

**PROGRAMMATIC SHIFTS IN NEED-BASED AND MERIT BASED
COLLEGE FINANCIAL AID POLICY**

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ABSTRACT

This study concerns financial aid awarding practices at Mid-Atlantic University, a large, urban, four-year, publicly supported, research institution. The purpose of this study was to consider how equitable the distribution of institutional need-blind and need-based gift aid was, viewing allocation of institutional gift aid as representative of institutional priorities on the overarching issues of access and equity in higher education. Four research questions are considered, with regressions performed aimed at identifying the factors of institutional financial aid policy on low and middle-income undergraduate students. The first two questions focus on relationships between institutional grant aid and student need, among the total sample cohort and among just the subset of need-blind merit scholarship recipients within the larger sample. The third and fourth questions focus on the student success outcomes: time to graduation, GPA, and accrued student loan indebtedness.

Mid-Atlantic University fairly allocated institutional need-based grants to help equalize income inequality among its financial aid applicants to some extent, as decreased time to graduate (with a stronger impact even than the receipt of merit scholarships) and very slight increases in cumulative GPA found for recipients. However, funding allocation to transfer students was an area of inequity in awarding practices. Transfer students received less funding in both need-blind merit scholarships and institutional need-based grants and accrued greater student loan debt. Additionally, allocation of need-blind merit scholarships favored lower need students and/or those that did not file a FAFSA. Lastly, student loan debt was found to have a negative relationship

with both time to graduation and GPA, and students with higher need were found to take on more student loan debt.

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CHAPTER 1

INTRODUCTION

The United States has both an access and an equity problem in higher education, which at its core is due to the lack of affordability of a college education (AACC, 2012; Burd, 2017, 2020; Chetty et al., 2017, 2020; Davis, 2006; Gansemer-Topf & Schuh, 2005; Haveman & Smeeding, 2006; Haycock, 2015; Perna & Jones, 2013; White & Dache, 2020). This problem has continued to worsen, to the extent that students from middle and lower socioeconomic status (SES) backgrounds are being priced out of college (AACC, 2012; Haycock, 2015; Perna & Jones, 2013). College tuition rates have skyrocketed since the 1970s; tuition and fee rates have increased more than 1,225%, which is more than double the increase in health care costs, more than triple the increase in housing costs, and more than quadruple the increase in food costs over the same period, as well as quadruple the overall consumer price index (Shaffer et al., 2016). In just the decade between 2006 and 2016, tuition and fees for higher education increased by more than 60% (U.S. Bureau of Labor Statistics, 2016). The biggest contributing factor to this upward trend of tuition and fee rates is due to decreased state appropriations for higher education, which forces the burden of financial support for public and state-affiliated institutions almost entirely onto the institutions, who must then recoup that lost funding from students in the form of higher tuition and fee rates (Pew, 2015; SHEEO, 2018).

Compounding the issue of college affordability, there has been an alarming, deleterious, and steady shift in financial aid policy and allocation to withdraw from

subsidizing education for low SES students. “The availability of financial aid often provides the sole opportunity for entry into institutions of higher learning;” yet need-based aid is increasingly being supplanted by merit-based aid by institutions wanting to attract the most “impressive” students, all while federal need-based aid no longer covers as much of tuition as it had in the past (Mendoza et al., 2009, 113). Additionally, the increased emphasis on student loans (including alternative loans with variable interest rates and Parent PLUS Loans taken out by the parent instead of the student) to finance an education and the acceptability of loans as a cornerstone to the financial aid package has become more prevalent (Kim, 2007; White & Dache, 2020). While in the 1970s, student loans typically only made up 30% of all student financial aid (with grants making up the other 70%), by the early aughts these numbers had nearly reversed, with loans making up 60% and grants decreasing to 38% (Kim, 2007). There are concerns that these factors are further widening the affordability gap particularly for students from low SES backgrounds, minority students, and female students (Kim, 2007; White & Dache, 2020).

“Financial aid” is an umbrella term that refers to any funds given from an institution to a student in order to pay for tuition and other education-related expenses, taking the form of federal, state, or institutional grants; federal or institutional loans; Federal Work Study; and institutional scholarships or stipends (IFAP, 2023). Financial aid can be generally separated into broad categories of “gift-aid” and “self-help aid,” whereby gift aid encompasses any financial aid that is given without requirement of repayment or earned via a paycheck, as opposed to self-help aid which refers to any aid that requires an obligation or significant commitment from the student, via employment (e.g. Federal Work Study) or repayment (e.g. student loans) and/or a combination thereof

(e.g. Federal TEACH Grant) (IFAP, 2023). These categories can be further broken down into “need-based” and “need-blind” aid; need-based aid requires demonstrated financial need from filing the annual Free Application for Federal Student Aid (FAFSA) to be an eligible recipient (IFAP, 2023). While need-based aid can often be thought of as synonymous with gift aid due to the scope of attention drawn in the public sphere and by social scientists on the Federal Pell Grant program, much of Federal self-help aid is actually need-based as Federal Direct Subsidized Loans (formerly Subsidized Stafford Loans), the (now retired) Perkins Loan program, Nursing Student Loan (NSL) program, and the Federal Work Study program all require a student have financial need to be eligible. Modern financial aid policy and programs (specifically Title IV aid) has its roots in Theodore Schultz’s Human Capital Theory (HCT), as Title IV aid was born out of the passage of the Higher Education Act of 1965, championed by economist Walter Heller, an ardent supporter of Schultz’s theory (Bailey & Duquette, 2014; Cherrier, 2019; Gilles, 2017; Holden & Biddle, 2017; Schultz, 1950, 1960).

Historical Context of Financial Aid Policy

Any discussion of the historical context of financial aid should include Schultz’s (1960) Human Capital Theory, which not only influenced future education research and policy, but arguably led to the formation of the cornerstone of modern financial aid: Title IV funding (Bailey & Duquette, 2014; Cherrier, 2019; Holden & Biddle, 2017). Most historical financial aid research hails the GI Bill as the primary starting point for discussions on aid origins. However, considering that the GI Bill was more of a military endeavor, and the beneficiaries in this case were so narrowly tailored due to eligibility exclusions (especially when considering race and gender), in this era, it appears clear that

the GI Bill came nowhere close to the accessibility offered by the Higher Education Act of 1965. Title IV of the Higher Education Act established and codified federal financial aid for higher education for the first time, including the creation of the Federal Pell Grant Program, Stafford Loan Program (now the Federal Direct Loan Program), Federal Perkins Loan program, Federal Supplemental Educational Opportunity Grant (FSEOG) Program, and Federal Work Study (FWS) Program. Title IV of the Higher Education Act, which has since been reauthorized multiple times, formed the backbone for the existing federal financial aid programs and policies that we have today, and its roots can be traced back to Schultz and his Human Capital Theory.

Education is the crux of Schultz's Human Capital Theory, viewed "as an investment in [men and women] and...its consequences as a form of capital," where "since education becomes a part of the person receiving it, I shall refer to it as *human capital*" (Schultz, 1960, p. 571). Human Capital Theory centers on the idea that there are intangible ways of investing in people that affect their individual productivity, affect their value to society more broadly, and have far-reaching impacts on the local, and, ultimately, the national economy (Holden & Biddle, 2017; Schultz, 1950, 1960). This is one of the most groundbreaking theoretical frameworks in both the realms of education and economics, inextricably binding the two; the concept of financial aid is, in essence, a form of social capital that augments human capital. It is monetary assistance granted by the government, an institute of higher education, and/or an outside entity to temper the costs of a college education, thereby increasing access and leveling an inequitable landscape for low-income students and their families (Schultz, 1950, 1960).

Recent historians believe that Human Capital Theory deeply resonated with economist Walter Heller, Chairman of the Council of Economic Advisors (CEA) in the Kennedy and Johnson cabinets (Cherrier, 2019; Holden & Biddle, 2017). Heller championed the theory in his advising to President John F. Kennedy (though its impact was minimal), and most importantly, later to President Lyndon Johnson, a move which ultimately revolutionized modern financial aid by directly leading to the creation of the Higher Education Act of 1965 (HEA) that established Title IV federal financial aid funding (Cherrier, 2019; Holden & Biddle, 2017). Heller believed that Human Capital Theory established what amounted to a federal imperative to fund education—both K-12 and higher education—in order to spur economic growth (Cherrier, 2019; Holden & Biddle, 2017). “While the Federal Government had long acknowledged the abstract moral and social benefits to public education, Heller encouraged politicians and policymakers to view education through the lens of human capital theory, in which education was a means to achieve national economic goals” (Holden & Biddle, 2017, p.22). Heller was known to frequently refer to the concept of “education as an investment,” exactly as proffered by Schultz, and the importance of human capital over the “tangible capital” of industry such as factories or industrial equipment (Holden & Biddle, 2017, p.22-24). Heller even reached out to Schultz on several occasions to meet with him and other economists to discuss his research (including Human Capital Theory) and its implications for public policy (Holden & Biddle, 2017, p.29-30).

While Heller was unsuccessful in getting Human Capital Theory enshrined in legislative action under Kennedy’s administration, after Kennedy’s death, Heller mentioned to Johnson that he had been tasked with researching ways to combat poverty,

spurring Johnson to launch the “War on Poverty” (Bailey & Duquette, 2014; Cherrier, 2019; Holden & Biddle, 2017). Johnson, having grown up impoverished, seized upon Heller’s idea, with an “unequivocal affirmation” of the poverty program in his first briefing: “That’s my kind of program. I’ll find money for it one way or another. If I have to, I’ll take away money from things to get money for people....Give it the highest priority. Push ahead full tilt” (Bailey & Duquette, 2014, p.3). Heller was appointed to lead a task force on the initiative, where he pushed for programs to facilitate and advance educational attainment, especially for families from low SES backgrounds (Holden & Biddle, 2017).

Johnson’s War on Poverty had myriad effects for the country; due to this initiative, “it is now widely agreed that the Federal Government has a responsibility to provide funding for education, and increasingly, in practice if not in principle, a right to exercise control over education” (Holden & Biddle, 2017, p.40). While states traditionally still carried the burden of the bulk of administering appropriations to schools and colleges, federal policy became more proactive in dictating many facets of education. One of the most significant legislative acts to result from the War on Poverty was the Higher Education Act of 1965 (HEA), which spoke to the heart of Human Capital Theory, to make higher education more accessible to all Americans (Bailey & Duquette, 2014; Cherrier, 2019; Holden & Biddle, 2017). Title IV of the HEA established and codified federal financial aid for higher education, making it the most significant higher education financial aid legislation passed in the United States to date, while deftly encompassing the heart of Schultz’s theory.

Human Capital Theory intertwines economic health for society, and the education of its populace; need-based financial aid is a powerful tool used for investing in human capital for poor students, carrying on the ideals of Walter Heller and the spirit of the War on Poverty into the current day. Unlike in a traditional investment where the returns garner assets or monetary gains, the rate of return for education is a changed person with an improved personal and professional outcome. Human Capital Theory proffers that education is intrinsically linked with social mobility, as well as individual and societal betterment, and Schultz's research still guides public policy today, as it led to the formation of modern federal financial aid policy (Schultz, 1950, 1960). Education is "human capital" because, instead of focusing on investments which result in a monetary change or change to some physical asset, the return of investment "becomes an integral part of a person, it cannot be bought or sold or treated as property," the knowledge and skills obtained through education can fundamentally can change a person, improving individual incomes and professional outcomes (Schultz, 1960, p. 571).

Schultz formulated his theory after studying agriculture economics predicated on prevailing neoclassical theory that "viewed the agricultural sector as being rife with inefficiency and misallocation," but what struck Schultz was the income inconsistency among farmers and farm workers throughout the nation, especially those with extraordinarily low incomes from their occupation (Holden & Biddle, 2017, p. 13). Schultz engaged in longitudinal studies comparing wages of high school graduates against their counterparts who obtained a college degree and found that college graduates earned significantly higher incomes; this is a finding that persists today, decades after Schultz first conducted his research (Gilles, 2017; Schultz, 1960). When he aggregated

individual incomes with other individuals in a community, it became clear that “the amount invested per human agent is extremely unequal from one community to another,” and Schultz determined it was inequitable education that played the most significant role (Schultz, 1950, p. 11-12). He found that agrarian communities with the lowest wages had the lowest rate of educated workers and vice versa, and as the number of more educated workers increased, those local economies fared significantly better. Schultz observed that increased education produced a higher caliber worker, one who could garner a deservedly higher wage, and having better educated—and thus more qualified—workers, directly aids in overall economic growth for the country (Gilles, 2017, p.2). Schultz’s research found a link between individual wages and income distributions in communities and education, and thus, with Human Capital Theory, Schultz crafted a theory that redefined classical economics (Gilles, 2017; Schultz, 1960).

Additionally, Schultz advocated that more attention, resources, and support should be given directly to disadvantaged populations to promote and facilitate educational attainment, particularly for those from low SES backgrounds to whom Human Capital Theory could have the greatest positive impact on being the “best unexhausted investment opportunities” (Gilles, 2017, p.4). Schultz championed the idea that education “renders a productive service of value to the economy;” this guiding principle has been extrapolated to K-12 and higher education, as well as even other pre-kindergarten and early education programs (Schultz, 1960, p. 571). A highly educated workforce typically equates to more qualified workers better skilled at their jobs—who accordingly receive higher incomes—which leads to better economic growth on local and national scales (Schultz, 1950, Schultz, 1960). For each additional credential earned

beyond a high school diploma, income increases overall, and thus, payment of taxes back to federal, state, and local governments increases, as well as the likelihood to reinvest disposable income back into the economy (Perna & Jones, 2013; Zumeta et al., 2012). This can be especially vital for local governments with perpetual underfunding in key services, such as K-12 education, arguably meaning that a more highly educated citizenry contributes towards creating the next generation of even more highly educated citizenry. Parents with advanced degrees tend to encourage their children to obtain at least a college education, which furthers this supposition (Hess et al., 2015; United Nations, 2020).

Issues of Access and Equity in Higher Education Affordability

Unfortunately, without significant changes to need-based aid policies, it will continue to become increasingly difficult for students from lower and even middle-class populations to gain access to higher education, or to remain in postsecondary education through to degree completion (Gansemer-Topf & Schuh, 2005; Haycock, 2015; Mendoza et al., 2009). At the institutional level, need-based financial aid sources and funding for students from low and middle socioeconomic statuses has become supplanted by grant and scholarships with an achievement component, such as academic merit, athletic ability, or special talent (Burd, 2017, 2020; Davis, 2006; Geiger & Heller, 2011; Haycock, 2015; Perna & Jones, 2013; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). While institutions increasingly attempt to use broader tuition discounting approaches such as merit scholarships that can be applicable to all applicants regardless of income to offset the college affordability crisis, “by using non-need grants to try and help preserve college *affordability* for middle-income families...it is possible that the price paid for this achievement may be the dilution of college *access* for those from

lower-income groups” (Redd, 2002, p. 34). Former foster care youth are among the highest need students with significantly lower incomes than their peers who were not previously in foster care, however they receive less merit-based or talent-based scholarships (both institutional scholarships and those privately funded), as well as substantially less in institutional grants, which has been attributed to the popularity of tuition discounting practices (Davis, 2006).

Access is dwindling alarmingly for selective public universities (not just private institutions), as in the last two decades “these schools increased the share of students in the top 20 percent at the same time that they reduced the share from the bottom 40 percent,” meaning that “the increase in affluent students came at the direct expense of low-income ones” (Burd, 2017, p.6). This trend has persisted into the aughts, where it is estimated that only 10% of students attending the top 28 most selective universities are students from low SES backgrounds (Gansemer-Topf & Schuh, 2005, p.16). This substantial accessibility change has been exacerbated by the rise in prominence of merit-based aid in financial aid award packages, to the detriment of need-based aid (Burd, 2017, 2020; Chetty et al., 2020; Pusser & Marginson, 2013; Zumeta et al., 2012). For public institutions, attracting wealthier—and especially wealthier out-of-state students—is in practice paramount to their bottom line. Out-of-state students pay higher tuition rates than in-state students, and wealthier families are better able to afford the full price of significant moneymaking school auxiliary services such as housing, meal plans, books, and supplies, while their poorer counterparts would likely utilize lower-cost alternatives, such as commuting, or buying used books from a non-university affiliate (Burd, 2020). Therefore, “providing four \$5,000 scholarships to otherwise “full-pay” students is much

more lucrative for the institutions than spending \$20,000 on one low-income student,” since low-income students would not only need assistance paying their tuition, but likely need additional funding to afford living in the dorms at schools (particularly at schools which require all freshmen to live on campus), as well as require assistance via means such as book stipends (Burd, 2020, p. 13). “In addition, changes in the financial aid system over the past decade, emphasizing loans, tax credits, and merit aid, place a disproportionately higher college cost burden on African Americans, Latina/o, and moderate-income students...this combination of factors often leads to a financial aid package that falls short of meeting a student’s actual financial needs” (White & Dache, 2020, p.17). This affordability gap disproportionately affecting families from the lowest SES backgrounds has continued to widen, as instead—and often in direct contrast to stated mission statements—favored is a meritocratic view of college applicants, which can overlook the myriad challenges students from low SES backgrounds face (such as systemic racism, sexism, and classism).

In conjunction with tuition increases, appropriations decrease, and shifts in institutional financial aid allocation, changes to need-based financial aid programs are essentially hampering college completion for students from low SES backgrounds. With regards to federal financial aid policy, over the last decade there have been changes in the metric to determine financial need; changes to the Pell Grant program which essentially cut eligibility; cessation of the Perkins Loan program; elimination of federal combination merit-need based programs such as ACG and SMART Grants; and drastic changes to the Federal Direct Subsidized Loan program (Bradley, 2013; Choy et al., 2011; Davidson, 2014; IFAP, 2023; Kantrowitz, 2011, 2018).

Regulatory Changes to Federal Student Aid Programs

For all students, the first step towards receiving need-based financial aid is to file their annual Free Application for Federal Student Aid (FAFSA), a series of questions covering a wide variety of topics including biographical information; dependency status; receipt of governmental assistance; tax information; and current asset information (IFAP, 2023). Completion of the FAFSA results in a calculation of a student's Expected Family Contribution (EFC), which despite the misnomer, is not an actual amount a family is deemed able to pay towards their tuition (IFAP, 2023). The EFC is actually a number that determines students' eligibility for certain types of federal student aid, calculated based on the information provided on the FAFSA (IFAP, 2023). "Financial aid administrators (FAAs) subtract the EFC from students' cost of attendance to determine their need for...federal student financial assistance" (IFAP, 2023). The methodology for determining EFC comes from Part F of Title IV of the Higher Education Act of 1965 (HEA). Per the Consolidated Appropriations Act, 2021, beginning in the 2024-25 FAFSA, the EFC will be renamed the Student Aid Index (SAI).

The EFC gauges eligibility for most types of federal financial aid (and typically for institutional need-based grants) by using different federal methodologies depending on the student's answers regarding their dependency status (either dependent or independent); receipt of government assistance; tax filing status; and income and asset information (IFAP, 2023). The lowest EFC possible is \$0 and the highest is \$999,999 (IFAP, 2023). "Financial aid administrators (FAAs) subtract the EFC from students' cost of attendance to determine their need for...federal student financial assistance" (IFAP,

2023). Students with low enough EFCs and meeting other federal eligibility requirements (such as working on their first bachelor's degree) are eligible for the Federal Pell Grant.

As “the largest means-tested financial assistance available to postsecondary students across the United States,” eligibility for the Federal Pell Grant is considered the standard for assessing financial need in higher education and financial aid research (Bettinger, 2004, p.207). It has a prolific federal administration, with a focus on offering the highest benefit to the poorest students, and the fact that the grant can be obtained with less than full time enrollment (though for a prorated amount), makes it one of the most researched elements in the realm of financial aid in higher education. Established by the Higher Education Act of 1965 (HEA) as part of the War on Poverty, and originally called the Basic Educational Opportunity Grant Program, in 1980 was renamed in honor of Senator Claiborne Pell from Rhode Island (Bailey & Duquette, 2014). The goal of what is now known as the Federal Pell Grant Program, is to make higher education more accessible to low-income families by providing the greatest benefit to the neediest students, (Bailey & Duquette, 2014). As such, the Pell Grant provides some form of support for about 40% of all undergraduate students, with 53% of recipients having annual family incomes below \$30,000 and 95% having annual family incomes of less than \$60,000 (Protopsaltis & Parrott, 2017). Overall, this means that for recipients, their “household income is less than half that of the average college student” (Bird & Castleman, 2015, p. 401).

Pell Grant eligibility hinges on Expected Family Contribution (EFC) thresholds. The maximum EFC threshold for Pell Grant eligibility and maximum Pell Grant available (given to students with \$0 EFCs) typically is not released by the U.S. Department of

Education until the latter half of the current aid year, so initial financial aid offers for the future aid year offer Pell Grants based of the standards for the current aid year and changed later (IFAP, 2023). For the 2020-21 aid year, the EFC threshold for Pell Grant eligibility is \$5,711 (IFAP, 2023). Having a valid, signed FAFSA on file with an EFC within the Pell Grant threshold, and meeting all federal requirements for federal aid eligibility (such as meeting Satisfactory Academic Progress (SAP) and being a U.S. Citizen or eligible noncitizen) are required to qualify for the grant (Bettinger, 2004; Evans et al., 2017). All undocumented students and students protected under the Deferred Action for Childhood Arrivals (DACA) policy are ineligible for Pell Grants, even if they meet matriculation and EFC requirements (IFAP, 2023). For students registered full time (12 or more credits as an undergraduate), they will receive 100% of their Pell Grant eligibility for that term; attendance less than full time means they will receive a prorated amount. If a student attends $\frac{3}{4}$ time (9-11 credits) they will receive 75% of the grant amount they would have received if attending full time; half-time attendance (6-8 credits) results in their grant prorated 50%, and less than half time enrollment (1-5 credits), results in their grant prorated 25% (IFAP, 2023).

There are many drawbacks to focusing solely on one aid source as the be-all and end-all of financial aid funding for low-income students, yet in financial aid research exactly that happens, with the Pell Grant being elevated to the exclusion of other equally important options. This can create an echo chamber, with prominent researchers parroting the same redresses for a complex problem, missing out on the inherent nuance in financial aid awarding. The prevailing school of thought among researchers regarding the bridging the disconnect between rising costs and the falling purchasing power of the Pell

Grant is that the government merely increasing the maximum Pell Grant amount—which it has already done over time—is the best means for encouraging persistence from low-income students to maintain enrollment through to graduation (Bettinger, 2004; Dynarski & Scott-Clayton, 2013; Evans et al., 2017; Rubin, 2011; Zumeta et al., 2012).

Any regulatory changes to the Pell Grant program and Pell eligibility have substantial impacts on college affordability. It is an erroneous and simplistic perspective that to merely increase the Pell Grant would suddenly equalize college access for high need students; such propositions show a lack of nuance of the greater issues plaguing the need-based aid landscape. This overlooks the massive regulatory changes governing Pell that have actually restricted Pell eligibility for thousands of students in order to support small annual nominal increases in the maximum annual grant amount (Bradley, 2013; IFAP, 2023; Kantrowitz, 2011, 2018). When Pell expenditures are saved by decreasing the number of students eligible for Pell, and the amount of Pell those who still qualify are allowed to receive, they go back into the program to help with financing for the following year, allowing for raw maximum Pell Grant amount increases. Instead of diverting more external funding to the program and expanding eligibility to assist a greater number of students with substantial need, the DoE essentially cannibalizes the program, having needy students supported by the removed support for students *almost* equally as needy.

As seen in Table 1.1, the federal government actually has frequently increased the Pell Grant over the last decade, and while it is true that the annual governmental Pell Grant allocations suffer in not being tied to increase with inflation, for the 2018-19 aid year, the maximum Pell Grant actually topped \$6,000 for the first time since the

program’s inception—in fact, up \$280 from \$5,815 the previous year—and has increased further still in the following years (IFAP, 2023).

Table 1.1. Historical Changes to Maximum EFC Threshold for Receiving a Pell Grant

Aid Year	Max EFC	Max Pell Amt (for 0 EFC)
2324	6,656	\$7,395
2223	6,206	\$6,895
2122	5,846	\$6,495
2021	5,711	\$6,345
1920	5,576	\$6,195
1819	5,486	\$6,095
1718	5,328	\$5,920
1617	5,234	\$5,815
1516	5,198	\$5,775
1415	5,157	\$5,730
1314	5,081	\$5,645

Even an argument holding that the issue is just that the grant has not been increased enough is shortsighted, as it overlooks the massive federal student aid regulatory changes that have restricted Pell eligibility for thousands of students in order to support this nominal increase in the maximum annual grant amount, a reaction which almost certainly would reoccur with a substantial increase to the Pell maximum (Bradley, 2013; IFAP, 2023; Kantrowitz, 2011, 2018). Instead, as Pell Grant maximums go up, seemingly reactionarily, the EFC formulas to determine eligibility have shifted to ensure that fewer students are eligible for those funds (Bradley, 2013; IFAP, 2023; Kantrowitz,

2011, 2018). Additionally, over the last decade many programmatic changes have occurred to restrict eligibility for need-based aid for low-income students, compounding college affordability for the neediest students (the target of the Federal Pell Grant program).

Significant research has been done into the demographics of Pell recipients, and in addition to obviously coming from low SES backgrounds, these students are more likely to be first generation college students; have dependent children; be single parents to dependent children; speak a language other than English as their primary language; and be of an underrepresented racial and/or ethnic minority (Bird & Castleman, 2015; Cook & King, 2007). Cook & King found that students who were single parents, first generation college students, and/or racial or ethnic minorities were disproportionately represented among the percentage of students receiving Pell, while making up a much smaller proportion of the overall undergraduate population (2007). For instance, “only 8 percent of students who did not receive a Pell Grant are single parents,” yet 27% of Pell recipients are single parents (Cook & King, 2007, p. 15). In their 2013 study, Cho et al., looking specifically at demographics of Pell recipients at community colleges, found they were more likely to be female, which seems plausible considering women are also more likely to be single parents than men, and therefore complements prior research. Cho et al., also found that the primary residences of Pell recipients were highly concentrated in high-poverty areas, instead of the much wider geographic spread of non-recipients (2013).

While significant research exists on many aspects of the Pell Grant program, there are hardly any formally targeted studies on the impacts of incremental changes to the

EFC formula need analysis. For the 2011-12 aid year the Federal Methodology behind the EFC calculation shifted to specifically targeted “Auto Zero” EFCs. Students typically qualify for a special kind of EFC calculation called Automatic Zero (“Auto Zero”) if they have received benefits in either the prior or “prior prior” tax year (PPY) from any of these federal programs as they all have inherent income/needs checks: Medicaid; Supplemental Security Income (SSI); the Supplemental Nutrition Assistance Program (SNAP); the Free and Reduced Price School Lunch Program; the Temporary Assistance for Needy Families (TANF) Program; and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (IFAP, 2023).

Students with a \$0 EFC are the highest need students and the only students eligible to receive the maximum annual Pell Grant amount, so it saves a lot of money to decrease the pool of students eligible for the maximum grant amount (Davidson, 2014; IFAP, 2023). The maximum Adjusted Gross Income (AGI) allowable for an independent student or dependent student’s family to report on the FAFSA and qualify for an auto zero EFC was drastically decreased from \$32,000 to \$23,000 (Davidson, 2014; IFAP, 2023; Kantrowitz, 2011). In order to save money, extremely high need students were targeted, decreasing their Pell Grants, and it “concentrates the impact on just students with AGI from 150% to 190% of the poverty line” (IFAP, 2023; Kantrowitz, 2011, p. 2). It is estimated that the students affected by this change likely accrued between \$2000 and \$6,000 in additional student loan debt over their undergraduate career (Kantrowitz, 2011).

Changes to the need analysis formula, particularly with income thresholds, have been found to contribute to lower enrollments at community colleges and public four-

year institutions (Bradley, 2013; Davidson, 2014). The need analysis formulas have typically been tweaked every year since 2011-12 (though not so dramatically), and it was not until the 2019-20 aid year that the AGI threshold was again increased (to \$26,000), though this increase is nowhere near the previous threshold high of nearly a decade prior (IFAP, 2023; Manning, 2018). For the following year, however, in 2020-21, the DoE changed implemented a drastic decrease to the asset protection allowance (APA), which allows families to have a certain amount in assets without being penalized by increasing their EFC for each dollar in assets (as other FAFSA questions do) (IFAP, 2023; Kantrowitz, 2018; Manning, 2018). More than a decade prior, Jessica Reyes aggregated data from the Panel Study of Income Dynamics (PSID) for 1999, 2001, and 2003; U.S. Census; the National Center for Education Statistics; and The National Education Longitudinal Study (NELS) (2008), finding that roughly 90% of families with AGIs between \$25,000 and \$100,000 are likely to be adversely affected by APA thresholds and how assets are viewed by the need analysis formulas (Reyes, 2008). Reyes (2008) argued that the FAFSA imposes an “implicit asset tax,” discouraging families to amass assets and/or encouraging families to decrease assets before children go to college in order to attempt to maintain or gain Pell Grant eligibility.

That is arguably what the APA change did, with the effect concentrated on students at the upper bounds of Pell, some of whom very likely lost Pell eligibility completely, and losing Pell also restricts students from receiving the benefits of access to an FSEOG Grant (which requires the receipt of Pell) and other programs that hinge on Pell eligibility. Reyes (2008) denounced the FAFSA (as well as the CSS Profile used by many private institutions) as punitive towards families who may be low-income yet save

and low-to-middle class families who may have assets but still are “cash poor,” and thus discourages families from attempting to accrue savings or assets, which then arguably then put them at a disadvantage and could hampers future social mobility for those families.

Significant eligibility changes are likely to follow in the 2024-25 academic year due to the FAFSA Simplification Act enacted with the passage of the 2022 Consolidated Appropriations Acts of 2021 and 2022, which amended the HEA (FSA, 2023). Along with the change of name in EFC to SAI (Student Aid Index), comes significant formula changes to eligibility, and an increased regulatory burden on financial aid offices. SAIs are now able to be negative (as low as -\$1,500), however students with any negative SAI will receive the same Pell eligibility as students with a \$0 SAI; the change is intended to further stratify need for schools among the neediest of students (who would likely all have been previously \$0 EFCs under the old system) (FSA, 2023). In practice, and regarding Pell eligibility, a student with an SAI anywhere from -\$1,500 to \$0 will be effectively treated the same, and there is a potential that this could lead to confusion for families who see an negative number for financial aid yet have offers which do not fully cover their need (similar to families who were confused as to why there was still an affordability gap when their “expected family contribution” was determined to be \$0).

There are some strong positives to the formula changes. While the APA will not increase, the income protection allowance (IPA), which essentially shields some income from the formula as it is expected to be utilized by daily living expenses for the family and cannot be used to assist a student in college will increase by roughly 20% for parents of dependent students (\$2,400), and for independent students who are also parents, it will

increase by about 60% (about \$6,500) (Lee, 2023). Families that receive Workman's Compensation in the tax year will also no longer have to report it, so their payments won't decrease their need by being viewed as untaxed income. However, there are also some demographics where the formula will not be so helpful. Families with more than one child in college at the same time, and with incomes greater than \$60,000 will be severely negatively impacted and likely could lose Pell eligibility altogether (FSA, 2023; Lee, 2023, IFAP, 2023). Under the current formula, EFC is reduced proportionally by the number of siblings in the household that will also be attending college at least half-time while matriculated in a degree-seeking program; however, the SAI will not change based on college attendance of siblings (FSA, 2023; Lee, 2023, IFAP, 2023). Additionally, there will be a shift in which parent should be considered the primary parent (in cases of parents that do not live together and are not married) for purposes of filing the FAFSA, from the parent the student lived with more in the prior calendar year, to the parent that provided more financial support, which could be detrimental to students that say, live with a parent who has a minimum wage job, but their other parent has a substantially higher-paying job and provides child support, as that non-custodial parent may now be considered the primary parent on the FAFSA (FSA, 2023; Lee, 2023).

The change from EFC to SAI has brought with it significant changes to this formula determining eligibility for the Pell Grant. "Families making less than 175% and single parents making less than 225% of the federal poverty level will receive the maximum [Pell Grant] award, while minimum grants will be guaranteed to students from a household earning below 275%, 325%, 350%, or 400% of the poverty level, depending on the household structure" (Lee, 2023). Students can now qualify for the Pell Grant in

three different ways, if they fall under criteria for the Maximum Pell Grant award (“Max Pell”); the Minimum Pell Grant; or a Calculated Pell Grant, the formula for which is Max Pell minus SAI, and that SAI formula take into account assets along with reported tax information and family size (FSAPartners, 2024). Students that qualify for Max Pell are not subject to assets being taken considered when calculating SAI, nor are families that received any means-tested federal benefit programs for any amount of time in the prior year, nor families with a combined AGI of \$60,000 or less that do not file certain schedules with their taxes (e.g. Schedule C) (FSAPartners, 2024). Independent students or dependent students whose parents are not required to file a federal income tax return are automatically assigned a -1500 SAI (FSAPartners, 2024). Single parents with an AGI within 225% or non-single parents (married, separated, unmarried and living together) within 175% of the poverty guideline per their state and household size qualify for Max Pell and generally receive a 0 SAI (FSAPartners, 2024). Lastly, single parents with and AGI within 325% or non-single parents within 275% of their state’s respective poverty guideline qualify for Minimum Pell and it is here that a problem arises (FSAPartners, 2024).

While the intention was to increase access to the Pell Grant by tying it to federal poverty guidelines per household size, it has had an insidious unintended consequence, allowing “no need” students (students with SAIs much greater than their COAs, in the hundreds of thousands of dollars), to qualify for minimum Pell Grant (\$740 for 2024-25) (FSAPartners, 2024). Students whose parents report very large business losses or report income only from S-Corps can get very low, even negative SAIs, which then potentially put them into eligibility for Minimum Pell, even if they have hundreds of thousands or

millions of dollars in reported assets (businesses, investments, cash/checking/savings accounts). These students have SAIs greater than their COA, making them “no need” students, yet will still receive a Pell Grant (FSAPartners, 2024). In states that have programs designed to assist in covering tuition for Pell Grant recipients, these families (colloquially referred to as “Pellionaires” among financial aid administrators) could also qualify for those programs as well. It is hard to believe that allowing the children of families that could be in the top 10% or 5% of earners in the U.S. to qualify for the Pell Grant program initially created to assist students with the highest financial need, is the best use of these tax dollars and was the intention of lawmakers in changing from EFC to SAI calculation.

In addition to decreasing access of needy students to receive Pell, the purchasing power of the Pell Grant has sharply fallen, as the program, oft held as a paragon of need-based aid, has not commensurately increased enough over time to keep assisting poor students in the same manner it was able originally to after its inception in the 1960’s (Cook & King, 2007; Kantrowitz, 2011; Zumeta et al., 2012). The Pell Grant “now covers a record-low” amount of tuition and fees (Marcus, 2018). Where the Pell Grant historically covered between 80%-90% of tuition and fees at public four-year institutions, currently, it can only cover about 50%-60%, though this falls further to less than 30% of total cost of attendance, if including room and board (Marcus, 2018; Protopsaltis & Parrott, 2017; Zumeta et al., 2012). For private institutions, it covers less than 17% of only tuition and fees—that number plummets further if including room and board (Marcus, 2018; Protopsaltis & Parrott, 2017).

The issue of Pell purchasing power is further exacerbated by the tendency of institutions to reduce institutional aid accordingly with increases to federal or state grants (Burd, 2017; Cooper, 2016). There is some evidence that the Pell Grant program, while supporting low-income students to attend college, can also have a hidden deleterious impact on these same students. A report by the Federal Reserve Bank of New York found that increases in the Pell Grant were correlated with a subsequent increase in tuition rates, where “each dollar of additional Pell Grant aid increases sticker-price tuition by around 40 cents,” which over time can equate to low-income students facing ever increasing shortfalls towards tuition affordability (Cooper, 2016). Unfortunately, “when students can pay more, colleges charge more, which partially cancels out any benefits to students” (Cooper, 2016).

Changes in State Appropriations

As state appropriations have eroded, higher education institutions have had to accordingly increase tuition and fees in order to make up the difference in general fund shortfalls, often despite cost-saving endeavors (Burd, 2020; Pew, 2015; SHEEO, 2018). Public and state-affiliated hybrid institutions have felt this brunt hardest, being fiercely impacted by shifting priorities in state legislatures leading many to significantly withdraw financial support for their public institutions (Burd, 2020; Pew, 2015; SHEEO, 2018). The reasons for the hesitancy to fund support for institutions that depend on it to keep costs for students down, are often espoused to be purely economic cost saving measures, but likely stems from a typically conservative legislature where higher education is just not considered a priority; in many states, support for higher education is about equal to support allocated to correctional institutions and prisons (Pew, 2015; SHEEO, 2018). The

steady historical decline in appropriations was sped up by the Great Recession of 2008, which saw a sudden and precipitous drop in state appropriations; more than a decade later, many states have not reversed their austerity budgeting practices regarding supporting their public institutions and investing in the human capital of their residents (SHEEO, 2018).

During the Great Recession of 2008, states typically cut appropriation support of higher education by 20% (SHEEO, 2018). In direct reaction to the Recession, employing severe austerity budgeting, “between fiscal years 2008 and 2012, for every \$1 state lawmakers raised in new revenue they cut \$3 from existing spending,” with the deepest cuts to higher education (Mitchell et al., 2019, p. 9). Currently, only six states have reached or surpassed their pre-recession appropriations; “for the first time, public higher education is more dependent on tuition revenue than educational appropriations in over half of all states” (SHEEO, 2018, p.28). Additionally, another six states have continued to drastically cut their appropriations, and thus per student spending, since the Great Recession in 2008 and have not rebounded to pre-Recession levels, with their per-student support decreasing by more than 30% in Alabama, Louisiana, Mississippi, Oklahoma, and Pennsylvania, and more than 55% in Arizona (Mitchell et al., 2019; SHEEO, 2018). These cuts have come during the same period that college tuition and fees have increased by more than 60% (Mitchell et al., 2019; U.S. Bureau of Labor Statistics, 2016).

Due to the lack of a premium placed on higher education by both the federal government and state governments, when budgetary shortfalls arise, appropriations for higher education are one of the first to be gutted, and thus economic and political instability of certain states can be disastrous for their public and state-affiliated colleges

and universities (Pew, 2015; SHEEO, 2018). Providing the necessary and substantial funding for universities, especially for those without the large endowments of the most highly selective institutions, then falls to the students to meet via their ever-increasing tuition and fees costs. The average low-income student is now expected to annually proffer more than 70% of their family's total income in order to pay for their total cost of attendance (COA) to attend a postsecondary institution (Haycock, 2015). Moreover, "students from low-income families pay a greater percentage of their incomes to tuition than do students from high-income families" (Gansemer-Topf & Schuh, 2005, p.5). Students from lower and even middle-class populations are increasingly at the mercy of an uncertain financial aid landscape, where institutional financial aid policies waffle greatly in how to administer need-based and merit-based aid; sweeping programmatic changes to federal need-based aid change annually; and student loan indebtedness looms (with all of the negative effects that can entail at both an individual and societal level).

Student Loan Indebtedness

At the same time that federal programmatic changes have restricted need-based eligibility and state appropriations for higher education have drastically dropped, universities are increasingly shift tuition burdens towards families while gutting need-based institutional aid to fund more and bigger merit scholarships (which go to wealthier students) to rise in college rankings (Burd, 2017; Geiger & Heller, 2011; Haycock, 2015; Perna & Jones, 2013; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). All of these programmatic and policy changes have contributed to the student loan indebtedness crisis currently facing this country (Grinstein-Weiss et al., 2016; Kantrowitz, 2018). With U.S. student loan indebtedness estimated at more than a trillion

dollars and many recent graduates find themselves unable to self-support—and the situation is even more dire for those unable to afford to complete their undergraduate degree (Berman, 2016; Dynarski, 2015, 2016, Egan, 2014; Grinstein-Weiss et al., 2016; Marcus, 2018).

Borrowers carrying the highest amounts of student loan debt are disproportionately low income, female, non-Asian racial or ethnic minorities (in particular African Americans), and have dependent children (Bird & Castleman, 2015; Grinstein-Weiss et al.; Kelchen & Li, 2017; Miller, 2017). While around 90% of Federal Pell Grant recipients graduate with student loan debt, only about half of non-Pell Grant recipients do (Cooper, 2016; Friedman, 2018; Grinstein-Weiss et al.; Kelchen & Li, 2017). Default rates have rapidly increased in the last decade, which can have long-lasting impacts on employability, credit scores, housing security, and access to disposable income (Dynarski, 2015, 2016; Grinstein-Weiss et al., 2016; Miller, 2017). This trend was persisting up until the recent COVID-19 pandemic which started a pause on student loan payments, a move which has become controversial, and it will be interesting to see the default rates after the payments resume later this year (especially with the establishment of new borrower assistance programs under President Biden, such as the Fresh Start plan). Recent findings suggest student loan debt burdens are resulting in Millennials delaying life milestones such as marriage, having children, and buying a home; moving back in with their parents or living with roommates in greater numbers than the previous generation; as well as having a deleterious effect on both mental health and physical health of these borrowers (Cooke et al., 2004; Dugan & Marken, 2014; Johnson et al., 2016; et al., 2015).

FAFSA Issues (2024-25 Cycle)

Concerns of access and equity in college financial aid practices have once again arisen during the current 2024-25 admissions cycle with the very delayed release of the 2425 FAFSA, beset by challenges leading to the rollout being described as “botched” by Republican lawmakers and at least two congressional investigations being undertaken (Lonas, 2024; Knott & Knox, 2024). A revamped FAFSA, as a result of the FAFSA Simplification Act which was enacted with the passage of the 2022 Consolidated Appropriations Acts of 2021 and 2022, was originally slated to debut for the 2023-24 admissions cycle. Before it was to be released, however the Department of Education indicated that “technology updates proved far more challenging than projected” and it would require another year to implement (Douglas-Gabriel, 2024). The FAFSA has opened annually on October 1st since the 2017-18 admissions cycle, a priority of President Obama who declared that “the bottom line is no young person in America should be priced out of college... You have to fill out this form, and we are making it easier for you to do – you have no excuse” (Bidwell, 2015). However, for 2024-25, the FAFSA did not open until December 30th, and even then it was as a “soft launch” per the Department of Education, with the form being open for filing for only 30 minutes, and in the following days there were hours when the form was “periodically unavailable” and when available, filled with technical glitches frustrating families (Douglas-Gabriel, 2024; Knott & Knox, 2024).

While the website stabilized on January 8, 2024, there have been numerous and serious technical issues which have hampered completion rates, with estimates that among new freshmen applicants, FAFSA completion rates are down at least 42%, perhaps

as much as half (Dickler, 2024; Douglas-Gabriel, 2024). This is concerning when research has found that high school seniors that complete a FAFSA are nearly 85% more likely to enroll in college for that aid year (DeBaun, 2019; Dickler, 2024). There have been reported glitches for students where their demographical data touches on common coding pitfalls getting stuck in a loop of being unable to save or progress on their FAFSA, such as students with demographic data that ends with zeroes, (specifically birth years of 2000); A-Numbers that end in a zero; and SSNs that end with double zeroes, as well as students and families whose last name is “Null” reporting issues with their FAFSA coming back processed blank for their surname (as NULL is used in computer terminology to mean a blank space/no value found) (FSA, 2024). Additionally, for several months married parents and students were getting locked out the FAFSA if they did not choose the option to add spousal (“contributor”) tax information at the outset, while parents that filed taxes as “married, filing jointly” had to manually enter in tax information despite the FAFSA’s new integration with the IRS systems (FSA, 2024).

Most severely impacted by the fraught technical execution were those thousands of students with undocumented parents, around 1-2% of FAFSA filers who are typically a lower income population to begin with, and often comprised of first-generation college students, as they were currently unable to complete the 2425 FAFSA until late spring (Douglas-Gabriel, 2024; FSA, 2024). Parents without an SSN were unable to either start a FAFSA on behalf of their student or contribute to a form started by their child (FSA, 2024). For several months, the Department indicated that there was no current workaround to address this situation and for students required to submit the FAFSA for critical deadlines for non-federal aid (such as institutional or external scholarships), the

only advice given was to follow a workaround which would technically allow a FAFSA to be submitted but in an incomplete status which means the student would have to later try and resolve the uncalculated result once their FAFSA eventually got rejected by the Central Processing System (CPS)/FAFSA Processing System (FPS) (Douglas-Gabriel, 2024; FSA, 2024). There have been multiple reports of the stress and confusion about the FAFSA application process students and families in this situation have been going through (Douglas-Gabriel, 2024; Knott & Knox, 2024). “This whole process was done in large part to help low- and middle-income students, but the delays and glitches are hurting them the most” (Douglas-Gabriel, 2024).

In addition to the issues students and their families are facing with actually submitting the FAFSA, comes disruption in the financial aid awarding cycle and an increased regulatory burden on financial aid offices. After FAFSAs were actually able to be submitted, it was a separate process for them to be processed and turned into Institutional Student Information Records (ISIRs) which are electronically sent to all schools that a student opts to include on their FAFSA (FSA, 2024). As a result, it took months longer than in typical aid cycles for colleges that depend on the FAFSA to receive them and be able to produce full aid offers (though private institutions that utilize the CSS Profile were able to produce institutional or provisional aid offers in some cases) (FSA, 2024). While the Department of Education originally indicated that ISIRs would be available to schools in late January, that announcement was later reversed and changed to “starting in the first half of March” (FSA, 2024). That mid-March estimate ultimately resembled the “soft launch” of the FAFSA’s original December opening date, as “the Department will start transmitting very small batches of ISIRs (1-2) to a few dozen

schools identified on the first submitted applications as part of the process to test ISIR delivery,” and even among the few universities included, some “may receive no ISIRs or as little as one ISIR each day depending on the schools identified by the applicant” (FSA, 2024). In reality, this meant that many institutions were not able to begin awarding aid to their incoming classes until April, while the national decision deadline for new students to deposit and commit to attending is typically May 1st (Douglas-Gabriel, 2024). While some schools openly extended their deadline, not all did, which caused even more anxiety and tension for both prospective students having no idea what their financial aid packages would look like making college affordability a very uncertain question (Douglas-Gabriel, 2024). Financial aid staff at those institutions could not even confirm or deny that a student even filed their FAFSA (let alone sent it to that school) since it took months for ISIRs to be processed (Douglas-Gabriel, 2024).

The 2024-25 FAFSA cycle was plagued by several rounds of processing delaying and iterations of reprocessing ISIRs much later than students had originally filed their FAFSAs, in some cases completely reversing their aid eligibility even after their aid had disbursed to their institutions. The first submitted FAFSA processing delay was due to the omission of the Department of Education to annually update Income Protection Allowance (IPA) amounts to account for inflation as required by the FAFSA Simplification Act of 2020, which results in a decrease to SAI and thus potential increase in financial aid (and especially Pell Grant eligibility), and once realized required a change to the SAI formula and reprocessing of any originally given SAIs on completed FAFSAs (FSA, 2024; Douglas-Gabriel, 2024; Knott & Knox, 2024). The IPA reprocessing became only the first of several rounds of announced reprocessing for the Department due to

coding issues on their end affecting SAI calculations (FSA, 2024). It was soon announced that more than 30% of submitted FAFSAs required reprocessing due to errors in the SAI calculation, largely because of asset fields not being properly read in the calculation leading to artificially lowered SAIs, to be re-transmitted by mid-April (FSA, 2024). This round of reprocessing was soon followed by 20% being to be reprocessed in early May because of issues with how tax fields imported incorrectly from the IRS via their new FA-DDX interface (FSA, 2024). The Department then flipfopped multiple times on its guidance to financial aid offices, telling them at first only to pull in the reprocessed ISIRs if the change benefitted the student (i.e. decreasing their SAI), which large offices balked at as it essentially put the onus on offices to review each account individually to decide whether or not to use a reprocessed ISIR; then later reversing this and tell institutions they were required to use the reprocessed ISIR, regardless of the change. Another round of reprocessing occurred in late December 2024/early January 2025, this time to ISIRs where a student or parent indicated they did not file taxes, as this manual selection option overrode any tax data reported in determining SAI, even tax data transferred via FA-DDX from the IRS (FSA, 2024). Thus, at the conclusion of the fall semester and right around the time of spring semester bills being due, there are students who have now found their SAI recalculated, in some cases completely removing their Pell Grant eligibility at a time when they believed their bills to be settled.

In conjunction with the reprocessing issues, students were unable to make any corrections to their FAFSAs until mid-April and in a staggering display of heaping administrative burden on already overwhelmed financial aid administrators, the U.S. Department of Education did not allow ability for financial aid administrators to make

any changes to received ISIRs until August. In August, an announcement was then issued indicating that the batch correction process was being abandoned for the 2024-25 FAFSA cycle, but it was expected to return in 2025-26 (FSA, 2024). The batch corrections process is vital for large institutions with thousands of students; it allows for administrators to make changes to a FAFSA directly on their institutional systems and send a single nightly file of all changes done by all administrators to the Central Processing System (CPS), which would create the change on the federal system and send back updated ISIRs with new SAI calculations back to the school. Institutions could also run internal processes to update multiple records on their end, which would also be caught up in their nightly files to CPS. Without that functionality, institutions largely had to push the burden of making ISIR changes back to the students, whereas in previous years administrators would be able to quickly resolve numerous errors for the students, to ease the student experience (such as for new freshman who forgot to include their high school information, or who said yes to the question regarding having graduated with a prior bachelor's degree prior to the upcoming academic year, misinterpreting it since they did recently graduate, but from high school). For FAFSA issues that institutions are required to adjust, as in for the Federal Verification process which requires students to submit tax information to schools to compare against what they reported on their FAFSA, financial aid administrators have to log into the FAFSA Partner Portal (FPP) and make all corrections there, instead of relying on batch processing through their systems, significantly slowing down processing times.

Along with these processing lag times, student stress was compounded due to verbiage changes causing many students to make mistakes on their FAFSAs, leading to

their SAIs remaining uncalculated (and thus leaving the students still unable to receive financial aid awards). This occurred most frequently with students either answering affirmatively to a question meant to only allow a student to qualify for Unsubsidized Loans only due to parent refusal to provide FAFSA information, or incorrectly answering indicating they were independent by circumstances not otherwise specified in the dependency status questions section (FSA, 2024). Many families were further confused by wording regarding the rare instance of parents having to report a student's scholarships in excess of their tuition as part of their AGI on their taxes, leaving families including their entire AGI for that answer, or reporting the sum total of all scholarships their child received (even though they did not pay taxes on those) (FSA, 2024).

While the FAFSA verbiage was later tweaked slightly to try and alleviate these issues, for those who misunderstood the Unsubsidized Loan only or dependency status questions—many of whom were among the earliest filers—they had to wait several months before they could even make the corrections necessary to receive a valid SAI (FSA, 2024). For those who misreported the answer to the question regarding scholarships included in AGI, they received falsely reduced SAIs (resulting in many receiving the lowest possible -1500 SAI). When flagged by their financial aid offices that this question was possibly answered incorrectly, students found their SAIs increased significantly, some students losing all of the need-based aid they believed they were originally receiving. For first time freshmen, these issues possibly influenced them to attend one school over another. Additionally, an issue with two dependency status questions was later uncovered, where the recorded answers were transposed after section on the student's ISIRs, causing confusion (FSA, 2024). Some students answering

affirmatively to having been in foster care had the answer logged as being a ward of the court, and students answering that they had been a ward of the court had their answer logged as being a foster youth leading these students already coming from difficult backgrounds to have schools they applied to request documentation to confirm a dependency status they had not actually selected (and thus could not fulfill). The Department of Education confirmed that while aware of this issue, since the fields show correctly to administrators when logged into the FAFSA Partner Portal (FPP), there was no intention to provide a resolution to this on the student ISIR side, and the issue remains active (FSA, 2024). The FAFSA is supposed to promote college access, and the goal of the FAFSA simplification process was to further this goal, making it easier for students to access need-based financial aid. Instead, the FAFSA rollout for this aid cycle repeatedly stymied students (especially among the most vulnerable populations) disrupting the student experience; increased administrative burden on financial aid offices and financial aid practitioners; and wrought havoc on yields for admissions cycles.

Without significant financial aid policy reform and institutional changes, it will continue to become increasingly difficult for students from lower- and middle-class populations to gain access to higher education, or to remain in postsecondary education through to degree completion (Gansemer-Topf & Schuh, 2005; Haycock, 2015; Mendoza et al., 2009). “Low-income” is defined by the U.S. Department of Education as an individual or family whose “taxable income for the preceding year did not exceed 150 percent of the poverty level amount” (OPE, 2023). The Census Bureau establishes, and the U.S. Department of Health and Human Services publishes, the Poverty Guidelines annually and both the current 2023 Poverty Guidelines and list of federal agencies that

follow those guidelines is provided in the Appendix for further context. For low-income families, however, receiving comprehensive support via financial aid is arguably one of the most powerful motivators in getting students to enroll and subsequently persist to achieve degrees and certificates (Gansemer-Topf & Schuh, 2005; Haycock, 2015; Mendoza et al., 2009). Need-based financial aid, (especially need-based grants), has a strong, positive correlation on college persistence, and is an exceptionally powerful motivator for students from low socioeconomic status (SES) backgrounds (Bird & Castleman, 2015; Gansemer-Topf & Schuh, 2005; Haycock, 2015; Mendoza et al., 2009). With each restriction of aid opportunities and each complication injected into the financial aid application process, already declining rates of social mobility in the United State worsen, especially for low-income students (Haycock, 2015; Perna & Jones, 2013; Zumeta et al., 2012).

Purpose

This study concerns the allocation shift of the declining availability of need-based financial aid sources and funding for students from low and middle socioeconomic status backgrounds. The purpose of this research is to examine the degree to which overarching institutional programmatic changes to support merit-based aid at the expense of awarding need-based aid, is negatively affecting college affordability (and therefore, access) for lower- and middle-income students. Essentially, this study uses financial aid allocation as a representation for how institutions value a more altruistic investment in the social capital of the neediest students against the more capitalistic investment in students for the purpose of lining their own coffers and ensuring financial stability and growth for the institution, itself. Institutional need-based aid sources that poor students and middle-

income students depend on to afford ever increasing college costs are trending down, which essentially amounts to less investment in human capital, and ultimately a decreased chance at social mobility. The study uses the microcosm of university merit and need-based aid allocation as a representation of the greater issues of access and equity in higher education specifically as it relates to impeding social mobility of students from low SES backgrounds at a large, Mid-Atlantic, urban, publicly supported university (“Mid-Atlantic University”).

This study controls for socioeconomic status (SES) for first time freshman applicants and new transfer students at a striving, public institution, situated just outside of the top 100 ranking for national universities by *U.S. News & World Report*, and thus arguably more prone to culture of shifting admissions and financial aid policy to climb into that elusive 100 list (U.S News, 2021). This study centers on reviewing the financial aid awards for overlapping cohorts, from 2016-2020. Inequity in institutional aid allocations is a largely untapped niche in financial aid literature which could better elucidate existing structural roadblocks for low and middle-income students in higher education related to college affordability and which could be affecting persistence.

The primary research questions are as follows: 1) What is the relationship between institutional aid and student need (controlling for demographic/background factors (such as gender, race/ethnicity, residency status, etc.)? 2) Among need-blind merit scholarship recipients what is the relationship between institutional aid and student need (controlling for demographic/background factors such as gender, race/ethnicity, residency status, etc.)? 3) What differences exist between student outcome measures (e.g. GPA, time to graduation) and the sources of financial aid (e.g. need blind, need-based, or both)?

4) What is the relationship between students' financial need and sources of financial aid and their total indebtedness?

As institutional grants and admissions merit scholarships typically come from the same pool of funding, this study aims to consider how equitable this distribution is with regards to the socioeconomic background of the undergraduate student body. Prior financial aid research has proffered that students from higher SES backgrounds tend to have higher GPAs and standardized test scores which would position them better to receive merit scholarships, so in practice the second question aims to see if this holds true for Mid-Atlantic University, wherein "need-blind" strategies for merit scholarships given upon college admission favor wealthier students (who could likely afford the tuition otherwise) after allocation (Burd, 2017, 2020; Chetty et al., 2020; Pusser & Marginson, 2013; White & Dache, 2020; Zumeta et al., 2012). As such, is it possible that this enrollment management strategy facilitates wealthier students actually receiving greater access to human capital.

The last two questions concern student success outcomes, time to graduation, cumulative GPA, and student loan indebtedness with regards to the SES background of the student population, as defined by a student's EFC. Is it possible then that despite receiving institutional gift aid, poorer students will still take out student loans regardless. Additionally, there is a concern about whether the enrollment management strategies regarding allocation of need-based and need-blind gift aid actually have demonstrable impacts on improving student success metrics, across students from varying SES backgrounds. To this end, multiple regressions will be performed and analyzed.

CHAPTER 2

REVIEW OF LITERATURE

Social Mobility

The decline of college affordability should be concerning as it is an affront to the entire notion of “The American Dream,” which entrenched in the American consciousness, essentially centers on the achievability of upward social mobility. Fluidity of social mobility is the ability of a person to move from one socioeconomic class to another, and usually implies an upward trajectory, though backward mobility is also possible (AACC, 2012; Aaronson & Mazumder, 2008; Buder, 2017; Haveman & Smeeding, 2006; Haycock, 2015; Song et al., 2020; Wright, 2011). Education has historically been the main impetus for allowing for social mobility, and attaining a college degree can break the seemingly inescapable cycle of poverty (AACC, 2012; Haycock, 2015; Haveman & Smeeding, 2006; Perna & Jones, 2013; Zumeta et al., 2012). However, educationally spurred upward social mobility has atrophied in recent years as higher education has increasingly become unaffordable to many Americans, and both class stagnation and backward mobility is becoming increasingly prominent (Aaronson & Mazumder, 2008; Buder, 2017; Haycock, 2015; Wright, 2011). This restriction of social mobility appears to be due at least in part to the conscious restriction of need-based assistance in favor of a shortsighted and callous economic pursuit that all comes down to saving money and making money at the expense of the futures of the poorest students and their families (AACC, 2012; Aaronson & Mazumder, 2008; Haveman & Smeeding, 2006; Haycock, 2015; Perna & Jones, 2013; Wright, 2011; Zumeta et al., 2012).

There is compelling evidence that educated citizenry benefits society (AACC, 2012; Coleman, 1988; Perna & Jones, 2013; Schultz, 1960; Zumeta et al., 2012). Indeed, state and federal governments would be rewarded if more credence was put towards making college affordable, as postsecondary degree attainment ultimately constitutes a public good. Having a more highly educated populace decreases likelihood of crime commission and usage of government assistance programs, which are typically “categorized as socially negative behaviors” (Perna & Jones, 2013, p. 100). For each additional credential earned beyond a high school diploma, income increases overall, and thus, payment of taxes back to federal, state, and local governments increases, as well as the likelihood to reinvest disposable income back into the economy (Perna & Jones, 2013; Zumeta et al., 2012).

Access to higher education can even reverse negative life trajectories for students from poor families. Critical race theorists have proffered evidence that this deviation is more drastic when looking specifically at low SES children who are also racial or ethnic minorities; for instance, among African American males, “who don’t complete high school, 68 percent will be imprisoned by age 34. With a high school diploma, that rate falls to 21 percent; with a college degree, to 6 percent” (Haycock, 2015). Further, the United Nations (U.N.) has specifically and continually found that educating girls and women is paramount to combating generational poverty worldwide and contributes to a country’s economic growth (United Nations, 2020). Educated women ensure their children are also educated, and each additional year of education after elementary school increases a girl’s lifetime earnings by at least 10-20%, with this return on education investment further increasing with postsecondary degrees (United Nations, 2020).

Increasing human capital for women via education thus is a societal boon with far-reaching positive effects for a country, especially one like the U.S. with gender and economic inequality (AACC, 2012; Aaronson & Mazumder, 2008; Song et al., 2020; United Nations, 2020). Critical feminist theorists have found that for women, higher education levels are correlated with higher wages; higher ages for first marriage and first child; higher rates of having health insurance and increased overall health; increased health of children; and increased education levels for their children; all of which can halt generational poverty (Hess et al., 2015).

A path to social mobility not only serves a public good, but undoubtedly also provides an individual good, as “the person who invests the time and resources in building up this capital reaps its benefits in the form of higher-paying job, more satisfying or higher-status work, or even the pleasure of greater understanding of the surrounding world—in short, all the benefits that schooling brings to a person” (Coleman, 1988, p. 116). Educational attainment helps to combat poverty one family at a time (Coleman, 1988; Haycock, 2015; Hess et al., 2015). Earning higher education credentials is correlated with steady employment and higher wages (Perna & Jones, 2013; Zumeta et al., 2012). Annual earnings are more than 60% higher for bachelor’s degree holders as opposed to those with only a high school diploma (and close to 70% for women) and is higher still for degree attainment beyond that level (Zumeta et al., 2012). “The earnings trajectories of college graduates are steeper over time than those with less education working the same job,” showing the effect is not restricted to certain occupations (Zumeta et al., 2012, Location No. 778). Additionally, there is a strong correlation between degree attainment and “other aspects of desirable careers, such as job-related

benefits, satisfaction, social status, longer life, better health, better child-rearing outcomes, and lower rates of social dysfunction” (Zumeta et al., 2012, Location No.787).

Due to myriad systemic failures for poor children, and especially poor children of color, of which the declining access to higher education cannot be overlooked, statistics regarding the fluidity of upward social mobility are grim, to the extent that “a child born poor in the United States today is more likely to remain poor than at any time in our history” (AACC, 2012, p. vii). Achieving “The American Dream” is less likely than it has ever been, however, “to a remarkable degree, even when belied by reality and common sense, Americans have trusted in the promise of life and the social mobility it promised them and their children” (Buder, 2017, p.36). This prevailing personal and societal faith in the likeliness of social mobility is best explained by the theory of American Exceptionalism, an internalized, collective patriotic belief in the U.S. as an entirely unique “land of opportunity,” as “a society that provides equal opportunities for individuals from poor and rich families alike” (Song et al., 2020, p. 251). Yet, this optimistic patriotism is contrary to the current national landscape. Intergenerational, parent-to-child social mobility in the U.S. has decreased sharply since the early 1980s and in the years following, and this trend has not reversed; in fact, backward social mobility has become more prominent (Aaronson & Mazumder, 2008; Buder, 2017; Song et al., 2020; Wright, 2011). Income inequality has flourished, decimating the middle class (Aaronson & Mazumder, 2008; Buder, 2017; Song et al., 2020).

This increasingly halted social mobility coincides with the significant educational shifts towards rising tuition and permutation of need-based financial aid into need-blind, performance based financial aid. “Contrary to its stated goals and repeated claims, the

U.S. higher education system fails to equalize opportunities among students from high- and low-income families” (Haveman & Smeeding, 2006, p. 128). This is a significant factor in the recent decline of higher education credential acquisition among the U.S. populace compared to other nations; while the U.S. historically had a one of the highest proportion of citizens with postsecondary credentials in the world, this trend has reversed, while in other nations—especially countries with free or heavily subsidized higher education—higher education degree attainment has increased comparatively (Haveman & Smeeding, 2006; Perna & Jones, 2013; Zumeta et al., 2012).

Using “deidentified tax records,” records from the College Board, ACT, and the Department of Education, a 2020 study by Chetty, et al., found that “parental income segregation” among students in college has increased exponentially over the last several decades, meaning that social mobility has consistently declined (p. 1567). This segregation has been most apparent at “Ivy-Plus colleges”—including statistics for the highly selective colleges Duke, MIT, Stanford, and the University of Chicago along with those for the Ivy League—which are also the schools with the highest rates of “upper-tail mobility—the fraction of students who come from bottom-quintile families and reach the top 1% of the earnings distribution (earnings > \$182,000 at ages 32-34)” (Chetty et al., 2020, p. 1571). Chetty et al. argued admissions processes for these schools are unfair as students from low-income families have far lower SAT and ACT scores than middle- and high-income students, and ultimately far lower than the test scores necessary for acceptance into Ivy-Plus colleges. As social mobility has become increasingly difficult in the U.S., losing access to attend due to an inability to pay (or a reticence to take on

significant debt) can equate to a decreased chance of breaking out of poverty (Chetty et al., 2020).

Perna & Jones (2013) found that when students from low SES backgrounds do attempt to attend college, they face more barriers which make them less likely to actually obtain a bachelor's degree. Low-income students are less likely to be enrolled in a four-year university (and more likely to be enrolled in a two-year community college); less likely to be enrolled in any program full time; and more likely to be working (and working more hours) while attending college, all factors which make persistence to graduation more difficult (Perna & Jones, 2013, p. 96). These students are also significantly more likely to take on student loan debt (and at higher amounts) than their higher-income counterparts, and more likely to default on said debt (Grinstein-Weiss et al., 2016; Kelchen & Li, 2017; Looney & Yannelis, 2015; Miller, 2017). In fact, for low SES students with good grades, they have relatively the same odds of attending college as high SES students with poor grades (Perna & Jones, 2013, 101). As educationally spurred social mobility cannot come without affordable higher education, these changes have brought a swell of investigation into access and equity in higher education among social science researchers, particularly regarding financial aid.

College Selectivity and Rankings

Facing enormous barriers to college access due to higher college costs, a less robust Pell Grant in terms of cost coverage, and the looming behemoth of significant student loan indebtedness, can create a chilling effect for low-income students, meaning restricted college options and thereby fewer future professional opportunities, as these students are significantly less likely to attend the most “prestigious” universities (Burd,

2017; Chetty, et al., 2020; Haycock, 2015; St John, 2001). This can mean restricted college options and thereby fewer future professional opportunities for low-income students, as these students are significantly less likely to attend the most “prestigious” universities (Burd, 2017; Chetty et al., 2017; Haycock, 2015). The most prestigious universities, particularly Ivy League institutions, have the highest rates of “upper-tail (bottom quintile to top 1%)” mobility, so losing access can equate to a decreased chance of breaking out of poverty (Chetty et al., 2017). Within the last decade, acceptance and enrollment at very selective and even moderately selective institutions has increased for students from high SES backgrounds, doubling their enrollment, while enrollment at minimally selective and “open admission institutions” has doubled...but for low SES students (Fry & Cilluffo, 2019).

Selectivity among the most prestigious universities has increased significantly over time, though the single greatest contributing factor is arguably the establishment of the first published college rankings by *U.S. News & World Report* in 1983 (Geiger & Heller, 2011). Geiger & Heller researched the origins of the current “arms race” among colleges to try and recruit the “best” possible students, ones with high test scores and often substantial wealth, in order to improve their rankings and ultimately their bottom line in the form of revenue and even securing future donations to endowments (Geiger & Heller, 2011, p. 10). The *U.S. News & World Report* education rankings gained traction in both the higher education community and among laypeople, driving the 1980’s into what Geiger & Heller dubbed “the selectivity sweepstakes” where competition for admission into the colleges highly ranked on the report drastically intensified (2011, p. 9). “The beauty contest, or league tables...were based solely on reputation, and thus

mirrored wealth, selectivity, and visibility,” and beginning in 1987 they began to be published annually, a practice which still exists today (Geiger & Heller, 2011, p. 10).

Colleges found that ranking highly increased applications received and yield (student enrollment after admission), and increased university prestige, which led to more applications—which allowed the universities to be more selective in who they admitted—which in turn, resulted in more donations from alumni (Geiger & Heller, 2011). The still-prevailing institutional aim of “high tuition and high aid” was solidified during the new rankings fervor, as high costs became synonymous in the public with high quality, and having such high tuition rates optimized revenue for universities (Geiger & Heller, 2011, p. 10). Having more revenue allows a university to spend more money to make the institution ever more appealing (such as on building infrastructure, faculty hiring, and marketing to potential applicants), which feeds the cycle in boosting applications and prestige, and raising costs again. “This pressure for ever-more spending among the country’s wealthiest universities is now conventionally called the ‘arms race,’ and has serious financial aid implications, as merit scholarships to reward educational prowess became the preferred means of enticement to build classes with the “top” quality students, over need-based grant funding (Geiger & Heller, 2011, p. 10).

The desire to ascend in rankings has put a premium on attracting the most talented students (which often overlaps with the wealthiest students) and the leading way this has historically manifested is in increasing selectivity in order to boost rankings (Burd, 2017, 2020; Gansemer-Topf & Schuh, 2005; Geiger & Heller, 2011; Heller & Nelson Laird, 1999; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). This trend is particularly prominent among less-traditionally selective institutions, driven to increase

their perceived prestige, as within the last decade, acceptance and enrollment at very selective and even moderately selective institutions (especially selective public universities) has increased for students from high SES backgrounds, while poor students have increasingly become more concentrated at minimally selective institutions and community colleges (Burd, 2017, 2020; Fry & Cilluffo, 2019; Gansemer-Topf & Schuh, 2005; Redd, 2002).

Leveraging merit-based scholarships with admissions offers has become the predominant way of wooing the highest achieving potential students, those who could most positively impact future rankings, however this leaves less funding for institutional need-based grants (Burd, 2017, 2020; Gansemer-Topf & Schuh, 2005; Heller & Nelson Laird, 1999; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). This shift has become particularly prominent among less-traditionally selective institutions, driven to increase their perceived prestige by moving up in college rankings (Geiger & Heller, 2011; Redd, 2002; Zumeta et al., 2012). Four-year public colleges tend to award the majority of their institutional gift aid as academic merit scholarships to “high ability” students, while selective, private colleges “generally receive admissions applications from many meritorious prospective students” so they do not need to aggressively attract this population and can instead offer more need-based grants (Redd, 2002, p. 30). Effectively, institutions are opting to rise in ranking by jettisoning poor students, leaving them to turn to lower cost community colleges or take on substantial student loan debt.

That *U.S. News* rankings place a stronger weight on high SAT/ACT scores which makes these high scoring students more alluring to less selective institutions in order to boost their rankings, and thus more likely to receive more and larger merit scholarships

(Redd, 2002). Unfortunately, extensive evidence has shown that lower income students are much less likely to have the test scores and/or grades to qualify for academic merit scholarships than their higher income counterparts (Chetty et al., 2020; Geiger & Heller, 2011; Heller & Nelson Laird, 1999; Redd, 2002). For students that do receive merit-based scholarships, especially students who are also high need, the stipulations of merit-based scholarships which typically require minimum GPAs and credit enrollment requirements (i.e. full-time registration) can make keeping that scholarship for duration of college attendance difficult (Geiger & Heller, 2011; Heller & Nelson Laird, 1999; Perna & Jones, 2013). Lower SES students are more likely to be working (and working more hours) while attending college than their higher SES counterparts, which can hinder grades, and are also less likely to be enrolled in any program full time (likely due to work schedule conflicts) so it is more difficult to meet minimum enrollment requirements to retain their scholarships (Perna & Jones, 2013). Minority students receiving merit scholarships are much less likely to see those scholarships renewed after freshman year; in several Georgian universities, white students had a scholarship renewal rate of at least double the rate for black students (Dynarski, 2004). There is actually an inverse correlation in student body makeup between average test scores and Pell Grant recipients at all colleges and universities, with the effect is even more pronounced for public universities: the higher the average SAT score reported in the *U.S. News* rankings for a university, the fewer Pell Grant recipients are enrolled at that school (Monks, 2018). As a result, universities increasingly appear to be drifting away from offering need-based institutional aid funding, forgoing need-based assistance in favor of flashier merit scholarships.

Changes in Institutional Aid Policies

Donald Heller and Thomas Nelson Laird were two of the earliest researchers to note a dramatic shift in gift aid allocation among colleges and tie it back to the explosion of college ranking fervor, by analyzing data from the National Postsecondary Student Aid Study (NPSAS) which was a nationally representative sample of institutional financial aid allocation between 1989 and 1996. Between the late '80's and late '90's, while gift aid spending by institutions overall increased, the number of high income students (from the upper quartile) receiving gift aid grew to more than double the amount of middle income students and more than quadruple the number of low-income students receiving gift aid, with 98% of high income, 46% of middle income, and only 26% of low-income students qualifying for institutional gift aid, trends that unfortunately still persist (Heller & Nelson Laird, 1999, p. 11). During this time period of the nascent college rankings, the financial aid awarding process became more stratified as the mean non-need based grants (academic merit scholarships) "increased at a greater rate than the mean need-based grant for each income group" and the highest average grants of both types were given to high income students (Heller & Nelson Laird, 1999, p. 12).

In traditional enrollment management settings, institutional need-based and merit-scholarships come from the same funding pool (Burd, 2017, 2020; Dynarski & Scott-Clayton, 2013; Perna & Jones, 2013; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). Thus, unless an institution is allocating their funding exactly equally between need-based grants and need-blind academic scholarships, one of the two sources will have to decrease to support over-awarding of the other. Thus, even need-based grants began to disturbingly shift allocations towards high income students; by the mid-1990's,

institutions were spending 145% more on need-based grant funding for this population than in the previous decade (Heller & Nelson Laird, 1999, p. 13). Meanwhile, low-income students “saw a drop in their representation among all grant recipients...as well as a decrease in their share of the total dollars received for both need-based and non-need grants” (Heller & Nelson Laird, 1999, p. 13). Disproportionately, academic merit award funding was given to high income students, and while low-income students saw a slight increase in receipt of merit scholarships, there was a sharp decline in merit scholarship allocations for middle income students (Heller & Nelson Laird, 1999, p. 16). This trend illuminated how institutions were beginning to use “their non-need grants more strategically for enrollment management purposes (e.g. while they were awarding fewer non-need grants, they were awarding larger ones to try to influence the enrollment of more desirable students),” and additionally, they increased the number of offered non-need (merit) grants and scholarships to all income groups except those in the lowest quartile (Heller & Nelson Laird, 1999, p. 19).

Institutional need-based grants have been observed to have a positive impact on low-income students (Bettinger, 2004; Evans & Nguyen, 2019; Mendoza et al., 2009; Gansemer-Topf & Schuh, 2005). For the last several decades, research has consistently shown that institutional grants are intrinsically tied with persistence for low-income students as they facilitate college affordability (Evans & Nguyen, 2019; Gansemer-Topf & Schuh, 2005; Mendoza et al., 2009). Evans & Nguyen found that offering even relatively small additional institutional grants (around \$1,000) to Pell recipients and students close to the Pell threshold led to decreased student loan borrowing by those students (by \$300–\$400) and also decreased amount spent at paid jobs, especially for

women (2019). Gansemer-Topf & Schuh suggested that institutional grants facilitate “stronger campus engagement”, which thereby increases likelihood of persistence (2005, p.18).

In traditional enrollment management models, both institutional need-based and merit scholarships come out of the same pool of funding (Burd, 2017, 2020; Dynarski & Scott-Clayton, 2013; Perna & Jones, 2013; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). Institutional grant funding largely comes directly from tuition and fees (making up roughly half to two thirds of the allocation), endowments, and gifts/donations from outside or alumni donors, though the amounts coming from these funding sources differ depending on type of institution (for instance, private schools tend to have larger endowments to draw from) (Redd, 2002, p.26). When awarding institutional gift aid, increasingly universities are turning to proprietary internal formulas and matrixes devised by enrollment management consultant firms to strategically award gift aid (Burd, 2020; Heller & Nelson Laird, 1999).

Stephen Burd, a prolific writer, researcher, and TV commentator on higher education, and specifically financial aid, has released multiple reports on how merit aid is supplanting need-based aid, and in his 2020 work, using Common Data Set and additional survey data from institutions provided by the college guidebook company Peterson’s, Burd details the impact of this new enrollment management strategy for awarding institutional gift aid. Typically universities now employ a process called “financial aid leveraging,” wherein admissions and financial aid administrators “determine the precise price point they need to offer to enroll different groups of students and not provide a dollar more,” saving the best award offers to their most sought after

students (regardless of need or lack thereof), with the concept of meeting full need for students “considered wasteful and inefficient” (Burd, 2020, p. 7). Attracting students of higher incomes is more financially beneficial for a college, as they can spend less funding to support these students than a high-need student would require, while their families will still be able to afford the full price of revenue-boosting school auxiliary services like housing and meal plans, or shopping for books and supplies from the school-owned bookstore (Burd, 2020). One university president recently admitted that, “typically, institutions do not release information on the distribution of merit- versus need-based financial aid, but I think all of us know, if only anecdotally, that it is true that some of our institutions are awarding more merit-based financial aid” (von Arx, 2013, p. 2).

“As colleges have faced more pressure to leverage their aid strategies to increase enrollment and maximize tuition revenues, they have been faced with tradeoffs between using aid to promote diversity and using aid to attract students who can pay a larger share of their college costs” (St John, 2001, p. 49). This leaves the majority of students, especially lower performing and low SES students (and these groups unfortunately often have significant overlap due to systemic classism), with financial aid packages that include a significant amount of “unmet need” (Burd, 2020; Heller & Nelson Laird, 1999). Half of all public universities cover less than 67% of their student’s financial need, and 20% cover less than 55%; in the early 2000’s, these institutions covered close to 72% (Burd, 2020). The growing unmet need for high need students is the point of this prevailing enrollment management strategy, it “is part of the game plan to ensure there is enough money to pursue the students who will help them raise their rankings and boost their institutions’ bottom line” (Burd, 2020, p. 7). Why try to spend more institutional

money for need-based grants to reduce the unmet need gap on a student that will come anyway with that lesser financial aid package?

This is especially alarming when looking at public four-year institutions, historically the most affordable option after community colleges. Unfortunately, for public and hybrid institutions, dwindling appropriations have limited the amount of money that can be realistically proffered for these need-based aid programs, and funding scholarships to further the rankings quest has essentially arisen as more important (Burd, 2017, 2020; Dynarski & Scott-Clayton, 2013; Heller & Nelson Laird, 1999; Perna & Jones, 2013; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). Even in the early aughts, Redd was relating how, “on average, across all institutional types, the plurality of grant dollars...were exclusively non-need awards,” with two thirds of institutional grant funding from four-year public universities awarded to students in the form of merit-based aid, and only one fifth awarded as need-based grants (2002, p. 28). The remaining funding was awarded largely as “merit-within-need” hybrid grants that require both need and academic achievement or other non-need criteria (such as demographic information like location of the student’s primary residence, or special ability/talent) to receive (Redd, 2002, p. 28).

Four-year public institutions award much larger shares (roughly 70% of institutional aid) in the form of athletic aid and scholarships for “special talents” (like musical or artistic ability) than private institutions do, which also detracts from the ability to assist low-income students (Redd, 2002, p. 30). It is estimated that over the last two decades, public four-year institutions have spent close to \$32 billion of their funding internally demarcated for financial aid on scholarships and grants to students without

need (Burd, 2020). During this time period, more than half of these institutions doubled their spending for non-need gift aid; more than a quarter quadrupled their spending, and 10% decupled their offers of gift aid without a need component. “About \$2 out of every \$5 these public universities provided went to non-needy students—those whom the federal government deems able to afford college without financial aid” (Burd, 2020, p. 5). In the early aughts, public institutions allocated more than \$1 billion in merit scholarships without a need component; they now spend \$3 billion in these need-blind scholarships (Burd, 2020). Since 2014, annually more funding has been spent on merit scholarships than on need-based grants at public four-year institutions (Burd, 2020). Less selective public colleges were not immune from this trend siphoning off the need-based grant funding of more selective public research universities; “regional state colleges actually devote an even larger share of their institutional aid dollars to non-needy students than do their more elite and better-resourced counterparts” (Burd, 2020, p. 6). While highly selective private institutions typically have larger endowments which can allow them to provide more per dollar in financial aid to students over their public counterparts, the situation is actually much murkier as “although low-income students are paying dramatically lower prices at high-selectivity institutions than their higher-income peers, families of low-income students still pay 49% of their yearly total income to tuition and fees, compared with 21% for higher-income students” (Gansemer-Topf & Schuh, 2005, p.16). One university presented ventured to say of the situation that “the consequence of this is clear: the neediest students are getting less financial aid, and merit scholarships are going to students who either do not demonstrate need, or to supplement the financial aid packages of low-need applicants” (von Arx, 2013, p. 2).

Changes in Student Loan Indebtedness

With ongoing changes to the Pell Grant program reducing eligibility for the most famous need-based gift aid program, and merit-based aid increasingly supplanting institutional need-based aid, more students are turning towards student loans to afford college. Borrowers carrying the most undergraduate debt are disproportionately low SES and receiving a Pell Grant; nearly 90% of Pell Grant recipients who graduate, graduate with student loan debt (Grinstein-Weiss et al., 2016; Kelchen & Li). It is then unsurprising then that in line with demographic research on Federal Pell Grant recipients, multiple studies have determined the highest undergraduate student loan borrowers are also more likely female, more likely non-Asian racial or ethnic minorities (in particular African Americans), and often have dependent children (Bird & Castleman, 2015; Grinstein-Weiss et al., 2016; Kelchen & Li, 2017; Miller, 2017). Unfortunately, that demographic overlaps considerably with those most likely to be in the lowest quintile, thus arguably perpetuating the cycle of poverty by saddling students with already limited means with lifelong debt (Bird & Castleman, 2015; Haycock, 2015; Grinstein-Weiss et al., 2016). In contrast, of students who have never received a Pell Grant, only 53% graduate with student loan debt, and their debt burden is significantly lower (Cooper, 2016; Friedman, 2018).

As readily available need-based aid sources have decreased while tuition has perpetually increased, low- and middle-income students who attempt to complete a postsecondary degree are forced to take on greater amounts of student loan debt than any time in history; it has become a national crisis which is particularly harming Millennials (Grinstein-Weiss et al., 2016; Friedman, 2018; Johnson et al., 2016; Kelchen & Li, 2017;

Xue & Chao, 2015). During the last decade, with the bulk of Millennials of college age, the amount of student loan debt in the United States more than doubled (Xue & Chao, 2015). Student loan indebtedness has increased dramatically in the last decade; it has become the greatest type of consumer debt by far, surpassing even credit card debt (Grinstein-Weiss et al., 2016). U.S. student loan debt totals over \$1.5 trillion and is held by more than 44 million people (Dynarski, 2015, 2016; Grinstein-Weiss et al., 2016).

Student loan debt has become an obtrusive problem in the United States, one that is affecting the economy and hampering the lives of its citizens. Aggregate student loan indebtedness is expected to grow to more than \$2 trillion within five years (Johnson et al., 2016). Using a “unique set of data on LMI households from the Refund to Savings (R2S) initiative, a national tax time intervention aimed at promoting saving behavior,” Grinstein-Weiss et al. found that more than 70% of undergraduates amass student loan debt during their education, and despite increased financial literacy outreach by colleges, those figures continue to increase (2016, p.167). Unsurprisingly, low-income and moderate-income students amass more student loan debt than their wealthier counterparts (Grinstein-Weiss et al., 2016). According to a recent report by the American Association of University Women, women take on significantly larger loan burdens than do men (Miller, 2017). On average, women take longer to graduate (particularly women with dependent children), which can cause more debt to accumulate; this is likely because women are more likely to be primary caregivers while still attending college (Miller, 2017). After accruing student loan debt, women take longer to repay that debt and are more likely to default on their loans (Miller, 2017). Financial aid policies aimed at

women to reduce loan debt, especially targeting this population for additional need-based grant assistance, could therefore be quite impactful.

In a 2015 qualitative phenomenological study designed to understand how lower SES students reticent to borrow loans perceive student loans, and how they manage to afford college without borrowing, Xue & Chao discovered that low-income students had greater aversion to taking out student loans than wealthier students, and their reticence largely fell into four categories: parental sway; lack of financial literacy regarding loans; fear of ultimate impact of student loan debt in the long term; and faulty cost-benefit analyses regarding the worth of a college education (or the abilities of certain colleges to further boost ultimate social mobility). Loan-averse students spent more time working while going to school to make up the shortfall loans would have covered, and were more likely to attend colleges with more generous financial aid packages or cheaper overall tuition (like community colleges) potentially foregoing increases to their cultural, economic, and/or social capital that more prestigious schools could provide (Xue & Chao, 2015).

Interestingly, several studies have consistently found that some degree of student loan debt helps persistence, though evidence is disparate as to what that threshold is to where student loan debt becomes an overall hindrance (Brown et al., 2015; Marcus, 2018; St. John, 2001). St John previously found that while loans may be more off-putting to low- high-income students, middle-income students are more receptive to having loans as part of their financial aid package, so financial aid packages that can balance both loans and grants can potentially sway more middle-income students to enroll (2001). More research into this threshold could be effective for future financial aid policy. Other

studies have found that financial aid packages which consist of only gift-aid (no loans) most improve likelihood of graduation as opposed to self-help only and combination financial aid offers (DesJardin & McCall, 2010; Fenske, Porter, & Dubrock, 1999).

Studies on student loans and persistence tend to have the same flaw of including the loan debt of both undergraduate and graduate students and not disaggregating these populations when focusing on amounts borrowed and delayed repayments (Baum, 2015; Brown, et al., 2015; Miller, 2017). The students with the largest overall student loan debt are graduate students—specifically, professional students—who generally have more occupational opportunities and higher salaries to allow easier repayment, so conflating graduate loan debt with undergraduate loan debt skews findings (Dynarski, 2015, 2016).

Consequently, as student loan burdens have increased, so have student loan default rates (Brown, et al., 2015; Kelchen & Li, 2017; Looney & Yannelis, 2015). Students who have the smallest amounts of loans are more likely to default on their loans (Dynarski, 2015, 2016; Looney & Yannelis, 2015; Zumeta et al., 2012). However, this is likely explained by students taking out loans to attend college but not actually graduating, and thus not acquiring the benefit of expanded job opportunities afforded to college graduates. Using data pooled from The National Postsecondary Student Aid Study (NPSAS), Kelchen & Li, determined that Pell recipients are overall slower at repayment for student loan debt, with far fewer managing to pay down their principal by at least \$1 within five-years of ceasing enrollment than non-Pell recipients with student loan debt, and are also more likely to default on their loans (2017). African American students also tend to have longer repayment times as well as higher rates of default and are more likely to seek private source alternative loans (Kelchen & Li, 2017; Looney & Yannelis, 2015).

Looking at student loan indebtedness as an aggregate, “these trends and statistics paint a disturbing picture of young adults who have been referred to as ‘generation indebted,’” Millennials (Johnson et al., 2016, p.185). For young Millennial families, from 2001 to 2013, the proportion with student loan debt of more than \$50,000 but less than \$100,000 has increased by more than 236% (to 13.2% from 5.6%), and the amount with more than \$100,000 in debt has grown by nearly an order of magnitude (up roughly 933%, rising to 5.6% from .06%), and these statistics are from 2013, so the increase is likely far greater in 2020 (Johnson et al., 2016, p.185). Dynarski has found in multiple studies that the job market has become more fraught beginning with the Great Recession, which has led to higher rates of unemployment and underemployment for recent graduates (2015, 2016). Johnson, O’Neill, Worthy, Lown, & Bowen’s 2016 phenomenological qualitative inductive survey interviewing current and past loan borrowers supports emerging research that nearly half of Millennials are living with a family member are delaying life milestones such as marriage, having children, and buying a home. Additionally, significant loan debt can have a deleterious effect on physical and/or mental health and emotional wellbeing for undergraduates and graduate students alike (Cooke et al., 2004; Dugan & Marken, 2014; Walsemann et al., 2015). Nora, Barlow, & Crisp found that taking on student loan debt can be a stressor possibly leading to a higher risk of dropping out (2006).

Gaps in the Research Literature

As research regarding trends in financial aid is a relatively recent endeavor of social scientists in the overarching field of higher education, there are several avenues to pursue for future inquiry. Financial aid-specific studies unfortunately tend to suffer from

some significant drawbacks, primarily timeliness of data; issues of generalizability; and a myopic focus on primarily Federal Pell Grants to the exclusion of all other forms of financial aid. It should be easy to find current, timely scholarly journal articles that explore this unceasing well of pathos that is financial aid policy. However, the political nature of the topic lends itself more to white papers, historical trend studies, comprehensive presentations to sway policy, or pithy, digestible articles for social media shareability. Journal articles on financial aid tend to focus on the Federal Pell Grant, first and foremost, and more recently, merit-based aid, or much more recently, student loan borrowing practices (Bettinger, 2004; Bettinger et al., 2012; Cho et al., 2013; Dynarski & Scott-Clayton, 2013; Evans et al., 2017; Evans & Nguyen, 2019; Geiger & Heller, 2011; Grinstein-Weiss et al., 2016; Hicks et al. 2014; Johnson et al., 2016; Kelchen & Li, 2017; Looney & Yannelis, 2015; Protopsaltis & Parrott, 2017; Walsemann et al., 2015).

Unfortunately, much of the research into financial aid for higher education makes ample use of small, homogenous cohorts which calls generalizability into question and a lack of generalizability limits the usefulness of data gleaned. Studies on gift aid, when not concerned with the Federal Pell Grant, typically focus on state-affiliated gift aid, such as with famous studies like Susan Dynarski's research on the Georgia HOPE Scholarship; Sara Goldrick-Rab's on the Wisconsin Scholars Grant; or Eric Bettinger's on California's Cal Grant program. While interesting, they are difficult to extrapolate effectiveness across state lines due to the very heterogenous nature of the United States; what works in a state like California is unlikely to be implementable in a state without the benefit of their budget, like in Mississippi, or untenable in a state which deprioritizes education spending as an aggregate (with higher education coming in well behind even underfunded

K-12), like in Pennsylvania, where support for higher education is less than that allocated to correctional institutions and prisons (Pew, 2015).

Many financial aid studies are based on data from decades prior, which affects policy relevancy. Oft cited financial aid studies are from the early aughts, or even when published contemporaneously still use data sets from pre-2011 (which is before the first modern federal financial aid programmatic shift to restrict eligibility for low-income students) and the financial aid landscape was completely different. For instance, Evans and Nguyen's 2019 study finding that supplementing Pell Grant recipients' aid packages with small institutional grants decreased student loan borrowing habits and time working in part-time jobs sounds exciting and fairly easy to implement (Evans & Nguyen, 2019). Yet their study uses data pooled from The National Postsecondary Student Aid Study (NPSAS), which while the study was published in 2019, the data set spans only 2000–2012. This is ancient data in the current financial aid landscape. During this time period, the Federal Direct Loan Program didn't even exist; it was the Robert T. Stafford Student Loan program and all loans had variable interest rates and were borrowed from various lenders that disingenuously also provided high interest private source alternative loans. During that time period, all graduate and professional students could still borrow Subsidized Loans, colleges readily stocked hard copy paper versions of the FAFSA, Pell Lifetime Pell Eligibility Used (LEU) caps did not exist, and the EFC (Expected Family Contribution) was calculated completely differently (markedly with a much high auto-zero threshold and asset protection allowance). The findings of Evans and Nguyen seem much more specious now; while their findings may have been true two decades ago, their results are arguably not very generalizable to current financial aid recipients.

The position and perspective of the researcher is also arguably important, especially when reviewing conclusions drawn and suggested implications for policy and future practice in financial aid research. Very few of the dominant voices in financial aid research are—or ever have been—financial aid practitioners; it is a field dominated by economists, bankers, social scientists and even other enrollment management professionals in Admissions, Registrar, and Student Affairs (but not within Financial Aid). Often financial aid practitioners are left out of the discussion completely; in fact, one of the only contemporary studies that actually interviewed financial aid counselors is the Eichelberger et al. 2017 study, however, the perspectives of financial aid practitioners were seemingly abandoned midway through the article to instead focus on the perspectives of other (non-financial aid) student service professionals about what financial aid professionals could and should be doing differently for student outreach and financial literacy. Yet the biggest solutions presented (mandatory workshops, online resources, and individual advising) are steps largely already taken by nearly all financial aid offices (including the office in the article), which would have been obvious if the focus was squarely on the financial aid office (Eichelberger, et al., 2017)! Furthermore, earlier in the study, Eichelberger et al. wrote about the counterproductive nature of one-on-one financial aid advising in the literature review, but then never presented any novel ideas for how to surmount these barriers for students. More research from financial aid professionals could be extremely beneficial, as they could help elucidate some of the nuance behind why some of the more common policy refrains are erroneous, such as that increasing the maximum Pell Grant amount is the best means for encouraging persistence in low SES students (Bettinger, 2004; Dynarski & Scott-Clayton, 2013)

More studies on the resulting impact of defaulted student loans on mental health and daily financial and professional responsibilities could be very helpful avenues to contribute to literature on student loan indebtedness; qualitative studies particularly could provide impetus to change student loan policies depending on how emotionally impactful responses are. This is because the significant negative impact on credit scores has far-reaching future consequences which can prevent one's ability to self-support by making it extremely difficult to obtain credit cards; home loans; car loans; homeowner's insurance; cell phone plans; getting approval to rent or lease an apartment; or even to sign up for basic utilities (FSA, 2022). Qualitative studies, such as Xue & Chao's 2015 study or Johnson, O'Neill, Worthy, Lown, & Bowen's 2016 work, focus on general perspectives of student loans by borrowers or current students, but not those of past borrowers who have now defaulted, though it is possible this topic may prove too sensitive for respondents to answer honestly. More qualitative studies specific to Millennials which speak to their unique negative position of holding more in student loan debt than any prior generations could likewise evoke a pathos that could ideally lead to student loan reform. It should be noted, however, that some recent research on entrepreneurial and "start-up" ventures strongly caution against comparing students with debt burdens to those without, in that it perpetuates a notion that such professional avenues are too risky, when the real societal issue is income inequality, not student loans (Baum, 2015).

The current financial aid landscape, alongside higher education as a whole, keeps moving further from the intended goals of the inception of Title IV aid under the Higher Education Act of 1965, which sought to increase human capital, raising the status of low-income individuals with restricted opportunities, and thereby improve the economy,

realizing Schultz's Human Capital Theory as actual legislative policy (Bailey & Duquette, 2014; Cherrier, 2019; Holden & Biddle, 2017). Financial aid reform (and especially student loan reform) is desperately needed, as without changes to how need-based aid is allotted to students, not only will it decrease social capital of low-income students, the likely result is more low SES students languishing in the cycle of poverty, which could ultimately harm our economy and society. With federal programmatic and policy changes inevitably restricting need-based aid eligibility, institutions opting to trade need-based aid for merit-based aid; and tuition rates increasing beyond the ability for lower- and middle-income families to pay, access to higher education seems to be sliding back to favoring wealthier students and the cost of the futures of lower income students.

The significant federal financial aid policy shift beginning in 2011 to restrict aid eligibility in order to save money while under the guise of making programs appear to be more beneficial to their recipients and to stakeholders shows no signs of reversal (IFAP, 2020; Kantrowitz, 2011). While some of the blame for the current predicament is certainly due to both the withdrawal of appropriations from state governments and supposed cost saving measures of the federal government to decrease grant aid and subsidy spending, higher education institutions are equally complicit in limiting access to affordable postsecondary education (Dynarski & Scott-Clayton, 2013; Zumeta et al., 2012). At a macro level, the current approach to awarding financial aid is essentially obstructing one of the few proven paths to social mobility: obtaining a higher education credential (Chetty et al., 2020; Haycock, 2015; Perna & Jones, 2013; Zumeta et al., 2012). This can only be construed as problematic and in dire need of priority realignment

as the obtainment of a college degree has very real positive implications for both individuals and for society.

CHAPTER 3

METHODOLOGY

This study is guided by the overarching theoretical framework of Theodore Schultz's Human Capital Theory (HCT), the theory which helped led to the creation of the Higher Education Act of 1965, an act which established Title IV federal financial aid programs and funding (such as the Pell Grant), evoking an imperative to subsidize higher education, and thus formed the foundation for the modern federal financial aid system still used today (Bailey & Duquette, 2014; Cherrier, 2019; Holden & Biddle, 2017). While the original intention was for the federal government to provide this funding, the pressing and worsening colossus of college affordability as federal and state governments continue to recede from carrying out this duty, has made it a responsibility for colleges and universities. It is important to ensure that colleges, especially those public institutions mission-driven to assist students from low SES backgrounds by maintaining relative affordability, are honoring the spirit of Human Capital Theory.

This study looks to one such public institution to consider how institutional need-blind and need-based gift aid are distributed, viewing allocation of institutional gift aid as representative of institutional priorities, whether it opts to use internal funding to develop the human capital of its high need students. To this end, multiple regressions were performed and analyzed, featuring a variety of continuous and binary independent variables centered on types of financial aid received by the population and its demographic characteristics, respectively. Additionally, since financial aid has its own

jargon and specific definitions to common words, a chart of terminology is included in Table 3.1 to provide clarity.

Table 3.1. A Quick Guide to Financial Aid Terminology

Term	Financial Aid Definition and Usage
Expected Family Contribution (EFC)	A number resulting from the federal formula that determines students' eligibility for certain types of need-based federal student aid, calculated based on the information provided on the FAFSA. The lowest EFC possible is \$0 and the highest is \$999,999. Beginning with the 2024-25 FAFSA, the EFC was renamed the Student Aid Index (SAI).
Total Cost of Attendance (COA)	The student's "budget" set up by each institution but required to include estimated tuition; fees; housing costs; meal plan/food costs; books; course materials or supplies; transportation; and an allowance for miscellaneous other educational expenses.
Financial Need	The difference between a student's COA and their EFC which indicates a student's eligibility (or lack thereof) to qualify for need-based financial aid). It is typically referred to in terms of "gross" or "unmet" need.
Gross Need	Gross need is determined by a student's COA minus their EFC. It can be \$0 if a student's EFC exceeds their COA; these students would be referred to as "no need" students.
Unmet Need	The amount of need remaining for a student after need based aid is subtracted from their gross need. If \$0, it means the student's need is fully covered, or if negative, more than fully covered, by other sources.
Gift Aid	Aid that is given without needing to be repaid (as a loan would be). Generally falls into the category of either scholarship (typically based on merit/academic achievement or a special talent) or grant (typically need-based and can come from the institution of higher education or from federal, state, or local governments).
Need-Based Aid	Aid that students are only eligible to receive as long as they have need: SEOG Grants; Federal Direct Subsidized Loans; Federal Work Study; institutional need-based grants. Federal Pell Grants and some State Grants require low enough EFCs for initial eligibility, but are considered entitlements, in that they can exceed their gross need and still receive them, as long as their only other funding is from scholarships or non-need based institutional grants.

Table 3.1. (Continued)

Need-Blind Aid	Aid students are eligible for regardless of EFC: merit scholarships; athletic aid; talent scholarships; Federal Direct Unsubsidized Loans; Federal Direct PLUS Loans; private loans
Self Help Aid	Aid that requires some sort of effort on the part of the student to maintain (i.e. getting a job as part of the Federal Work Study program) or repay (a student loan).
Federal Direct Subsidized Loan	No interest accrues on the loan for the borrower until 6 months after they cease enrollment or attend less than half time (less than 6 credits). Interest rates are typically lower than for unsubsidized loans.
Federal Direct Unsubsidized Loan	Interest begins to accrue for the borrower as soon as the loan is disbursed. Dependent students whose parents refuse to provide their tax information for the FAFSA can only qualify for Unsubsidized Loans. Dependent students whose parents are denied a Federal Direct Parent PLUS Loan can qualify for additional Unsubsidized Loans.
Federal Direct PLUS Loans	A type of unsubsidized loan only available to parents of dependent students (Parent PLUS) or graduate students (Grad PLUS) with a limit up to the student’s COA. The federal government is the guarantor, and these loans have significant origination fees (of which the percentage taken varies year to year). PLUS Loan interest rates are typically the highest of the three types of Federal Direct Loans.
Private Alternative Loan	A student loan borrowed from a private company (like a bank), unaffiliated with the federal government. Some states (e.g. New Jersey) offer private loans with the state government as the guarantor. These typically have the highest interest rates and highest repayment amounts and cannot be consolidated after graduation.

The Site

This study focused on undergraduate students enrolled in a matriculated degree-seeking program from the 2014-15 academic year to the 2020-21 academic year. The university of attendance for this population was a large, 4-year, publicly supported, research institution situated on an urban campus in a city with a significant poverty rate. For the purposes of discussion, this institution will be called “Mid-Atlantic University.”

Considering of those city denizens in poverty, nearly half are living in “deep poverty” (or below 50% of the poverty line), and earning less than \$9,700 a year, it could be expected that the institution likely has a significant high-need student population (at least of locals drawn from the surrounding community) (Pew, 2017).

Mid-Atlantic U has a deep historical connection to investing in human capital since its inception, being founded particularly to meet the unique needs required for educating nontraditional students, a history reflected in the institution’s mission statement. The university is intrinsically linked to the surrounding community by its very location, along with a historical penchant of outreach to the locals, however, juxtaposed against its mission, and its recent rise in rankings, could be categorized as a “striving institution” and thereby very susceptible to mission drift, which would be a failure to live up to the spirit of Human Capital Theory imbued in the institution’s inception (Gardner & Veliz, 2014). Mission drift is almost certainly happening due to a preoccupation with rankings, noticeable by the institution’s significant gains in college rankings over the last decade, recently entering the top 100 (U.S News, 2023). Per their annual publications on demographics, more than 80% of the full-time undergraduate population at Mid-Atlantic U receives some form of financial aid (IPEDS, 2022). More than 60% receive some form of need-based gift aid, and just under 60% receive need-based loan funding (such as subsidized loans) (IPEDS, 2022). Roughly 30% of undergraduates annually receive a Pell Grant (around 8,000 students) and 24% receive need-based state grants (IPEDS, 2022). The 4-year graduation rate is around 60%, increasing to around 75% for the 6-year graduation rate (IPEDS, 2022).

Collection

The dataset was obtained through the office for Institutional Research after a lengthy permissions process going through the enrollment management leaders, including signoffs from the Director of Financial Aid and the Director of Undergraduate Admissions. The additional permissions were necessary due to the highly sensitive nature of the EFC calculation and financial information reported by families on the FAFSA (typically EFCs are not allowed to be included on need ranking requests from departments outside of financial aid) and due to the use of proprietary formulas in determining amounts and types of merit scholarships awarded to incoming students. Institutional Research separated out only domestic undergraduates that were enrolled after the census dates for each respective term from 2014-15 through the 2020-21 academic (and aid) years (though some students that were enrolled after census later withdrew from all classes or received retroactive course registration deletions). The data were received in the form of multiple Excel files covering general demographic data; financial aid and FAFSA data (one file per each year of FAFSA filing data); admissions acceptance data; and academic and registration data. The data were then consolidated into a single SPSS file. For the financial aid data set, rows had to be first merged into one consolidated file with one row per student with columns designating each aid year as students attending multiple years typically will file a FAFSA for multiple years.

The Population

Data were collected from all full-time registered students (80,574). The analysis sample resulted when the following groups of students were removed: international students, graduate students, professional students (students matriculated in the schools of

Dentistry, Law, Medicine, Podiatric Medicine, and Pharmacy), and non-matriculated students. The sample used only includes domestic undergraduates, as international students are ineligible for both federal and institutional need-based aid. This study primarily looks at the allocation of gift aid awarded to students with “no need” EFCs and/or non FAFSA-filers (“nonfilers”) and the amount and volume of gift aid awarded to students with Pell-eligible (“high need”) and mid-range EFCs. Presumably, students do not file a FAFSA because they either are not eligible for need-based gift aid or they do not need other gift-aid assistance (i.e. they already are receiving a full tuition scholarship) (Bird & Castleman, 2015; Evans et al., 2017). In occasions where financial aid counselors need to submit external information regarding need without divulging specific EFCs, a process called EFC banding is used where EFC ranges are given a numerical value (typically of 0-10) with 10 being highest need and 0 being nonfilers; the modified EFC banding scale implemented by Mid-Atlantic U in this study is included in table 3.2 below.

Table 3.2. EFC Banding and Explanation

EFC Band	Hierarchy	EFC Range	Explanation of Range
9	Highest Need	0	Gross need is equal to COA; full Pell Grant eligibility; primary eligibility for Federal Supplemental Educational Opportunity Grant (FSEOG)
8	Very high need	1-2000	Receiving nearly full Pell Grant; FSEOG eligibility
7	High need	2001-5,711	End of Pell Grant eligibility threshold
6	Needy	5,712-12,000	At the cusp of Pell eligibility to end of State Grant eligibility

Table 3.2 (Continued)

5	Middle-income	12,001-25,000	Approximately half of COA able to be covered by student/family
4	Low need	25,001-35,000	Only a small amount of need; likely only need-based funding is from Subsidized Loans and/or FWS
3	Very low need	35,001-45,000	If financial need is required for a fund, the student might just barely qualify for it
2	No need	45,001+	EFC is greater than COA; not eligible for any need-based aid; only eligible for Unsubsidized Loans
1	Incomplete FAFSA	FAFSA Filed with Uncalculated EFC	Financial need cannot be determined
0	No FAFSA	Nonfiler	Did not file a FAFSA; assume no need

“Pell-eligible” is a term used by financial aid professionals to describe students that are eligible for the Federal Pell Grant, which signifies the highest need range as determined by the EFC on the FAFSA. For 2020-21, the last cohort year in this study, the Pell-eligible range is any EFC between \$0 and \$5,711, with zero indicating highest need and receipt of the maximum Pell grant of \$6,345/year (IFAP, 2023). A “mid-range” EFC refers to any EFC higher than the threshold of Federal Pell Grant eligibility, but still having need, typically enough need for a full Federal Direct Subsidized Loan. For the purposes of this study, “mid-range” will refer to any EFC higher than the Pell threshold, but still within typical EFC thresholds for state grant funding (so roughly \$5,712-\$12,000 EFCs).

A “maximum EFC” was calculated for all students in the population to use as a gauge for socioeconomic status for each student in the population over the course of their

attendance at Mid-Atlantic University. The highest EFC from all FAFSAs filed by each student between 2015-16 and 2020-21 was used for this value. It was determined to use “maximum” EFC over “minimum” EFC to avoid issues of anomalous FAFSA filing issues, particularly students changing dependency status partway through their time at Mid-Atlantic University, where going from dependent to independent typically drastically reduces EFC. Additionally, as previously discussed, it was assumed that students that did not file a FAFSA (and were thus missing those data elements) did so because they did not require federal, state, or institutional financial aid assistance. As such, they were given a value of 999,999, the same as other no-need students that did file but whose tax and asset information put their EFC beyond the utmost bounds. Another variable (NeverFiled) was created for them in case it was necessary to look at information specifically to non-filers.

Along with aggregating EFCs, it is important to explain other financial aid nuances in how the variables were chosen for the regressions performed. Unmet need figures are often talked about in financial aid research to refer to a student’s ability to pay for college, but for this study gross need was chosen as the more fitting gauge of financial need since it indicates a student’s need prior to any aid being awarded. A student with an EFC greater than their COA has \$0 in gross need, but their unmet need could vary, going into the negatives if they are receiving any “equity funds,” funding designed to reduce need, which can include merit scholarships (IFAP, 2023). Gross need is never negative, and at many institutions (including Mid-Atlantic University), institutional need-based grant funding is often awarded due to calculations on percentages of a student’s gross need, making it a more appropriate metric to look at need-based grant awarding than

unmet need. Lastly, Aid, debt, and need totals across the six years (2015-16 to 2020-21) were calculated with the aim of capturing the overall financial aid profile over the academic career of the students in the final sample cohort. These totals were utilized for the primary regressions run using these totals across the six years from 2015-16 to 2020-21. Additional regressions were also performed for each of the six subsequent aid years using only the aid amounts from those specific years to illuminate any other trends or more subtle changes from one year to the next; these tables can be viewed in the appendices.

Final Sample Cohort

The decision was made to narrow down the population used in the study to cover students attending between the academic years of 2015-2016 through 2020-2021, which covers 6 academic years (2015-2016; 2016-2017; 2017-2018; 2018-2019; 2019-2020; 2020-2021). This time period was decided upon as it reflected a common industry metric with regards to financial aid and academic success, that time to graduation statistics taken by Institutional Research which typically cover a 4- and 6-year period. Starting with the 2015-16 aid year was chosen due to a change in merit awarding strategy so comparing earlier years would not be as accurate or fair. The ending year for the cohort being 2020-21 is important due to differential funding allocations and restrictions due to the COVID-19 pandemic, which went into effect for the 2021-22 aid year. Many institutions (including Mid-Atlantic U) had to make difficult choices regarding institutional financial aid funding, facing budget cuts due to a myriad of factors including, but not limited to, declining class sizes for the aid year due to the pandemic; unexpected losses due to refunds of housing, meal plans, and in some cases tuition in the prior year during the

onset of the pandemic; unanticipated spending increases to make campuses safer, online classes more robust and accessible, and work-from-home requirements for university staff. Including post-COVID aid awarding practices could have obscured prior patterns in aid awarding.

The cohort was further paired down to only include students attending Mid-Atlantic University in a matriculated undergraduate program during the time period studied. Students that were in an undergraduate program and later (still within the time period constraints) graduated and began a graduate or professional degree program; or became non-matriculated attendees (taking continuing education classes); or became certificate-seeking students, had their data removed for those time periods in which they were not undergraduate attendees. For instance, if a student attended as a matriculated undergraduate student in 2015-16 through 2017-18, then graduated and began matriculating as a law student in 2018-19 through 2020-21, only their financial aid (FAFSA filing) and academic date from the 2015-16 through 2018-19 academic years were included in the file used to run the regressions explained in Chapter 4.

Demographics

The final total of students included in the cohort studied was 15,050 students, paired down from the original file received from Institutional Research which included 80,574 students. 7,950 were female (52.8%) and 7,100 were male (47.2%). The majority (60.5%) of the cohort were white; 16.9% were African American; 12.2% were Asian; 7.6% were Hispanic, and 2.9% were of an unknown/unreported racial background. 9,064 began their academic career at Mid-Atlantic University as a first-time freshman (60.2%), whereas 5,986 were transfer students (39.8%).

Most students (80.2%) in the cohort were considered in-state residents for tuition purposes; 19.8% were considered non-residents, which means their tuition was roughly double that of an in-state student. The vast majority of students filed a FAFSA (91.22% of the cohort), with only 8.78% of the cohort never filed a FAFSA during the academic years included in this study (it is possible that some of those students may have filed before or after the years reviewed). A breakdown of EFCs for the sample according to the modified EFC banding is included in Table 3.3 below.

Table 3.3. EFC Band Breakdown of Sample

EFC Band	<i>n</i>	%
0	1,822	12.11
1-2000	1,405	9.34
2001-5,711	1,454	9.66
5,712-12,000	1,676	11.14
12,001-25,000	2,597	17.26
25,001-35,000	1,354	9
35,001-45,000	978	6.5
45,001+ or Nonfiler	3,764	25.01
Total	15,050	100

The majority of students in the cohort (78%) held some amount of student loan debt, though only .9% of those with debt were carrying student loan debt from a prior institution; nearly all of those with debt began incurring it at Mid-Atlantic University. 39.91% of the students received a need-blind merit scholarship. 43.42% received a Pell

Grant at least once over the years included in the study and 57.40% received an institutional need-based grant (at least once).

While 20.5% of the cohort graduated in less than 4 years, it is important to note that some of those students may have taken more than 4 years in total because they transferred to Mid-Atlantic University and thus spent a year or more in a prior institution, or the student may have attended Mid-Atlantic University many years prior and “stopped out” before coming back to finish their degree. More than half (54.9%) graduated in four years; 3% in five years; and 1.1% took more than five years to graduate (but still did graduate). 20.6% of the cohort did not graduate during the aid years reviewed; it is possible that some of those students later graduated in subsequent aid years.

Research Questions

This study considers four different research questions aimed at uncovering different facets of institutional financial aid policy and its impacts on low and middle-income undergraduate students, especially as it intersects with coexisting federal and state financial aid policy. The first question centers on institutional grant aid and student need. The second question takes that underlying relationship and applies it only to the population of students receiving merit scholarships. The third and fourth questions focus on student success outcomes, with the third focusing on success metrics during attendance at Mid-Atlantic University, and the fourth and final question going beyond attendance at Mid-Atlantic University to accrued student loan indebtedness.

- 1. What is the relationship between institutional aid and student need (controlling for background and demographic factors such as gender, race/ethnicity, residency status, etc.)?**

How is institutional gift aid generally allocated among students with regards to their relative need?

Considering institutional grants and admissions merit scholarships typically come from the same pool of funding, do the neediest students actually secure the least amount of gift aid?

- a. Gift Aid: Total merit scholarships per year (and in total across attendance years); Total institutional grant aid per year (and in total across attendance years)
 - i. Also total of all gift aid per year & across total attendance years (merit, institutional grants, fed grants, state grants)?

2. Among need-blind merit scholarship recipients, what is the relationship between institutional aid and student need (controlling for background and demographic factors such as gender, race/ethnicity, residency status, etc.)?

What happens to the distribution of students receiving “need-blind” merit scholarship awards given upon college admission related to student financial status? Does it favor wealthier students (defined as no-need or non-FAFSA filers) and if so, how much more in gift aid do they receive?

- Gift Aid: Total merit scholarships per year (and in total across attendance years); Total institutional grant aid per year (and in total across attendance years)
- i. Also total of all gift aid per year & across total attendance years (merit, institutional grants, fed grants, state grants)?

Is gift aid going to wealthier students and is this “fair”? What are the consequences of this enrollment management strategy?

3. What differences exist between student outcome measures (e.g. GPA and time to graduation) and the sources of financial aid (e.g. need blind, need-based, or both)?

How does receipt of need-blind and need-based institutional gift aid affect persistence with regards to cumulative GPA and time to graduation?

- i. Graduated: graduated in 4 years; graduated in 5+ years; no graduation
- ii. Control for college code (some colleges are more expensive)
- iii. Control for residency (tuition higher for non-residents)

4. What is the relationship between students’ financial need and sources of financial aid and their total indebtedness?

How is eventual student loan indebtedness impacted by receipt of need-blind aid and total gift aid among high need students?

- a. **Are high need (low EFC) students more likely to still borrow regardless of gift aid received?**
 - i. Control for college code (some colleges are more expensive)
 - ii. Control for residency (tuition higher for non-residents)

CHAPTER 4

DATA ANALYSIS AND RESULTS

As an historical overview of financial aid policy into the modern day seems to illustrate a deviation from the originally intended goals of Title IV aid to increase human capital by providing avenues to higher education and thereby social mobility for people from low SES backgrounds who could otherwise not afford such opportunities, it is important to actually study at institutions on an individual level as well, instead of viewing all as a monolith. Looking at how institutions leverage their own money when it comes to financial aid offers insight into which institutions are best preserving access and equity in higher education by how these institutions value their neediest students who want to attend (which for public institutions are often the surrounding communities); how they may be upholding their missions (or deviating from them); and how they may be upholding the spirit of financial aid administration to develop human capital (or are using receipt of Title IV aid to withhold institutional funding from poorer students in favor or attracting wealthier, more desirous students). Institutions must balance balancing competing priorities of assisting students and financial solvency, and the struggle is stark when an institution simply has less institutional funding to award, which is why it is so vital to look at public institutions like Mid-Atlantic University which do not have the same kind of access to the large endowments held by private institutions.

The first two research questions concern whether Mid-Atlantic University's aid awarding practices constitute a fair system. Whether the money going to the "right" people (i.e. the neediest students). Historically, the answer would be "no," that students

who are most unable to finance their education are less likely to receive large merit scholarships than students from more affluent backgrounds. These questions seek to elucidate how well Mid-Atlantic is embracing the original goals of the creation of the Title IV funding they are stewards of: are they using their own funding to supplement and buoy their neediest students accessing governmental financial aid, or are they using the receipt of such funding to offer less institutional aid to these students, since the students can have governmental grants and federal and private loans to fall back on (and thus skew funding more towards the incentivizing attendance from students who could afford to pay tuition rates with less aid, but are higher achieving and as such could go to wealthier institutions).

The third and fourth questions seek to uncover how students receiving financial aid are meeting academic success benchmarks. These questions concern how receipt of need-blind and need-based institutional aid affects persistence with regards to cumulative GPA and time to graduation. Are they maintaining good cumulative GPAs that will enable them to graduate? If they are meeting satisfactory academic progress, are they also actually being able to graduate in significant numbers, and if so, are they being able to graduate in a timely manner. The reverse is also important, to look at the students who are not managing to graduate, and what their relationship to financial aid through Mid-Atlantic University is, especially their student loan debt load, as having incurred student loan debt but not graduating, puts these students on much worse footing, as they will not have the prospects of increased potential future earnings to offset the debt load that a student obtaining a college degree does.

Research Question 1: What Is the Relationship Between Institutional Aid and Student Need? (*controlling for background and demographic factors such as gender, race/ethnicity, residency status, etc.*)

These regressions tested the relationships between institutional grant aid and student need. Institutional grant aid is intended to be need-based, so these regressions aimed to see if that was accurate. These regressions measured 12 independent variables against the dependent variable, which was institutional grants received. The first independent variable was annual gross need amounts (with the final regression using total gross need amount over the entire duration of attendance), and gross need is the resulting calculation of a student's cost of attendance (COA) minus their Estimated Family Contribution (EFC); if a student has an EFC greater than their total COA, they are considered to have "no need." The other 11 independent variables were total merit aid (need-blind scholarships) received; total athletic aid received; total governmental grants (Pell, SEOG, state grants) received; total student loan debt accrued; race (whether African American, Asian, or Hispanic); sex (whether male or not); residency classification (whether receiving in-state residency tuition, which is roughly half that of out-of-state tuition); enrollment in a college with a higher tuition differential (schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health); and whether the student had transferred into Mid-Atlantic University from another institution (else they began their academic career at as a freshman at Mid-Atlantic University). See Table 4.11 for a full list of variables included.

Table 4.11. Variables Studied in Regression Related to Institutional Grant Allocation

Variable	Mean / Proportion	Standard Deviation	Range
Maximum Gross Need	\$27,166	\$17,592	\$0 - \$96,280
Maximum EFC	\$112,865	\$279,147	\$0 - \$999,999
Total Merit Scholarships	\$10,381	\$21,519	\$0 - \$174,553
Total Institutional Grants	\$4,575	\$8,262	\$0 - \$79,162
Total Athletic Aid	\$1,090	\$12,847	\$0 - \$330,978
Total Student Loan Debt	\$38,955	\$40,156	\$0 - \$270,907
Total Governmental Grants	\$5,745	\$8,816	\$0 - \$86,019
Male	0.470		
African American	0.169		
Hispanic	0.076		
Asian	0.122		
In-State Residency	0.802		
High Tuition Differential	0.746		
Transfer Student	0.398		

A primary regression was done using aid and debt totals across all six aid years beginning in 2015-16 and ending in 2020-21 to provide an overview of the students' entire academic career (See Table 4.12 for further information). This regression registered an r^2 value of .399 and a p -value of $<.001$ which implies statistically significant findings. None of the racial variables were found to be statistically significant at the .001 level, nor was sex, though a weaker relationship was found at the .013 level with regards to Asian

students receiving \$424 less in need-based grant aid than non-Asian students. These findings indicate that race and sex had little to no bearing on the allocation of institutional grant funding. Interestingly, the variable indicating the presence of a tuition differential was also not statistically significant, despite the fact that students in programs with a tuition differential had a higher COA than those students not in the schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; or health at Mid-Atlantic University. If a student was enrolled in one of these colleges it typically would mean they had a higher gross need amount, that is unless the families of students in those programs also had higher EFCs which negated the difference. It would make sense that a student from a higher SES background could more readily afford to attend a program with higher costs.

Table 4.12. Regression of Institutional Grant Allocations by Variable (Including Gross Need)

Variable	Regression Coefficient (B)	Beta	t	Sig.
(Constant)	\$6,709.786		32.241	<.001
Maximum Gross Need	\$0.170	0.361	43.205	<.001
Total Merit Scholarships	-\$0.080	-0.207	-29.335	<.001
Total Government Grants	-\$0.038	-0.040	-5.106	<.001
Total Athletic Aid	-\$0.065	-0.101	-15.727	<.001
Total Student Loan Debt	\$0.016	0.080	11.395	<.001
African American	\$207.540	0.009	1.372	0.170
Asian	-\$423.726	-0.017	-2.497	0.013
Hispanic	-\$250.363	-0.008	-1.223	0.221

Table 4.12. (Continued)

Male	-\$157.279	-0.010	-1.474	0.141
In-State Residency	-\$3,861.011	-0.186	-26.614	<.001
High Tuition Differential	-\$64.543	-0.003	-0.524	0.600
Transfer Student	-\$7,593.312	-0.450	-66.166	<.001

- For every \$1 increase in a student’s gross need, institutional grant aid increased by \$.17. This means that for each \$1,000 in gross need, institutional grant aid increased by \$170, so the highest need students (those with an EFC of \$0, having a standard in-state COA of around \$32,000, would have received \$5,440 in institutional grant aid, which is roughly the equivalent of their Pell Grant (so akin to receiving double Pell).
- Receipt of other gift aid sources (merit, governmental grants, and athletic aid) had negative relationships to the dependent variable, where institutional grant aid decreased as gift aid from those sources when up. This is unsurprising as Mid-Atlantic University determines institutional grant aid based off of a calculation of percentage of gross need minus gift aid sources. Concerning merit scholarships, the relationship was nearly dollar for dollar, where for every \$1 of merit scholarships received, institutional grants decreased by \$.80. This effect was less pronounced with athletic aid as for every \$1 increase in athletic aid, institutional grants decreased by \$.65, and was least pronounced with governmental aid, decreasing by only \$.38 for every dollar received, which is a really positive finding, showing that Mid-Atlantic was bucking the trend to completely reduce

institutional gift aid eligibility due to receipt of Pell Grants or state grants (Burd, 2017; Cooper, 2016).

- For every \$1 increase in student loan debt accrued, institutional grants increased by \$.016. For students carrying an average amount of loan debt for the cohort (\$38,955) they saw a resultant \$623 in institutional grants. This impact could be so small because students taking on more loan debt could either have higher need but also receiving more aid from other sources (i.e. governmental grants) or because students taking on more loan debt due so because they are receiving less aid from other sources because they have higher EFCs and thus lower gross need so lowered eligibility for institutional grants.
- The residency status variable also found a negative relationship, whereby in-state residents received \$3,861 less in need-based grant aid compared with students classified as non-residents. This makes sense considering that in-state residents pay half the amount of tuition of their out-of-state counterparts, and thus their COA and resulting gross need would be far less, impacting their eligibility for institutional grants.
- Lastly, transfer students received significantly less institutional grants (\$7,583) than students who began their academic career at Mid-Atlantic University as freshman. This could be because transfer students typically attend fewer semesters and so would receive less institutional grants in the long run, or because they are more likely to attend less than full time (forfeiting eligibility for this grant in most circumstances). However, it could show a bias in the formula against transfer students, where the percentage of gross need eligibility is set to a lower threshold

for transfer students, with the thinking that they transferred into Mid-Atlantic University because they want to be there, so perhaps less institutional aid dollars are required to coax them to stay.

An additional regression was performed for each of the six subsequent aid years from 2015-16 through 2020-21 to compare trends from one year to the next (see Tables 6.11 – 6.16 in Appendix A). Gross need was always statistically significant across all aid years (and in the final overarching regression) with a *p*-value of $<.001$ and indicating a positive relationship whereby as gross need increased, so too did institutional grant aid; this finding seems to indicate that these institutional grants, intended to be need-based, were being awarded appropriately to the neediest students, with eligibility for these grants increasing as this clearest indicator of their SES brought about by the FAFSA increased. However, despite this positive increase, the purchasing power of these grants decreased over time; in 2015-16, for each \$1 of gross need, their institutional grant aid increased by \$.104, but by 2020-21, institutional grant aid only increased by \$.023. This means that, in our earlier example, an in-state student with a gross need of \$32,000 (roughly equivalent to a \$0 EFC student meeting in-state residency tuition requirements), would have received \$3,328 in institutional grants in 2015-16, but that same kind of student attending in 2020-21, would have only received \$736, or 22% less in institutional grant aid.

It is important to note that the largest drop in institutional grants per gross need actually happened between the 2019-20 (\$.074) and 2020-21 (\$.023) aid years, which was the first academic year to take place entirely during the COVID-19 pandemic which swept through the nation (and the world), causing enrollment decreases, withdrawal

increases, and revenue loss, so it could conceivably be argued that such a precipitous drop was due to the effect of the pandemic on the amount of funding the financial aid office was allocated to assist students (especially coming after a fraught spring semester when the pandemic first hit). The regression focusing on the 2020-21 aid year was anomalous in many ways, considering the only variables found to be statistically significant (or have close to any significance) were that of gross need and a student being a transfer student.

Aside from gross need, whether the student was a transfer student was the only other independent variable that was always statistically significant, though the trends were reversed from what was seen looking at the gross need variable. The transfer student variable always showed a negative correlation, whereby transfer students always received less institutional grant aid than their counterparts who started at Mid-Atlantic University as freshmen, however, this gap between those groups significantly decreased during the time period studied. While in 2015-16, transfer students received \$2,732 less in institutional grant aid for every \$1 received by those who started as freshmen, by 2020-21, they only received \$420 less, the chasm between these groups decreasing by nearly 75%. Overall, an awarding discrepancy still exists, though it is unclear whether it is because of the enrollment pattern of transfer students (more likely to attend less than full time which would make them ineligible for this kind of institutional funding in most cases) or because eligibility caps on maximum grants for transfer students meant less of these students could qualify for them in the first place, and at much lower amounts.

For all aid years between 2015-16 and 2019-20, merit scholarships, governmental grants, and residency status were all statistically significant with a p -value of $<.001$, and

all negatively correlated. Thus, for every \$1 in merit scholarship and/or governmental grant received, institutional grant eligibility decreased, which while it makes sense for merit scholarships, does seem to indicate that the neediest students, those who are federal (Pell) or state grant recipients, were so penalized with a resultant decrease in institutional grant aid, which is in line with some research findings (Cooper, 2016). Arguably, it could also instead indicate that the function of the institutional need-based grants was really to assist those middle-income students without EFCs low enough to receive governmental gift aid, but who still had a large amount of gross need.

Additionally, for every \$1 in institutional grant aid received by a student paying non-resident tuition rates, in-state residents received less in grant aid, though the amount less stayed fairly constant overall, with an average of \$1,145 less in grant aid. Since students qualifying for in-state residency pay less than half the tuition rate than non-residents pay, this institutional grant aid gap seems to not be as large as one would expect. Perhaps it is that students need to be wealthier to attend Mid-Atlantic University as an out-of-state resident (so would be less likely to qualify for these institutional need-based grants or in a voluminous amount) or that in-state residents tend to have higher need even though they have lower COAs due to their decreased tuition, qualifying for higher amounts of institutional grants and narrowing the gap between the two groups.

For all aid years from 2015-16 – 2019-20, except for the 2017-18 aid year, the student loan debt variable was found to be statistically significant with a p -value of $<.001$ and negatively correlated. This meant for the majority of aid years studied, for every \$1 of student loan debt accrued in each aid year, institutional grant aid decreased. This finding was surprising in that it was the reverse of the trend observed in the regression

looking at all of the aid years together, which found institutional grants increasing as student loan debt increased.

Lastly, sex was never found to be statistically significant, and overall neither was race. Occasionally, some awarding discrepancies were noted with regard to race, but a consistent pattern of inequity did not solidify. The only year in which a racial variable was statistically significant at a p -value $<.001$ was in the 2015-16 aid year, and then only for African American students, who received \$270 more in institutional grant aid for every \$1 in institutional grant aid that students that were not African American received. For Hispanic students, a weaker relationship existed in that same year, statistically significant at the as .012 level, whereby Hispanic students received \$223 more in institutional grant aid than students who were not Hispanic. Intermittently, a weak relationship (with a p -value of less than .05 but more than .001) was found to exist for Asian students, wherein they received between \$120 and \$240 less institutional grants than students of other races. It could potentially be argued that institutional grant aid allocation became more race-blind over time, as by the final aid year studied, there were no statistically significant findings with regards to race.

Research Question 2: Among Need-Blind Merit Scholarship Recipients, What Is the Relationship Between Institutional Aid and Student Need? (*controlling for background and demographic factors such as gender, race/ethnicity, residency status, etc.*)

These regressions tested the relationships between institutional grant aid and student need among recipients of need-blind merit scholarships. Roughly 40% of the total sample (39.91%) received a merit scholarship from Mid-Atlantic University. Institutional

grant aid is intended to be need-based, so merit recipients would be expected to receive less institutional grants. These regressions measured 11 independent variables against the dependent variable, which was institutional grants received. See Table 4.21 for a full list of variables included.

Table 4.21. Variables Studied in Regression Related to Institutional Grant Allocation Among Need-Blind Merit Recipients

Variable	Mean/Proportion	Standard Deviation	Range
Maximum Gross Need	\$28,416	\$16,878	\$0 - \$83,786
Maximum EFC	\$122,211	\$305,002	\$0 - \$999,999
Total Merit Scholarships	\$2,098	\$4,480	\$0 - \$133,739
Total Institutional Grants	\$596	\$1,967	\$0 - \$68,530
Total Athletic Aid	\$145	\$3,188	\$0 - \$138,296
Total Student Loan Debt	\$39,172	\$35,374	\$0 - \$229,625
Total Governmental Grants	\$5,880	\$7,187	\$0 - \$64,760
Male	0.510		
African American	0.195		
Hispanic	0.088		
Asian	0.109		
In-State Residency	0.890		
High Tuition Differential	0.707		
Transfer Student	0.997		

The first independent variable was the maximum Estimated Family Contribution (EFC) over all years filing a FAFSA for each student, as a representative of their general SES over the course of the time periods used in this study. The other 10 independent variables were total athletic aid received; total governmental grants (Pell, SEOG, state grants) received; total student loan debt accrued; race (whether African American, Asian, or Hispanic); sex (whether male or not); residency classification (whether receiving in-state residency tuition, which is roughly half that of out-of-state tuition); enrollment in a college with a higher tuition differential (schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health); and whether the student had transferred into Mid-Atlantic University from another institution (else they began their academic career at as a freshman at Mid-Atlantic University).

A primary regression was done using received aid and accrued debt totals across all six aid years beginning in 2015-16 and ending in 2020-21 to provide an overview of the students' entire academic career for students in the sample that were recipients of merit scholarships. This regression centered solely on merit recipients had an n of 6,007. This regression registered an r^2 value of .024 and a p -value of $<.001$ which implies statistically significant findings. None of the racial variables were found to be statistically significant, nor was sex, indicating that race and sex had no bearing on the allocation of institutional grant funding, despite often being tied to social class. Receipt of athletic aid and being in higher cost colleges (those with a tuition differential) were also not found to be statistically significant. Among this cohort of merit recipients, receipt of athletic aid in general was much less than compared to the greater population at large, which could account for this as well as indicate that students generally either qualify for merit or

athletic scholarships and not both (or qualify for no scholarships at all). Students attending a higher cost college could also be more readily able to attend more expensive programs regardless of receiving financial aid if they come from higher SES backgrounds (which wouldn't qualify for as much in institutional grant aid). See Table 4.22 for further information.

Table 4.22. Regression of Institutional Grant Allocations Among Need-Blind Merit Recipients by Variable

Variable	Regression Coefficient (B)	Beta	t	Sig.
(Constant)	\$3,020.923		7.026	<.001
Maximum EFC	\$0.000	-0.071	-4.987	<.001
Total Government Grants	-\$0.011	-0.039	-2.781	0.005
Total Athletic Aid	-\$0.002	-0.003	-0.220	0.826
Total Student Loan Debt	\$0.005	0.086	6.094	<.001
African American	-\$84.653	-0.017	-1.243	0.214
Asian	-\$54.810	-0.009	-0.642	0.521
Hispanic	\$19.049	0.003	0.207	0.836
Male	\$24.283	0.006	0.475	0.635
In-State Residency	-\$251.994	-0.040	-3.040	0.002
High Tuition Differential	\$2.100	0.000	0.037	0.970
Transfer Student	-\$2,269.182	-0.068	-5.297	<.001

- The most surprising finding was that despite being statistically significant, there was no relationship between EFC increasing or decreasing and recipient of institutional grant; for every \$1 increase in EFC there was no corresponding

change to institutional grant amount. This seems to indicate that for merit recipients, already receiving gift aid in the form of scholarships, also received institutional grants anyway regardless of SES (using EFC as a proxy for SES). This is in line with the research finding that public four-year institutions tend to allocate more gift aid to non-needy students and merit scholarships are going more to students with low or no need (Burd, 2020; Redd, 2002; von Arx, 2013).

- Among merit recipients, for every \$1 in accrued student loan debt, institutional aid increased by \$.005. For students carrying an average amount of loan debt for the cohort (\$38,955) they saw a resultant \$195 in institutional grants. This impact could be so small because since they are receiving merit scholarships, they do not feel the need to take on as much student loan debt. It could also be because this population comes from higher SES backgrounds in general (as the research finds merit recipients are more likely to demonstrate less financial need) and thus do not take out as much in student loans and have lower gross need so lowered eligibility for institutional grants.
- This regression again shows that transfer students receive significantly less institutional grants than students who began their academic career at Mid-Atlantic University as freshman. Transfer students who received merit scholarships received \$2,269 less in institutional grants. This could be because transfer students typically attend fewer semesters so their institutional grant total for their academic career could be less. It could also be pointing out an inequity in financial aid strategy, highlighting a bias in the formula to determine eligibility for institutional grants against transfer students, where the percentage of gross

need eligibility is set to a lower threshold, under the assumption that since they took the initiative to transfer into Mid-Atlantic University perhaps less institutional aid dollars need to be expended to retain them. This inequity is stark when considering that transfer students qualify for significantly less in merit scholarships than students attending from freshman year (their maximum merit scholarship threshold is much smaller at Mid-Atlantic University, capping a less than half of the maximum award for non-transfers). Transfer students can only receive their merit scholarship for a total of six consecutive semesters (even if it takes them longer than that to graduate), while students beginning as freshmen can receive up to eight semesters if still meeting eligibility requirements (and in some instances can even receive a final year of undergraduate merit in their first year of a professional program, if they have not exceeded that eight semester cap).

- Weaker relationships existed for the total governmental grants and residency variables. Statistically significant at only the .005 level, governmental grants had a negative relationship to receipt of institutional grants among the population of students ever receiving a merit scholarship at Mid-Atlantic University. For every \$1 in governmental grants received, merit recipients received \$.011 less in institutional grants. Since for this population the average governmental grant amount was only \$5,880 (a little more than a maximum Pell Grant); students receiving around this much in governmental gift aid only saw their institutional grant eligibility decrease by around \$65 (so arguably receipt of governmental grants was not used against these students when calculating their eligibility for institutional grants).

- The residency variable was found to be statistically significant at the .002 level. When compared to their non-resident counterparts, in-state residents received \$252 less in institutional grants. This difference is negligible when considering the large COA and tuition differences between these two populations; non-resident merit recipients pay more than twice as much in tuition but only receive \$252 more in institutional grants than received by an in-state resident merit recipient.

An additional regression was performed for each of the six subsequent aid years from 2015-16 through 2020-21 to compare trends from one year to the next (see Tables 6.21 – 6.26 in Appendix B). As in the findings for the individual aid year regressions from Question 1, the 2020-21 aid year was anomalous from every other aid year, most likely contributable to the challenges of schools navigating the COVID-19 pandemic. It was the only aid year where no variable stood out as being of statistical significance.

For the aid years from 2015-16 through 2018-19, gross need and governmental grants were found to be statistically significant with a *p*-value of <.001. The regressions always found a positive relationship between gross need and receipt of institutional grant aid among merit scholarship recipients, though to a much lower amount than among the larger population viewed in Question 1. For instance, in 2015-16, among merit recipients, for every \$1 of gross need, their institutional grants only increased by \$.005, while for the same time period among the entire pool of students (not just merit recipients), saw an increase of \$.104. Additionally, for this bump in institutional grant aid eligibility, with eligibility increasing as gross need increased to the effect that it doubled over time, the impact was negligible since the amount only went from \$.005 to \$.011. It can likely be

concluded that among the pool of merit recipients out of the greater undergraduate cohorts, these students had less gross need and/or their merit scholarships covered a greater portion of the gross need they did have.

As in Question 1, there was a negative relationship between receipt of governmental grants and institutional grants, indicating that these grants were more beneficial to middle-income students, while the poorest students received less in this form of gift aid because they were receiving governmental gift aid, so highlighting the same problem some researchers found where, as Pell Grant amounts increased, institutions subsequently provided less aid (Cooper, 2016). However, this negative relationship was less pronounced among the merit recipient population than the larger undergraduate population, which could indicate that the income levels were more equalized, with less merit recipients having low enough EFCs to qualify for governmental grants in the first place.

Lastly, for three aid years, 2015-16, 2018-19, and 2019-20, the transfer student variable was found to be statistically significant with a p -value of $<.001$ and negatively correlated. This could be in line with transfer students qualifying for less merit scholarship funding than students accepted as freshmen. However, this gap narrowed from a high in 2015-16, where transfer students received \$5,392 less in grants than their non-transfer counterparts, to \$1,223 less in 2018-19, which could indicate a striking change towards more equity for transfer students in the merit scholarship awarding process.

Research Question 3: What Differences Exist Between Student Outcome Measures (e.g. GPA and Time to Graduation) and the Sources of Financial Aid (e.g. Need-Blind, Need-Based, or Both)?

These regressions tested the relationships between two student success outcomes: time to graduation and cumulative grade point average (GPA) and receipt of different types of financial aid (need blind, need-based, or both). These regressions all measured 13 independent variables against their respective dependent variable (time to graduation by semesters or cumulative GPA). The independent variables tested included each student's maximum Estimated Family Contribution (EFC) over all years filing a FAFSA; total merit aid (need-blind scholarships) received; total governmental grants (Pell, SEOG, state grants) received; total institutional grant aid (need-based grants) received; total athletic aid received; total student loan debt accrued; race (whether African American, Asian, or Hispanic); sex (whether male or not); residency classification (whether receiving in-state residency tuition, which is roughly half that of out-of-state tuition); enrollment in a college with a higher tuition differential (schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health); and whether each student began their academic career at Mid-Atlantic University as a transfer (else as a freshman).

Academic Success Outcome: Time to Graduation (Semesters)

The regression studying time to graduation measured those 13 independent variables against the dependent variable of number of semesters attended at Mid-Atlantic University before graduating. For a full list of variables included, see Table 4.31).

Table 4.31. Variables Studied in Regression Related to Time to Graduation (Semesters)

Variable	Mean/Proportion	Standard Deviation	Range
Maximum EFC	\$112,865	\$279,147	\$0 - \$999,999
Total Merit Scholarships	\$10,381	\$21,519	\$0 - \$174,553
Total Institutional Grants	\$4,575	\$8,262	\$0 - \$79,162
Total Athletic Aid	\$1,090	\$12,847	\$0 - \$330,978
Total Student Loan Debt	\$38,955	\$40,156	\$0 - \$270,907
Total Governmental Grants	\$5,745	\$8,816	\$0 - \$86,019
Male	0.470		
African American	0.169		
Hispanic	0.076		
Asian	0.122		
In-State Residency	0.802		
High Tuition Differential	0.746		
Transfer Student	0.398		
# Semesters to Graduate	13.700	3.55	3 - 30

This regression registered an r^2 value of .326 and a p -value of $<.001$ which implies statistically significant findings. Two variables were not found to be statistically significant: total athletic aid and whether the student was Asian. Controlling for all other variables, however, the regression identified the following variables with statistical significance at the p -value of $<.001$ level. See Table 4.32 for further information.

Table 4.32. Regression of time to graduation by variable

Variable	Regression Coefficient (B)	Beta	t	Sig.
(Constant)	13.920		117.307	<.001
Maximum EFC	8.27E-07	0.065	7.887	<.001
Total Merit Scholarships	-1.16E-05	-0.076	-8.442	<.001
Total Institutional Grants	-2.63E-05	-0.065	-6.993	<.001
Total Athletic Aid	4.27E-08	0.000	0.022	0.982
Total Student Loan Debt	1.35E-05	0.158	18.764	<.001
Total Governmental Grants	5.09E-05	0.132	15.910	<.001
African American	0.408	0.041	5.000	<.001
Hispanic	0.279	0.026	3.267	0.001
Asian	0.115	0.008	1.056	0.291
Male	0.354	0.050	6.464	<.001
In-State Residency	0.227	0.025	2.902	0.004
High Tuition Differential	0.356	0.043	5.574	<.001
Transfer Student	-4.208	-0.577	-63.690	<.001

It is important to note that the academic year at Mid-Atlantic University consists of two primary semesters, fall and spring, and two summer sessions. These summer sessions are generally optional for academic progress and there is significantly less financial aid available for students attending, typically just whatever is left from their fall/spring annual aggregates for Federal Pell Grants and Federal Loans; institutional need-based grant funding is extremely limited. However, for the purposes of calculating

semesters to graduation, Summer I and Summer II are included, for a maximum of four semesters making up an aid year. While many students attend summer sessions, not all do, so it is possible this may undercount the actual number of years a student in the cohort attended Mid-Atlantic. For instance, if a student only attended fall and spring and never summer, then having attended four semesters could mean they attended, say 2015-16 and 2016-17 versus a student attending all summers to graduate faster having attended four semesters but all within one academic year (say, 2015-16 to use the same example). This is why looking at semesters of attendance is preferable to using years of attendance.

- For every \$1 increase in total student loan debt accrued, time to graduate increases by .00001348 semesters. This seems like a very slight amount, but the mean student loan debt for this population was \$38,955, which equates to a little over half a semester (.525), so students carrying an average amount of debt, not only had nearly \$40K in student loan debt, but also took longer to graduate than those students without loan debt (and thus likely incurred other expenses during that extra time they were still in school).
- The two variables of total merit scholarships and total institutional grants were found to have negative relationships with time to graduation. For every \$1 increase in merit scholarships, time to graduate decreases by .00001156 semesters. For students with the mean merit scholarship amount of \$10,381, their time to graduate was decreased by a twelfth of a semester (.120). For the merit recipient with the highest total merit aid (\$174,553) their time to graduate was decreased by two semesters (a full year, at 2.018).

- For every \$1 increase in institutional need-based grants, time to graduate decreases by .00002633 semesters. For students with the mean amount of need-based grants (\$4,575), their time to graduate was decreased by about a twelfth of a semester (.120). For the institutional grant recipient with the highest total gift aid (\$79,162), their time to graduate was decreased by just over two full semesters (2.084).
- However, the opposite trend exists with regards to total governmental grants, where for every \$1 increase in governmental grants, time to graduate increases by .00005087 semesters. The average of maximum Pell Grants during the academic years covered in this study, from 2015-16 – 2020-21 was \$5,781, so a student with a maximum Pell Grant would have taken slightly longer (.294 semesters) to graduate than a student without a Pell Grant. A highest need, in-state resident student could have potentially had a maximum Pell Grant (roughly \$5700) and a maximum state grant (roughly \$5,000) which would mean they could take a half a semester longer to graduate (.548 semesters) than a less needy student, eligible for less in governmental gift aid.
- For every \$1 increase in EFC, time to graduate increased by .0000008266 semesters. With the mean EFC \$112,865, a student with an EFC close to that had a slight increase in semesters to graduate (an increase of .093 semesters), over students with lower EFCs. This highlights the difficult situation of more middle-class students who have EFCs too high to receive Federal Pell Grants or state grants, and possibly not even institutional grants, to help ease their financial

burden. Students on the lowest end of the EFC range were able to graduate marginally faster than their higher EFC classmates.

- For each semester it took female students to graduate, male students took nearly half a semester longer. Statistically significant at the .001 level, it took African American students .408 semesters longer and Hispanic students .279 semesters longer to graduate than students of other races or ethnicities.
- A negative relationship existed when considering the transfer student variable. Transfer students took roughly 4.21 semesters shorter to graduate than students who started at Mid-Atlantic University as freshmen. However, this makes sense considering transfer enrollment patterns coming from two-year to four-year institutions; a transfer student coming from a community college presumably would have already completed at least four semesters at their prior institution, meaning their time to graduate at Mid-Atlantic University would be roughly four semesters shorter (Causey et al., 2023).
- For every additional semester taken by students in colleges with cheaper tuition rates, those enrolled in a college with a higher tuition differential (schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health) took .356 semesters longer.
- For every semester taken by non-resident students, students that had in-state residency (and thus lower tuition), took .337 semesters longer. This variable was statistically significant (though to a lesser extent) at the .004 level. It is a little surprising that students paying less would take longer to graduate, though perhaps many in this population are able to commute and/or attend less than full-time. The

choice to enroll less than full-time tends to extend time to graduate (since a student is taking fewer credits toward their degree completion). Making the choice to commute from the home shared by parents or relatives instead of living on campus in the dorms or nearby in an off-campus residence could also make a student feel less engaged at Mid-Atlantic University and is another factor which could lengthen time to graduate (Gansemer-Topf & Schuh, 2005).

Academic Success Outcome: Cumulative GPA

The regression studying cumulative GPA measured those 13 independent variables along with the number of semesters to graduation (subject of the first regression in this series), against the dependent variable of maximum cumulative GPA obtained while attending Mid-Atlantic University. For a full list of variables included, see Table 4.33.

Table 4.33. Variables Studied in Regression Related GPA

Variables	Mean/Proportion	Standard Deviation	Range
Maximum EFC	\$112,865	\$279,147	\$0 - \$999,999
Total Merit Scholarships	\$10,381	\$21,519	\$0 - \$174,553
Total Institutional Grants	\$4,575	\$8,262	\$0 - \$79,162
Total Athletic Aid	\$1,090	\$12,847	\$0 - \$330,978
Total Student Loan Debt	\$38,955	\$40,156	\$0 - \$270,907
Total Governmental Grants	\$5,745	\$8,816	\$0 - \$86,019
Male	0.470		
African American	0.169		

Table 4.33. (Continued)

Hispanic	0.076		
Asian	0.122		
In-State Residency	0.802		
High Tuition Differential	0.746		
Transfer Student	0.397		
Maximum cGPA	3.146	0.621	0.00 - 4.00

This regression registered an r^2 value of .325 and a p -value of $<.001$ which implies statistically significant findings. The only variable found not to be statistically significant was maximum EFC, however it is possible that the impact of this variable (gauging SES) was being masked by total governmental and/or institutional grants as both are need-based. Controlling for all other variables, however, the regression identified the following variables with statistical significance at the p -value of $<.001$ level. Negative relationships were observed for nearly all variables studied, showing many more forces at play that can decrease cumulative GPA instead of bolster it. See Table 4.34 for further information.

Table 4.34. Regression of Maximum Cumulative GPA by Variable

Variable	Regression Coefficient (B)	Beta	t	Sig.
(Constant)	4.028		206.715	<.001
# Semesters to Graduate	-0.038	-0.344	-37.535	<.001
Maximum EFC	-2.01E-09	-0.001	-0.171	0.864

Table 4.34. (Continued)

Total Merit Scholarships	5.28E-06	0.312	34.397	<.001
Total Institutional Grants	1.16E-06	0.026	2.741	0.006
Total Athletic Aid	-8.07E-07	-0.029	-3.738	<.001
Total Student Loan Debt	-7.30E-07	-0.076	-8.954	<.001
Total Government Grants	-1.88E-06	-0.044	-5.199	<.001
African American	-0.136	-0.122	-14.844	<.001
Asian	-0.101	-0.084	-10.532	<.001
Hispanic	-0.08	-0.051	-6.576	<.001
Male	-0.128	-0.161	-20.941	<.001
In-State Residency	0.054	0.054	6.167	<.001
Transfer Student	-0.214	-0.263	-25.015	<.001
High Tuition Differential	-0.078	-0.084	-10.893	<.001

- For each additional semester attending Mid-Atlantic before graduating, cumulative GPA decreased by .038 points. If a student took 20 semesters to graduate (roughly 5 years), this decreased their eventual GPA by $\frac{3}{4}$ of a point (.76), which equates to nearly than a full letter grade difference.
- For each dollar of student loan debt incurred, GPA decreased by .0000007298 points. Taking into account that the average student loan debt for the population (\$38,955), students holding that amount of debt had a GPA nearly .03 points (.0284) less than students with no loan debt.

- For each \$1 of athletic aid received, GPA decreased by .0000008074 points.

While this wouldn't have too much of an impact (especially on the low range of athletic aid received), for the students at the highest range, it means a .267 point decrease in GPA. It is possible this disparity could be construed as students with the highest amount of athletic aid having more pressure to compete/more time occupied by athletic pursuits over academic ones which could be contributing to the decrease in GPA, and not the athletic aid itself.

- For each \$1 of governmental grant aid received, GPA decreased by .000001879 points. For a Pell Grant recipient, this would be a decrease of roughly .011 if they received the maximum Pell Grant during any year studied; for a student receiving both maximum Pell Grant (roughly \$5,700) and maximum state grant (roughly \$5,000), they could have a GPA roughly .020 lower than students not eligible for such funding. Thus, the highest need students could have a GPA .01 lower than students with EFCs too high to qualify for such funding.
- Stark racial disparities in GPA were evident, with the greatest impact noted among African American students. African American students were observed to have GPAs .136 points lower; Asian students had GPAs .101 points lower; and Hispanic students had GPAs .080 points lower than students not of those respective races or ethnicities.
- There was also a disparity observed with regards to sex. Male students were observed to have GPAs .128 points lower than female students.
- Transfer students were found to have cumulative GPAs .214 points lower than students who started at Mid-Atlantic University as freshmen. This is especially

interesting because transfer students typically spend less semesters at Mid-Atlantic University.

- Students in colleges with higher tuition differentials had GPAs .078 points lower than those in the colleges of liberal arts, education, and social work (or students who were undeclared). However, it is possible in this case that it isn't the direct costs of the program being elevated which explains the GPA decreased, but that among those colleges with a differential (schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health) are all STEM programs, notoriously difficult programs.

Interestingly there were only 3 variables where a positive relationship was observed, that of total merit scholarships received; total institutional need-based grants received; and residency status. Both total merit scholarships and residency status were significant at the p -value of $<.001$ level, while the total institutional grants variable was significant at the .006 level.

- For each \$1 of merit scholarships received, GPA increased by .000005283, which sounds infinitesimally small, but this means that a student with an average amount of merit scholarships (\$10,381) could have a GPA .055 higher than their classmates without a merit scholarship. Thinking about academic success, the difference between a 2.00 and 1.95 could be the difference between academic progress (which maintains financial aid eligibility) and academic probation.
- For each \$1 of institutional need-based grant aid received, GPA increased by .000001157, which is less than the impact of merit scholarships. For a student with \$10,000 in institutional grants, this would mean a cumulative GPA increase

of .012, and each subsequent \$10,000 over that adding an additional hundredth of a point to GPA. It is important to note that students qualifying for institutional grant funding would likely fall more in the middle-class range, with EFCs too high for governmental need-based grants (or much of them) but still with substantive financial need, so from less economically disadvantaged populations as their Pell recipient classmates.

- Students qualifying for in-state residency had cumulative GPAs .054 points higher than non-residents. This could be explained by lower tuition rates meaning less of a financial burden for students, enabling them to be more focused on academics than students more beset by financial worries.

Research Question 4: What Is the Relationship Between Students' Financial Need and Sources of Financial Aid and Their Total Indebtedness?

These regressions measured 12 independent variables against the dependent variable of total student loan indebtedness. Specifically these regressions tested the relationship between accrued student loan debt and each student's maximum Estimated Family Contribution (EFC) over all years filing a FAFSA; total merit aid (need-blind scholarships) received; total governmental grants (Pell, SEOG, state grants) received; total institutional grant aid (need-based grants) received; total athletic aid received; race (whether African American, Asian, or Hispanic); sex (whether male or not); residency classification (whether receiving in-state residency tuition, which is roughly half that of out-of-state tuition); enrollment in a college with a higher tuition differential; and student cohort type (whether each student started as a freshman in the 2015-16 academic year). A

primary regression was done using aid and debt totals across all six aid years beginning in 2015-16 and ending in 2020-21 to provide an overview of the students' entire academic career. For a full list of variables included, see Table 4.41.

Table 4.41. Variables Studied in Regression Related to Student Loan Indebtedness

Variable	Mean/Proportion	Standard Deviation	Range
Maximum Gross Need	\$27,166	\$17,592	\$0 - \$96,280
Maximum EFC	\$112,865	\$279,147	\$0 - \$999,999
Total Merit Scholarships	\$10,381	\$21,519	\$0 - \$174,553
Total Institutional Grants	\$4,575	\$8,262	\$0 - \$79,162
Total Athletic Aid	\$1,090	\$12,847	\$0 - \$330,978
Total Student Loan Debt	\$38,955	\$40,156	\$0 - \$270,907
Total Governmental Grants	\$5,745	\$8,816	\$0 - \$86,019
Male	0.470		
African American	0.169		
Hispanic	0.076		
Asian	0.122		
In-State Residency	0.802		
High Tuition Differential	0.746		
Transfer Student	0.398		

An additional regression was performed for each of the six subsequent aid years to compare trends from one year to the next (see Tables 6.41 – 6.46 in Appendix C). The primary regression using aid totals registered an r^2 value of .177 and a p -value of <.001

which implies statistically significant findings. There were four variables not found to be statistically significant, that of total government grants (though this variable could be being masked by EFC), whether the student was Hispanic, whether the student was male, or whether they started in the initial freshman cohort. Controlling for all other variables, however, the regression identified the following variables with statistical significance at the p -value of $<.001$ level. See Table 4.42 for further information.

Table 4.42. Regression of Student Loan Indebtedness by Variable

Variable	Regression Coefficient (B)	Beta	t	Sig.
(Constant)	\$46,323.894		39.461	<.001
Maximum EFC	-\$0.035	-0.244	-31.384	<.001
Total Merit Scholarships	-\$0.287	-0.154	-18.328	<.001
Total Government Grants	-\$0.019	-0.004	-0.509	0.611
Total Institutional Grants	\$0.949	0.195	21.933	<.001
Total Athletic Aid	-\$0.164	-0.052	-6.965	<.001
African American	\$4,894.207	0.046	5.713	<.001
Asian	-\$10,053.236	-0.082	-10.458	<.001
Hispanic	\$949.527	0.006	0.817	0.414
Male	-\$1,316.155	-0.016	-2.169	0.030
In-State Residency	-\$11,815.019	-0.117	-14.171	<.001
High Tuition Differential	\$5,376.274	0.058	7.719	<.001
Transfer Student	\$4,811.908	0.059	6.719	<.001

- For every \$1 increase in EFC, accrued student loan debt decreased by \$.035. The lower the EFC, the higher the student's gross need is, and thus, the more disadvantaged their socioeconomic status, and the higher the EFC, the higher their SES. This finding is in line with the myriad research (and common sense) that poorer students have to take out more in student loans to cover their tuition educational expenses than their wealthier counterparts.
- For every \$1 increase total merit aid, student loan debt was reduced by \$.29 and for athletic aid, debt was reduced by \$.16. This also makes sense as students receiving more achievement-based scholarship aid, would have more of their tuition and educational expenses covered by "free money" gift aid options, and would not need to take on as great a student loan debt burden and a student not receiving such fund sources. It's also important to note that research indicates that need-blind aid such as such as academic merit, athletic ability, or special talent scholarships, tends to favor wealthier students and institutions are increasingly choosing to mete out their funds in this form instead of via traditional need-based grants (Burd, 2017, 2020; Davis, 2006; Geiger & Heller, 2011; Haycock, 2015; Perna & Jones, 2013; Pusser & Marginson, 2013; Redd, 2002; Zumeta et al., 2012). Students receiving merit or athletic aid had a much higher maximum threshold than that of institutional need-based grant recipients as well, over \$100,000 for those groups, compared to the \$79,000 maximum total institutional grant. The mean for merit recipients was also more than twice that for institutional grant recipients.

- For every \$1 increase in institutional need-based grants, accrued student loan debt increased by \$.95. This may seem counterintuitive, but it is getting at the fact that these institutional grants are meant to assist the neediest students, so a student with a higher amount of need-based grants must have a higher amount of *need*, and thus it is unsurprising that poorer students both qualify for institutional need-based grants and still need to take on student loan debt anyway. The nearly dollar-for-dollar change could further indicate that those students with the highest need not only borrow loans, but borrow either to the maximum aggregate limit, or up to their COA (via Parent PLUS or private source alternative loans).
- Regarding racial breakdowns, African Americans overall amassed the most student loan debt and Asian students the least. African American students accrued \$4,894 more debt than non-African American students. Asian students accrued \$10,053 less debt than non-Asian students.
- In-state residents faced a lower debt burden than their out-of-state counterparts accruing \$11,815 less debt than non-resident students. Out-of-state residents typically pay double the tuition of in-state students, so it makes sense that in-state students facing half as much in tuition charges do not need to take on the same kind of debt burden.
- Students enrolled in a college with a higher tuition differential (schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health) took on more student loan debt. Compared with students in a lower-cost college (such as liberal arts,

education, social work, or students who were undeclared), students in programs affiliated with higher tuition differentials had amassed \$5,376 more student loan debt.

- Transfer students amassed more student loan debt (\$4,812) than students that began their time at Mid-Atlantic University as freshman. This is especially noteworthy considering transfer students typically spend less time at the university they transfer to, since they bring with them completed credits towards their degree. It is likely another finding indicating a disparate gift aid awarding strategy for transfer students, whereby due to maximum caps and stipulations (such as full-time enrollment) to receive merit scholarships and need-based grants, transfer students receive less gift aid and thus must more readily turn to loans to pay for college.
- Lastly, Hispanic students accrued \$950 more loan debt than non-Hispanic students, though this was statistically significant at the .030 level. Aside from this finding, there were only three other regressions where being Hispanic has a statistically significant impact, in years 2018-19 and 2019-20 (where they received roughly \$2,000 more in student loan debt than non-Hispanic students), and among the cohort of students who graduated during the six-year period covered (where they had incurred more than \$4,200 more loan debt).

There were two several variables that had no statistically significant impact on student loan indebtedness, that of sex and, surprisingly, receipt of governmental grants. Prior research has found women accrue greater amounts of student debt, but the only regression where a similar finding was observed was that run for undergraduate students

enrolled in the 2019-20 aid year, where males accrued \$1,483 less in student loan debt that year. There were only 3 regressions where being Hispanic has a statistically significant impact, in years 2018-19 and 2019-20 (where they received roughly \$2,000 more in student loan debt than non-Hispanic students), and among the cohort of students who graduated during the six-year period covered (where they had incurred more than \$4,200 more loan debt). Regarding governmental grants, it is possible that the impact is being masked by the EFC category (as a lower EFC brings a student closer to being eligible for Pell Grants, SEOG Grants, and state grants) or the institutional need-based grant category (as a higher need student receiving governmental grants would have a lower EFC but the receipt of the grants could conversely cause a decrease in eligibility for institutional grants).

Students Who Have Graduated

Lastly, two additional regressions were performed using total aid amounts but looking only at students who graduated during the six-year time period covered in the study and then only students whose graduation could not be confirmed. This was to shed extra light on the debt accrued by students who possibly do not even have a credential to fall back on to provide access to higher paying jobs, as opposed to their counterparts with the benefit of being a college graduate. See Table 4.43 for the time to graduation breakdown (shown in years for practical clarity) for all students in the sample.

Table 4.43. Cohort Years Taken to Graduate

Years to Graduate	n	Percent
Did Not Graduate	3,093	20.6
Less Than 4 Years	3,088	20.5
4 Years	8,264	54.9
5 Years	445	3
More Than 5 Years	160	1.1
Total	15,050	100

The regression of college graduates had a n of 11,957 and registered an r^2 value of .200 and a p -value of $<.001$ which implies statistically significant findings. Total student loan debt held by this population ranged from \$0 to \$244,562. See Tables 4.44 and 4.45 for more information, including the full list of variables included.

Table 4.44. Variables Studied in Regression Related to Student Loan Indebtedness for Students Who Graduated Between 2015-16 and 2020-21 Academic Years

Variable	Mean/Proportion	Standard Deviation	Range
Maximum EFC	\$115,157	\$279,025	\$0 - \$999,999
Maximum Gross Need	\$27,087	\$17,868	\$0 - \$96,280
Total Merit Scholarships	\$12,274	\$23,409	\$0 - \$174,553
Total Institutional Grants	\$5,026	\$8,802	\$0 - \$78,950
Total Athletic Aid	\$1,280	\$14,186	\$0 - \$330,978
Total Student Loan Debt	\$41,344	\$41,595	\$0 - \$244,562
Total Governmental Grants	\$6,032	\$9,240	\$0 - \$86,019

Table 4.44. (Continued)

Male	0.148
African American	0.127
Hispanic	0.069
Asian	0.460
In-State Residency	0.804
High Tuition Differential	0.756
Transfer Student	0.387

Table 4.45. Regression of Student Loan Indebtedness by Variable for Students Who Graduated Between 2015-16 and 2020-21 Academic Years

Variable	Regression Coefficient (B)	Beta	t	Sig.
(Constant)	\$58,211.655		41.311	<.001
Maximum EFC	-\$0.040	-0.269	-31.269	<.001
Total Merit Scholarships	-\$0.399	-0.225	-23.42	<.001
Total Government Grants	-\$0.182	-0.04	-4.469	<.001
Total Institutional Grants	\$0.634	0.134	13.301	<.001
Total Athletic Aid	-\$0.216	-0.074	-8.776	<.001
African American	\$8,420.940	0.072	8.12	<.001
Asian	-\$10,596.841	-0.085	-9.772	<.001
Hispanic	\$4,247.974	0.026	3.052	0.002
Male	-\$613.721	-0.007	-0.879	0.379
In-State Residency	-\$16,097.235	-0.154	-16.405	<.001
High Tuition Differential	\$5,101.285	0.053	6.284	<.001
Transfer Student	\$44.247	0.001	0.053	0.958

- For every \$1 increase in EFC, accrued student loan debt decreased by \$.040. This is more than for the overall regression that did not control for graduation (and twice that of the cohort of students who had not graduated), which could indicate that perhaps Mid-Atlantic was doing well at helping get students across the finish line to graduation, even if they were accruing debt along the way.
- For every \$1 increase total merit aid, student loan debt was reduced by \$.40 and for athletic aid, debt was reduced by \$.22. Again unsurprising, as students receiving meritorious gift aid are more likely to be lower need anyway, and receiving such gift aid would make a student not need to take on as much debt.
- For every \$1 increase in governmental (need-based) grants, accrued student loan debt decreased by \$.18. This could indicate that those need-based sources were really helping the neediest students to persist to graduation and take on less debt as they went.
- For every \$1 increase in institutional need-based grants, student loan debt accrual increased by \$.63. When looking at the governmental grants seeming to have a stronger impact in lowering student loan borrowing habits, it is possible that the group receiving the institutional funding are more middle-class students who are not receiving as much governmental help yet still have significant unmet need and so need to go further into debt because they simply have fewer options for assistance.

- Regarding racial breakdowns, African Americans overall amassed greater loan debt than students of other races or ethnicities, while Asian students accrued less. African American students amassed \$8,420 in student loan debt, while Asian students accrued \$10,600 less.
- In-state residents faced a lower debt burden than their out-of-state counterparts, accruing \$16,097 less student loan debt than that of a non-resident student.
- Students in a college with a higher tuition differential took on more student loan debt. Students from colleges with a tuition differential (schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health), carried \$5,101 higher loan debt burdens than their counterparts in lower-cost colleges (such as liberal arts, education, social work, or students who were undeclared).

In addition to the variables which were statistically significant at the .001 level, this was one of the only instances where the Hispanic variable had statistical significance compared with all other regressions related to student loan debt. It was significant at the .002 level, finding that Hispanic students took on \$4,248 more student loan debt than students who were not Hispanic.

Students Who Have Not Graduated

The regression for students that did not graduate between the six-year time period of the 2015-16 to 2020-21 academic years had an n of 3,093. It registered an r^2 value of .193 and a p -value of $<.001$ which implies statistically significant findings. Total student

loan debt held by this population ranged from \$0 to \$270,907, with a maximum total accrued loan debt higher than held by the population of students who did graduate, a population which was nearly four times larger. See Tables 4.46 and 4.47 for more information, including a full list of variables included.

Table 4.46. Variables Studied in Regression Related to Student Loan Indebtedness for Students Who Did Not Graduate Between 2015-16 and 2020-21 Academic Years

Variable	Mean/Proportion	Standard Deviation	Range
Maximum EFC	\$104,006	\$279,490	\$0 - \$999,999
Maximum Gross Need	\$27,468	\$16,478	\$0 - \$83,786
Total Merit Scholarships	\$3,065	\$8,231	\$0 - \$126,510
Total Institutional Grants	\$2,832	\$5,371	\$0 - \$69,387
Total Athletic Aid	\$354	\$4,953	\$0 - \$157,736
Total Student Loan Debt	\$29,722	\$32,417	\$0 - \$270,907
Total Governmental Grants	\$4,635	\$6,824	\$0 - \$69,387
Male	0.249		
African American	0.102		
Hispanic	0.103		
Asian	0.530		
In-State Residency	0.791		
High Tuition Differential	0.709		
Transfer Student	0.439		

Table 4.47. Student Loan Indebtedness by Variable for Students Who Did Not Graduate Between 2015-16 and 2020-21 Academic Years

Variable	Regression Coefficient (B)	Beta	t	Sig.
(Constant)	\$18,978.318		9.958	<.001
Maximum EFC	-\$0.021	-0.181	-10.593	<.001
Total Merit Scholarships	-\$0.023	-0.006	-0.335	0.738
Total Government Grants	\$0.515	0.109	6.202	<.001
Total Institutional Grants	\$1.852	0.307	15.97	<.001
Total Athletic Aid	-\$0.196	-0.03	-1.829	0.068
African American	\$3,250.929	0.043	2.436	0.015
Asian	-\$4,313.657	-0.04	-2.367	0.018
Hispanic	-\$1,619.442	-0.015	-0.893	0.372
Male	\$712.030	0.011	0.661	0.509
In-State Residency	-\$5,328.183	-0.067	-3.798	<.001
High Tuition Differential	\$3,503.752	0.049	2.993	0.003
Transfer Student	\$14,986.105	0.229	12.221	<.001

- For every \$1 increase in EFC, accrued student loan debt decreased by \$.021. This is half as much of a decrease than what existed for the graduated students' cohort. Perhaps it is because these students stopped out and so did not have the chance to amass as much debt.
- Conversely, an increase in need-based grant funding led to a higher amount of loan debt for this population. For every \$1 increase in governmental (need-based) grants, loan debt increased by \$.52 and for every \$1 increase in institutional need-based grants, loan debt increased by \$1.85. It is possible that among these students who did not graduate, they had higher need that was

going unmet by need-based grant sources and as they began accruing more and more debt decided to stop out instead of persisting to graduation.

- In-state residents still faced a lower debt burden than out-of-state students, accruing \$3,504 less loan debt than students classified as non-resident for tuition purposes.
- Transfer students faced greater student loan debt burdens than those students that started at Mid-Atlantic University as freshman. Transfer students amassed \$14,986 more in student loan debt, a staggering number considering transfer students typically spend less time at the institution they transfer to. This loan debt is close to a full year's tuition for an in-state resident in a college without a higher tuition differential.
- Students in a college with a higher tuition differential took on more student loan debt. Students in the schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health had \$3,504 more loan debt than students enrolled in other colleges. While not statistically significant at the .001 level, it was significant at the .003 level.
- Regarding racial breakdowns, African Americans overall amassed greater loan debt than students of other races or ethnicities. African American students' debt was \$3,251 more than students who were not African American. While not statistically significant at the .001 level, it was significant at the .015 level.
- Additionally, Asian students carried lower student burdens, amassing \$4,314 less in student loans than non-Asian students. While not statistically significant at the .001 level, it was significant at the .018 level.

In comparing individual aid year regressions across all aid years in the time period studied, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, and 2020-21, students with the highest amounts of accumulated student loan indebtedness had many similarities regardless of what year was reviewed. They always had higher amounts of gross need (meaning they were from lower SES backgrounds with lower annual EFCs). They always received less in merit scholarships and received less in athletic aid (so were less likely to be athletes). They also received less gift aid in general, receiving less in both governmental and institutional need-based grants. For all observed aid years, African American students incurred the greatest amounts of student loan debt annually, and Asian students borrowed fewer loans than students of other races or ethnicities. There was no statistical significance in comparing Hispanic students to students of other races or ethnicities, and there were no statistically significant relationships found when looking at sex. For some aid years, students were less likely to be considered in-state residents, meaning they would have faced higher annual tuition costs (typically twice as expensive).

Those who graduated with higher aggregated student loan debt during their time at Mid-Atlantic University over the six-year time period studied tended to be from lower SES backgrounds as they had a lower maximum EFC across their total years spent at Mid-Atlantic University from 2015-2021, which is understandable as students who have greater financial need would likely have to take on student loans in order to try and pay for college. Nearly all (90%) of Pell Grant recipients graduate with student loan debt, while only about half of students that are ineligible for Pell Grants do (Cooper, 2016; Friedman, 2018; Grinstein-Weiss et al.; Kelchen & Li, 2017). They were likewise recipients of greater amounts of institutional need-based grants, though they were less

likely to be athletes, and received less merit scholarship funding. African American students graduated with student loan debt roughly \$8,500 higher than students of other races, whereas Asian students graduated with more than \$10,000 less in student loan debt than students who were not Asian. This coincides with research finding African American students incur the greatest amounts of student loan debt, while Asian students incur the least amounts (Bird & Castleman, 2015; Grinstein-Weiss et al.; Kelchen & Li, 2017; Miller, 2017). Those graduating with student loan debt were also less likely to qualify for in-state tuition (thus having to pay twice as much in tuition as non-residents) and were more likely to have enrolled in colleges within Mid-Atlantic University that had higher differential tuition rates (including schools of business, music, fine and media arts, communications, engineering, science, hospitality management, and health).

Students who did not (or have not graduated), tended to be from lower income SES, having a lower maximum EFC across their total years spent at Mid-Atlantic University from 2015-2021. They had less aggregated merit aid over time, less athletic aid (were less likely to be athletes), and had higher amounts of both governmental and institutional need-based grants, which is consistent with them being from lower income backgrounds (and thus recipients for Pell Grants, SEOG Grants, state grants, and institutional grants depending on financial need for eligibility). Those who were African American typically had aggregated student loan debit about \$4,7134 higher than students of other races, putting them at a further disadvantage since they did not come away with a college degree, which is in line with a bevy of research showing African American students incur more debt than any other racial or ethnic group (Bird & Castleman, 2015; Grinstein-Weiss et al.; Kelchen & Li, 2017; Miller, 2017). Lastly, those who did not

graduate were less likely to be considered in-state residents were more likely to be in the “high tuition” cohort of students enrolled in colleges within Mid-Atlantic University that had higher differential tuition rates. Paying higher tuition rates as a lower income student could arguably make it more financially difficult to persist in college and could certainly contribute to accumulating higher student loan debt.

Summary

Mid-Atlantic University determines institutional grant aid through a calculation of percentage of gross need minus gift aid sources, with the percentage being taken depending on a variety of factors, specifically residency status; receipt of merit scholarships determined in the admissions process; student type (whether accepted for admission as a transfer student or as a new freshman); and student status (whether a new admit for that year or a continuing student). Overall, Mid-Atlantic University equitably allocated undergraduate institutional need-based grant funding, even improving their award practices over time. Not only that, but allocation of institutional need-based grants led to decreased time to graduate (more than two full semesters among the recipients of the highest amounts of such funding), with a stronger impact even than the receipt of merit scholarships, as well as very slight increases in cumulative GPA. Those with Pell Grants and institutional grants graduated marginally faster than their classmates without governmental grants.

Increases in gross need led to increases in institutional grant aid, which indicates that how Mid-Atlantic allocated its institutional funding was ultimately done equitably, being awarded appropriately to the neediest students. In fact, the highest need students

received institutional grant aid roughly the equivalent of their Pell Grant, essentially receiving “double Pell,” which is one of the most common financial aid rallying calls to policymakers each year, and Mid-Atlantic was doing this at the institutional level. There was some variability at the per-year level findings that receiving governmental grants led to a greater decrease in institutional grant aid eligibility, but in these regressions, increase in gross need still led to an increase in institutional grants, which actually be uncovering that the institutional need-based grants most served middle-income students, those without EFCs low enough to receive governmental gift aid, but who still had large amounts of gross need. However, students receiving institutional grants saw a nearly dollar-for-dollar increase in student loan debt as well, which may seem counterintuitive until understanding that to have enough gross need to qualify for these institutional dollars, simply put they were poorer with more need, and would be less loan-adverse since they had other educational expenses they had to fund that students from higher income families could have more support from their families to cover.

Meanwhile, receipt of need-blind aid led to a nearly dollar-for-dollar decrease in institutional grant aid eligibility, though this effect was much less pronounced upon receipt of governmental need-based aid, showing Mid-Atlantic was less in line with the practice of other institutions to use receipt of Pell Grants as a way of avoiding awarding institutional funding to the neediest students. However, when looking only at the population of merit recipients, this negative relationship was much more pronounced, and coupled with finding no corresponding change to institutional grant found with the increase or decrease of EFC, indicates that among this group, the income levels were more equalized, which means this population either already had more of their gross need

covered by their scholarships (and thus less unmet need) or that students receiving merit aid were on the whole wealthier, having low or no need. This is on par with findings on public four-year institutions allocated more merit aid to non-needy students, whereby need-blind policies really end up being poverty-exclusionary policies. Merit recipients also had higher cumulative GPAs.

Despite often being closely tied with social class, race and sex ultimately did not have an impact on the institution's own discretionary financial aid grants awarding practices. No regressions found any difference in awarding with regards to sex. Sex also had no statistically significant impact on the accrual of student loan indebtedness for students in the cohort. Only in 2015-16, the very first year studied, was there found any racial bias in institutional financial aid awarding practices, where among merit scholarship recipients, African American students also received \$270 more in institutional grant aid per dollar than students of other races, so arguably, institutional grant aid allocation became more race-blind over the course of the years studied.

The regressions looking at student academic success metrics were the only ones to find statistically significant results showing any impact of sex and race. Regarding sex, the only relevant results were that males had cumulative GPAs .128 points lower than female students and that they took nearly half a semester longer to graduate than female students. The regressions focused on GPA also found racial discrepancies among all groups, with African American students having the lowest cumulative GPAs. The only other statistically significant findings regarding Hispanic students were that they tended to take longer to graduate than their non-Hispanic counterparts (though appeared to still graduate sooner than African American students).

Those with student loan debt took longer to graduate than students without any loan debt, which was unsurprising considering the finding that time to graduation increased slightly with each additional dollar of student loan debt accrued by students in the cohort. Cumulative GPA also very slightly decreased with each dollar increase to student loan debt, and students holding an average amount of student loan debt had a GPA nearly .03 points less than students with no loan debt. Students with higher tuition rates (either from being considered a non-resident, or enrollment in a program with a higher tuition differential took on more debt than those receiving in-state tuition or part of base rate programs. Those students with higher student loan debt received less in both need-blind and need-based gift aid and had higher gross need. African American students accrued greater amounts of student loan debt than students of other races, while Asian students accrued less student loan debt than students of other races.

Residency status had an effect in every regression, whereby students qualifying for in-state residency received less in every institutional gift aid source. On a positive note, they also ended up accruing significantly less student loan debt. This is because tuition is roughly halved for students considered by Mid-Atlantic University to be residents of the state that the institution is situated in (for purposes other than solely educational). As they have decreased tuition, their maximum merit scholarships are capped at lower values than for their non-resident counterparts, and as their total cost of attendance is lower, their gross need is as well (since that formula is $COA - EFC$). However, it was found that this population also took longer to graduate, though perhaps it is because many in this population are more easily able to commute (decreasing their COA and gross need, but also decreasing their actual educational costs) and/or attend less

than full time both of which tend to extend time to graduate (and which could make a student less engaged at Mid-Atlantic University, which could also lengthen time to graduate) (Gansemer-Topf & Schuh, 2005). Despite their lengthened time to graduation, in-state residents had cumulative GPAs .054 points higher than non-residents, possibly because they may be more able to focus on academics due to less stress with how to pay their tuition.

Certain programs and colleges at Mid-Atlantic were significantly more expensive such as the schools of business; music; fine arts; media arts; communications; engineering; science; hospitality management; and health. While one may expect that since these programs cost more contributing to a higher COA for a student, it would be a statistically significant variable in each regression, but this was not so. The most likely reason for this would be students in those programs also had higher EFCs which negated the impact that having a larger COA could have on gross need. If EFCs were also higher, then gross need would still be decreased even as COA increased. A student from a higher SES background could more readily afford to attend a program with higher costs, even if doing so also increased time to graduate.

The biggest inequities in awarding practices arose when looking at funding allocation to transfer students. The maximum annual scholarships amount for first time transfers are less than that for first time freshmen, with their maximum scholarship level less than half that of the equivalent level for same-residency freshmen. Transfer students always received significantly less in institutional grants than students who began their academic career at Mid-Atlantic University as freshman. However, even here Mid-Atlantic University is making strides, as the gap between institutional grant funding for

transfer students and students beginning as freshman decreased by nearly 75% when comparing the first year studied for this cohort to the final year for these groups, with the deficit per dollar steadily decreasing each year. Despite spending less semesters at Mid-Atlantic University, Transfer students had lower cumulative GPAs.

Institutions are increasingly choosing to allocate their internal gift aid funds in this form instead of via traditional need-based grants (Burd, 2020; Redd, 2002). Over a third of the cohort received merit scholarships as part of their financial aid award. As merit scholarship recipients received less institutional grant funding, it can be concluded that these students had less gross need overall, and/or their merit scholarships covered a greater portion of the gross need they did have. This supposition is supported by the body of research indicates that need-blind aid including academic merit, athletic ability, or special talent scholarships, tends to favor wealthier students (Burd, 2020; Heller & Nelson Laird, 1999; Redd, 2002; von Arx, 2013). Recipients of merit or athletic aid accrued less student loan debt than students without those scholarships, graduated sooner, and had higher cumulative GPAs than students without such gift aid. Students at the highest end of merit scholarships received found their time to graduate reduced by more than a full academic year.

CHAPTER 5

DISCUSSION

The purpose of this study was to examine the degree to which overarching institutional programmatic changes to support merit-based aid at the expense of awarding need-based aid negatively affects college affordability (and therefore, hampers access) for lower- and middle-income students at “Mid-Atlantic University,” a large, 4-year, publicly supported, research institution situated on an urban campus in a city with a significant poverty rate. The study used merit and need-based aid allocation as a proxy for issues of access and equity in higher education, ascribing financial aid allocation of institutional gift aid as a representation for how institutions (especially public and publicly supported) value the relative need of their students. This study sought to understand whether Mid-Atlantic University chose to value investment in the social capital of the neediest students, or, whether the institution preferred to use their funding more strategically to obtain a wealthier class with less need but higher performing, more able to help the institution ascend in rankings (something which would likely ensure future financial stability and growth for the institution). The core of the study, essentially, is whether gift aid is more predominately going to wealthier students, and if so, this practice “fair”, and are there consequences of this enrollment management strategy.

Findings and Conclusions

Overall, it can be concluded that Mid-Atlantic University allocated undergraduate institutional need-based grant funding equitably, whether looking at aggregated funding totals received by undergraduate students over the six-year period covered, or instead

individually within each of the six aid years and interpreting trends based on annual changes. Mid-Atlantic University showed no implicit bias on the basis of sex within their institutional gift aid awarding practices. The only racial discrepancies in awarding of need-based grants appeared sporadically, without a consistent, pervasive pattern of profound inequity in awarding being observed (any grant differentials amounted to around \$200 in an individual aid year), and by the last year studied, there were no statistically significant findings with regards to race, so it appears awarding became more race-blind over time.

The institutional need-based grant allocation efforts of Mid-Atlantic University did appear to focus overall on students from low- and middle- SES backgrounds, those who most needed it, equitably allocating such funding to help equalize income inequality among its financial aid applicant population to at least some extent. Mid-Atlantic University's awarding strategy seems particularly astute since middle-income students appear to be treated especially favorably in need-based grant awarding, as this is a population that is increasingly catching the zeitgeist as being overlooked in the financial aid process. Middle-income students can still have high amounts of both gross and unmet need and typically miss the cutoffs for governmental need-based grants; yet still lack the ability to afford college without these students or their families going into significant amounts of student loan debt.

The most common observable pattern in looking at institutional need-based grants was arguably the positive relationship between this form of financial aid and gross need; discernable over and over again in the regressions performed. The highest need students received institutional grant aid roughly the equivalent of their Pell Grants, leading them

to essentially receive “double Pell,” positioning Mid-Atlantic University as actually putting into practice the consistent annual call of financial aid researchers and advocates to Congress. Furthermore, Mid Atlantic University’s allocation of their institutional need-based grant funding was found to improve student success outcomes. Recipients of institutional need-based grants had a positive, statistically significant impact on time to graduation for high need students, decreasing time to graduate by two or more semesters. There also existed a slight, though statistically significant, positive relationship between GPA and receipt of institutional need-based grants. Those with both institutional grants and Pell Grants graduated marginally faster than their classmates such governmental grants. These findings are consistent with research that receipt of institutional need-based grants encourages persistence for low-income students since they are targeted to facilitate college affordability for those with the most financial need (Evans & Nguyen, 2019; Gansemer-Topf & Schuh, 2005; Mendoza et al., 2009).

While Mid-Atlantic University had many aspects within their overarching financial aid policy where there was socioeconomic parity with respect to need-based gift aid, there were some significant areas that elucidate necessity for further study. As with many similar institutions, and in line with prior research, allocation of need-blind merit scholarships by Mid Atlantic University more consistently favored lower need students and/or those that did not file a FAFSA. This is in line with many research findings that the awarding of need-blind merit scholarships tends to favor wealthier students for a myriad of reasons, from higher test scores due to familial ability to higher private tutoring to institutionalized classicism (Burd, 2020; Heller & Nelson Laird, 1999; Redd, 2002; von Arx, 2013). Receipt of merit scholarships also appeared to have a much stronger

positive relationship with GPA than the relationship found between institutional need-based grants and GPA. They also accrued less student loan debt and graduated sooner than students without those scholarships. Students at the highest end of merit scholarship allocation appeared to have their time to graduate reduced by more than a full academic year. This could be indicative of a pattern more on par with findings that public four-year institutions are allocating more merit aid to non-needy students and using funds originally given as need-based grants to provide for this increase in merit scholarships, so need-blind policies practically end up being anti-need policies (Burd, 2020; Heller & Nelson Laird, 1999; Redd, 2002; von Arx, 2013).

The generosity in gift aid considerations by Mid-Atlantic University was much more tepid toward transfer students. Transfer students, despite attending Mid-Atlantic University for fewer semesters (since they attended elsewhere and brought their credits with them), carried higher student loan debt than those students who began their educational career at Mid-Atlantic University as freshmen. It would be beneficial to expand future financial aid research to focus on transfer students at four-year institutions, and their experiences with need-blind and need-based financial aid. As research into transfer students typically centers on the academic success side of their college experience, the financial aid discrepancies that exist between this group compared with their peers that started at the institution as freshmen is largely ignored. The results of analysis into Mid-Atlantic University's financial aid distribution seem to paint a picture of inequity in resource allocation, with imposed maximum caps on both grants and scholarships specific to transfer students, with those same thresholds often more than doubled for non-transfer students. Considering popular discourse on advice given to new

college students is to eschew a 4-year institution at the outset and instead go to community college for a couple years before transferring back to their first choice institution in order to save money, it would be illuminating to compare gift aid totals, student loan indebtedness, and out-of-pocket costs incurred by transfer students at all institutions they have attended versus what their likely equivalent gift aid package would have been had they attended their final institution as a freshman, to see if this kind of advice is truly in the students' best interests.

While an awarding discrepancy certainly existed for transfer students at Mid-Atlantic University, it is unclear whether it is because of the enrollment pattern of transfer students or bias in the formulas determining allocation of this funding. Transfer students typically attend fewer semesters at the institution they transferred into than a traditional student (so would receive less institutional grants in total), and when they do attend, that population is historically more likely to attend less than full time (thereby forfeiting eligibility for this kind of institutional funding, both grant and merit scholarships, in most circumstances). It could also be due to maximum institutional grant amount caps being lower for transfer students (just as it is for merit scholarships), combined with the percentage of gross need eligibility to determine grant amounts set to a lower threshold for transfer students. This is undertaken under the fiscal conservative thinking that since a student transferred into Mid-Atlantic University because they want to get a degree from there (instead, of say, a community college), perhaps less institutional aid dollars are required to retain them. Thus, many fewer transfer students, despite financial need, could even qualify for these grants in the first place, or if they are eligible, receive them at much lower annual amounts. Such institutional fund allocation practices that cap transfer

students can be seen as insidious or even predatory on those high need students that tried to make financially savvy decisions with regards to college attendance to limit their loan borrowing and out-of-pocket expenses.

Additionally, student loan debt was found to have significant negative impacts of student academic outcomes. Those with student loan debt took longer to graduate than students without any loan debt, and time to graduation increased slightly with each additional dollar of student loan debt accrued by students in the cohort. Those with student loan debt received less in need-blind merit scholarships and were more likely to come from low-SES backgrounds since they had both higher gross need and lower maximum EFCs across their time spent at Mid-Atlantic University from 2015-2021. Regressions focusing on student loan debt also found a nearly dollar-for-dollar increase in loan debt with an increase in institutional need-based grants. These findings are similar to other research indicating that students who have greater financial need (and thus lower EFCs) often take on student loans in addition to any gift aid received in order to try and pay for college and additional educational expenses (Bird & Castleman, 2015; Haycock, 2015; Grinstein-Weiss et al., 2016; Kelchen & Li, 2017; Miller, 2017). For all observed aid years, African American students incurred higher amounts of student loan debt annually than students of other races, and Asian students borrowed fewer loans than students of other races or ethnicities which directly coincides with many studies into student loan debt patterns finding African American students incur the greatest amounts of student loan debt, while Asian students incur the least (Bird & Castleman, 2015; Grinstein-Weiss et al.; Kelchen & Li, 2017; Miller, 2017).

Lastly, the study looked at those students in the sample who did and did not graduate. Students who did not (or have not yet graduated), tended to be from lower SES backgrounds, having lower maximum EFCs across their total years spent at Mid-Atlantic University from 2015-2021. They had less aggregated merit scholarships, less aggregated athletic aid (were less likely to be athletes), and had higher amounts of both governmental and institutional need-based grants, which is consistent with them being from lower income backgrounds (and thus recipients for Pell Grants, SEOG Grants, state grants, and institutional grants depending on financial need for eligibility). The cohort that had not graduated was nearly four times smaller than the population of students who did graduate, yet they had a significantly higher maximum total accrued loan debt.

Limitations and Strengths

There are some limitations to this study. Due to the proprietary nature of enrollment management strategies for scholarship determination and need-based grant awarding, it is possible that the results would lack generalizability to the college students as an aggregate or for comparison against findings of other financial aid studies on merit and need-based aid. This proprietary aspect to funding allocation means a certain vagueness when explaining operational strategy was the necessary price to gain access to the data used in this study (e.g. not being able to specify what exact percentage need calculations; institutional algorithmic awarding formulas; and any specific funding caps per populations used by Mid-Atlantic University). Similar desires of keeping enrollment management awarding strategies at least somewhat obfuscated from the general public will likely always be any issue when trying to study gift aid allocation at any institution,

especially one trying to crack into that upper echelon of *U.S. News & World Report* rankings.

With Mid-Atlantic University being a public institution, it has less discretionary institutional funding and a smaller endowment to draw from to assist its students, than similarly situated private institutions, as well as typically having a significant population of high-need Pell Grant recipient students. Attempting to carry out similar regressions at private institutions, especially the most selective of such, could yield significantly different results. This reality of unequal resources to help poorer and vulnerable populations is important to not underestimate, especially being that Mid-Atlantic University is situated in a state which provides well under the national average in support to its public higher education institution(s), further stretching the bounds of support it can offer its high-need population.

With recent interest in studying how to best allocate an institution's limited dollars to have the greatest impact on student success, an ideal avenue of future research to build upon this foundation of gift aid impacts would be further analysis to see if there is a specific "sweet spot" combination of gift aid per EFC band range that has the strongest impacts on persistence. For instance, for the highest need, 0 EFC student, combined with their Pell Grant, can it be determined that awarding a specific amount in institutional need-based grant aid + a specific amount in merit scholarships (as well as just grant aid or just merit aid) that gives the strongest gains in GPA and shortest time to graduate? Additionally, aside from offering a full tuition scholarship, looking for whether there is a general range of need-based grant funding that correlates with lower student loan indebtedness among those undergraduate populations most at risk for holding above

average student loan debt (such as African American students and female students) especially with regards to private loans (which have much higher interest rates).

Research into patterns of funding around athletes could prove illuminating. Athletes are often excluded from studies in financial aid as this population is very small yet receiving an outsized amount of gift aid. This could be especially timely considering the recent NCAA rule change to eliminate “headcounts” (most notable at most colleges for football, men and women’s basketball, women's tennis, gymnastics, and volleyball). This rule change, due to the House v. NCAA settlement, means athletic departments will now need to figure out what percentage their full-scholarship students would face a reduction down to in order to account for their merit and non-Pell funds (Pell Grants remain an entitlement).

It would be remiss to not mention the importance of the time period the analysis covers. Going from 2015-16 to 2020-21, the latter academic years were during the COVID-19 pandemic and subsequent “lockdown” nationally and globally, which drastically impacted higher education institutions, to which Mid-Atlantic University was no exception. The pandemic caused enrollment decreases, withdrawal increases, unexpected expenses for safety purposes and significant revenue loss, and a decrease in interest from applicants and prior admitted students, with students not wanting to attend classes remotely, or fearful to attend classes that were in-person, or not wanting to attend a college where they couldn’t have the quintessential experience of living in dorms. Furthermore, the pandemic directly impacted enrollment management strategies since many students could not take their SATs or ACTs for that Admissions cycle, and as a result, some institutions, such as Mid-Atlantic University found they were unable to

award merit scholarships the way they had previously done so. In a positive change, for Mid-Atlantic University, pivoting to taking a test-optional approach to merit awarding, internally made for a much more diverse admittance pool, with students of color receiving more merit scholarships and in greater amounts than in prior applicant cycles. As such, specific research into gift aid allocation with regards to the undergraduate admissions cycles of 2020-21, 2021-22, and 2022-23 could be a very interesting next area of research, especially comparing it to pre-pandemic and then the current post-pandemic times and aid awarding practices. The uncertainty of making admissions and retention targets could also have had an impact on how need-based institutional grants were allocated to continuing students, as well.

This study's biggest strength is arguably its large population size. With such a large n , even smaller relationships register as statistically significant, and when a relationship is not, it is emphatically not significant. With regards to allocation of institutional aid, neither sex nor race were found to be statistically significant overall, which gives confidence in stating that Mid-Atlantic University's internal awarding strategies from the 2015-16 through 2020-21 academic years were not biased in terms of sex or race.

This study was able to access elements from the FAFSA, particularly EFC, to better situate socioeconomic status of students at Mid-Atlantic University, which is an access not often allowed researchers, due to the researcher's background working in the financial aid realm. This positionality is important to note as very few of the dominant voices in financial aid research are, or ever have been, financial aid practitioners, yet conclusions drawn and suggested implications for policy and future practice in financial

aid research will ultimately impact those stewards of financial aid administration, especially when policy changes come with new administrative burden (as often happens when there are regulatory status changes). One needs only to look back at the administrative burden heaped upon institutions during the fraught rollout of the 2024-25 FAFSA to see how significant that can be.

Future Implications

Unfortunately, the higher education landscape and future financial aid policy is in an uncertain place at this juncture. With state appropriations decreasing each year for many public and state-related institutions, this is not an area many public universities can count on any longer; Mid-Atlantic University finds itself unpleasantly situated in a state towards the bottom of rankings in generosity of state appropriation to institutions of higher education. With the current federal administration, tensions are arguably fraught for students, administrators, and teachers in all levels of educational spheres (not just in higher education), due to prevailing rumors of looming presidential Executive Orders intended to dismantle the U.S. Department of Education (Blake, 2025). Such a move would undoubtedly affect financial aid administration, as in late January, after an Executive Order issued late at night freezing federal grant and loan funding caused widespread chaos, even among financial aid offices where the verbiage was vague enough to include federal financial aid funding (Blake, 2025). Financial aid offices were wondering whether they would have to stop disbursing financial aid until clarification was finally given by the Department of Education, explicitly excluding Pell Grants, SEOG Grants, Federal Work Study, and Federal Direct Student Loans from inclusion,

though estimates are that nearly 3,000 federal grant programs are still included, many which affect institutions for all levels of education, including higher education (Blake, 2025). However, the White House Office of Management and Budget (OMB) indicated those federal financial aid programs are still under review, reportedly asking the Department of Education “to clarify whether federal student financial aid programs ‘promote gender ideology’ or support ‘illegal aliens’,” which may not bode well for Title IX programs that concern sex-based discrimination in educational programs (Schermele, 2025).

During the prior Trump presidency, the administration called for “significant reductions” to Federal Work Study (roughly halving its budget) and the elimination of the FSEOG Program, which provides Supplemental Educational Opportunity Grants for the highest need students, requiring Pell Grant eligibility at the lowest ends of the SAI spectrum before a student can potentially be awarded one by their institution (Knox, 2024). Allowing students access to Subsidized Loan funding and for students in repayment, ending Public Service Loan Forgiveness (PSLF) has also reportedly been under consideration by the administration. (Knox, 2024). Resurrection of the controversial “Short Term Pell” Bill is possible, under which “Pell money is rerouted to apprenticeships and credential programs”, including expanding eligibility to “workforce training and short-term credential programs,” which could be harder to administer and audit, and could potentially decrease Pell Grant amounts and eligibility for traditionally enrolled college students, since the proposal does not also call for an increase in overall Pell Grant funding, and “once you reach that point, it forces really devastating conversations about eligibility and award amounts” (Knox, 2024). On a positive note, it is

unlikely the Pell Grant program would be completely abolished due to its overall popularity. However, this is tempered by the likelihood that its impact on low-income students could be extraordinarily lessened by a myriad of different changes to funding allocation which add up to a metaphorical lingchi “death by a thousand cuts” scenario.

Recommendations for Financial Aid Practitioners and Financial Aid Applicants

Even with an uncertain future for federal grant programs, it is unlikely that the FAFSA and aid application process would go away, so it is imperative that financial aid practitioners reframe some of the conversation around the FAFSA and financial aid in general. Some of the traditional discourse around financial aid needs to shift in order to best serve the needs of students and families balanced against the exhaustive administrative burdens of understaffed financial aid offices in the modern era. For instance, it may be time to retire the often-repeated advice for poorer students to attend a more affordable and/or local college (such as community college) instead of a more expensive four-year institution that offers a modest scholarship offer because they can always transfer to that more expensive school later, as it may no longer be true. If transfer students are accruing higher student loan debt burdens than their counterparts that start at the institution as new freshman, and if institutions continue to employ enrollment management strategies that incorporate much lower maximum scholarship offers and lower institutional need-based grant caps, the fiscal calculus of transferring is much murkier than it once was. If transfer students intend to attend their later institutions while attending less than full time, they should make sure to familiarize themselves with the

institution's internal policies regarding enrollment requirements for maintaining scholarships or receiving institutional need-based grants.

For new admits, the modern consideration of financial aid as something fluid that is up for negotiation and haggling needs to shift, as it arguably sets up an adversarial relationship with financial aid offices as gatekeepers to mythical funding that is dangling just out of reach, when the actuality is much less salacious. Financial aid offices primarily administer federal and state grants and self-help aid, amounts and annual aggregate limits of which are defined by legislation, out of the control of financial aid offices. Unless a student is attending a private institution with large endowments and discretionary funding for new admits, Title IV funding is not negotiable. The only way to receive additional Pell Grant funding, for instance, is if there is a significant familial hardship which would qualify the student for a Professional Judgement (PJ) special circumstances evaluation (such as job loss or death of a primary wage earner) or change in dependency status (the student has become an orphan, or a parent, or an unaccompanied or homeless youth). In these cases, the financial aid office would have to process an administrative override to change student's FAFSA, recalculating their SAI (IFAP, 2023). Families do not often understand that if the SAI on the FAFSA does not change, federal aid will not change; this is what could allow a student experiencing such a situation to qualify for need-based aid. Financial aid offices do not often go out of their way to publicize this kind of appeals process, but it is the most prudent way for a student experiencing that kind of hardship to have a reevaluation of their financial aid offer. Instead, a better tactic is to contact the undergraduate admissions office with an appeal letter explaining why they would like a scholarship reevaluation (especially if there is something significant such as a GPA

increase after the admissions application was sent in). Scholarships typically have a discretionary component that federal aid does not, so essentially students are often trying to negotiate with the wrong office.

There is certainly room for improvement in how financial aid offices present the financial aid process to new and continuing students. They could certainly do better at demystifying what can be an overwhelming and intimidating process, especially for first generation students, or students whose parents simply do not have recent familiarities with filing the FAFSA. If students or families happen to mention, in passing or in appeals for additional need-based aid assistance, that they receive certain forms of government assistance (SNAP, TANF, WIC, SSI, etc.) administrators should encourage them to include that information on their FAFSA, as it has an impact on SAI, and could mean the difference between some Pell and maximum Pell in some cases. County offices that provide such assistance could likewise do more to make known to families the importance of accurately reporting benefits on the FAFSA. Similarly, families with children with special needs that receive Medicaid or who have school-aged children that receive free or reduced often miss the questions reporting participation in these assistance programs, which also affect how SAI is calculated.

There is often a push by financial aid offices broadly to get students to file a FAFSA, though some more targeted campaigns may produce better results. A concerted effort to encourage students who answer affirmatively to independent status questions (such as former foster care youth), receive dependency overrides, or complete special circumstance appeals to not only file but file as early as possible, could help students from non-traditional or more disadvantaged backgrounds that may not be able to rely on

parents or other trusted adults, to ford the often confusing process. Following up on students from these populations later who submit incomplete FAFSAs (with uncalculated SAIs) could encourage persistence as some students may just give up if they have issues completing the FAFSA and/or getting a valid SAI., and if they give up, they will have to turn to sources outside of Title IV aid to finance their education. Additionally, a lot of research and attention is placed on Pell recipients, but more focus on Pell recipients that file their FAFSA in one year and then do not file in the subsequent year, could be illuminating, and approaches could be formed at federal, state, and institutional levels to ensure students that need this kind of funding to secure an education are not being waylaid somewhere and falling through the proverbial cracks. That first step of filing a FAFSA could be seen as the beginning of a path towards social mobility via securing higher education, so efforts put towards increasing FAFSA filing rates are efforts to invest in human capital.

Conclusion

Investments in human capital via more attention, resources, and support to promote and facilitate educational attainment has been proven again and again over more than seven decades since Theodore Schultz began espousing what became Human Capital Theory to have significant positive impacts on the national economy and, even more broadly, on our society (AACC, 2012; Coleman, 1988; Perna & Jones, 2013; Schultz, 1950, 1960; Zumeta et al., 2012). An educated citizenry exhibits less “socially negative behaviors” such as crime commission, has more disposable income to reinvest back into the economy, and pays more in taxes back to federal, state, and local governments (Perna & Jones, 2013, p. 100). It allows for a path to social mobility, which is the crux of “The

American Dream,” halting generational poverty and improving life trajectories for disadvantaged populations via higher wages, better job-related benefits, better health, even longer life (AACC, 2012; Aaronson & Mazumder, 2008; Coleman, 1988; Haveman & Smeeding, 2006; Haycock, 2015; Hess et al., 2015; Perna & Jones, 2013; Song et al., 2020; United Nations, 2020; Zumeta et al., 2012). As such, it is crucial that a less adversarial approach to education is taken in our country, one which prioritizes funding education and related services and programs which support educational development (including early intervention programs, special education, gifted education, speech-language pathology, physical therapy, and occupational therapy). It is imperative that future administrations are supportive of and want good working relationships with educational establishments, especially public and public-supported schools and universities.

If higher education is more embraced by governmental entities in terms of financial support (especially increasing appropriations), it could help defray some of the rising costs of college which are thrust upon families and are fueling the college affordability and student loan indebtedness crises students now face. If future federal (and state) college financial aid policies or sweeping regulatory changes to implementation of existing policies are crafted in consultation with actual financial aid practitioners, and bolstered by the years of research on the allocation of gift aid and impacts thereof for students with significant financial need that has come in the interim, perhaps substantive positive change in financial aid policy could arise which helps students while not increasing undue administrative burden on already overtaxed financial aid offices. Ideally, a shift in perspective of and approach towards education—all levels of education,

from early childhood education, through traditional K-12 education, and inclusive of higher education as well—will be ushered in by a future federal administration. An administration with a staunchly pro-education stance, harkening back to the attitudes towards education and investment in education expounded by Schultz’s Human Capital Theory and brought into the political sphere by Heller and Johnson during the “War on Poverty” could have significant ripples of influence at the federal, state, and institutional level, leading to very real positive impacts on quality of life for American citizens. This would be the most optimal scenario for not just future college students, but all students, and for our society, even if not seemingly realistic at this juncture.

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APPENDIX A
REGRESSIONS BY YEAR FOR QUESTION 1

Table 6.11. 2015-2016 Academic Year Regression of Institutional Grant Allocation by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$3,148.583	88.98		35.385	<.001
1516 Gross Need	\$0.104	0.002	0.557	52.145	<.001
1516 Merit Scholarships	-\$0.192	0.005	-0.325	-36.892	<.001
1516 Governmental Grants	-\$0.302	0.012	-0.266	-25.237	<.001
1516 Student Loan Debt	-\$0.013	0.002	-0.049	-5.586	<.001
African American	\$270.089	64.518	0.036	4.186	<.001
Asian	\$22.827	74.153	0.003	0.308	0.758
Hispanic	\$222.501	88.452	0.021	2.515	0.012
Male	-\$33.927	46.238	-0.006	-0.734	0.463
In-State Residency	-\$1,700.432	64.82	-0.227	-26.233	<.001
High Tuition Differential	\$63.265	52.868	0.01	1.197	0.231
Transfer Student	-\$2,732.304	51.613	-0.465	-52.938	<.001

$r^2 = .547$, p -value <.001

Table 6.12. 2016-2017 Academic Year Regression of Institutional Grant Allocation by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$2,425.376	61.892		39.187	<.001
1617 Gross Need	\$0.080	0.001	0.517	59.272	<.001

Table 6.12. (Continued)

1617 Merit Scholarships	-\$0.120	0.003	-0.255	-36.104	<.001
1617 Governmental Grants	-\$0.202	0.008	-0.2	-24.182	<.001
1617 Student Loan Debt	-\$0.007	0.001	-0.041	-5.682	<.001
African American	\$45.459	46.595	0.007	0.976	0.329
Asian	-\$161.142	51.51	-0.021	-3.128	0.002
Hispanic	-\$21.869	63.191	-0.002	-0.346	0.729
Male	-\$68.207	32.706	-0.013	-2.085	0.037
In-State Residency	-\$1,240.824	44.204	-0.193	-28.07	<.001
High Tuition Differential	-\$34.183	37.728	-0.006	-0.906	0.365
Transfer Student	-\$2,205.435	35.793	-0.423	-61.616	<.001

$r^2 = .425, p\text{-value} < .001$

Table 6.13. 2017-18 Academic Year Regression of Institutional Grant Allocation by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$1,717.976	66.149		25.971	<.001
1718 Gross Need	\$0.062	0.001	0.452	43.294	<.001
1718 Merit Scholarships	-\$0.070	0.003	-0.174	-21.297	<.001
1718 Governmental Grants	-\$0.144	0.009	-0.155	-16.14	<.001
1718 Student Loan Debt	-\$0.002	0.001	-0.019	-2.149	0.032
African American	\$61.847	51.127	0.01	1.21	0.226
Asian	-\$124.458	54.982	-0.017	-2.264	0.024
Hispanic	\$3.505	68.866	0	0.051	0.959

Table 6.13. (Continued)

Male	-\$57.382	35.348	-0.012	-1.623	0.105
In-State Residency	-\$838.463	47.615	-0.141	-17.609	<.001
High Tuition Differential	-\$63.505	41.357	-0.012	-1.536	0.125
Transfer Student	-\$1,678.062	38.239	-0.344	-43.883	<.001

$r^2 = .294, p\text{-value} < .001$

Table 6.14. 2018-19 Academic Year Regression of Institutional Grant Allocation by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$1,782.948	74.325		23.989	<.001
1819 Gross Need	\$0.068	0.002	0.486	42.826	<.001
1819 Merit Scholarships	-\$0.075	0.003	-0.198	-22.648	<.001
1819 Governmental Grants	-\$0.176	0.010	-0.174	-16.892	<.001
1819 Student Loan Debt	-\$0.006	0.001	-0.039	-4.101	<.001
African American	\$112.021	59.586	0.016	1.880	0.060
Asian	-\$120.771	62.118	-0.016	-1.944	0.052
Hispanic	-\$66.669	79.996	-0.007	-0.833	0.405
Male	-\$49.487	40.599	-0.010	-1.219	0.223
In-State Residency	-\$1,083.375	53.268	-0.176	-20.338	<.001
High Tuition Differential	-\$24.866	48.270	-0.004	-0.515	0.606
Transfer Student	-\$1,580.700	45.963	-0.288	-34.390	<.001

$r^2 = .307, p\text{-value} < .001$

Table 6.15. 2019-20 Academic Year Regression of Institutional Grant Allocation by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$1,361.742	96.822		14.064	<.001
1920 Gross Need	\$0.074	0.002	0.535	32.563	<.001
1920 Merit Scholarships	-\$0.066	0.005	-0.170	-14.540	<.001
1920 Governmental Grants	-\$0.189	0.013	-0.210	-14.182	<.001
1920 Student Loan Debt	-\$0.007	0.002	-0.056	-4.284	<.001
African American	-\$15.432	80.187	-0.002	-0.192	0.847
Asian	-\$249.225	80.503	-0.035	-3.096	0.002
Hispanic	-\$85.335	110.048	-0.009	-0.775	0.438
Male	-\$86.482	54.597	-0.017	-1.584	0.113
In-State Residency	-\$863.843	70.109	-0.144	-12.321	<.001
High Tuition Differential	\$11.996	65.691	0.002	0.183	0.855
Transfer Student	-\$1,336.608	67.778	-0.222	-19.720	<.001

$r^2 = .268$, p -value <.001

Table 6.16. 2020-21 Academic Year Regression of Institutional Grant Allocation by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$248.318	121.262		2.048	0.041
2021 Gross Need	\$0.023	0.003	0.298	8.258	<.001
2021 Merit Scholarships	\$0.017	0.017	0.024	0.976	0.329
2021 Governmental Grants	-\$0.022	0.015	-0.045	-1.435	0.151

Table 6.16. (Continued)

2021 Student Loan Debt	-\$0.002	0.002	-0.032	-1.074	0.283
African American	\$29.692	87.300	0.009	0.340	0.734
Asian	\$146.445	93.048	0.041	1.574	0.116
Hispanic	-\$118.795	125.664	-0.024	-0.945	0.345
Male	\$27.285	65.859	0.010	0.414	0.679
In-State Residency	-\$103.960	90.769	-0.029	-1.145	0.252
High Tuition Differential	-\$28.946	78.694	-0.009	-0.368	0.713
Transfer Student	-\$419.850	74.404	-0.140	-5.643	<.001

$r^2 = .08$, p -value $<.001$

Table 6.17. Regression of Institutional Grant Allocations by Variable (Including Maximum EFC)

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$10,665.211	211.749		50.367	<.001
Maximum EFC	-\$0.003	0.000	-0.086	-11.921	<.001
Total Merit Scholarships	-\$0.078	0.003	-0.204	-27.275	<.001
Total Government Grants	\$0.112	0.007	0.119	16.412	<.001
Total Athletic Aid	-\$0.054	0.004	-0.083	-12.322	<.001
African American	\$0.033	0.001	0.159	21.933	<.001
Asian	\$725.202	159.095	0.033	4.558	<.001
Hispanic	-\$318.073	179.076	-0.013	-1.776	0.076
Male	\$131.064	215.825	0.004	0.607	0.544
In-State Residency	-\$228.090	112.643	-0.014	-2.025	0.043

Table 6.16. (Continued)

High Tuition Differential	-\$5,380.067	149.492	-0.260	-35.989	<.001
Transfer Student	\$342.341	129.520	0.018	2.643	0.008

$r^2 = .330, p\text{-value} < .001$

APPENDIX B
REGRESSIONS BY YEAR FOR QUESTION 2

Table 6.21. 2015-16 Academic Year Regression of Institutional Grant Allocations Among Need-Blind Merit Recipients by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$5,502.872	309.702		17.768	<.001
1516 Gross Need	\$0.005	0.001	0.166	6.769	<.001
1516 Governmental Grants	-\$0.056	0.005	-0.279	-11.841	<.001
1516 Student Loan Debt	\$0.004	0.001	0.100	5.361	<.001
African American	-\$39.510	21.527	-0.034	-1.835	0.067
Asian	-\$12.578	27.829	-0.008	-0.452	0.651
Hispanic	-\$35.824	30.168	-0.021	-1.187	0.235
Male	\$21.465	16.290	0.023	1.318	0.188
In-State Residency	-\$47.490	28.188	-0.029	-1.685	0.092
High Tuition Differential	\$19.837	17.859	0.019	1.111	0.267
Transfer Student	-\$5,391.921	307.628	-0.297	-17.527	<.001

$r^2 = .157, p\text{-value} < .001$

Table 6.22. 2016-17 Academic Year Regression of Institutional Grant Allocations Among Need-Blind Merit Recipients by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$709.524	374.240		1.896	0.058
1617 Gross Need	\$0.008	0.001	0.177	9.480	<.001
1617 Governmental Grants	-\$0.055	0.005	-0.183	-10.582	<.001

Table 6.22. (Continued)

1617 Student Loan Debt	\$0.000	0.001	-0.006	-0.410	0.682
African American	-\$34.303	26.656	-0.018	-1.287	0.198
Asian	-\$32.636	32.896	-0.014	-0.992	0.321
Hispanic	-\$26.316	35.792	-0.010	-0.735	0.462
Male	-\$13.738	19.830	-0.009	-0.693	0.488
In-State Residency	-\$84.582	32.351	-0.035	-2.614	0.009
High Tuition Differential	-\$23.941	22.053	-0.014	-1.086	0.278
Transfer Student	-\$494.373	372.131	-0.017	-1.328	0.184

$r^2 = .029$, p -value < .001

Table 6.23. 2017-18 Academic Year Regression of Institutional Grant Allocations Among Need-Blind Merit Recipients by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$107.588	255.750		0.421	0.674
1718 Gross Need	\$0.011	0.001	0.234	11.374	<.001
1718 Governmental Grants	-\$0.042	0.006	-0.138	-7.410	<.001
1718 Student Loan Debt	\$0.001	0.001	0.019	1.184	0.236
African American	-\$34.606	29.949	-0.017	-1.155	0.248
Asian	-\$40.836	36.071	-0.017	-1.132	0.258
Hispanic	-\$24.940	39.576	-0.009	-0.630	0.529
Male	-\$16.901	21.934	-0.011	-0.771	0.441
In-State Residency	-\$7.941	36.173	-0.003	-0.220	0.826

Table 6.23. (Continued)

High Tuition Differential	\$0.932	24.765	0.001	0.038	0.970
Transfer Student	-\$29.352	254.880	-0.002	-0.115	0.908

$r^2 = .038, p\text{-value} < .001$

Table 6.24. 2018-19 Academic Year Regression of Institutional Grant Allocations Among Need-Blind Merit Recipients by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$1,548.747	231.765		6.682	<.001
1819 Gross Need	\$0.011	0.001	0.234	9.387	<.001
1819 Governmental Grants	-\$0.035	0.007	-0.112	-5.055	<.001
1819 Student Loan Debt	\$0.001	0.001	0.037	1.857	0.063
African American	-\$30.213	36.600	-0.015	-0.825	0.409
Asian	-\$72.768	42.098	-0.031	-1.729	0.084
Hispanic	-\$25.983	47.716	-0.010	-0.545	0.586
Male	-\$3.226	26.553	-0.002	-0.122	0.903
In-State Residency	-\$67.578	42.543	-0.028	-1.588	0.112
High Tuition Differential	-\$11.835	30.358	-0.007	-0.390	0.697
Transfer Student	-\$1,463.288	228.574	-0.109	-6.402	<.001

$r^2 = .061, p\text{-value} < .001$

Table 6.25. 2019-20 Academic Year Regression of Institutional Grant Allocations Among Need-Blind Merit Recipients by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$1,242.019	173.770		7.148	<.001

Table 6.25. (Continued)

1920 Gross Need	\$0.003	0.001	0.099	2.403	0.016
1920 Governmental Grants	-\$0.008	0.007	-0.041	-1.140	0.255
1920 Student Loan Debt	\$0.000	0.001	0.007	0.207	0.836
African American	\$4.949	38.884	0.004	0.127	0.899
Asian	-\$46.490	44.159	-0.029	-1.053	0.293
Hispanic	\$45.406	55.059	0.023	0.825	0.410
Male	-\$3.638	29.680	-0.003	-0.123	0.902
In-State Residency	\$23.090	47.468	0.014	0.486	0.627
High Tuition Differential	-\$28.811	33.590	-0.024	-0.858	0.391
Transfer Student	-\$1,223.412	172.171	-0.194	-7.106	<.001

$r^2 = .047, p\text{-value} < .001$

Table 6.26. 2020-21 Academic Year Regression of Institutional Grant Allocations Among Need-Blind Merit Recipients by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$344.792	363.196		0.949	0.343
2021 Gross Need	\$0.006	0.004	0.125	1.580	0.115
2021 Governmental Grants	\$0.036	0.019	0.122	1.913	0.056
2021 Student Loan Debt	-\$0.001	0.002	-0.017	-0.261	0.794
African American	-\$88.471	101.695	-0.046	-0.870	0.385
Asian	\$77.858	122.140	0.032	0.637	0.524
Hispanic	\$76.168	147.106	0.026	0.518	0.605
Male	\$201.190	80.653	0.122	2.495	0.013

Table 6.26. (Continued)

In-State Residency	-\$39.108	144.559	-0.013	-0.271	0.787
High Tuition Differential	\$21.610	92.292	0.011	0.234	0.815
Transfer Student	-\$480.396	338.518	-0.069	-1.419	0.157

$r^2 = .067, p\text{-value} < .001$

APPENDIX C
REGRESSIONS BY YEAR FOR QUESTION 4

Table 6.41. Student Loan Indebtedness by Variable for 2015-16 Academic Year

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$6,003.310	502.345		11.951	<.001
1516 Gross Need	\$0.268	0.012	0.364	22.790	<.001
1516 Merit Scholarships	-\$0.411	0.029	-0.176	-14.029	<.001
1516 Governmental Grants	-\$1.080	0.064	-0.242	-16.963	<.001
1516 Institutional Grants	-\$0.365	0.061	-0.093	-5.979	<.001
1516 Athletic Scholarships	-\$0.236	0.062	-0.040	-3.819	<.001
African American	\$2,327.593	335.117	0.079	6.946	<.001
Asian	-\$2,462.260	384.749	-0.070	-6.400	<.001
Hispanic	\$887.098	460.256	0.021	1.927	0.054
Male	-\$424.963	240.531	-0.019	-1.767	0.077
In-State Residency	-\$2,753.260	354.008	-0.093	-7.777	<.001
High Tuition Differential	\$667.746	275.046	0.026	2.428	0.015
Transfer Student	\$5,807.805	309.510	0.251	18.765	<.001

$r^2 = .210$, p -value <.001

Table 6.42. 2016-17 Academic Year Student Loan Indebtedness by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$9,301.097	411.451		22.606	<.001
1617 Gross Need	\$0.409	0.009	0.476	45.683	<.001

Table 6.42. (Continued)

1617 Merit Scholarships	-\$0.482	0.022	-0.183	-21.975	<.001
1617 Governmental Grants	-\$1.335	0.053	-0.237	-25.071	<.001
1617 Institutional Grants	-\$0.404	0.053	-0.072	-7.605	<.001
1617 Athletic Scholarships	-\$0.445	0.034	-0.097	-13.232	<.001
African American	\$3,611.886	295.285	0.095	12.232	<.001
Asian	-\$3,687.690	326.101	-0.085	-11.308	<.001
Hispanic	\$230.781	401.589	0.004	0.575	0.566
Male	-\$288.614	207.900	-0.010	-1.388	0.165
In-State Residency	-\$1,948.970	290.559	-0.054	-6.708	<.001
High Tuition Differential	\$223.137	239.834	0.007	0.930	0.352
Transfer Student	\$4,735.678	253.650	0.163	18.670	<.001

$r^2 = .256, p\text{-value} < .001$

Table 6.43. 2017-18 Academic Year Student Loan Indebtedness by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$12,561.230	499.065		25.170	<.001
1718 Gross Need	\$0.534	0.010	0.525	51.514	<.001
1718 Merit Scholarships	-\$0.555	0.025	-0.183	-22.450	<.001
1718 Governmental Grants	-\$1.374	0.066	-0.198	-20.734	<.001
1718 Institutional Grants	-\$0.222	0.065	-0.030	-3.405	<.001
1718 Athletic Scholarships	-\$0.526	0.042	-0.093	-12.524	<.001
African American	\$4,651.417	379.496	0.097	12.257	<.001

Table 6.43. (Continued)

Asian	-\$4,173.200	408.021	-0.079	-10.228	<.001
Hispanic	\$788.216	512.805	0.012	1.537	0.124
Male	-\$452.466	263.251	-0.013	-1.719	0.086
In-State Residency	-\$772.354	361.091	-0.017	-2.139	0.032
High Tuition Differential	\$402.555	308.086	0.010	1.307	0.191
Transfer Student	\$3,922.861	303.814	0.108	12.912	<.001

$r^2 = .295, p\text{-value} < .001$

Table 6.44. 2018-19 Academic Year Student Loan Indebtedness by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$12,868.430	526.540		24.440	<.001
1819 Gross Need	\$0.547	0.011	0.554	49.854	<.001
1819 Merit Scholarships	-\$0.520	0.023	-0.195	-22.154	<.001
1819 Governmental Grants	-\$1.416	0.073	-0.200	-19.503	<.001
1819 Institutional Grants	-\$0.377	0.067	-0.054	-5.623	<.001
1819 Athletic Scholarships	-\$0.469	0.036	-0.106	-13.211	<.001
African American	\$4,849.492	416.149	0.100	11.653	<.001
Asian	-\$3,800.460	433.920	-0.073	-8.758	<.001
Hispanic	\$1,849.357	560.215	0.027	3.301	<.001
Male	-\$341.610	284.451	-0.010	-1.201	0.230
In-State Residency	-\$640.490	382.715	-0.015	-1.674	0.094
High Tuition Differential	\$137.896	338.316	0.003	0.408	0.684
Transfer Student	\$3,276.150	338.433	0.085	9.680	<.001

$r^2 = .308, p\text{-value} < .001$

Table 6.45. 2019-20 Academic Year Student Loan Indebtedness by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$15,839.280	783.382		20.219	<.001
1920 Gross Need	\$0.700	0.018	0.599	39.046	<.001
1920 Merit Scholarships	-\$0.630	0.037	-0.193	-17.203	<.001
1920 Governmental Grants	-\$1.319	0.108	-0.174	-12.181	<.001
1920 Institutional Grants	-\$0.546	0.103	-0.065	-5.323	<.001
1920 Athletic Scholarships	-\$0.550	0.053	-0.110	-10.457	<.001
African American	\$4,937.846	648.159	0.086	7.618	<.001
Asian	-\$4,230.040	650.488	-0.071	-6.503	<.001
Hispanic	\$2,506.188	890.574	0.030	2.814	0.005
Male	-\$1,483.300	441.817	-0.036	-3.357	<.001
In-State Residency	\$155.911	579.247	0.003	0.269	0.788
High Tuition Differential	\$331.111	532.249	0.007	0.622	0.534
Transfer Student	\$3,023.194	565.598	0.059	5.345	<.001

$r^2 = .325, p\text{-value} < .001$

Table 6.46. 2020-21 Academic Year Regression Student Loan Indebtedness by Variable

Variable	Regression Coefficient (B)	Std. Error	Beta	t	Sig.
(Constant)	\$11,525.980	1533.297		7.517	<.001
2021 Gross Need	\$0.668	0.033	0.570	20.424	<.001
2021 Merit Scholarships	-\$0.009	0.217	-0.001	-0.041	0.967
2021 Governmental Grants	\$0.002	0.196	0.000	0.012	0.990

Table 6.46. (Continued)

2021 Institutional Grants	-\$0.411	0.325	-0.027	-1.263	0.207
2021 Athletic Scholarships	-\$0.638	0.150	-0.088	-4.257	<.001
African American	\$1,561.938	1118.629	0.031	1.396	0.163
Asian	-\$5,532.330	1184.608	-0.102	-4.670	<.001
Hispanic	\$2,467.405	1608.675	0.033	1.534	0.125
Male	-\$1,182.190	843.098	-0.030	-1.402	0.161
In-State Residency	\$1,910.550	1165.069	0.035	1.640	0.101
High Tuition Differential	\$181.012	1008.215	0.004	0.180	0.858
Transfer Student	\$1,111.345	962.670	0.025	1.154	0.248

$r^2 = .341, p\text{-value} < .001$