsible choice for the time being: utilize the education CCC provided while they figured out exactly what they wanted to pursue with the goal of applying to a four-year college in the future. CCC offers an opportunity to attend college and take general education courses with the understanding that transferring to a four-year institution is still an option in the future—an option that allows students to stay engaged in a formal educational setting and

“
I applied to eight other universities including CCC, and I go into all of them, which is great for my self-esteem. Of course, the two that I loved the most was DePaul and Harold Washington. And then it's not until after winter break of your senior year where they send out that lovely bill of like, hey, this is what you're going to have to owe us. That kind of took the wind out of my sails, because I was so ready to go to DePaul, and then that's when my mom reminded me. She was like, 'well, you still have CCC and the Star Scholarship.’”

—Brittney

making progress towards their goals with no financial investment or risk. This reasoning also applies to students who are faced with similar situations, including those who are not ready to move away from home, fully pursue a four-year university and all that it entails, or have familial obligations that clash with attending a traditional institution.

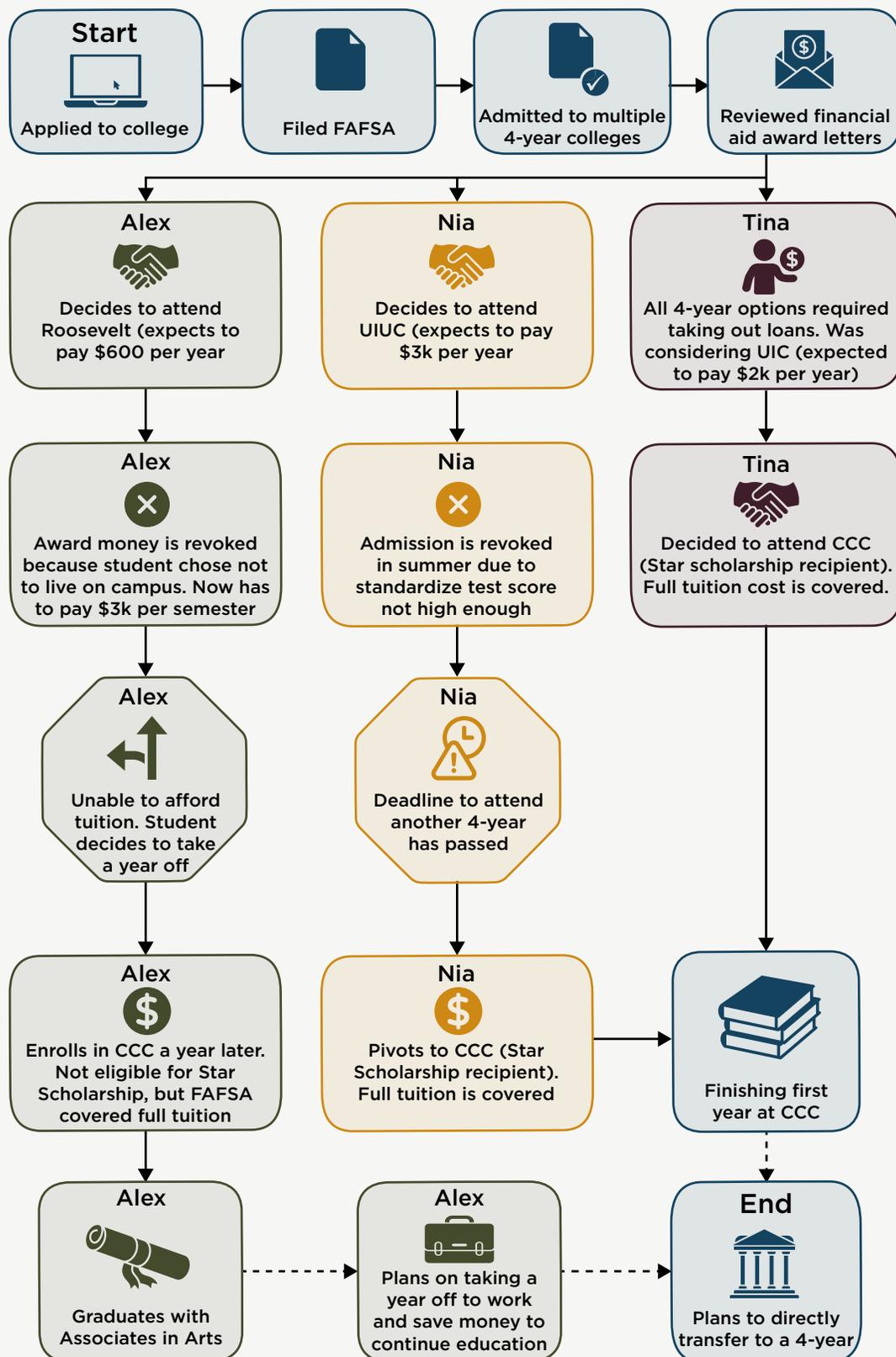
Flexibility

For some students, the flexibility to work full-time while attending college is a key factor in choosing CCC. One student mentioned that CCC offered them the flexibility to manage both work and school, including the option of taking online classes which allowed them to fit school into their schedule. Financial considerations are often a factor for students who need to work while attending school, as many are unable to attend school without financial support.

Figure 14 illustrates that our participants prioritized obtaining an education without incurring significant debt. Some students choose to attend CCC while exploring career options in order to maximize their financial stability and mobility. These students may view any form of education as valuable, especially when face with the possibility of a 4-year education coupled with significant debt. Overall, CCC offers students the opportunity to gain valuable skills and knowledge for future jobs and/or education, while also allowing them to avoid debt. CCC provides a way for students to pursue their goals without the financial burden of a 4-year education.

Figure 14. Pathways Through City Colleges of Chicago

Pathways through City Colleges of Chicago



RQ4. What post-secondary factors are most salient for students who go on to enroll in CCC?

Contrary to previous research (Ziskin et al., 2014), the participants in this study had an intimate understanding of the long-term value of higher education, recognizing that the potential for financial security and upward economic mobility was often contingent on postsecondary degrees and credentials. This resonated the same for students' whose short-term reality required them to prioritize other career pathways and make money through a full-time or part-time job. For these students, three themes emerged as most prominent in their postsecondary decision-making process: financial contribution to family, location, and immigration status.

“I've always paid for anything that's not the basics like food, clothing.”

While campus setting, diversity, and student groups—core tenets of social fit—were highlighted as being important factors in the college choice process, **finances in the form of contributions to the household and paying for college were most salient for these students, and the concept of social fit seemed like a luxury.** First, students expressed an increasing desire to contribute to the finances of their families. The COVID-19 pandemic, in particular, impacted the lives of these young people as they witnessed their families struggle with layoffs, decreased work hours, and the unfortunate loss of life of contributing family members. While the majority of our participants were able to avoid working while they were in high school, they understood that graduating meant moving into a different socioeconomic role within the family—one where they would be financial contributors to the household—and a role in which they placed value. Collectivism appears to be a common theme of undermatching as many students, especially those who come from a low-income background, attend college in the hopes of acquiring a well-paying job post-graduation to help their parents and/or family.

Second, when it came to paying for college, students prioritized finding a school that offered them the most financial aid and seemed affordable for their families. The cost of attending college can be a significant burden for students and their families, and it has a big impact on which school they decide to enroll in. Students also mentioned other factors they considered, such as safety, diversity, and proximity to home, but money was the main determining factor. With 89 percent of CPS graduates who enrolled in CCC having also applied to a 4-year college, and 30 percent having transferred into CCC from a 4-year college, we can see that for the majority of students, CCC may not have been their sole or their first choice. When comparing the average costs of a 4-year college and a 2-year college, the costs of their original college choice was likely significantly higher, and when

factoring in the considerations of housing and tuition costs, financial aid alone may not have been sufficient, prompting students to explore other options. By receiving the Star Scholarship and choosing to enroll in CCC, students were able to relieve some financial stress and pursue a financially sound career path, even if it deviated from their original plan.

“

Well, unfortunately, coming from a very poor family, the first thought is always money. Will I be able to pay for it? And how am I going to pay for it? And I'd say that that affects so many families, especially where I come from, of the thought of college. It's like the first thought is what school best fits me financially? It's not, what school best fits me for my degree or for my personal choice? Unfortunately, it is financial.”

—Pablo

“I think one of the biggest things was the location and the ambience.”

Fitting with the existing literature on student college choice, location played an important role in student decision making. **Students initially desired to go to a college that was far enough away from home to provide some sense of independence, but close enough where they could come home on the weekends or provide family support in times of crisis.** When CCC proved to be the best option financially, 89 percent of students ultimately remained at home after enrolling, however, the location of the campuses provided several benefits.

Students, especially those from a low-income background, undermatched at CCC in order to stay close to their family and help them financially. They were able to remain close to home while also having the chance to explore outside of their neighborhoods, travel downtown and have different experiences. For other students, enrolling in CCC allowed them to not only save money, but remain in a city they are familiar with. With seven campuses across the city, CCC offers students ease of access in terms of locations while also offering students a slice of the college experience by allowing them to travel and explore different parts of the city. As an added bonus to the location, CCC provided students with a diverse and multicultural experience, that gave them the chance to connect with residents

and other students, and get connected to opportunities, that they may have otherwise not have had the chance to engage with.

“I feel like you know, some of us who grow up here being undocumented, we didn’t choose to come here. Our parents brought us here to have a better life, but in some way, I felt like it was my fault.”

Five out of 53 participants disclosed their undocumented status—a position that left them in a postsecondary limbo of sorts. Under the Deferred Action for Childhood Arrivals (DACA) program, people who entered the United States without documentation before the age of 16 were temporarily provided protection from deportation, given the authorization to work, and afforded the ability to apply for a social security number (Georgetown University, 2019). However, the DACA program was terminated in 2017, leaving those previously awarded DACA status to exist in a state of uncertainty amidst renewing permits and entering college and the workforce. In June 2020, the Supreme Court overturned the Trump Administration’s termination of DACA. While students were relieved and excited that they had the opportunity to apply for DACA status with the prospect of attending college, they were quickly met with a different set of challenges.

Despite having a lack of adequate support and resources to navigate the often expensive and complex college application process, students successfully completed the preparatory requirements to attend a four-year college but were met with uncertainty when it was time to complete the FAFSA and apply for scholarships. According to one student:

“

When I was ready to apply, I think Trump had become president. So, my mom was like, ‘Yeah, you’re not applying.’ And not because she didn’t support me or anything, but because we were scared that, if he started deporting people, he would have targeted the DACA students first, just because now they had all their information and stuff. So, we were kind of scared because of that. So, after Trump left, we were like, ‘Okay, we’ve got to get our stuff together.’ ... So, I’m just so happy, because now I’ll be able to get a job, and I’ll be able to help my parents. And with this, when I get a job, I’ll be able to pay for college myself.”

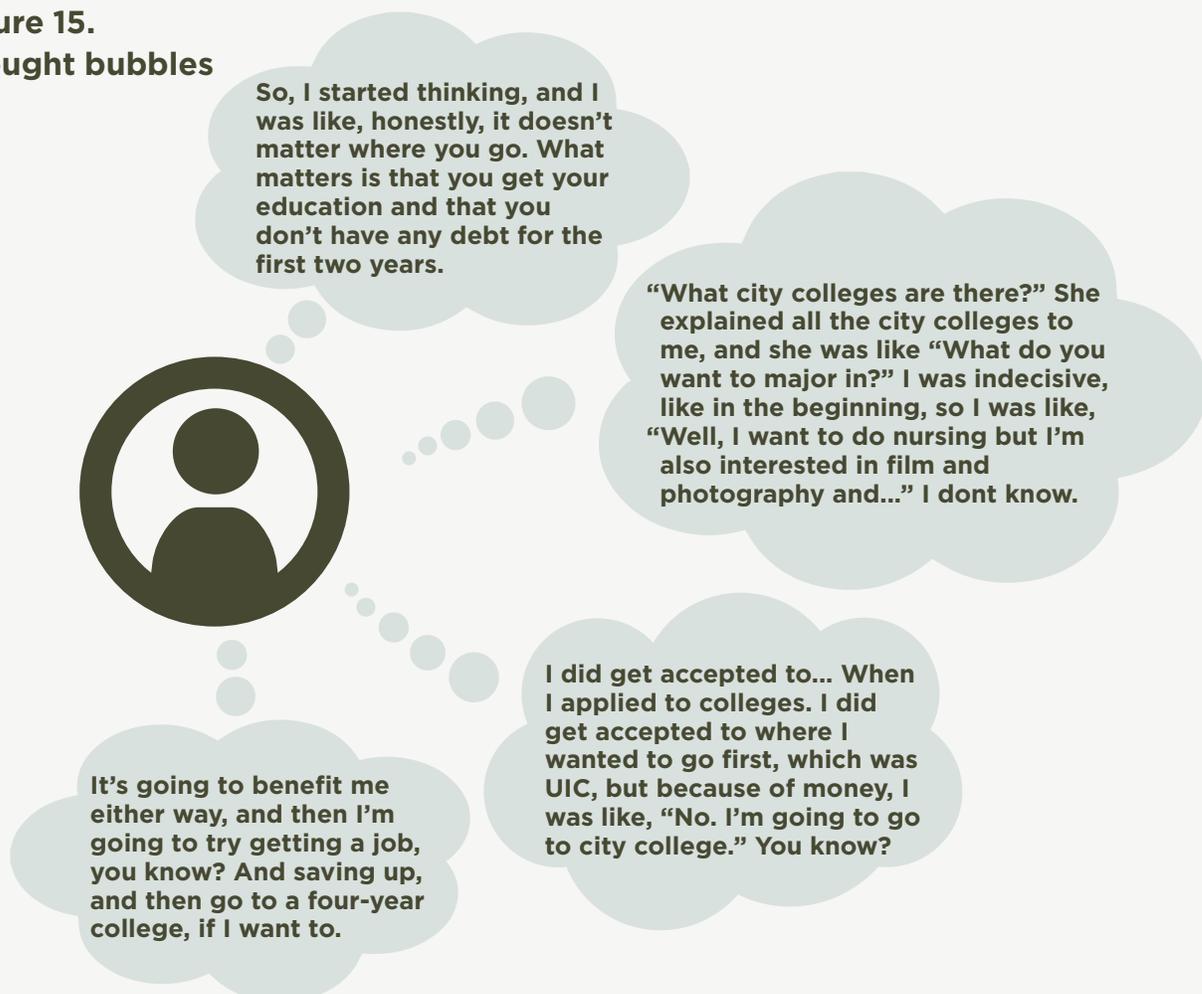
—Camilla

At the time of her interview, Camilla was still awaiting word on her application status.

Undocumented students, first-generation students, and students who come from immigrant families are often left without the supports that other students have to navigate the college application process.

When it comes to financial aid documentation, especially for those who are undocumented, students and their parents often maintain their reluctance to apply. An undocumented status for students can bring about a fear that they and their parents, due to their status, may face questioning or even deportation if they decide to apply to college. For those who do decide to apply, they are left with trying to finance tuition costs while being ineligible for financial aid and scholarships that require citizenship and, as such, CCC becomes the most attractive option. The security that comes with enrolling in CCC is a key factor, with added benefits being how easy the enrollment process is to navigate, the financial support they receive from the Star Scholarship, and the opportunity to continue on a postsecondary path to fulfill their educational goals.

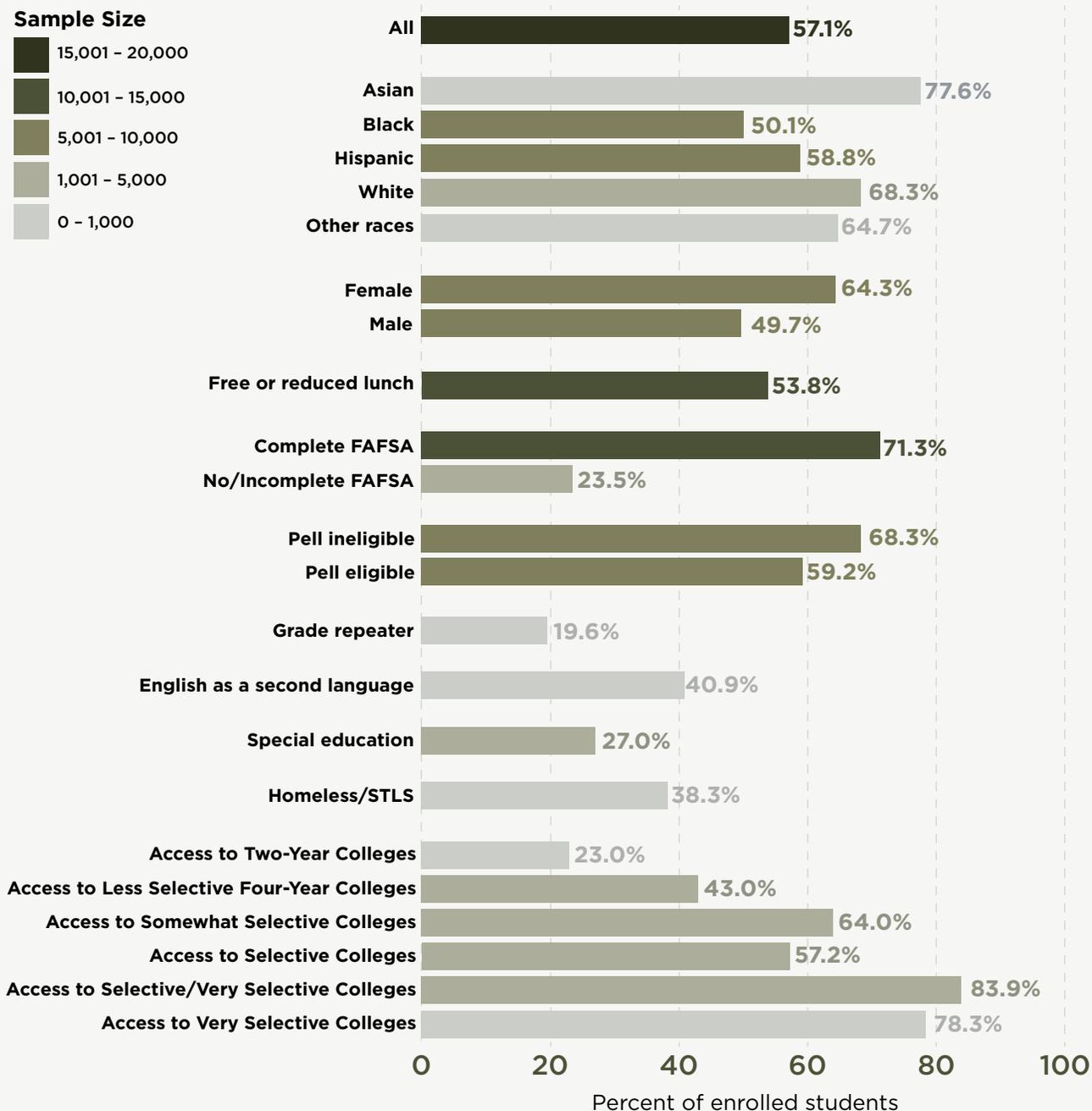
Figure 15.
Thought bubbles



RQ5: Which students enroll in colleges and where do they enroll? How do academic, social, and financial factors interact to influence whether and where students enroll in college within one year after graduation?

Before diving into the details of how the interaction among academic, social, and financial factors influence students' enrollment decisions, we first provided an overview of the characteristics of enrolled students. As noted above, roughly 57.1 percent of students in the class of 2018 enrolled in college within one year of their high school graduation. However, not all students were equally likely to enroll. Figure 16 shows the proportion of enrolled students in total and by demographic and academic characteristics. Asian students had the highest enrollment rate of 77.6 percent, followed by White students (68.3 percent) and students of other races (64.7 percent). The average enrollment rate among Hispanic students was comparable to the average enrollment rate of the class of 2018. However, **the enrollment rate among Black students was only 50.1 percent, about seven percentage points lower than the average enrollment rate of the class of 2018.** When examining gender, we found that female students were 14.6 percentage points more likely to enroll than their male counterparts. Pell-ineligible students were 9.1 percentage points more likely to enroll than Pell-eligible students. Students who enrolled were less likely to be grade repeaters, to have English as a second language, to have special education status, and to have experienced housing instability. On average, we also saw that enrollment rate increases as the selectivity of institutions students were likely to have access to increases.

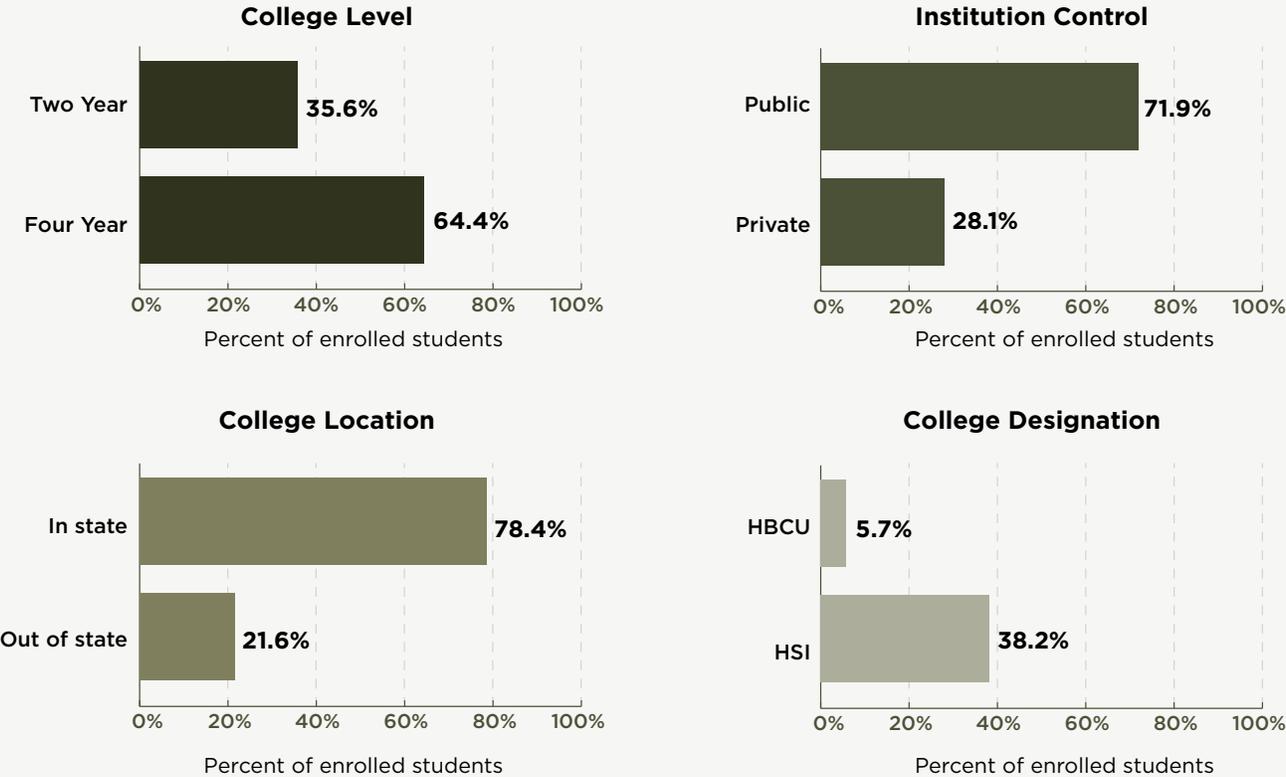
Figure 16. Percent of CPS Seniors Who Enrolled in Total and by Subgroup (n=27,148)



Note: Other races include Asian/Pacific Islander, Native American/Alaskan Native, Multiracial, Pacific Islander/Hawaiian, and not available. Incomplete FAFSA indicates that a student filed the FAFSA but there is missing/incorrect information in the application that prevented the EFC calculation. Pell-grant eligibility is estimated by having estimated family income below \$60,000. Homeless/STLS indicates students who live in a shelter or are otherwise classified as homeless or Students in Temporary Living Situations. Labels for the types of colleges refer to student access level (i.e., the type of school a student would have access to based on their GPA and SAT score).

Figure 17 provides an overview of where students enrolled. About a third of college enrollees chose a two-year institution and 64.4 percent chose a four-year institution. The vast majority of the class of 2018 who enrolled in college did so at public institutions (71.9 percent) and stayed in Illinois for college (78.4%). About 5.7 percent enrolled in HBCUs and about 38.2 percent enrolled in HSIs.

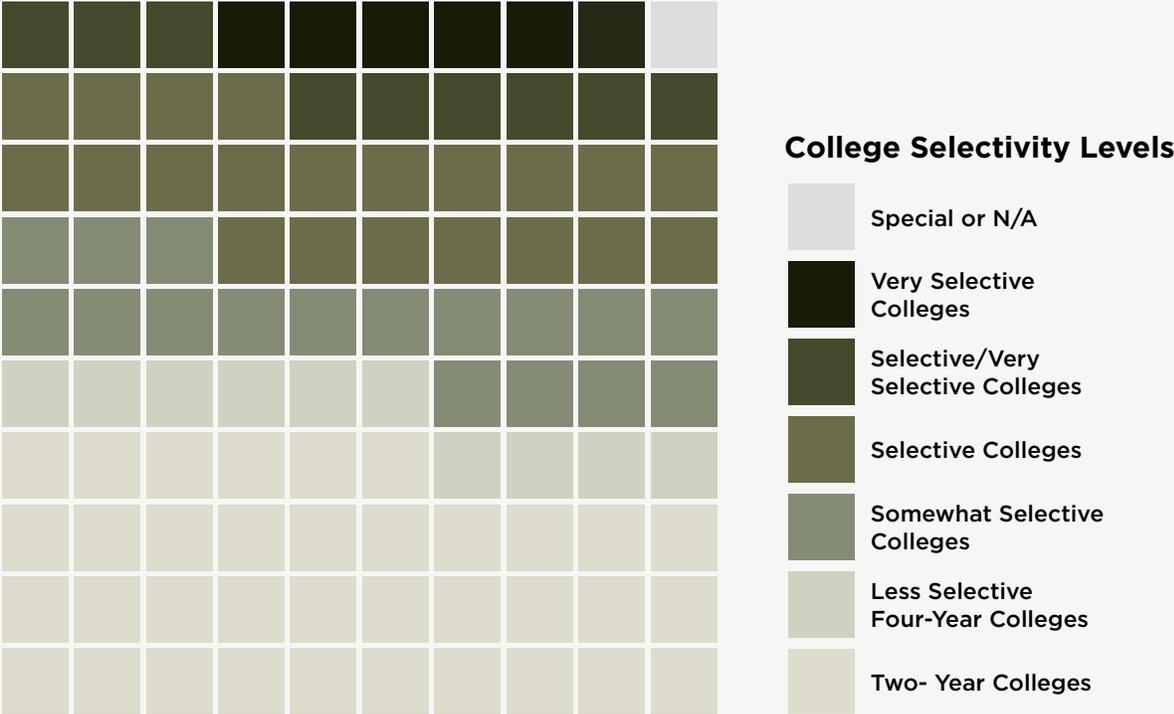
Figure 17. Institutional Characteristics of the Enrolled Colleges (n=15,489)



Academic match. Similar to the analysis of college application, we first examined the extent to which academic match shaped students’ enrollment decisions. Students from the class of 2018 enrolled in colleges associated with various college selectivity levels. Figure 18 shows that more than one-third of the students enrolled in two-year colleges, and one-fifth of the students enrolled in selective colleges. Colleges with less or noncompetitive ratings and selective/very selective ratings saw a similar enrollment rate of roughly 10 percent. There was also a significant number of students who chose to enroll in somewhat selective

colleges (17 percent). Only about six percent of students enrolled in very selective colleges, and about one percent enrolled in special or N/A colleges.

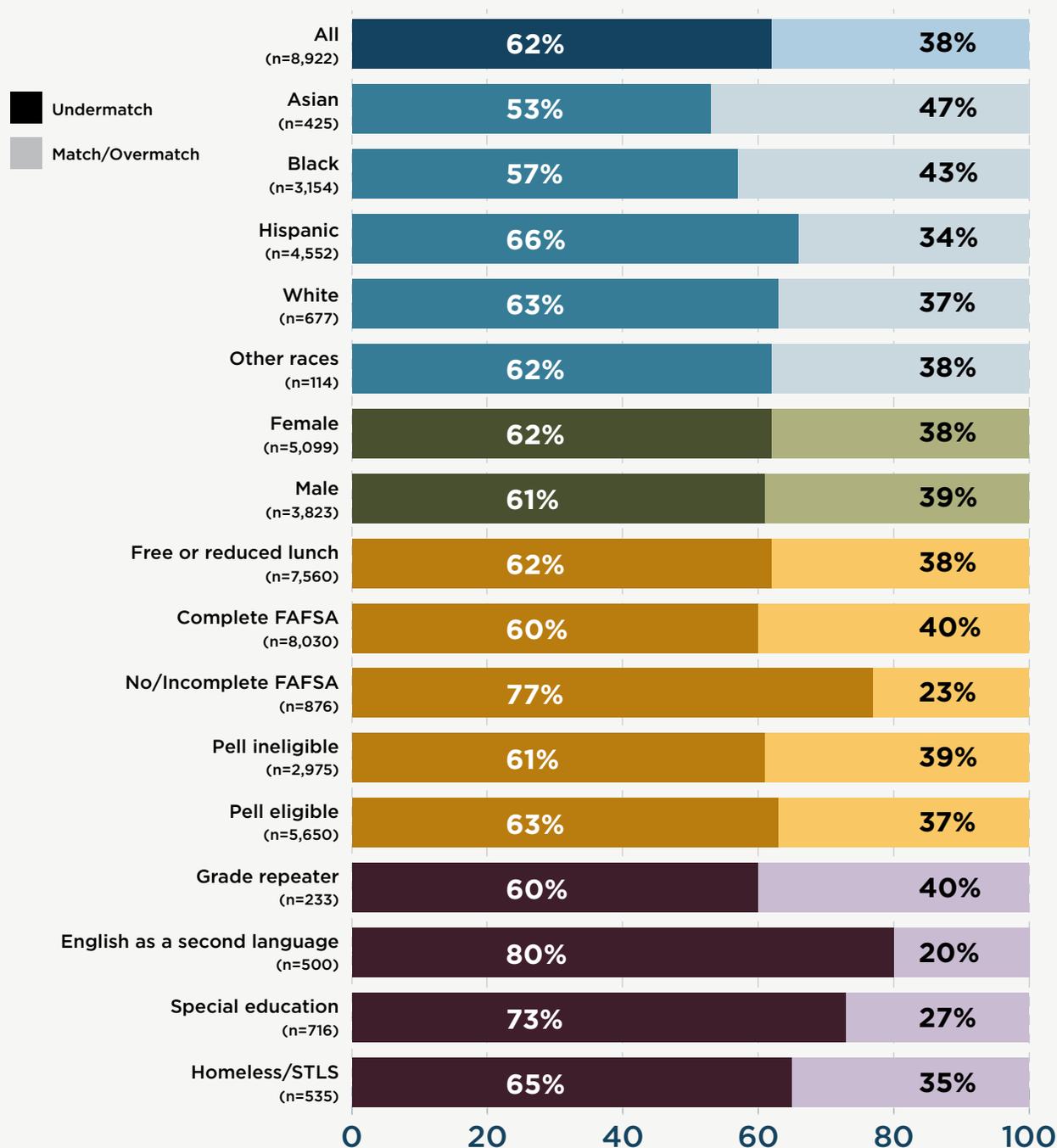
Figure 18. College Selectivity Levels for Students Who Enrolled (n=15,489)



Note: Each square amounts to 1% of the total enrolled students. Special/NA category encompasses colleges with undetermined Barron’s ratings, colleges with specialized programs, or professional schools of art, music, nursing, and other disciplines.

Figure 19 shows the breakdown of CPS seniors who enrolled in undermatch or match or overmatch colleges across demographic subgroups. **Among seniors from the class of 2018, 62 percent enrolled in undermatch institutions, while 38 percent enrolled in match or overmatch institutions.** Although undermatching occurs across demographic subgroups, the actual rates differed substantially across these subgroups. Asian students undermatched at nine percentage points, and Black students at five percentage points, lower than CPS seniors overall. In contrast, Hispanic students undermatched at four percentage points higher than all CPS seniors, and White students undermatched at one percentage point higher. Students with no or incomplete FAFSA applications, students who received special education, and students with English as a second language also undermatched at approximately 11 to 18 percentage points higher than all CPS seniors.

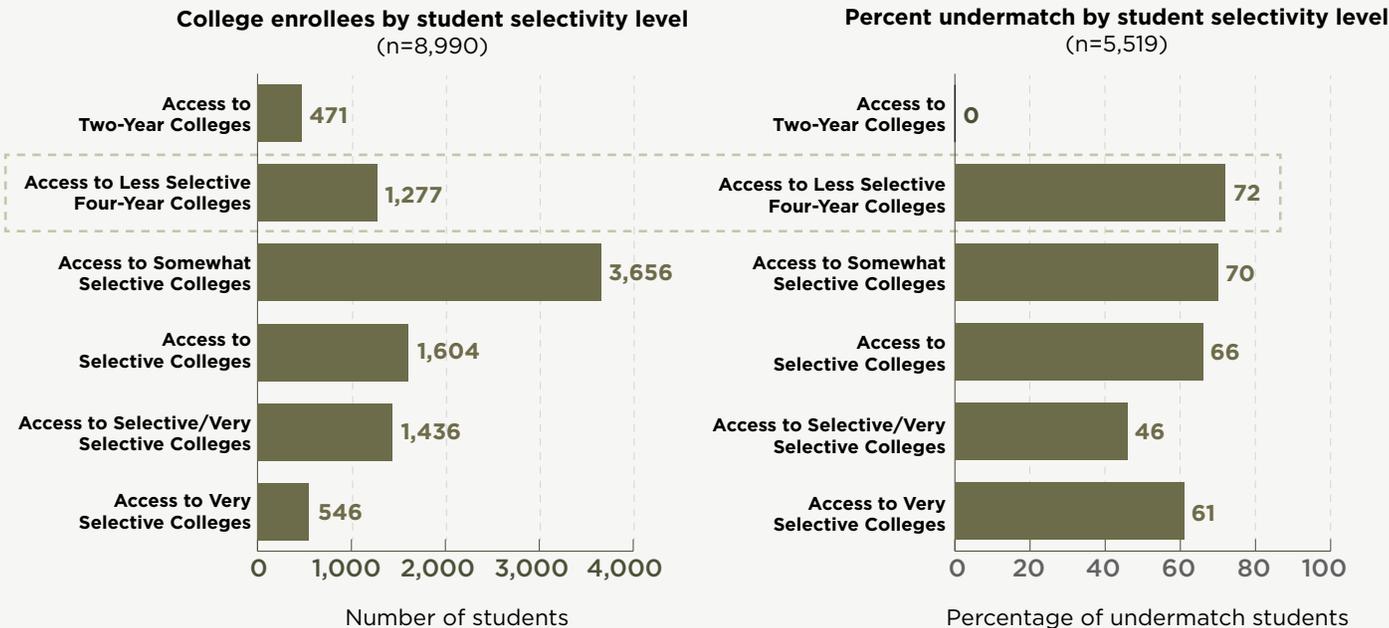
Figure 19. Percent of 2018 CPS Seniors Who Enrolled in Undermatch vs. Match/Overmatch Colleges in Total and by Subgroup (n = 8,922)



Note: The figure excludes 6,866 enrolled students who have missing information that prevents the calculation of academic match. These students either have missing student selectivity level or enrolled in special/unranked colleges. Other races include Asian/Pacific Islander, Native American/Alaskan Native, Multiracial, Pacific Islander/Hawaiian, and not available. "Incomplete FAFSA" refers to cases when student filed the FAFSA but there was missing/incorrect information in the application that prevented the EFC calculation. Pell-grant eligibility is estimated by having estimated family income below \$60,000.

Figure 20 examines undermatch rates based on the selectivity of the institutions students likely had access to. **Undermatch occurs across student selectivity levels, but students whose high school credentials gave them access to less selective four-year colleges are most likely to enroll in an undermatch institution.**

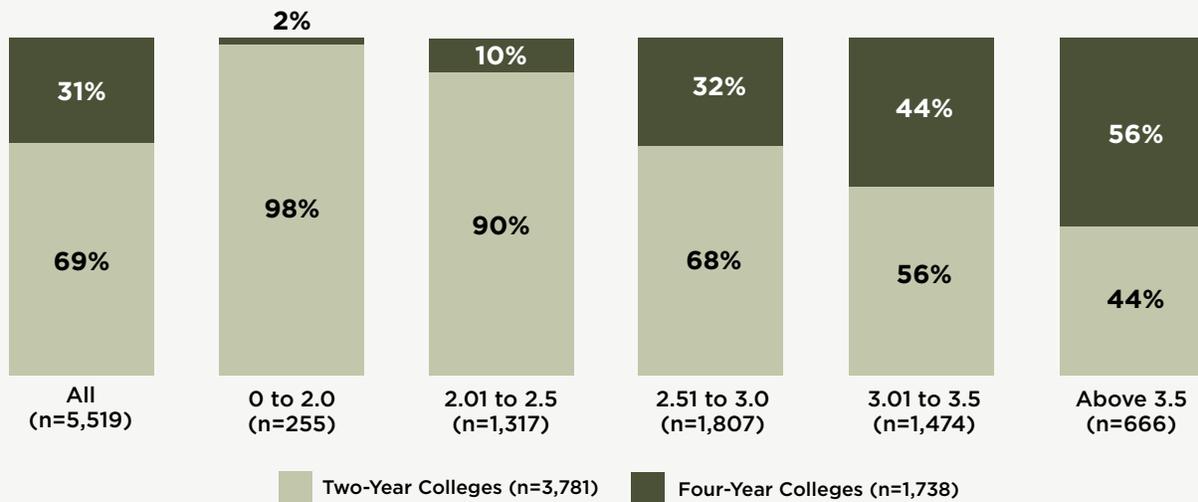
Figure 20. Number of College Enrollees and Percent Undermatch by Student Selectivity Level



Note: The sample excludes 6,499 enrolled students who have missing information that prevents the calculation of academic match. These students either have missing student selectivity level or enrolled in special or unranked colleges.

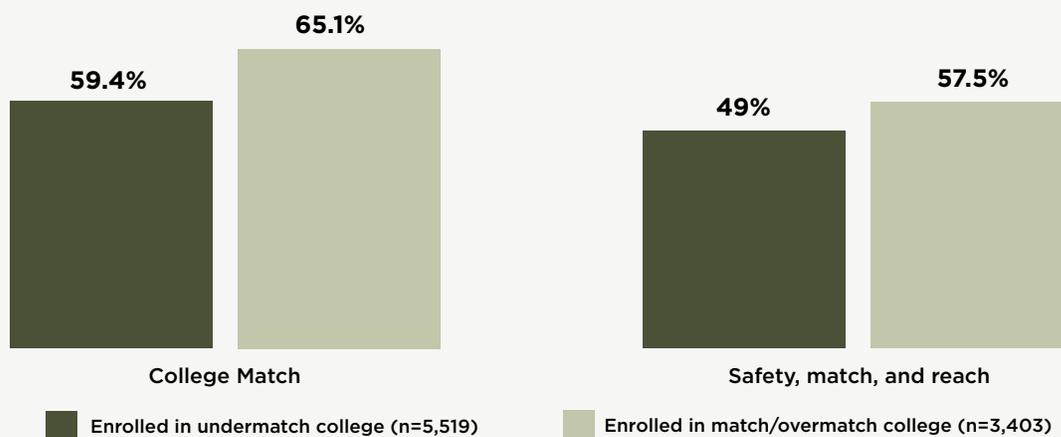
We observed that a substantial share of this undermatch was being driven by enrollment in two-year institutions, which were only identified as an academic match for 409 students. Figure 21 shows the share of two- and four-year college enrollment for undermatch students in total and by high school GPA. We found that **69 percent of overall undermatch students enrolled in a two-year institution.** The vast majority of undermatch students with a GPA below 2.5 enrolled in a two-year institution. The enrollment rates in two-year colleges decreased gradually from 68 percent for students with GPA between 2.51 and 3.0 to 56 percent for students with GPA between 3.01 and 3.5, and to 44 percent for students with GPA above 3.5.

Figure 21. Percent of Undermatch Enrollment by Institution Level in Total and by GPA (n=5,519)



How students approach the college application process and where they apply could also explain some of the enrollment in undermatch institutions. The common strategy of applying to schools that are seen as reach, match, and safety schools to help ensure that a student is able to attend as selective an institution as possible may not be widespread in CPS. **Figure 22 provides some evidence that students who went on to enroll in undermatch institutions were less familiar with the terms “college match” and “safety, match, and reach” than those who went on to enroll in a match or overmatch institution.**

Figure 22. Familiarity with “College Match” and “Safety, Match, and Reach” Phrases Among Students Who Attend Undermatch vs. Match/Overmatch Institutions (n=8,922)

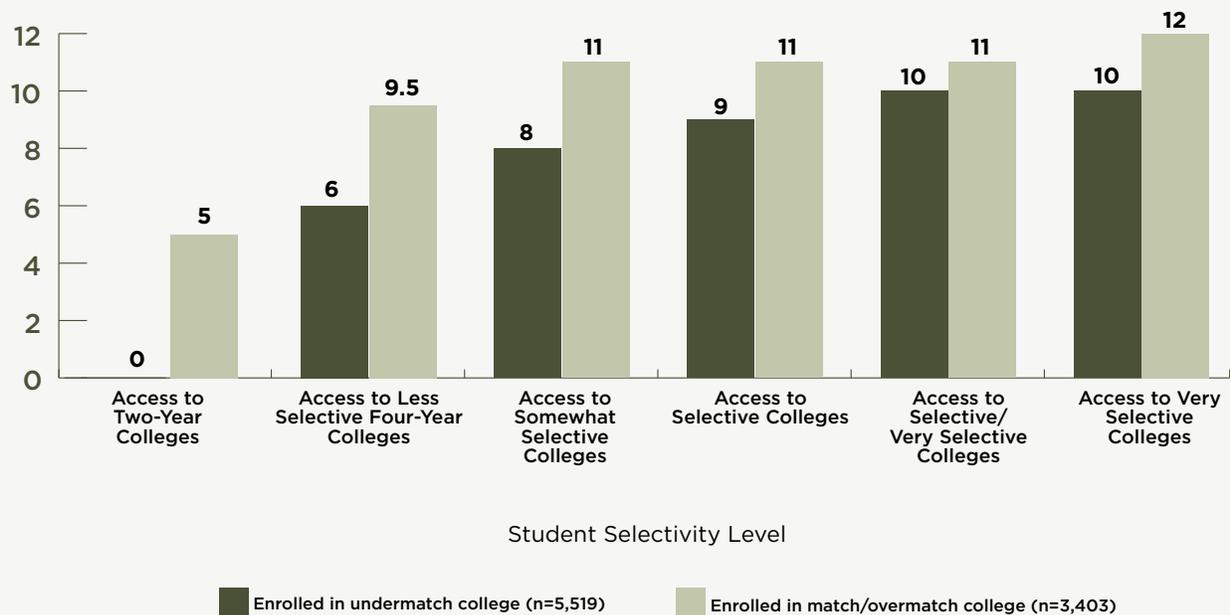


Note: Derived from SEQ survey response that asked the question “In any time during your senior year, which of the following phrases have you heard of in your school and could explain to another person?”

Figure 23 and 24 show that students who enrolled in undermatch institutions apply to fewer colleges and fewer match or overmatch colleges than their peers who enrolled in match or overmatch institutions.

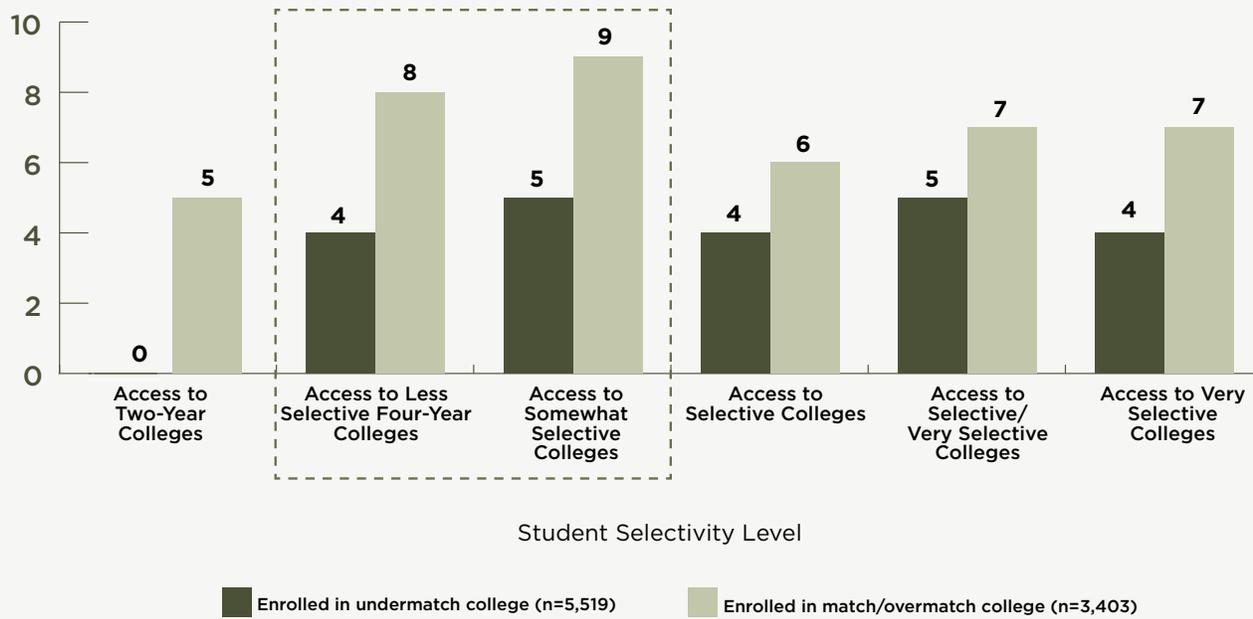
This gap is largest for students with access to less selective four-year and somewhat selective institutions based on their high school academic credentials. These are the same groups of students who undermatch at the highest rates. However, it is important to note that even students who enrolled in undermatch institutions applied to between six and ten schools, of which four or five are typically a match or overmatch. This finding suggests application behavior alone cannot explain undermatch.

Figure 23. Average Number of College Applications Submitted Based on Enrollment in Undermatch or Match/Overmatch Colleges and Student Selectivity Level (n=8,922)



Note: This figure uses median as a measure of average number of applications.

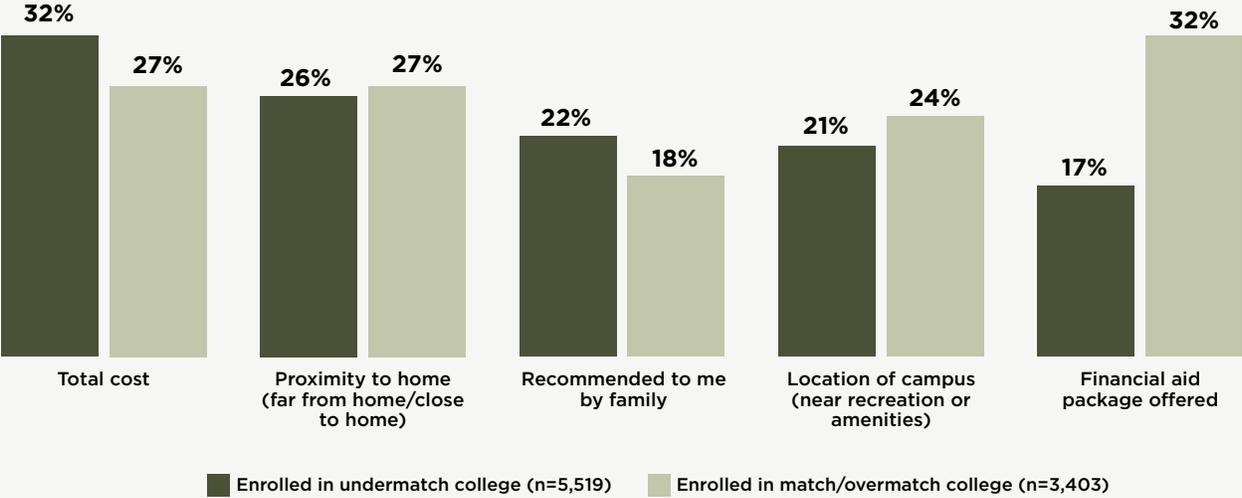
Figure 24. Average Number of College Applications Submitted to Match/Overmatch Colleges Based on Enrollment in Undermatch or Match/Overmatch Colleges and Student Selectivity Level (n=8,922)



Note: This figure uses median as a measure of average number of applications.

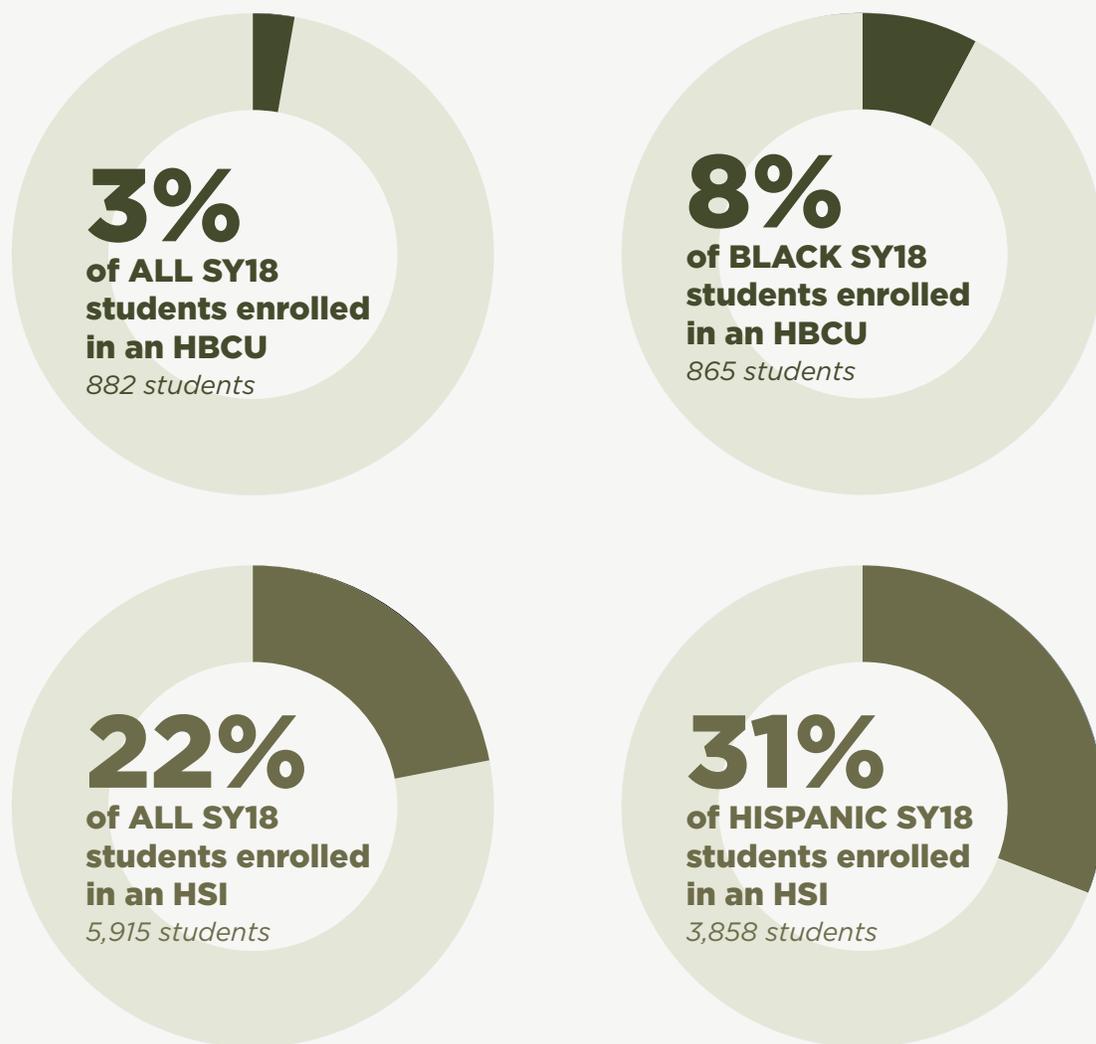
Social Fit. Factors other than academic match are also playing a role in shaping students' enrollment decisions. While we were not able to directly measure the role social fit plays in the enrollment decisions for the class of 2018, their responses to the SEQ give us some insights into how students ranked several factors at the end of their senior year in high school. Figure 25 below presents this information for both students who went on to enroll in an academic match or overmatch institution and those who went on to an academic undermatch institution. A fifth to a quarter of students mentioned proximity to home, family recommendations, and location of campus as influential in their decision-making process. Students who enrolled in an undermatch institution were slightly more likely to view family recommendations as influential than their peers who enrolled in a match or overmatch institution.

Figure 25. Percentage of Students Enrolled in Undermatch and Match/Overmatch Colleges Who Ranked the Following Factors as the Most Influential Factors in College Choice (n=8,922)



We can also indirectly examine the role the demographic composition may be playing in enrollment decisions by looking at the characteristics of the institutions they selected. **Some 3 percent of all students and 8 percent of Black students enrolled in an institution categorized as an HBCU. Likewise, 22 percent of all students and 31 percent of Hispanic students enrolled in an HSI (Figure 26).**

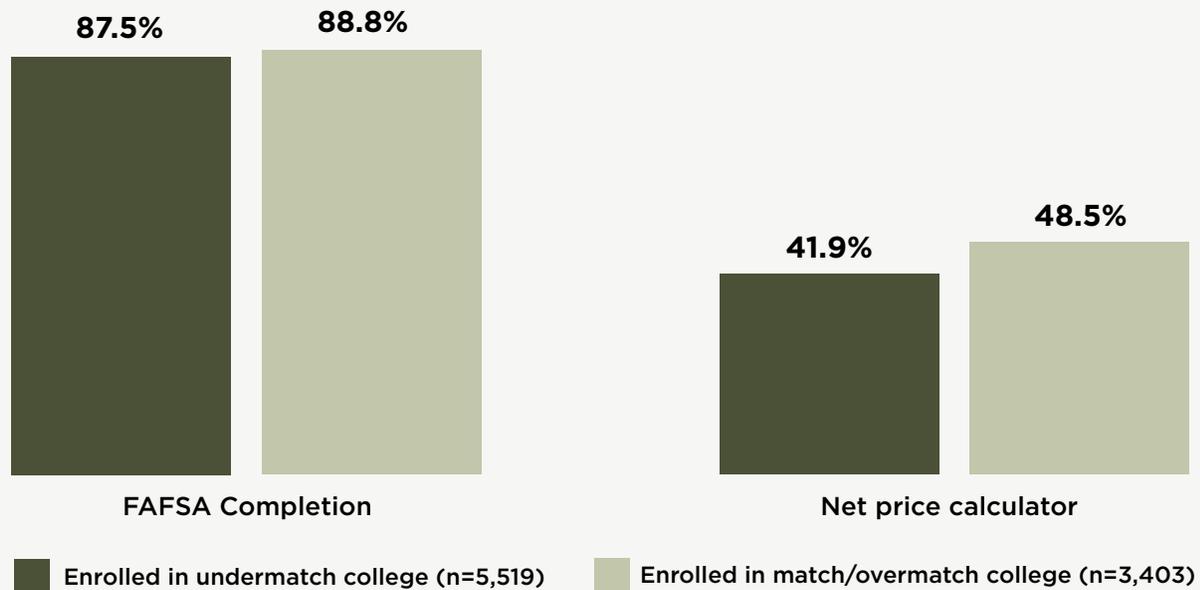
Figure 26. Percentage of SY18 Students Enrolled in HBCU or HSI in Total and by Student Race/Ethnicity (n=27,148)



Affordability. Another salient factor in students' decision to enroll is cost and affordability. About a third of students who completed the SEQ identified total cost or financial aid package as influential in their college enrollment decision. Interestingly, **students who enrolled in institutions that were a match or overmatch were more likely to note financial aid, while students who enrolled in institutions that were an academic undermatch were more likely to cite total cost (see Figure 24 on page 64).** Similarly, while both groups of students were highly likely to be familiar with the need to complete the FAFSA, Figure 27 shows that students who enrolled in a match or overmatch institution were slightly more likely to be familiar with the concept of a net price calculator.

These responses suggest that a more nuanced familiarity with financing college may open up access to more selective institutions.

Figure 27. Familiarity with Financial Phrases Among Students Who Attend Undermatch or Match/Overmatch Colleges (n=8,922)

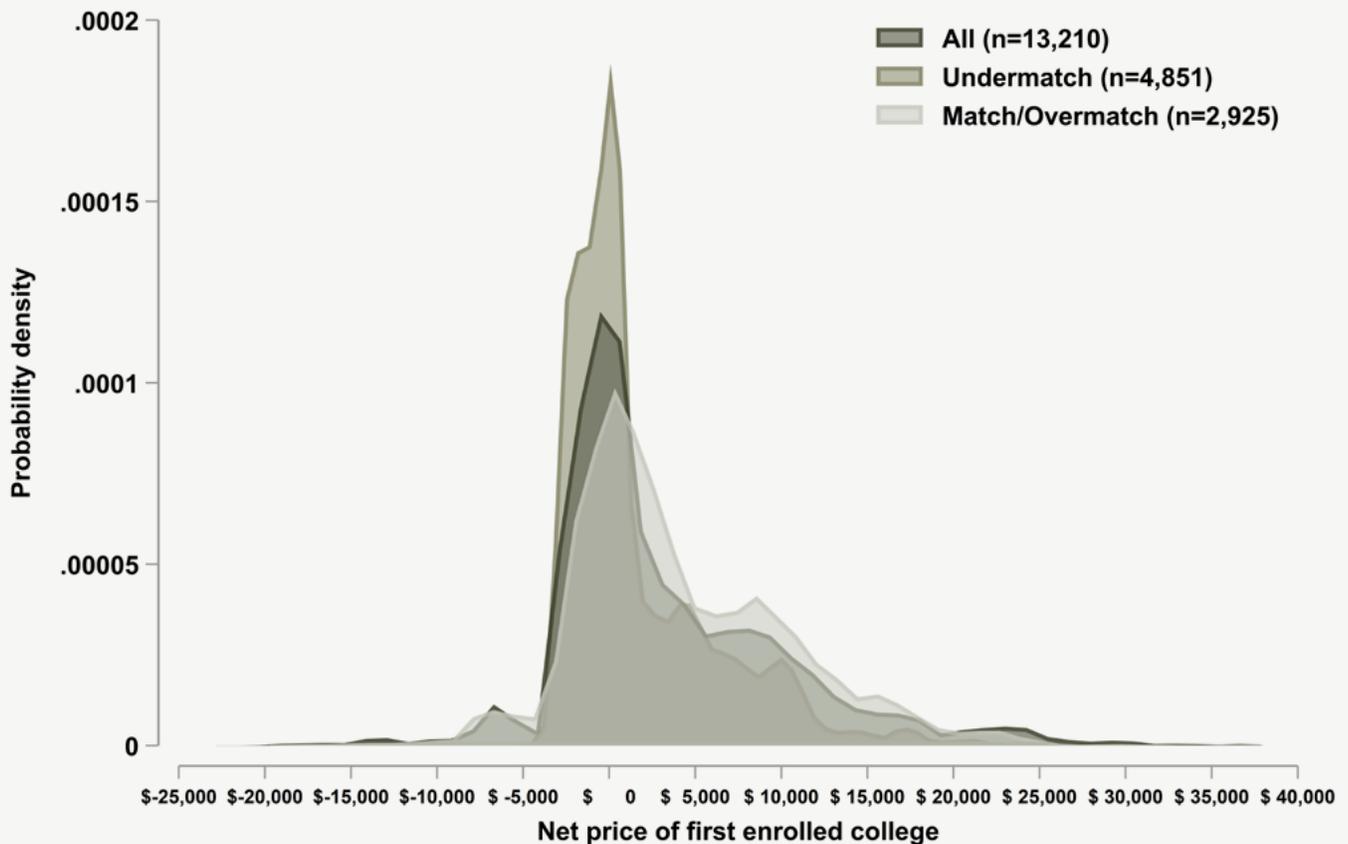


Note: Derived from survey response that asked the question “In any time during your senior year, which of the following phrases have you heard of in your school and could explain to another person?”

To further explore affordability, we examined the financial packages students were likely to receive from the institutions they enrolled in. To do this, we drew on information from IPEDS and the U.S. Census to estimate the net price students were likely paying at the institutions in which they enrolled. Using this method, we estimated that the average CPS student from the class of 2018 who enrolled in college would pay \$3,405 for the 2018-2019 academic year. However, these averages mask substantial variation across students. Some 39 percent of students had net prices below 0, while this figure could reach over \$35,000 for other students. We note that the constructed net price in this analysis is the difference between tuition fee and financial aid, and therefore might not reflect the actual out-of-pocket costs that students pay. Figure 28 depicts the distribution of net prices associated with the first college enrolled for all enrolled students and by whether the students enrolled in an institution that was a undermatch or match/

overmatch. The majority of the students in the sample enrolled in colleges with net prices between $-\$3,000$ and $\$3,000$. Undermatch students were likely to enroll in colleges with net prices between $-\$3,000$ and $\$1,000$ on average. On the other hand, match or overmatch students were likely to enroll in colleges with net prices between $-\$3,000$ and $\$5,000$. **This difference in net prices suggests that the costs students face were also likely to influence enrollment decisions.**

Figure 28. Net Price of the First College Enrolled by Match Enrolled Selectivity



Note: The kernel density plot is based on the Epanechnikov kernel. The distribution for “All” also includes students who enrolled with missing student selectivity levels and students with non-missing student selectivity who enroll in unranked colleges. This figure does not have net price for out-of-state public colleges due to the availability of IPEDS data.

Next, we examined the net prices associated with the full set of colleges students applied to and compare the net price of the institutions they ultimately enrolled in to those that they did not select. **Across the board, we saw that students faced lower net costs at the institutions they enrolled in than the other institutions**

they applied to. The first and second bars of Figure 29 show that the average net price for all other colleges that students applied to is \$5,806, while the average net price for college students enrolled in is \$3,573. The third bar shows that students enrolled in colleges with an expected net price that was \$2,233 lower than the other colleges they applied to. Note that the third column reflects the average of the difference in net price between applied and enrolled colleges and not the difference in the averages as shown in the first two columns. This finding reinforces the takeaway from the qualitative interviews that the out-of-pocket costs facing students is salient when deciding between potential colleges.

Figure 29. Average Net Price for All Applied, Enrolled Colleges, and Average Difference in Net Price Between Applied and Enrolled Colleges (n=13,137)

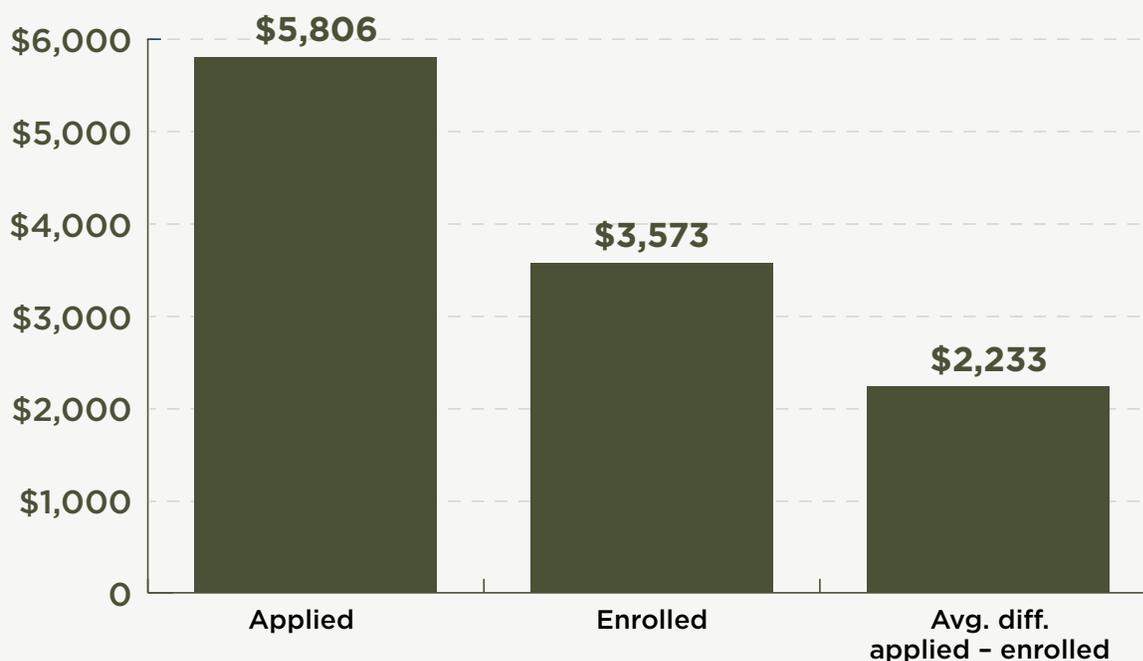
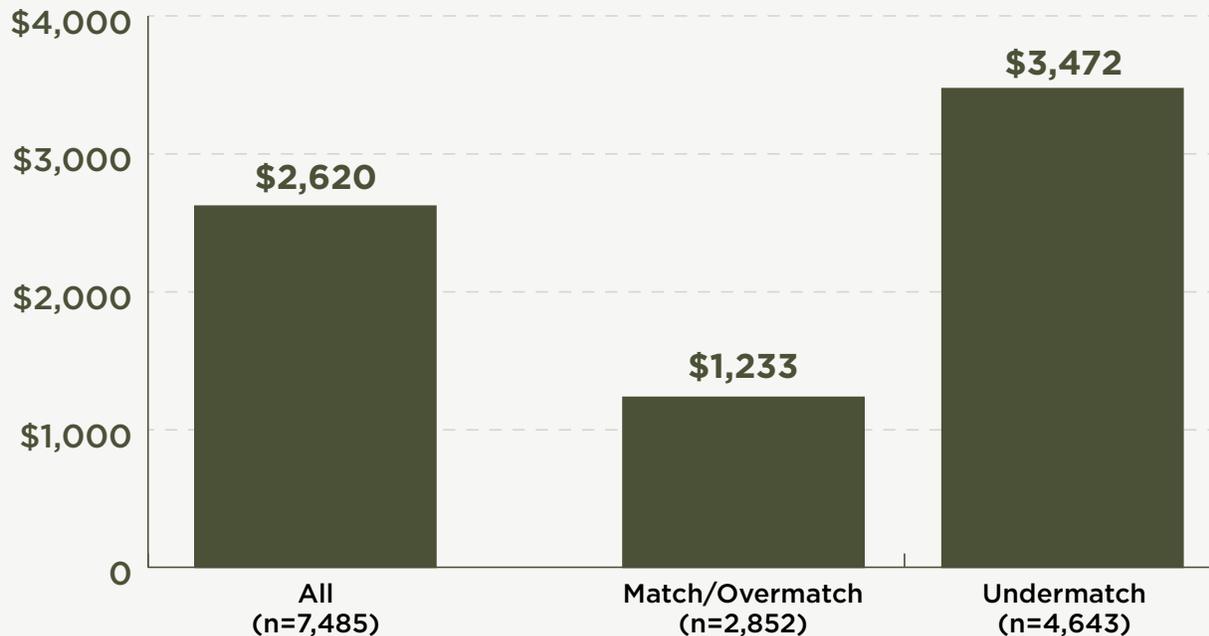


Figure 30 shows the average of the difference in net price between all other applied colleges and enrolled colleges in total and by match selectivity level. **Undermatch students enrolled in colleges with expected net prices that were \$3,472 lower than other colleges applied to.** By comparison, this difference was only \$1,233 for students who went on to enroll in match or overmatch institutions. This difference suggests that net price might play a role in students' decisions to enroll in undermatch institutions.

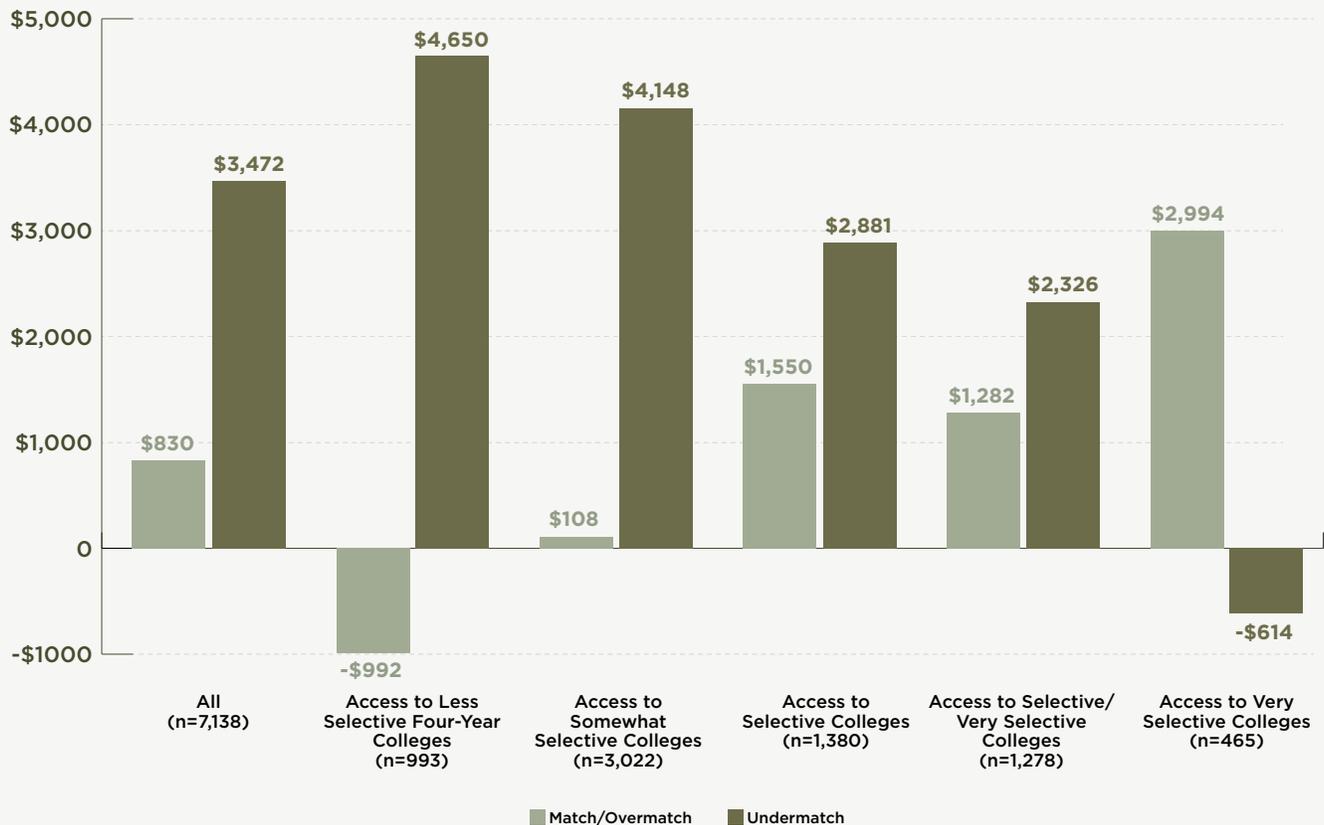
Figure 30. Average Differences in Net Price Between All Applied and Enrolled Colleges by Academic Match (n=7,495)



Note: This figure only include students whose academic match can be determined. As such, the average difference in net price for all students is different from the corresponding measure in Figure 29.

We also examined whether the tradeoff between academic match and affordability varies across student selectivity levels. Figure 31 shows that the averages of the differences in net price between all applied and enrolled colleges are most pronounced among undermatch students with access to less selective four-year colleges and somewhat selective colleges. These groups of students enrolled in colleges that were, on average, \$4,650 and \$4,148 lower in net price, respectively, compared to all the other colleges they applied to. The averages of the differences in net price between all applied and enrolled colleges reduce to \$2,881 for undermatch students with access to selective colleges and \$2,326 for undermatch students with access to selective/very selective colleges. For undermatch students with access to very selective colleges, the net price of the enrolled colleges is \$614 higher than the net price of all other applied colleges. The observed differences in the tradeoff can be explained by higher rates of undermatch students with access to less selective four-year colleges and somewhat selective colleges enrolling in two-year colleges, which have significantly lower costs than four-year colleges.

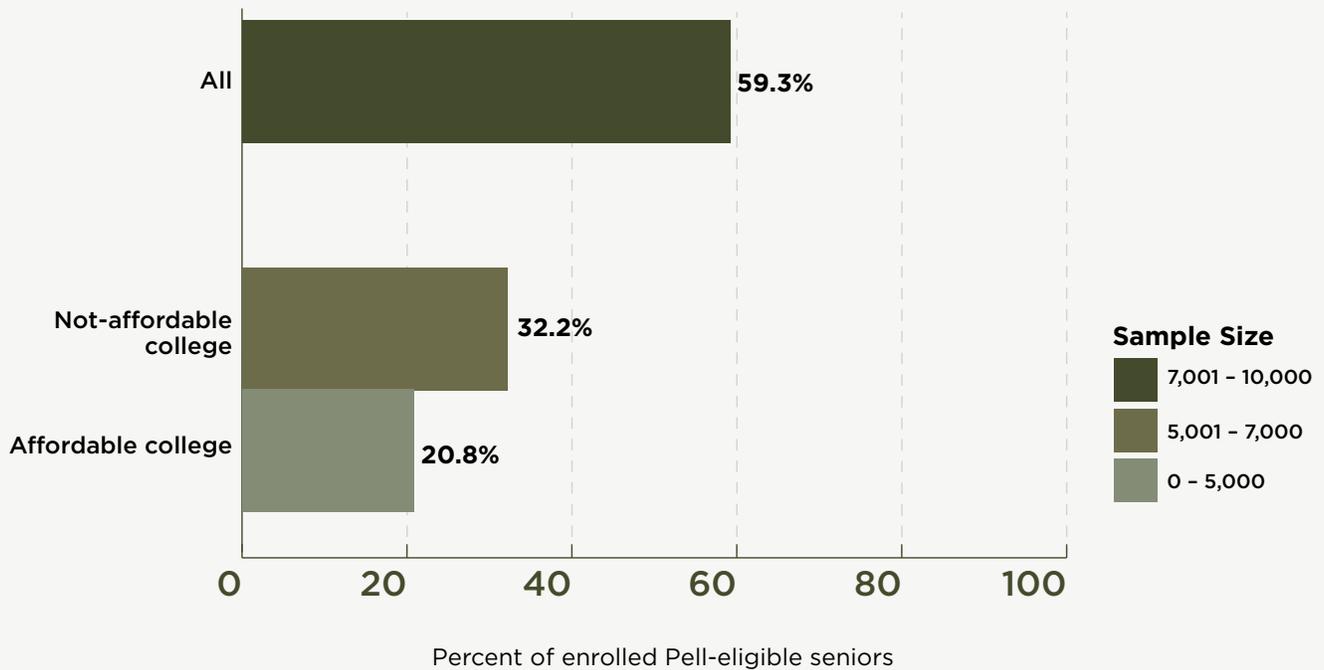
Figure 31: Average Differences in Net Price Between All Applied and Enrolled Colleges by Academic Match and Student Selectivity (n=7,138)



Note: The average differences in net price between all applied and enrolled colleges for all students do not include those who have missing student selectivity and students who have access to two-year colleges.

We then specifically looked at enrollment rates among Pell-eligible students who, based on family income, might be most sensitive to affordability concerns. Figure 32 details the enrollment rate in total and the likelihood of enrolling in an institution that is considered affordable. We saw that 59.2 percent of Pell-eligible students from the class of 2018 enrolled in a college. However, only 20.8 percent of Pell-eligible students enrolled in a college that is considered affordable based on the MoneyThink (2021) definition described above.

Figure 32. Percent of Enrolled Pell-eligible Seniors in Total and by Affordability Status (n=15,710)



Note: This figure does not include Pell-eligible students who applied to colleges with missing net price information from IPEDS. College affordability is defined using Moneythink's (2021) metric for affordability which places a net price below \$7,000.

We also examined the proportion of Pell-eligible students who attended colleges where the net price of attendance is expected to be affordable. Figure 33 shows that only 39 percent of Pell-eligible students enrolled in an affordable college, while up to 61 percent of Pell-eligible students enrolled in an unaffordable college. This figure is even lower for Black Pell-eligible students, with only 32 percent attending affordable institutions.

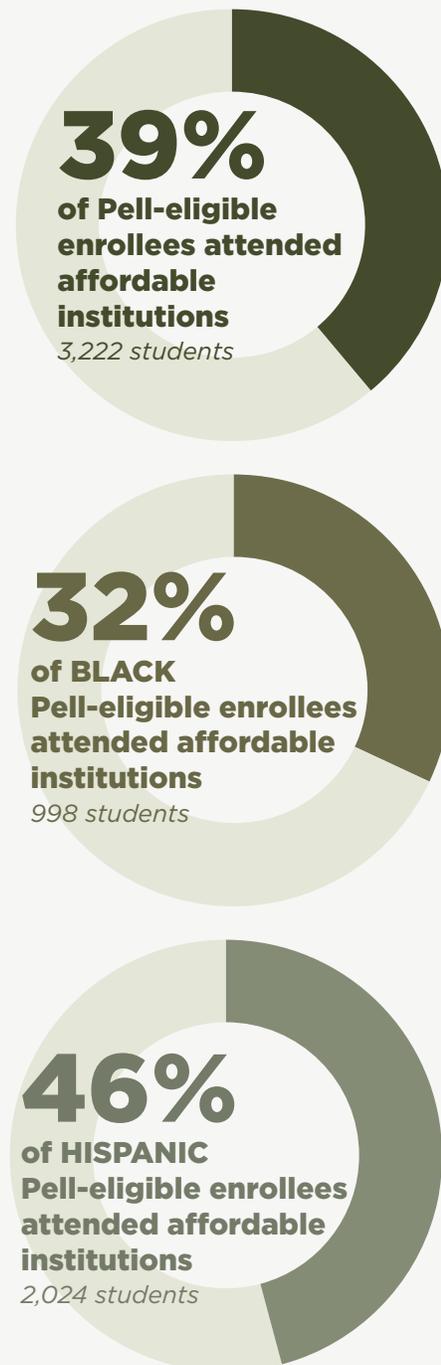
In an effort to gain more insights into the financial tradeoff that students might consider when making their enrollment decision, the research team conducted a pilot study in which we collected and studied a set of financial aid award letters for a non-representative set of 62 students from three Chicago high schools. Our findings in the pilot study confirmed that students were more likely to enroll in colleges with lower net prices than other applied colleges, and the net price

discrepancy between enrolled and unenrolled colleges was even starker on average (Appendix C). On this 2020-21 school year, the research team collected letters from a broader set of students. A future report will focus on the analysis of these data.

RQ6. What is the college experience like for CPS students who undermatch at CCC?

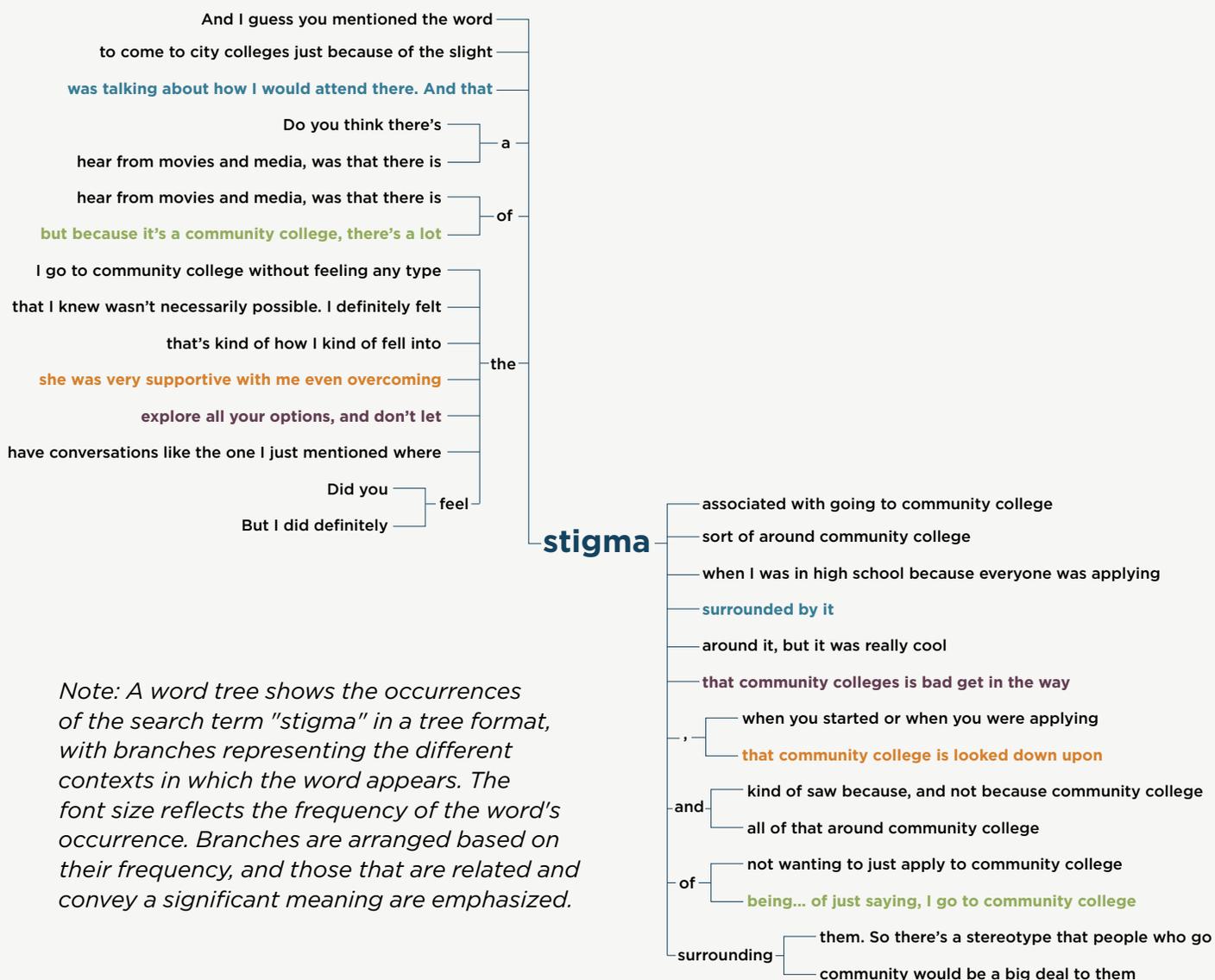
Despite their best efforts to prepare for college, many did not expect to start at CCC, but they were determined to make the most of the opportunity. To start, making the most of their experience at CCC involved shedding the stigma many of them faced by pursuing an education at a two-year college. We did not directly ask students if they were stigmatized for choosing to enroll in a community college, yet the topic emerged organically when students discussed their reasons for choosing the two-year college route. Figure 34 shows participants' responses that related to the concept of stigma. In our analysis, about 45 percent of students mentioned how they navigated the common narrative associated with community college.

Figure 33. Proportion of Pell-eligible Enrollees Who Attended Affordable Institutions



Note: This figure excludes students whose affordability measure cannot be determined and does not include Pell-eligible students who enrolled in colleges with missing net price information from IPEDS. College affordability is defined using Moneythink's (2021) metric for affordability which places a net price below \$7,000.

Figure 34. Stigma Word Tree



Note: A word tree shows the occurrences of the search term "stigma" in a tree format, with branches representing the different contexts in which the word appears. The font size reflects the frequency of the word's occurrence. Branches are arranged based on their frequency, and those that are related and convey a significant meaning are emphasized.

In general, students felt a lot of stress and pressure from both peers and high school staff to not consider community college, which was often described as a last resort option. They felt pressure to follow a narrow path that led directly to a four-year college, even if it meant taking on large amounts of debt. However, students found relief once they applied to CCC and received notification of the financial support they would receive to attend. As one student put it:

“

Going to CCC relieved a lot of my stress and it made me more comfortable with like taking an untraditional route towards college, because a lot of people they kind of think, like, you go to community college because you weren't smart enough to get into a four-year, when it's like, no, I was taking the same classes as a lot of my friends that currently attend a four-year college. I just didn't incur the same debt that they did, which I was like, I mean, it was just a better opportunity for me. ”

—Nia

Academically, our interview participants felt prepared for the academic demands of CCC. They were accustomed to challenging coursework and the rigor of managing multiple classes while also meeting other obligations. Their self-disclosed CCC grade point averages were comparable to their high school GPAs, and very few reported struggling academically. However, the COVID-19 pandemic fundamentally reshaped their expected college-going experience.

Students initially hoped to have some of the typical college experiences, but due to the shift to online learning, these experiences were put on hold. As one participant noted:

“

I hoped that I could have gone on-campus, because I think for me, I always wanted to live the college life. Walking on campus, talking to professors, being in the classroom, making new college friends. I was hoping that that would've happened, but obviously COVID was still brand-new and it's still dangerous, but I don't know. I was excited, and then my expectations went down. But I mean, that's still school, online learning. ”

—Maria

“

When the pandemic happened, I was in classes in-person. So I was taking two and I felt very comfortable. I felt like I was doing really good. And then all of a sudden we had to switch to Zoom and I hadn't really taken any online classes before. So I didn't know really what to expect, but I know the teachers had a very hard time kind of connecting and getting everybody together. So I just felt like there was a lot of miscommunication on both ends and I just kind of felt like towards the end, it was kind of hard to figure out what was going on and what needed to be get done.”

—Isabella

Other students mentioned participating in a college transition program designed to assist with the transition from high school to college. As part of the program, students were paired with mentors, as well as, small group activities were planned to address challenges and share resources. However, the pandemic disrupted these support mechanisms and left many students, particularly first-generation students, feeling unsupported.

All participants, whether they began their studies in-person or online, faced challenges with remote learning. Students who had already transitioned to remote learning in high school had an easier time adjusting to remote learning in college. On the other hand, students who started college in-person and made the switch to remote learning mid-semester struggled more with the transition.

One obstacle that all students faced was access to reliable internet. This issue was exacerbated for students with siblings in the household who also needed to connect to school remotely. Inability to access a stable connection led to a loss of learning opportunities, as students were unable to attend classes or follow along during lectures. Another challenge that affected all students was not having the necessary technology to fully participate in online classes. Since schools did not have enough laptops for all students, and some families were unable to afford to purchase one, several students were left with no alternative but to take courses using their cell phones. In addition, to connectivity and logistical issues, students also struggled with staying focused and engaged during online classes. Some students felt intimidated to ask questions because they didn't want to interrupt the professor's lecture. Others reported that their professors did not have the capacity to answer all questions or connect with students outside of the virtual classroom, which led to frustration and disengagement.

“

You don't ever really get the full learning experience like where in a classroom you could ask questions right away, or you could hold ... The whole class kind of looks around for reassurance. You know that look, where the teacher could look to make sure if the students really understand the material. You don't have any of that, and when you lose that you really don't get a lot of work done. You end up just procrastinating, because it's not interesting anymore. I feel like a lot of classes are actually pretty interesting, it's just this remote learning really messes it up.”

—Diego

Technology issues were not the only challenge of the pandemic that impacted students' college experience. Many students also struggled with family wellbeing and mental health issues. The pandemic disproportionately impacted people of color, causing several students to report experiencing additional stress and mental health challenges due to family members falling ill or losing employment. One student shared how family illness impacted their grades:

“

First semester they were B's. At first, they were B's and A's and then the last quarter they did drop to B's and C's, which I'm not proud of. But at the time I was not struggling, but I did have family problems on the side, the coronavirus, and some of my family members did end up in the hospital, so it kind of took a toll on me. I was like, oh, this is so serious. It was just difficult for me at the time.”

—Maria

These findings suggest that while many students embarked on their college-going journey with expectations of what they thought the experience would be like, the pandemic played a significant role in shaping their overall college experience. Their stories speak more to the experience of being a college student during a pandemic, and the challenges of adjusting to online learning, a lack of social experiences, and navigating health concerns.

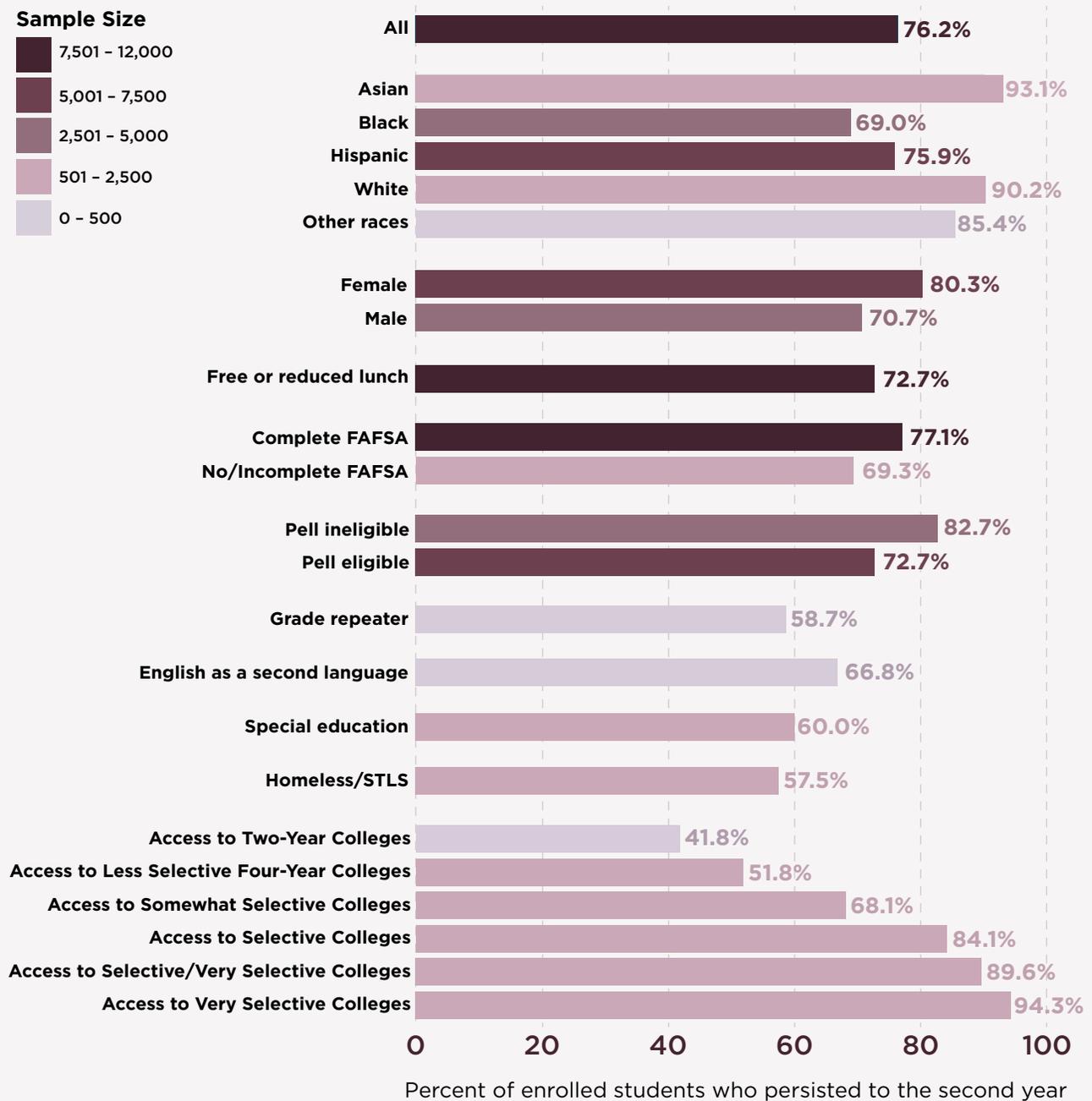
COLLEGE PERSISTENCE

RQ7. Which students persist in college in the two years after high school graduation? What is the relationship between academic match, social fit, and affordability and student persistence?

Of course, college enrollment is only the first step to attain a college degree. While enough time has not yet passed to observe degree completion for the class of 2018, we examined persistence in school as a predictor of eventual completion. For the purpose of this analysis, we considered a student to have persisted in college if they enroll in college the year after their senior year of high school and return the following academic year. That is, a student has persisted if they have a college enrollment in both the 2018-19 and 2019-20 school years. Based on this definition of persistence, 43 percent of the class of 2018 persisted in college.

Figure 35 looks specifically at enrolled students and compares the characteristics of students who persisted in college to those that did not. We found that 76.2 percent of those who enrolled persisted to the second year. Similar to the application and enrollment patterns, persistence rates exhibit substantial variation across demographic subgroups. Persistence rates among Asian students, White students, and students of other races were approximately 10 to 15 percentage points higher than among CPS enrollees overall. Black students who enrolled in college experienced the lowest persistence rate of 69 percent. Female students were ten percentage points more likely to persist than their male counterparts. Students with no or incomplete FAFSA applications, grade repeaters, students with English as a second language, special education students, and students who experience housing instability were most likely at risk of not persisting to the second year. In addition, we found that persistence rates gradually increased along with student selectivity level. Specifically, the persistence rate increased from 41.8 percent for students with access to two-year colleges to 68.1 percent for students with access to somewhat selective colleges and to 94.3 percent for students with access to very selective colleges.

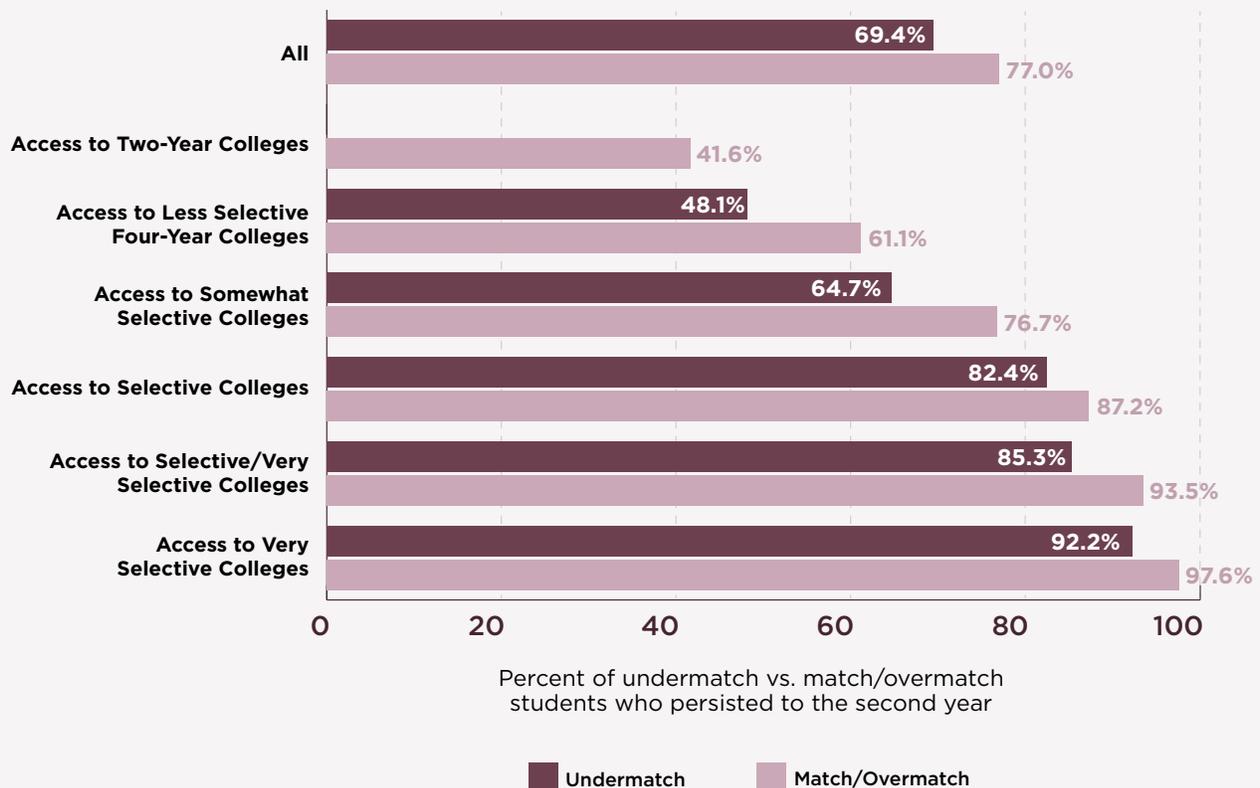
Figure 35. Percent of Enrolled Students Who Persisted to the Second Year in Total and by Student Characteristic (n=15,489)



Note: Other races include Asian/Pacific Islander, Native American/Alaskan Native, Multiracial, Pacific Islander/Hawaiian, and not available. Incomplete FAFSA indicates that a student filed the FAFSA but there was missing/incorrect information in the application that prevented the EFC calculation. Homeless/STLS indicates students who live in a shelter or are otherwise classified as homeless or Students in Temporary Living Situations.

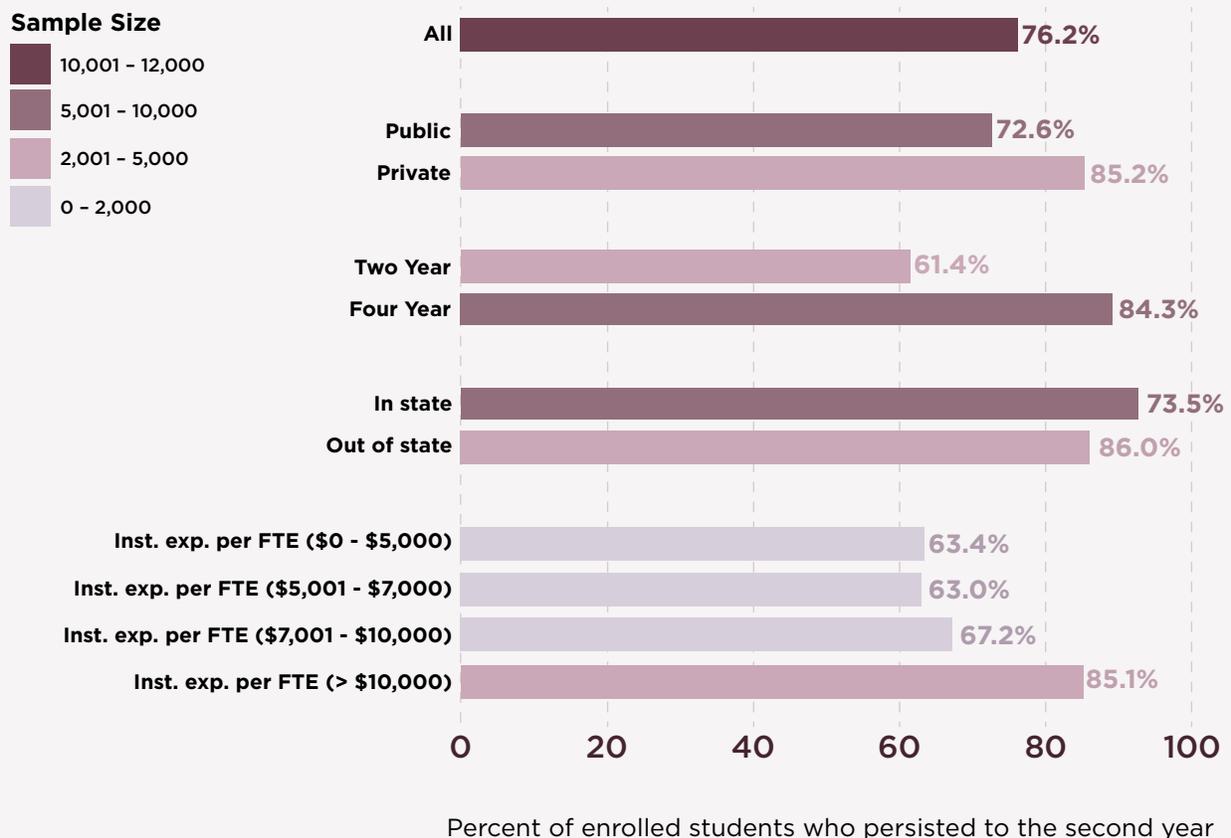
Academic match. Figure 36 compares the persistence of students who enrolled in institutions that were an undermatch based on their high school GPA and test scores to those who enrolled in institutions that were a match or overmatch. In general, **undermatch students were less likely to persist to their second year than match or overmatch students, and this pattern was consistent across student selectivity levels.** Specifically, the persistence rate to the second year was 77 percent among students who match or overmatch, while this figure was only 69.4 percent for students who undermatched. Persistence rates between undermatch and match or overmatch students diverged mostly among students with access to less-selective four-year colleges (48.1 percent and 61.1 percent, respectively) and somewhat selective colleges (64.7 percent and 76.7 percent, respectively). On the other hand, students with access to selective colleges and very selective colleges were more equally likely to persist to the second year regardless of the type of institution they enroll in. Among these students, the differences in persistence rates to the second year reduced to about five percentage points.

Figure 36. Percent of Undermatch vs. Match/Overmatch Students Who Persisted to the Second Year in Total and by Student Selectivity Level (n=8,922)



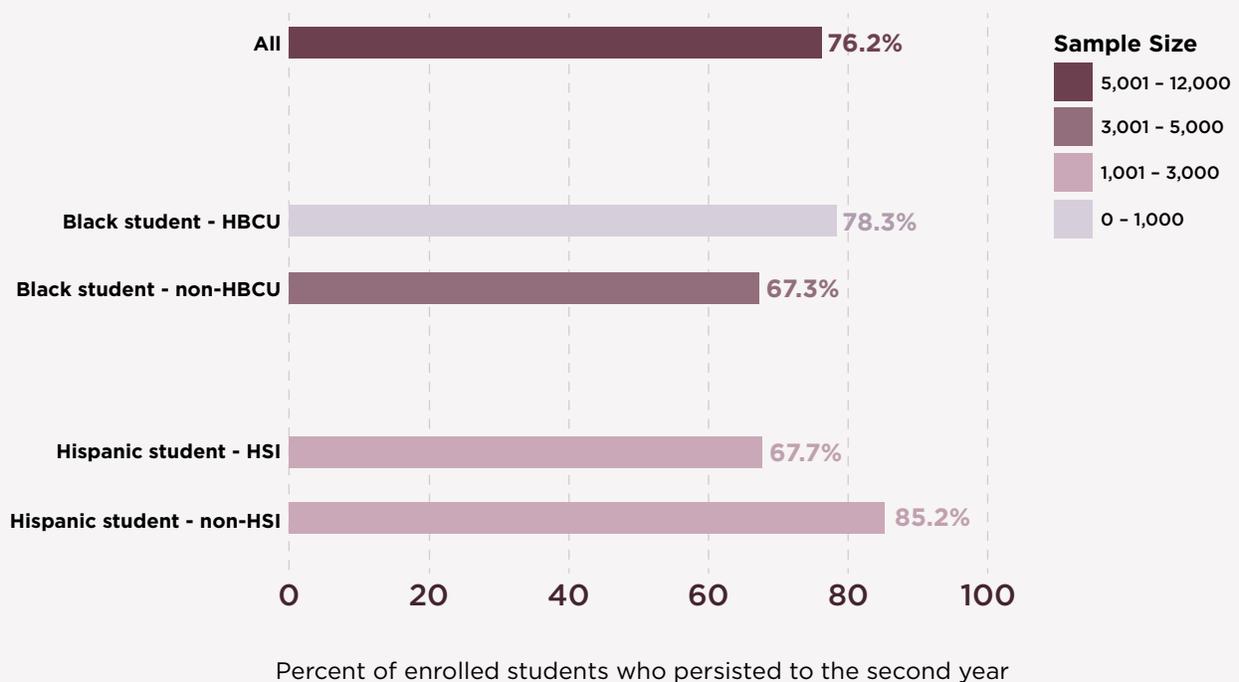
Social fit. As we noted above, we did not have strong measures of the degree to which the college a student enrolled in is a social fit. However, we could explore the relationship between the non-academic reasons a student may choose an institution and persistence. **Figure 37** compares the persistence rates for various types of postsecondary institutions. We observed that **students who persisted to the second year were more likely to attend private colleges, four-year colleges, out-of-state colleges, and colleges that spend more than \$10,000 on instruction per full-time equivalent (FTE) student.** In particular, persistence rates averaged approximately 85 percent among these groups of students. Students who enrolled in two-year colleges were the least likely to persist at 61.4 percent. Notably, there was not much variation in persistence rates across different levels of instruction expenses per FTE student below \$10,000. On average, persistence rates within institutions with instruction expenses per FTE student below \$7,000 and between \$7,000 and \$10,000 were 63 percent and 67 percent, respectively. These rates are comparable to reported findings among two-year college enrollees.

Figure 37. Percent of Enrolled Students Who Persisted to the Second Year in Total and by Institutional Characteristics (n=15,489)



We also compared persistence rates among Black students who attended HBCUs to those who attended non-HBCUs, and among Hispanic students who attended HSIs and those who did not. **Our results show that Black students enrolled in HBCUs experienced an 11 percentage points higher persistence rate than Black students enrolled in non-HBCUs (Figure 38).** In contrast, Hispanic students who enrolled in HSIs experienced 18 percentage points lower persistence rates than Hispanic students who enrolled in non-HSIs. The differences in the findings between Black and Hispanic students could be attributed to a variety of factors. First, HBCUs have been documented to successfully create a supportive environment for Black students to thrive academically, culturally, and socially compared to non-HBCUs (Clayton, Leavitt, & Torpey-Saboe, 2022; Seymour & Ray, 2015). HBCUs also have a more complex and more extended history of educating Black students compared to HSIs (for Hispanic students), whose designation is solely determined by having a 25 percent or more Hispanic enrollment rate.

Figure 38. Percent of Enrolled Students Who Persisted to the Second Year in Total and by College Designation and Student Race (n=15,489)

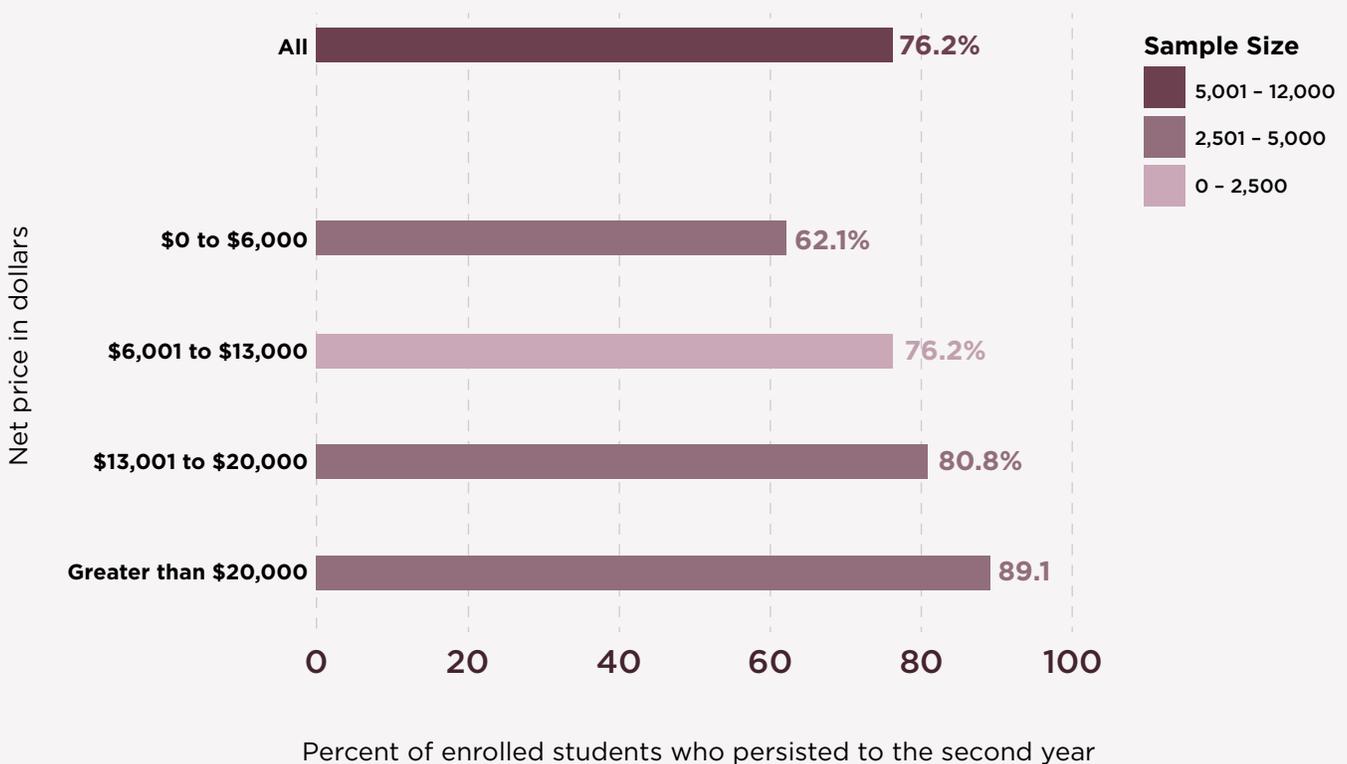


Note: All of the HBCUs in the sample are out-of-state colleges since there are no HBCUs in Illinois, and up to 40 percent of the Hispanic students in our sample enrolled in CCCs, five of which are classified as HSIs.

Affordability. In the next step of the analysis, we studied the role of affordability by examining the relationship between net price and persistence. **Our findings suggest that students enrolled in institutions with higher net prices are more likely to persist than students enrolled in institutions with lower net prices.**

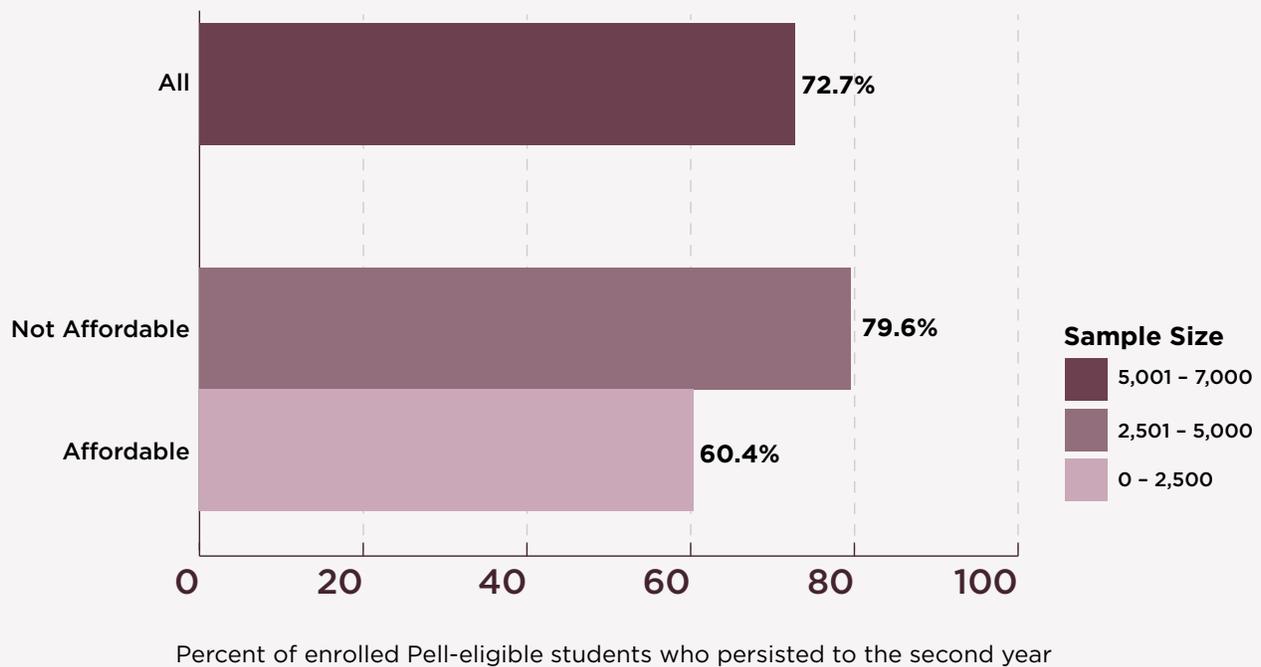
As shown in Figure 39, only 62.1 percent of the students with net prices less than \$6,000 persisted to the second year. The persistence rate increased to 76.2 percent for students with net prices between \$6,001 and \$13,000 and increased to 80.8 percent for students with net prices between \$13,001 and \$20,000. Students with net prices greater than \$20,000 were the most likely to persist to the second year at the rate of 89.1 percent. One reason that explains this pattern is that students who enrolled in institutions with higher net prices are more likely to have higher student selectivity levels, and as previously shows, are also more likely to persist. These findings suggest that students may face a tradeoff between being able reach their goal of attending a school that will leave them with little or no debt upon graduation and attending a school where they are more likely to persist to a second year.

Figure 39. Percent of Enrolled Students Who Persisted to the Second Year in Total and by net price level (n=15,489)



We next looked at the persistence rates among enrolled Pell-eligible students and observed how they varied by affordability status. Compared to all enrolled students, Pell-eligible students had a slightly lower persistence rate of 73 percent (Figure 40). Persistence rates among Pell-eligible students who enrolled in unaffordable colleges were 79.6 percent, about 19.2 percentage points higher than those who enrolled in affordable colleges. The results may be driven by the fact that more than one-third of enrolled Pell-eligible students enrolled in two-year colleges, which offer affordable net prices but have lower-than-average persistence rates.

Figure 40. Percent of Enrolled Pell-Eligible Students Who Persisted to the Second Year in Total and by College Affordability Status (n=9,308)



Note: College affordability is defined using Moneythink's (2021) metric for affordability which places a net price below \$7,000.

Bringing it all together. Having separately examined the relationships between academic match, affordability, social fit, and student persistence, we now extend our analysis to understand how all three factors influence persistence using multiple regression analysis. Two major concerns could hinder the interpretation of the results. First, students with different demographics and academic backgrounds have different likelihoods of persisting in general. Secondly, we know that students who attend different types of colleges are different from one another in ways that might also affect persistence. As shown in the above analyses, students who attend private, four-year, and out-of-state institutions are more likely to persist in college. However, these institutions also tend to be higher in selectivity level and net price. These relationships mean we cannot isolate the effect of attending a certain type of college on students' persistence.

We addressed these concerns by conducting a multiple regression analysis using a variety of model specifications. We regressed the persistence indicator on the main variables of interests that capture academic match, affordability, and social fit while controlling for student-level demographic and academic characteristics. Since we were interested in the general persistence patterns for all CPS-enrolled students, we did not hold institutional characteristics constant across all models.

Table 2 shows the regression results of the persistence analysis. Column 1 examines the relationship between our main variables of interest and persistence for all students in our sample who enrolled in any private college in the country or any public college in Illinois. (Because IPEDS does not include financial aid estimates for out of state public schools, we were unable to obtain net price information for students who enroll in these institutions here.) From this analysis we saw that **students who enrolled in institutions that were an academic match or overmatch were 4.7 percentage points more likely to persist than those who enrolled in undermatch institutions.** We also saw that persistence actually increased with expected net price. **An increase of \$1,000 in net price was associated with a 0.3 percentage point increase in persistence. HBCU enrollees were 16.9 percentage points more likely to persist than non-HBCUs enrollees.** In contrast, there were no significant differences in persistence rates between HSI and non-HSI enrollees.

Columns (2) and (3) examine how academic match, financial factors, and social fit relate to persistence for Black and Hispanic students respectively. Overall, we observed a similar relationship between each of these factors and persistence for these groups of students. However, it appears that **persistence might be even more sensitive to college choice for Black students,** as Black students who attended match or overmatch institutions were 10.7 percentage points more likely

to persist than Black students who attended institutions that were an academic undermatch (compared to a 4.7 percentage difference in the broader population). Likewise, an increase of \$1,000 in net price of the enrolled college is associated with 0.6 percentage point increase in persistence for Black students (compared to a 0.3 percentage point increase overall). The estimates for Hispanic students more closely mirrored those for all CPS enrollees, though the point estimate on enrolling in an HSI was positive and was not statistically significant.

Finally in Columns (4) and (5), we focused our analysis on Pell-eligible students as they could be more sensitive to out-of-pocket costs. Instead of measuring the effect of an increase of \$1,000 in net price on persistence, we now used the affordability indicator defined by Moneythink (2021). Specifically, we assigned the affordability indicator a value of one for Pell-eligible students who enrolled in colleges with net prices lower than \$7,000. We also introduced a set of indicators representing the quartiles of net price to capture any potential non-linearity relationship between net price and persistence. When controlling for Moneythink's (2021) affordability indicator (Column 4), we found that among all Pell-eligible students, students who matched or overmatched were 2 percentage points more likely to persist than students who undermatched. Students who enrolled in affordable colleges were 5 percentage points less likely to persist than students who enrolled in unaffordable colleges.

When controlling indicators for the second, third, and fourth quartiles of net price (Column 5), we found that those who attended colleges with net prices in the second quartile are 1.6 percentage points more likely to persist than those who attended colleges with net prices in the first quartile. Those who attended colleges with net prices in the third and fourth quartiles were approximately three to four percentage points more likely to persist than those who attended colleges with net prices in the first quartile. This suggests that persistence rates for Pell-eligible students are higher among those who attended colleges with higher net price levels. Similar to all enrolled students, we found that Pell-grant students who attended HBCUs were more likely to persist than students who attend non-HBCUs, and Pell-grant students who attended HSIs were less likely to persist than students who attended non-HSIs. The magnitudes of the estimates were also relatively similar to all enrolled students.

Table 2. Regression Results for Persistence Analysis

	(1) All Enrolled Students	(2) Black Students	(3) Hispanic Students	(4) Pell- eligible Students	(5) Pell- eligible Students
Match/Overmatch (Enrolled)	0.047*** (0.012)	0.107*** (0.019)	0.044*** (0.017)	0.020 (0.016)	0.035** (0.015)
Net price (Enrolled)/\$1,000	0.003*** (0.001)	0.006*** (0.002)	0.004*** (0.001)		
Affordable Colleges (Enrolled)				-0.050*** (0.017)	
Net price (Enrolled)/ \$1,000 - 2nd Quartile					0.016 (0.019)
Net price (Enrolled)/ \$1,000 - 3rd Quartile					0.029* (0.016)
Net price (Enrolled)/ \$1,000 - 4th Quartile					0.041** (0.018)
HBCU (Enrolled)	0.169*** (0.026)	0.156*** (0.030)		0.176*** (0.031)	0.175*** (0.032)
HSI (Enrolled)	-0.017 (0.014)		0.029 (0.019)	-0.017 (0.018)	-0.028 (0.018)
Observations	7,627	2,326	4,214	5,032	5,032
R-squared	0.167	0.177	0.143	0.173	0.173
Student demographics characteristics	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: Student characteristics include gender, race, lunch status, FAFSA completion status, special education status, English language learner status, homeless/STLS status, 504 status, and whether student is a grade repeater, GPA, SAT score, and log of estimated family income. IPEDS does not have information on financial aid for out-of-state public school, which prevents the calculation of net price for non-IL colleges. It follows that the coefficient for HBCU in column (2) only shows the difference between Black students who enrolled in private out-of-state HBCUs to Black students who did not enroll in any HBCUs. The four quartiles for net prices are: (-\$18,516) - (-\$578) (1st Quartile), (-\$560) - \$517 (2nd (Quartile), \$528 - \$5,221 (3rd Quartile), and \$5,233 - \$36,841 (4th Quartile).

Overall, our findings suggest that academic match and social fit are all critical considerations in promoting persistence in higher education, particularly for Black students. We also observed a consistently positive relationship between persistence and net price across all models, including the models that restricted to Pell-eligible students. As indicated above, our interpretation of this measure is limited by its potential relationship with a variety of important institutional characteristics (including college selectivity and instruction spending per FTE) that can influence persistence.

DISCUSSION AND NEXT STEPS

Discussion and Next Steps

For those aspiring to attend college, institutional choice has important implications for overall college success, especially for students whose racial and economic backgrounds make them more likely to face significant barriers to their achievement. For students aspiring to attend college, they are often faced with a decision-making process that forces them to take academic, financial, and social factors into consideration. By identifying the role that each of these factors play, the Inclusive Economy Lab hopes to provide a better understanding of how financial considerations influence students' college choice and unpack the role these considerations play in leading students to undermatch and enroll in schools that are less selective than they should have access to, given their academic record.

Students, including those that are first-generation, continue to “undermatch” at institutions that do not fit their academic profile or intended career path, and racial disparities in college enrollment and completion for Black and Hispanic students remain. CPS graduates who undermatched at CCC shared details of their journey with researchers. Their experiences were often characterized by preparation, confusion, and familial influences. Students interviewed for this report understood the value of degree attainment but struggled to navigate the complexities of postsecondary planning. We presented their experiences alongside quantitative evidence, and our findings reveal areas where the two forms of data complement each other and other areas that present rather surprising results. We discuss key determinations uncovered through our research and offer suggestions and policy interventions that can be geared toward further supports for students.

DETERMINATIONS

Determination 1: Affordability is the most salient factor in student decision making, but academic match is most predictive of persistence.

The first overarching finding of the qualitative component of this study is that young people find it difficult (if not improbable) to consider social fit factors in their college going decision-making. Every student interviewed stressed the importance of finding a financial fit for themselves and their families before moving forward with final decisions—and in **nearly all cases, the financial fit factor was the sole determining factor in their postsecondary choices.**

Students wanted to explore university clubs, sports, fraternities and sororities, but were deterred in their explorations until they received final financial aid packages. We found that financial and social fit are false free-choice options for students, in real ways. In line with burgeoning new research (for example, that by Itoh, 2018), we found that the phrase “college choice” is an incomplete and problematic way of understanding how prospective students navigate the available postsecondary pathways. The significant opportunity costs, hidden expenses, and seemingly life-long consequences of the choice itself constrains genuine opportunities for exploration and engagement in higher education decision-making.

While financial fit may guide students’ college choice, our analysis showed affordability to have the lowest magnitude of significance in college persistence when compared with academic match, the leading determining factor in persistence, and social fit which followed second. There appears to be a contrast between what students perceive to be of importance and what college affordability means to them, and the institutions where they are most likely to persist and reach degree attainment—which have been shown to be private, four-year, out-of-state colleges. Our qualitative research showed finances to be the primary factor and a common theme of the overall perceived unaffordability of college. This can be coupled with inequities in financial literacy, and the overall confusing nature of interpreting financial aid award letters. Yet, our quantitative research shows a relationship between selectivity and persistence that points to schools that tend to have a higher sticker price as being the spaces in which students are best positioned to succeed. More selective institutions tend to be better resourced and thus better positioned to provide the kind of student supports known to lead to high retention and graduation rates. These

institutions have also been shown to spend more than \$10,000 on instructional expenses per student and provide more supports to help students succeed. Conversely, students who enroll in two-year colleges were shown to be the least likely to persist. For Black and Hispanic students, whom these findings might have the biggest implications for, this contrast is even more interesting, given the challenges they face with persisting and degree attainment, and the role it can play in their long-term success.

Determination 2: The tradeoffs between academic match and affordability are felt most acutely by students who are qualified to attend somewhat selective and less selective four-year colleges.

While the need to attend an affordable institution constrains choices for students across the academic spectrum, students who are qualified to attend colleges that are somewhat selective or less selective four-year institutions seem to face the starkest tradeoffs between affordability and selectivity. These students, who tend to have high school GPAs between 2.0 and 2.9, undermatch at rates that are higher than students with access to more selective institutions. The schools these students applied to offered the most variability in out-of-pocket costs as well. Students who undermatched and were qualified to attend somewhat selective or less selective four-year institutions enrolled in colleges that cost \$4,650 and \$4,148 less out of pocket, respectively, compared to all the other colleges to which they applied. Unfortunately, the decision to enroll in a less selective, but more affordable institution may be most impactful for this group of students as well as the gap in persistence between students who match or overmatch and who undermatch is largest for this group. Roughly 48 percent of students with access to less selective four-year colleges who undermatched persisted to a second year of college compared to 61 percent of their peers who matched or overmatched. Similarly, about 65 percent of students with access to somewhat selective colleges persisted compared to 77 percent of their peers who enrolled in match or overmatch institutions. While these students are likely being counseled about the importance of attending a match institution, it is difficult to take on what might seem like insurmountable out of pocket costs when confronting much more affordable offers from two-year institutions.

Determination 3: High school college-going culture is significant, but more college preparation may be needed.

The CPS students who struggle the most with postsecondary educational achievement tend to be low-income, Latino, Black, or first-generation college students. Research has shown that secondary schools can play an important role in helping to reduce this college access and retention gap. Within schools, researchers define a “college-going culture” as one in which students find encouragement and help from multiple sources to prepare them with knowledge needed for college success (Corwin & Tierney, 2007; Holland & Farmer-Hinton, 2009). Important components of this culture are a rigorous curriculum that promotes student achievement (Adelman, 2006; Wolniak & Engberg, 2010), knowledge of academic behaviors and skills needed for college success (Conley, 2008; Roderick, Nagaoka, & Coca, 2009).

The introduction to the college application process begins for most CPS students during their freshman and sophomore years, and then increases during their junior and senior years. Among the many facets of the preparation process is the discussion of the cost of attendance since it is a key factor in the types of colleges students apply to, and students tend to keep their options in-line with their estimated family income. Even so, our findings showed that students applied to at least one academic match or overmatch institution and the majority of college applications were submitted to institutions where students would face a net price that would be considered unaffordable even when expected financial aid was taken into account. This shows at least some initial interest in schools where selectivity was the guiding factor over perceived affordability. However, something appears to happen during the periods of exploration, application, and enrollment that leads students to switch from their original selections—often from academically matched or overmatched institutions to schools in which they are overqualified to attend.

During our interviews, students felt they had a good understanding of what the college application process looked like but did not fully grasp the complexity and time commitment needed to adequately consider all decision points. As senior year progressed and students underwent senior seminar courses and attended financial aid workshops, the sudden realization of the multitude of factors they still had to think through with deadlines quickly approaching set in, leaving them feeling overwhelmed. Despite attending the most selective institution possible based on a students’ academic record being associated with higher completion rates (Bowen et al., 2009; Roderick et al., 2011), many students ultimately

undermatched at a less selective and more affordable 4-year college. Others leaned on the STAR scholarship to pursue a 2-year education instead, or attend a 2-year, free of charge, before planning to transfer to a 4-year to finish out their educational goals. What may have initially been a less-overwhelming and financially sound decision for these students, our findings show stark differences in the implications for persistence from the colleges they may have initially had interest in or even applied to but did not enroll in.

Increased college preparation could be an important factor for supporting students in making their final decisions, beginning earlier and to a greater degree than what may currently be the norm. Less discussed in the college-readiness literature, but arguably just as important, is the availability of social supports to help students in school (Lee & Smith, 1999), however, students from low-income backgrounds are more likely to be faced with attending under-resourced schools where college counselors often have capacity to provide only limited guidance due to high student-counselor ratios (Choy, 2001; McDonough & Calderone, 2006). These students may also lack prior experiences that foster college readiness and lead them on the college path (for example, they may have parents without an education beyond high school or may have developed a distrust and dislike for schools due to discouraging elementary school situations). For this reason, school staff may need to exert extra effort to develop a college-going culture and increase student aspirations, possibly by exploring low touch interventions that build upon the framework that already exists within their schools.

Determination 4: Higher education credentialing continues to be the goal for students, but college affordability remains a barrier.

The participants in this study were often told by their parents, teachers, and mentors that with hard work and a dedication to their studies they can achieve anything, including attending a competitive four-year college. This longstanding aphorism, shared by students across the country, ignores many of the real-world issues that the participants in this study face. They shared that they did everything expected of them, and more:

- They took rigorous courses.
- They scored well on standardized tests.
- They engaged in extracurricular activities and volunteer activities.
- They applied to several colleges, applied for scholarships, and filled out the FAFSA.

It would appear that there would be little to no surprises waiting for them at the end of their senior year. So, what's missing for these students, even those who were successful at navigating this complex pathway to postsecondary matriculation? **Explicit discussions with their families and caregivers regarding their real financial status and the full costs of college.** Students who have the option to take out loans seem to have an implicit understanding that they would be responsible for any loans taken out to cover the cost of college. The college affordability problem is even more challenging for students who are ineligible for a federal loan because of their documentation status. In both circumstances, students have to make constrained choices with the deciding factor being whether or not they can afford the college of their choice. In the end, faced with little decision-making time, even less mentoring and guidance, and only negative connotations regarding school loans, students made the decision that made the most financial and personal sense to them. There were three common pathways we saw through our interviews with students:

- 1. Attending CCC with a STAR scholarship as a means to obtain a credential.** For some students, CCC may still be their best option, despite being qualified to attend a more selective school. When taking social fit into account, we found that cultural factors also played a role in where students decided to enroll. CCC fulfilled the desire for some students to remain close to home, and align with familial preferences. After receiving an associate degree or credential, these students are left with zero education-based debt, improved job possibilities, and an opportunity to create a plan that maximizes their credential.
- 2. Attending CCC with a STAR scholarship with plans to transfer later to a four-year university.** Other students saw a benefit to beginning their education at a two-year school, free-of-charge, before transferring to a four-year institution. However, many students were faced with the same lack of financial understanding that they were when first deciding on college, despite now only needing to finance two years of a college education instead of the full four, and often without the same supports they had in high school.
- 3. Attending a four-year institution.** Some students decided to pursue a four-year education, only to be met with surprise tuition charges, little support from university staff, overwhelming cultural disconnection, and, fortuitously, returned to a CCC system that buttressed the detour from the traditional college pathway.

When investigating what the cost of college looks like for students, our findings showed that the majority of students enrolled in colleges with net prices between -\$3,000 and \$3,000. Students who undermatched were more likely to enroll in colleges with a net price of no more than \$1,000 on average. Furthermore, undermatch students enrolled in colleges with expected net prices that were \$3,469 lower than other colleges they applied to. This difference suggests that the costs students face likely influence their enrollment decisions and can be a dealbreaker in whether a student decides to undermatch. It seems that on average, the difference between undermatching and attending a school that is an academic match was roughly \$3,500. For some, this may not seem like a very large number, but for many others — especially when considering that paying for college is likely the first major financial decision students are faced with — it can seem insurmountable.

The academic and social components of the college preparation process appear to begin much earlier than the conversations about finances, which tend to be driven home during senior year. Yet, students still feel unprepared to responsibly address the financial component of college, and even less knowledgeable on their options if they were to take out loans. Some view higher education as an investment that can lead to upward mobility. Students may find they can indeed grapple with the implications of student loans if they have developed a clear, timely, and customized plan that makes the task of paying off student loans surmountable. However, it is unclear the depth of financial education being delivered, and how aware students and their families are of all of the options available to them.

IMPLICATIONS FOR POLICY AND PRACTICE

Findings from this report demonstrate that the perceived and actual costs of college are constraining students' college choices, too frequently pushing them to either not enroll in college or to enroll in colleges where they may be less likely to persist and ultimately graduate. To address these challenges, we recommend the following:

Providing students information about the costs of college earlier in the college application process. Our research suggests that once students have received their acceptance letters, they are too often deciding between schools that are an academic match or social fit and schools that are affordable. By considering cost earlier in the application process, students may be able to identify schools to apply to that are both the best fit for them individually

and likely to offer the financial supports needed to make them affordable. Future work by this research team could be used to identify affordable options at each level of selectivity level and with varying institutional characteristics that matter to students.

Target additional financial resources to students who stand to benefit most. Our research shows that students who, based on their high school grades and test scores, have access to somewhat selective and less selective four-year colleges tend to face the sharpest tradeoffs between academic match and affordability. By better understanding the unmet financial needs among CPS graduates and which students are likely to face the steepest costs, funders could craft financial supports that enable students from low-income households to attend the colleges that are the best fit for them regardless of cost.

Simplifying the financial aid process. Our country's decentralized and complicated system of attaining financial supports for college going acts as an added barrier for students and their families. Families must navigate a complicated financial aid application process and sort through inconsistent communications from schools and scholarship programs that often obscure the true cost of college. Future work by our research team will focus on exploring how financial award letters themselves might be standardized and streamlined to ensure that students can make sense of the financial supports schools are offering and are receiving the support for which they are eligible.

Expand post-enrollment supports at more affordable institutions. Even with all of these changes, some students will still likely face difficult decisions between attending institutions with higher graduation rates, but also higher prices and institutions with lower graduation rates and lower prices. Many of these students will opt to attend the less expensive option, including enrolling in two-year community colleges. A growing research literature, including a randomized controlled trial conducted by IEL of the One Million Degrees program, demonstrates that providing comprehensive support services can dramatically improve outcomes for students attending less selective institutions (Weiss et al., 2019; Sommo et al., 2018; Evans et al., 2017; Bertrand et al., 2022). Expanding access to these supports should be a central component of ensuring that every CPS graduate enrolls in a college that is both affordable and where they have the support they need to succeed.

NEXT STEPS

To support these efforts, the Inclusive Economy Lab is planning a second phase of this work in partnership with the CPS Office of School Counseling and Postsecondary Advising, as well as local nonprofit Chicago Scholars.

Through this partnership, we have gained access to over 1,800 award letters from students across the district. Our analysis of these letters will examine what the real costs of college are for CPS students, assessing which students have an affordable college choice and where more financial support is needed. Further, we will examine the language of the letters themselves to understand how institutions of higher education are describing the cost of attendance to students, identify the extent to which colleges are engaging in predatory and misleading practices to attract students, and assess how the perceived and actual costs of college influence students' enrollment decisions.

The research team will complement the award letter analysis with conducting focus groups among CPS seniors to better understand how they are weighing the various aspects of the college choice process, and interviews with counselors and college and career coaches to understand the current guidance given to students. Additionally, we hope to interview family members to better understand how they make sense of the award letters. Lastly, we will also conduct interviews with a diverse array of financial aid department administrators to better understand how they make decisions about financial need, clarify their definitions and use of terms in their award letters, and capture trends they observe in acceptance practices.

By better understanding the scale of unmet financial need among CPS graduates, as well as what components of a financial aid award matter most in their decision, funders can carefully craft financial supports that enable low-income students to attend the college that is best for them. Our goal is not only to support better informed individual college choice decisions and school counseling practices, but also to push for institutional accountability and transparency in the financial aid process and increased access to the resources students need to attend a school that is truly their best fit.

APPENDICES

Appendices

APPENDIX A: CPS COLLEGE MATCH GRID 2021-2022

Appendix Figure 1. College Match Grid 2021-2022.

College Match Grid 2021-2022

CPS and the To&Through Project are piloting this grid during the 2021-22 school year. Your feedback on the grid's accuracy and usability are critical to improvements. Please submit feedback using our form: bit.ly/2XDIRE7

SAT	GPA				
	< 2.0	2.0-2.4	2.5-2.9	3.0-3.4	3.5-4.0
1250+	MODERATELY COMPETITIVE	MODERATELY COMPETITIVE	COMPETITIVE	HIGHLY COMPETITIVE	HIGHLY COMPETITIVE
1160-1250	MODERATELY COMPETITIVE	MODERATELY COMPETITIVE	COMPETITIVE	HIGHLY COMPETITIVE	HIGHLY COMPETITIVE
1060-1150	MODERATELY COMPETITIVE	MODERATELY COMPETITIVE	COMPETITIVE	COMPETITIVE	HIGHLY COMPETITIVE
960-1050	SLIGHTLY COMPETITIVE	MODERATELY COMPETITIVE	MODERATELY COMPETITIVE	COMPETITIVE	HIGHLY COMPETITIVE
860-950	NEAR OPEN ADMISSION	SLIGHTLY COMPETITIVE	MODERATELY COMPETITIVE	MODERATELY COMPETITIVE	COMPETITIVE
< 860	NEAR OPEN ADMISSION	SLIGHTLY COMPETITIVE	SLIGHTLY COMPETITIVE	SLIGHTLY COMPETITIVE	MODERATELY COMPETITIVE

The To&Through Project is currently unable to predict admissibility for students who apply test optional. However, a group of CPS practitioners recommends that counselors and coaches use the 960-1050 row for students with greater than a 3.0 GPA and the 850-960 for students with less than a 3.0 GPA.

HIGHLY COMPETITIVE
 COMPETITIVE
 MODERATELY COMPETITIVE
 SLIGHTLY COMPETITIVE
 NEAR OPEN ADMISSION



APPENDIX B: CPS-BARRON COLLEGE SELECTIVITY RATING MAPPING TABLE

Appendix Figure 2. CPS-BARRON College Selectivity Rating Mapping Table

CPS College Selectivity Level	Barron’s College Selectivity Level	Most Enrolled College
Very Selective Colleges	Most Competitive Highly Competitive + Highly Competitive Very Competitive +	Northwestern University Illinois Institute of Technology University of Illinois at Urbana Champaign Marquette University
Selective/Very Selective Colleges	Highly Competitive Very Competitive + Very Competitive	University of Illinois at Urbana Champaign Marquette University University of Illinois at Chicago
Selective Colleges	Very Competitive Competitive +	University of Illinois at Chicago Xavier University of Louisiana
Somewhat Selective Colleges	Competitive	Northern Illinois University
Less Selective Four-Year Colleges	Less Competitive Noncompetitive	National Louis University Harris-Stowe State University
Two-Year Colleges	Two-Year College	City of Chicago - Harold Washington College

APPENDIX C: PILOT STUDY

Our pilot study consisted of financial aid award letters for a non-representative set of 62 seniors from three Chicago high schools. The set of financial aid offer letters presents an opportunity to gain insights into the financial tradeoff that students might consider when making their enrollment decision.

Before delving into the discussion on the financial tradeoff, we first highlighted some key differences between the characteristics of the students in the pilot study and all CPS seniors. Among 62 students in the pilot study, 43.6 percent were from Robert E. Lindblom Math & Science Academy High School (selective enrollment), 25.8 percent were from Wendell Phillips Academy High School (neighborhood), and 30.6 percent were from Eric Solorio Academy High School (early college STEM). Generally, students in the pilot study sample had higher socio-economic status and are more academically ready than CPS students (Appendix Table 1). Black students and students with FAFSA filed with EFC made up a higher share of the pilot study sample than all CPS students. In particular, 98.4 percent of the students in the pilot study had their FAFSA applications filed with EFC, while this figure was only 70.8 percent among all CPS students. Grade repeaters and homeless students made up a smaller share of the students in the pilot study compared to CPS seniors. The pilot sample consists of only Black and Hispanic students, none with English as a second language and special education status. On average, students in the pilot study scored 0.48 points higher in GPA and 127.92 points higher on the SAT than CPS students.

Appendix Table 1. Demographic Characteristics of Pilot Study Sample

	Pilot Study (1)	CPS Seniors
DEMOGRAPHIC CHARACTERISTICS		
Gender		
Male	45.2%	49.5%
Female	54.8%	50.5%
Race/Ethnicity		
Black	53.2%	39.9%
Hispanic	46.8%	45.6%
Asian	None	4.1%
Asian or Pacific Islander	None	0.01%
Hawaiian or Pacific Islander	None	0.1%
Native American	None	0.3%
White	None	9.0%
Multi-racial	None	1.0%
Lunch Status		
Denied FRL	*	12.2%
Free or reduced lunch	83.9%	83.3%
None	*	4.08%
Education Funding Status		
FAFSA filed - has EFC	98.4%	70.8%
FAFSA filed - no EFC*	None	3.2%
No FAFSA filed	None	24.0%
Estimated Family Income		
\$0 to \$30,000	*	6.6%
\$30,001 to \$48,000	32.3%	32.1%
\$48,001 to \$75,000	50.0%	34.2%
\$75,001 to \$110,000	*	10.4%
Greater than \$110,000	*	6.4%
Others		
Grade repeater	*	7.8%
English as a second language	None	6.2%
Special education	None	17.1%
Homeless	*	8.6%
<i>Number of students</i>	62	27,148
ACADEMIC CHARACTERISTICS		
GPA	3.16	2.68
<i>Number of students</i>	62	15,943
SAT score	1,082.5	954.58
<i>Number of students</i>	61	23,409

Note: * "FILED, NO EFC" does not mean that the student has an EFC of 0. Rather, this value indicates that a student filed the FAFSA but there is missing/incorrect information in the application that prevented the EFC calculation.

In the pilot study analysis of the college application and enrollment patterns, we found that all 62 students applied to at least one match or overmatch college but only 57 students enrolled in colleges (Appendix Table 2). Out of the enrolled students, 33 enrolled in match or overmatch colleges, 24 enrolled in undermatch colleges, and fewer than ten students enrolled in CCC. Interestingly, while the students in the pilot study were not representative of the district in terms of demographics and academic characteristics, the rates of undermatch among the students in the two samples were somewhat comparable (42 percent in the pilot study vs. 36 percent for all CPS students).

Appendix Table 2. College Application and Enrollment Patterns of Pilot Study Sample

	Number of students
Applied to at least one match/overmatch college	62
Applied to only undermatch college	0
Enrolled in any colleges	57
Enrolled in match/overmatch college	33
Enrolled in undermatch college	24
Enrolled in CCC	*

Note: Data on college applications are based on Naviance and the set of financial aid award letters.

We also examined the completeness of the set of financial aid award letters to understand the extent of our visibility into students’ college enrollment choice set when considering different financial aid options. Appendix Table 3 shows a total of 303 financial aid award letters in the pilot study sample. The average number of financial award letters per student is four. When combined with Naviance application data, we found that the total number of applications for the 62 students was 919, and the average number of applications per student was 14.5.

We also looked at the number of applications submitted to match or undermatch colleges as a proxy for the number of acceptance offers. In doing so, we assumed that students were likely to be accepted to match or undermatch colleges. As shown in Appendix Table 3, the total number of applications submitted to match or undermatch colleges was 781, and the average number of applications submitted to match or undermatch colleges per student was 12.5. We then

calculated the acceptance rate based only on the financial awards letters and showed that the median acceptance rate per student based on the financial aid award letters was 37 percent. When taking into account applications submitted to match or undermatch colleges to Naviance, the acceptance rate was 93.1 percent. While we could not claim that students always get accepted to match or undermatch colleges, the stark difference in the acceptance rates based on the two samples suggests that we might not have collected the full financial aid award letters in our pilot study.

Appendix Table 3. Applications Patterns of Pilot Study Sample

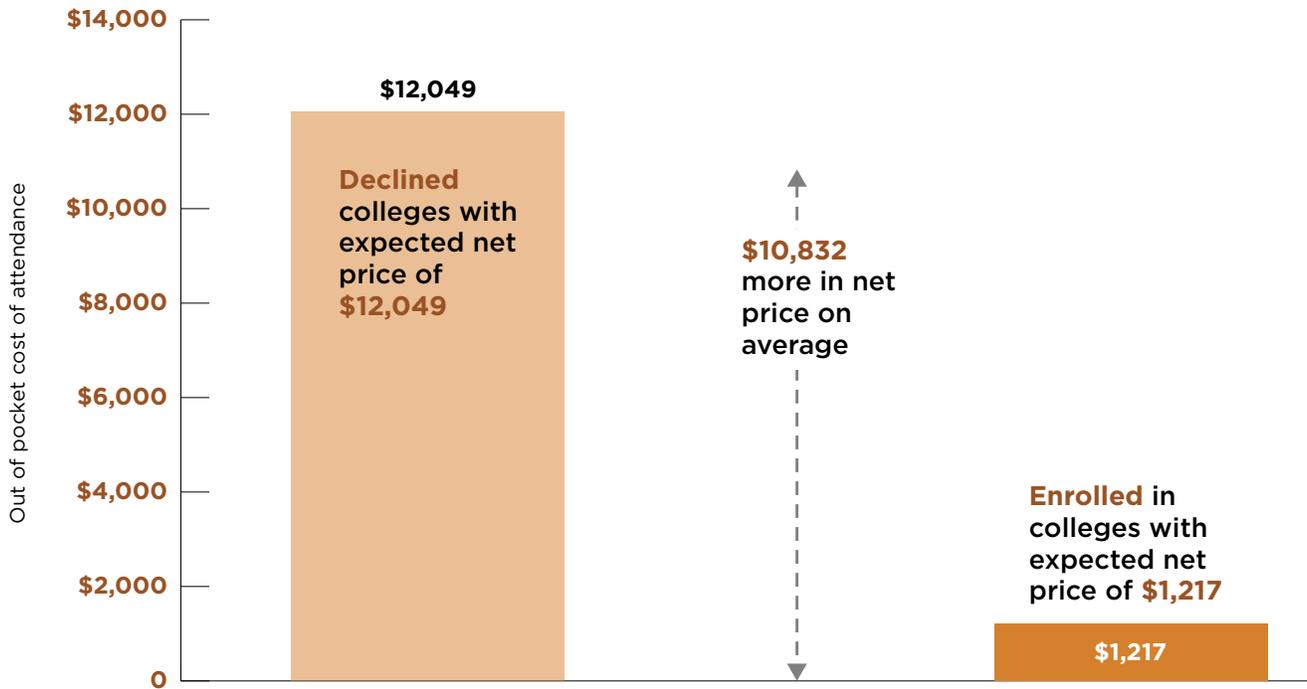
	Source	Total	Median (per student)
Number of financial aid award letters	Financial aid awards letter	303	4
Number of applications	Financial aid awards letter and Naviance	919	14.5
Number of applications submitted to match/undermatch colleges	Financial aid awards letter and Naviance	781	12.5
Acceptance rate	Financial aid awards letter	N/A	37.2%
Estimated acceptance rate based on applications submitted to match/undermatch colleges	Financial aid awards letter and Naviance	N/A	93.1%

Note: College application data are based on Naviance and the set of financial aid award letters. The acceptance rate is calculated by dividing the number of financial aid award letters/applications submitted to match/undermatch colleges by the number of applications.

With this limitation in mind, we proceeded to study the role of financial aid on students’ enrollment decisions. We first calculated the differences in the net price between all other colleges that students got accepted but did not enroll in (unenrolled colleges) and the enrolled college for each student. We then calculated the average of these differences for each student and then took the average of this measure for all students in our sample. The analytic sample now dropped to 38 students with non-missing net price values for both unenrolled and enrolled colleges. Appendix figure 3 shows that the average net price of all unenrolled colleges was \$12,049, and the average net price of the enrolled college

was \$1,217. It follows that, on average, students enrolled in colleges that offered \$10,832 higher in net price, suggesting that financial aid might play a significant role in students' college enrollment decisions.

Appendix Figure 3. Net Price Comparison Between Colleges Where Students Applied but Did Not Enroll and Where Students Enrolled (n=38)



Note: Information on this slide is based on a sample of 38 students for whom we were able to gain access to each of their award letters and calculate the net price of the colleges that these students enrolled in and did not enroll in. Source: 2018/2019 NSC File and 2018 OSCPA Financial Aid Award File

APPENDIX D: DEMOGRAPHICS CHARACTERISTICS OF QUALITATIVE SAMPLE

Appendix Table 4. Full Demographic Characteristics of the Qualitative Sample

Demographics	Qualitative Sample (n = 53)
Gender	
Male	64.2%
Female	28.3%
Non-binary	*
Prefer not to say	*
Race/Ethnicity	
Black	22.6%
Hispanic	54.7%
Asian or Pacific Islander	*
White	*
Multi-racial	*
Age	
18-19	49%
20-21	34%
22-26	*
High School Type	
Neighborhood	41.5%
Selective Enrollment	24.5%
Charter	*
Other citywide	*
Early college STEM	*
Military	*
Non-district Options	*
High School Location	
Northside	56.6%
Westside	30.2%
Southside	*
High School Graduation Year	
2019 - 2020	79.2%
2017 - 2018	*
2013 - 2016	*

Demographics	Qualitative Sample (n = 53)
High School GPA	
2.0 – 2.4	*
2.5 – 2.9	*
3.0 – 3.4	45.3%
3.5 – 4.0	43.4%
SAT	
960 – 1050	41.5%
1060 – 1150	28.3%
1160 – 1250	20.8%
1250 +	*
Access Level	
Somewhat Selective	*
Selective	37.7%
Selective/Very Selective	28.3%
Very Selective	24.5%
CCC Campus	
Harold Washington	34%
Wilbur Wright	26.4%
Malcolm X	*
Kennedy King	*
Richard Daley	*
Harry Truman	*
Olive Harvey	*
Major	
Human Sciences	30.2%
Health Science	*
Business and Professional Services	*
Information Technology	*
STEM	*
Transportation, Distribution, and logistics	*
Culinary Arts and Hospitality	*
Undecided	*
Enrollment Status	
Full-time	79.25%
Part-time	20.75%
Applied to a 4-Year College	
Yes	88.7%

Demographics	Qualitative Sample (n = 53)
No	*
STAR Scholarship Eligible	
Yes	75.5%
No	24.5%
Took Out Loans	
Yes	18.9%
No	81.1%
Transfer From 4-Year College	
Yes	30.2%
No	69.8%
City Colleges First College Attended	
Yes	64.2%
No	35.8%
First Generation	
Yes	47.2%
No	52.8%
Mother's Highest Level of Education	
Less than high school diploma	*
High school graduate	28.3%
Some college	*
Bachelor's	26.4%
Master's or Advance degree	*
Not applicable/unknown	*
Father's Highest Level of Education	
Less than high school diploma	22.6%
High school graduate	26.4%
Some college	*
Bachelor's	*
Master's or Advance degree	*
Not applicable/unknown	*

Note: Values with counts <10 have been suppressed to preserve anonymity.

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