Does Looking for Help Matter? The Relationship Between Information Sources and Borrowing Decision Factors in Student Loan Decisions

Thesis

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Abstract

America’s total educational debt recently surpassed the $1.3 trillion mark, concerning students, educators, and policymakers alike. Most research on student loans focuses on either the pre-college phase, examining how students develop an understanding of and attitude toward debt, or the post-college phase, when they have completed their education and are dealing with the lump-sum implications of the borrowing decisions they have made. Few studies have considered the decision-making process itself, even though most students will make dozens of individual borrowing choices during their educational journey.

This study uses a series of binary logistic regression models to explore the relationship between the sources of information students consult when making choices about loans and the borrowing decision factors they. It finds that students who consult parents, financial aid counselors, themselves, or the internet are significantly more likely to use budgets, to borrow as little as possible, to think about their total debt at graduation, and to think about the amounts they have borrowed in the past, while controlling for selected academic, demographic, and socioeconomic variables. Because students who sought advice about loans made more considered borrowing decisions, institutions of higher education should do more to encourage and facilitate these types of conversations.
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Fields of Study

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Chapter 1: Introduction

America’s issue with educational debt has been decades in the making. What began as a small-scale loan program designed to make college more affordable has ballooned to $1.3 trillion in accumulated debt and an average debt per borrower of $27,000 (Hillman, 2015). Despite a wealth of scholarly research, little consensus exists about the reasons behind its rise and what the resulting consequences will be. It is a problem that tends to be examined either for its role in how students choose a college (Burdman, 2005; Kim, 2004) or its impact upon those students after their educational journey is over (Austin, 2013; Heller, 2001). Little research is done in the “murky middle,” or the timeframe during college in which students are making active decisions about borrowing. It is also a problem that is usually discussed in lump-sum terms (Monks, 2001; Price, 2004), with few studies stopping to consider the unique way in which educational debt is acquired. Unlike a car loan or mortgage, where a person makes a single decision to take on debt, student loans are usually acquired incrementally over a number of years. A typical student will make dozens of choices over the course of their education about whether they should borrow to finance school expenses and how much they should borrow if they choose to do so (Delisle & Holt, 2015).

This study comes at a time when student loans are a central feature in the national dialogue around the importance and relative worth of a college education (King, 2008;
Looney & Yannelis, 2016). Although decision-making plays a role in how students think about and acquire debt, few studies have examined how the students themselves think through those choices. A more thorough understanding of how students make debt decisions, who they go to for guidance, and how considerations may change based on demographic differences is vital. Unpacking these decisions, and thus beginning to explain what takes place in the “murky middle,” will not only allow for a more thorough understanding of the $1.3 trillion issue facing America, but also illuminate how to best support individual students struggling to finance their education.

**Rise of Loan Debt in the United States**

The rise in educational debt has been fueled by several complex, interwoven factors. Many researchers have tried to tease apart its root causes, finding that everything from broad national attitudes about education (Duffy & Goldberg, 1998; Fuller, 2014) to student demographic shifts are involved (Hearn & Holdsworth, 2004). Although little consensus exists regarding which issues bear the brunt of the responsibility, most researchers would agree that any discussion of America’s increasing debt burdens requires considering the problem holistically.

The federal government’s student loan program awarded its first educational loans in the fall of 1967. In that first year over a quarter-million loans were issued for a total debt of $244 million (Fuller, 2014). Since 1967 the trend line of student loan borrowing has pointed unwaveringly upward, although the rate of increase has fluctuated with changes in demand, policy, and college pricing. Over the course of the first 30 years
student borrowing increased twenty-five times over, even after adjusting for inflation (King, 1997).

The first major escalation occurred after the Middle Income Student Assistance Act [MISAA] of 1978, which removed income-based borrowing hurdles. Although it was later repealed, borrowing never returned to pre-MISAA levels (King, 1997). The second increase came after the 1992 reauthorization of the Higher Education Act. This legislation broadened borrowing eligibility and raised loan limits, resulting a 30% jump in student borrowing in a single year. By the 1996-1997 school year 8 million loans were issued for a grand total of $29 billion (King, 1997). Between 1996 and 2014 the amount increased an additional 227% to nearly $100 billion awarded in federal loans yearly (National Association of Student Financial Aid Administrators [NASFAA], 2015). Although policy changes played a role in this meteoric rise, they were not the only catalyst.

America’s expanding higher education system also contributed to the increases in student loan debt. Between 2003 and 2013 the United States saw a 20% increase in undergraduate enrollment in degree-granting postsecondary institutions (National Center for Education Statistics [NCES], 2015); in other words, each year the total number of new students entering college increased by over a million. Much of this enrollment increase was fueled by students who had previously been excluded from higher education, such as students of color and those from low income families. The influx of these populations, combined with the economic recession in the mid-2000s, meant that
more students were using loans to finance their education than ever before (Brown et al, 2014).

As more of the population gained access to higher education, national attitudes about the purpose of college shifted. Prior to the mid-1970s a college education had been considered a public good, with most believing that a well-educated citizenry contributed to more robust economy and better-informed voters. Since that time, however, the perceived benefits of a college education have been increasingly confined to the individuals receiving the education rather than the nation as a whole (Duffy & Goldberg, 1998). As national attitudes changed so did the funding model. When higher education was viewed as a public good financial aid emphasized grant aid, scholarships, and negligible tuition, particularly in the country’s public universities. As the focus shifted to education as a private good, however, loans began featuring more prominently in student aid packages (Fuller, 2014). By the end of the millennium loans had become the majority of federal financial aid offered to students (College Board, 2000). Tuition had also been steadily increasing during this time as federal and state governments dialed back support; between 1983 and 2013 tuition increased by an average of $14,000 at public colleges and by $19,000 at private ones (NCES, 2014). All of these changes have contributed to the $1.3 trillion in outstanding education loans.

**Educational Debt as Inequality**

Although the sheer amount owed is enough to give pause, student loans also merit consideration because they do not affect all populations equally. Student loan burdens are disproportionately distributed to students that prior research shows are already considered
to be most “at-risk” of not succeeding in college. Students of color, first generation college students, and low income students, among others, not only carry above-average levels of educational debt, but also experience more negative consequences as a result of that debt. (Callender & Jackson, 2005; Chen & Wiederspan, 2014; Houle, 2014).

The lack of equity in student loans is striking. In one study Houle (2014) found that Black students have 51% more loan debt than White students and that students from high-income families accumulated 240% less debt than students from low income households. These differences held even when controlling for aid from family, parental education, and other financial aid offered by institutions. Other studies have confirmed similar patterns (Callender & Jackson, 2005; Chen & Wiederspan, 2014).

The reasons for these disparities are complex, and some have been more thoroughly researched than others. Many of the studies that examine how different populations acquire debt focus on students’ behaviors prior to enrolling in higher education institutions. As students are accepted into colleges they begin thinking about loans in the abstract (Sallie Mae, 2014) and using financial aid packages to choose between the schools to which they’ve been admitted (Kim, 2004). Depending on their attitude toward loans they may begin employing debt aversion strategies to reduce or eliminate the need for borrowing (Callender & Jackson, 2005). The way that individual students make decisions about loans is influenced by both their ability to make rational choices (Becker, 1993) and their relative amounts of social and cultural capital (Bourdieu & Passerson, 1977). Students with identities or backgrounds that restrict their ability to get timely, accurate information about education loans are at a disadvantage when
making these decisions, explaining some of the observed inequality. Even so, little research has been done to understand where students turn for help when making borrowing choices and how the help they receive influences their decision-making process.

**Contextual Factors Influence Choice**

Perna (2006) developed a model that sought to explain how the different layers of context to which a student is exposed inform and influence the decisions they make about where to go to college. At the center of the model is the choice itself; the model assumes that the decision a student makes is rational based on the information available to the student at that time. It also assumes, however, that both the information available to the student and what qualifies as a rational choice are fundamentally related to the layers of context that surround the student; in decreasing order of influence, these layers are the individual habitus, the school and community, the higher education context, and finally the socio-political realm in which the choice takes place. As this was intended as a model of college choice, in this case the end result is an individual student making a choice about which institution to attend (Perna, 2006).

Even though the analogy is not exact, it is a useful framework from which to understand students’ loan decisions. Although very little research has looked directly at how students make these decisions, the broader debt literature emphasizes that students’ attitudes toward debt are a direct reflection of the opinions of their parents, schools, and broader cultural communities (Cunningham & Santiago, 2008; McDonogh & Calderone, 2006; Perna, 2008;). Parents are perhaps the source of information most likely to be
consulted by students in making loan decisions, but studies have shown that many parents have a poor understanding of financial aid. Often, the parents whose children are most likely to need detailed advice are the parents who are least equipped to give it (Perna, 2008). Similar patterns exist when considering schools or communities—those with the fewest resources often have the least knowledge around financial aid topics (Bell, Rowan-Kenyon & Perna, 2009).

**Decisions that Last a Lifetime**

The loan burdens that result from these decisions and the consequences associated with them are well studied. This body of research can be thought of as the “post-decision” realm, meaning it explores the total amount of debt with which students graduate and how that burden may alter the course of their lives.

The consequences of student debt represent more than just lump sum burdens; loans also put a strain on academics, cause financial stress, and can result in people forgoing major life milestones such as buying a house or having children (Dwyer, McCloud, & Hodson, 2012; Houle, 2014). It is important to note that the effects of debt are not linear, and small amounts of educational debt (typically below $10,000) have been linked to increased retention and reduced financial anxiety (Drentea, 2000; Dwyer et al, 2012). Unfortunately, as the average debt per borrower is $27,000, most students experience the negative side of loans rather than the positive (Hillman, 2015).

**The “Murky Middle” of Student Debt Decisions**

The vast majority of research on student debt takes place in either the pre-decision timeframe or the post-decision timeframe. Very few studies examine how students
experience debt while they are acquiring it or how they participate in the decision-making process itself. While this area is neglected in the research, it has a critical role to play in understanding the nation’s mounting debt issue as well as supporting the students adding to it each year (Deslisle & Holt, 2015). In order to accomplish both of these objectives the distinctive nature of loan debt must be examined with much sharper focus.

The process of acquiring educational debt is unique from acquiring any other type of debt. Although student loans are often compared to car loans, mortgages, or credit card debt, these surface-level associations do not hold up under close scrutiny (Deslisle & Holt, 2015). For example, consider a debt amount of $25,000. If an individual acquires a car loan for $25,000 it represents a single point of purchase—one lender, one point of sale, one interest rate. The borrower knows the duration of the loan and is given a firm monthly payment. Based on their current income and budget they are able to make an informed, considered decision about how much to borrow.

Now consider how a student might acquire $25,000 in educational debt. Unlike car debt, which is all acquired at a single time, educational debt is acquired incrementally. In most cases a debt load of $25,000 results from many individual decisions to borrow. Financial aid is awarded on a yearly basis, so every ten to twelve months students must make a decision about whether or not to use loans and, if they choose to borrow, how much they will need for the year. On top of that, in a single aid package a student may be offered several different types of loans that each have their own borrowing limits, interest rates, and repayment schemes (Delisle & Holt, 2015).
Additionally, when students begin acquiring debt they do not have a firm grasp of how much they will owe at the end, what their eventual monthly payment will be, or what job (if any) they will have after graduation. Each year’s round of decisions, then, represents a bigger and bigger gamble that they will be able to secure a job with a salary high enough to cover the cost of their loans (Akers & Chingos, 2015; Delisle & Holt, 2015). Framed in this way, it is clear that how students make decisions about educational debt is distinct from how they make decisions about other types of consumer debt. In present conditions, even a diligent student might struggle to make informed, careful choices about how much to borrow.

The few recent studies that have examined this “murky middle” decision period have returned alarming results. Although some have suggested that students are making well-informed loan decisions (Hart & Moustafa, 2008), others have raised concerns about the degree to which students understand the debt they acquire. One study at Iowa State University found that one in ten students were unaware they had a loan and another 10% underestimated the amount they owe by more than $10,000 (Andruska, Hogarth, Feltcher, Forbes, & Wohlgemuth, 2014). Another study on a wider scale found similar results. In a national sample of first-year students, almost half underestimated the amount they owe by more than $1,000 and one-quarter underestimated by more than $5,000 (Akers & Chingos, 2014). It is concerning enough that the nation is tipping over the $1.3 trillion mark in student loan debt, but it is even more alarming to realize that many students may not even understand to what extent they are a part of it.
Purpose of this Study

At this point very few studies have examined how students navigate the in-the-moment decision-making process of borrowing to finance their education. Knowing more about what sources of information students consult when making these choices and how they relate to the borrowing decision factors students use will shed more light on the process by which education debt is acquired. It will also allow educators and policymakers to provide more direct, timely interventions to influence these decisions.

The ultimate goal is that all students will begin to make wise choices regarding educational debt. Although the problem may seem insurmountable, even small changes in student borrowing behaviors could lead to large positive effects later in their lives. For example, if a student could reduce their borrowing by just $250 per semester over the course of four years in college they would graduate with $2,207 less debt, assuming an unsubsidized loan with a 4% interest rate (Sallie Mae, 2016). Furthermore, after graduation that same student would save $23 per month ($276 per year) on monthly payments in the standard repayment plan and could end up saving more than $3,000 over the course of repayment (Federal Student Aid, 2016). This example uses small loan amounts and very conservative interest rate estimates, so the actual impact could be much larger.

The purpose of this study is to capture how students are thinking about borrowing during the time period when the decisions are being made. Specifically, it explores how the sources of information students consult when making choices about loans are related to the borrowing decision factors they use. To accomplish this goal, this study uses a
series of binary logistic regression models to interpret data on student debt decisions that was collected in the 2014 administration of the Study on Collegiate Financial Wellness [SCFW]. The specific research question is: How do the sources of information students consult when making choices about education loans relate to the borrowing decision factors they use to make these decisions?
Chapter 2: Literature Review

Despite the national attention around student debt and its prominence in the higher education sphere the topic is still not well understood on the granular, decision-making level. Although few studies have attempted to explain what is taking place in the “murky middle” when students make decisions about debt, many have worked to understand how the crisis arose, how students learn about and understand educational debt, and how the decisions students make about loans impact their educational journey. A thorough review of each area of research provides necessary context for identifying gaps in existing knowledge and situating the current study within the broader field of student debt research.

History of Student Debt in the United States

The current level of student debt in the United States is an issue over fifty years in the making, bolstered by a series of education acts. Federally funded education loans originated in the 1958 National Defense Education Act and loan programs further expanded under the Guaranteed Student Loan program as part of the Higher Education Act of 1965. While growth in student loans started with these early programs, it began in earnest by the mid-1970s (Hearn & Holdsworth, 2004). In 1972 the Higher Education Act was re-authorized, creating the Stafford Loan program, originally called the Guaranteed Student Loan Program (Fuller, 2014). It was during this decade that loans
began to dominate federal student higher education funding, increasing to 41% of
distributed aid by 1980. The increase was aided by the reauthorization of both the
Guaranteed Student Loan Program and National Direct Student Loans in the 1972 Higher
Education Act (Duffy & Goldberg, 1998).

The growth in federal student loans over several decades was accompanied by a
decrease in grants and other gift-based aid (College Board, 2000; Duffy & Goldberg, 1998). It is beyond the scope of this analysis to offer a full review of how federal aid
policies have shifted over time, but a basic overview is necessary to illustrate how loans
came to occupy such a prominent portion of awarded student aid.

Broadly, the shift to loans as the predominant vehicle for student aid reflects a
shift in national attitudes over the last four decades regarding the purpose of a college
education. The federal government once considered education to be a public good,
recognizing that a more educated citizenry leads to a more informed electorate and a
better national economy. This attitude can be attributed to the human capital movement
of the 1960s, which stressed that “investment in people…has returns just as does
investment in physical capital” (Duffy & Goldberg, 1998, p. 192). In the 1970s, however,
focus shifted to the private, individualized returns of higher education, such as better
salaries and increased job security for the people with advanced degrees. Following this
rationale, higher education was considered a private good as well as a public one; its
benefits focused on the improved economic outlook of individuals rather than the
elevation of society as whole (Duffy & Goldberg, 1998).
A shift in funding strategies came along with this shift in attitudes. Prior to the mid-1970s federal financial aid policy emphasized grants as the primary way for governments to help students fund their higher education journeys (College Board, 2000). While nothing in politics is ever unanimous, this funding model enjoyed a high degree of consensus among policymakers (Hearn & Holdsworth, 2004). By the mid-1970s, however, as the rhetoric around the purpose of higher education began to focus on its individual benefits the financial burden began to shift to individuals as well. At the federal level grant funding and other gift aid was reduced, while loans began to take up a larger proportion of educational spending. Ronald Reagan slowed the growth somewhat during his tenure in office, but the 1990s were widely recognized as “the decade of loan expansion” (Fuller, 2014, p. 124).

In the *Trends in Student Aid Report* (2000) the College Board noted “over the past quarter century, federal student aid [has] drifted from a grant-based to a loan-based system, producing a sea change in the way many students and families finance postsecondary education” (p. 4), calling it the “most prominent trend in student aid” (p. 3) since the early 1980s. By the 1999-2000 school year, federal loans represented the majority (51.4%) of student financial aid (College Board, 2000). As policy changes, rising tuition costs, and political attitudes also contributed to the acceleration of student debt (Fuller, 2014), by the end of the millennium loans had become the primary way for students to finance higher education.
**Current Snapshot of Student Debt**

The growth in student loan debt has received a great deal of attention from researchers, the media, and consumers alike (Looney & Yannelis, 2016). Student debt in the United States broke the trillion-dollar mark in 2012 and the most recent estimates show it as greater than $1.3 trillion (Board of Governors of the Federal Reserve System, 2017), leaving many to wonder whether a crisis similar to the 2008 housing bubble is on the horizon (Austin, 2013; Looney & Yannelis, 2016).

These numbers are best understood in light of historical trends in lending. In the 1995-1996 school year the federal government disbursed $35.5 billion in undergraduate student loans. Additionally, $3.8 billion was disbursed in PLUS loans and approximately $2 billion in non-federal loans (College Board, 2015). In contrast, in the 2015-2016 school year students borrowed over $76 billion in undergraduate loans provided by the federal government (a 114% increase), $10.6 billion in Parent PLUS loans (a 179% increase), and $10.1 billion in nonfederal loans, such as those provided by banks or other private lenders (a staggering 405% increase) (College Board, 2015).

While it is important to consider the total amount of student loans dispersed, given that this study focuses on individual-level decision making it is also informative to consider increases in the amount of debt per student. In the 1994-1995 school year 3.8 million students borrowed subsidized loans, with an average loan amount of $3,392, and 2.1 million students borrowed unsubsidized Stafford loans with an average loan amount of $3,673 (College Board, 2000). In contrast, in the 2014-2015 school year over 6.6 million undergraduate students borrowed subsidized loans, with an average loan amount
of $3,750 (a 10.6% increase), and 6.3 million students borrowed unsubsidized Stafford loans, with an average loan amount of $4,120 per student (a 12.2% increase) (College Board, 2015). Thus, both total federal expenditures on educational debt as well as per-student borrowing have increased in the past 20 years.

Because the purpose of educational debt is to facilitate a student’s ability to obtain a degree (Baum & Schwartz, 2006), the amount of debt upon graduation is another metric by which student debt burdens can be contextualized. In the 1999-2000 school year students graduating from public colleges had an average debt per borrower of $19,500 and those graduating from private colleges had an average debt per borrower of $22,300 (College Board, 2010). In contrast, fourteen years later the average debt per borrower in the 2013-2014 school year was $25,500 for those graduating from 4-year public institutions (a 31% increase) and $30,200 for those graduating from 4-year private, non-profit institutions (a 35% increase) (College Board, 2015).

It is clear that American educational debt has increased by many metrics over the last ten years. Not only has the total amount of debt increased, which might be expected with greater numbers of students attending college than ever before (National Center for Education Statistics, 2015), but so too have the amounts students borrow each year and the total debt with which they graduate. As troubling as these measures are, the overall amount of borrowing has actually been decreasing over the last several years. For example, borrowing from the Direct Loan programs has fallen by 20% since the 2010-11 school year and nonfederal borrowing has fallen by 60% since 2007-08 as America continues to claw its way out of the most recent recession. While there has been an
overall reduction in borrowing, it is not representative of the experience of all students. Students of color, low income students, and first generation college students, among others, continue to be saddled with higher levels of educational debt relative to their more privileged peers (College Board, 2015). Understanding how students make loan decisions is an important step in improving borrowing behavior and outcomes for those from all backgrounds.

**What is student debt?**

Student debt is often discussed as a single, monolithic entity but in reality the $1.3 trillion dollars in loans is comprised of a variety of different types of debt (Board of Governors of the Federal Reserve System, 2017). When considering the decisions student make about taking on educational debt it is important to understand that not all debt is created equal; loans offered to students may vary wildly in amount, source, type, interest rate, and available repayment options. It would be impossible to explain the subtleties of every different public, private, state, and institutional loan, but an exploration of the major differences in the federal programs offers insight into not only the details behind the largest source of student debt funding, but also the level of complexity that students who take on debt are expected to understand. A brief overview such as this one highlights the maze of standards students must attempt to navigate when making debt decisions. Grasping the complexity of federal student loans is an essential precursor to exploring research that purports to explain how students come to understand financial aid broadly and student loans specifically.
Federal Direct Loans. Federal Direct Loans are the most common loans taken out by undergraduate students (College Board, 2015). There are two types of federal loans available to undergraduate students through the William D. Ford Federal Direct Loan Program: Direct Subsidized Loans and Direct Unsubsidized Loans. Direct Subsidized Loans are available only to undergraduate who have demonstrated financial need through the Free Application for Federal Student Aid (FAFSA). Direct Unsubsidized Loans are available to both undergraduate and graduate students regardless of financial need (Federal Student Aid, 2015b). Students are not required to make payments on either of these loans while enrolled in school, but Direct Unsubsidized Loans accrue interest during enrollment while the government pays interest on Direct Subsidized Loans during this time. Each loan’s interest rate is set by Congress and the rates usually change year-to-year (Federal Student Aid, 2015b). Although at the time of this writing the interest rates on both loans are set at 4.29% (Federal Student Aid, 2016b), historically Unsubsidized loans have had higher interest rates than Subsidized loans (Federal Student Aid, 2015b). Students are capped on how much they may borrow from each program annually; the caps themselves vary from student to student and are dependent upon year in school, financial need, and the family’s Parent PLUS loan eligibility (Federal Student Aid, 2015b). The United States Education Department is the lender for both Subsidized and Unsubsidized loans, although loan repayment is handled by one of ten private servicing agencies (Federal Student Aid, 2016a). Although Direct Loans are the most utilized type of federal debt, they still have many layers of complexity that students must take into consideration to practice savvy borrowing.
A further point of confusion that may arise is that even today Direct Loans will sometimes be referred to as “Stafford Loans,” (e.g. Illinois Student Assistance Commission, n.d.; University of Maryland, Baltimore County, n.d.) although that term is no longer correct. Stafford loans were part of the Federal Family Education Loan Program (FFELP) and, although they were administered by the federal government, the funds for loans came from private sources such as banks or credit unions (Student Loan Finance Corporation, 2014). FFELP was eliminated as part of President Barack Obama’s Health Care and Education Reconciliation Act of 2010; from that point forward, every federal loan was “direct” or serviced by the Education Department itself (Health Care and Reconciliation Act, 2010). The distinction is important to understand because while no new Stafford Loans are being issued, they are frequently referenced in the student debt literature (e.g. Avery & Turner, 2012).

**Federal Perkins Loans.** Perkins Loans are much less common than Direct Loans, but still represent around a billion dollars in student debt each year (College Board, 2015). Funding for Perkins Loans comes from the federal government, but the loan itself is administered through higher education institutions. Perkins loans are a hybrid between federal loans and institutional loans. Like Direct Subsidized Loans, Perkins Loans require that students have demonstrated financial need through the FAFSA. The interest rate has remained constant at 5% for the lifetime of the program (U.S. Department of Education, 2014). Unlike Direct Loans, however, the student’s institution is the lender for Perkins Loans. Repayment is due to the institution itself or to a chosen service provider. Unlike Direct Loans, which have set award ceiling for each student, the institution has leeway
over how much Perkins funding to award depending on aid packaging and availability. Some limits exist, however—yearly awards may not exceed $5,500 and undergraduates may not borrow more than $27,500 in aggregate (Federal Student Aid, 2015b).

It is worth noting that the Perkins Loan Program is in its final stages. The program was almost abolished in 2015 (Shaffer, Sohl, & Steele, 2016), but it was resurrected for two more years through the Federal Perkins Loan Program Extension Act of 2015. As part of the act no new Perkins Loans will be disbursed after September 30, 2017. No new funding will be provided to the program after the 2017-2018 school year (Federal Perkins Loan Extension Act, 2015), eliminating a vital part of many students’ financial aid packages.

**Federal Direct PLUS Loans.** Unlike the previous types of debt, this loan is awarded to the parent rather than the student and requires an evaluation of the parent’s credit-worthiness. Although any parent with an eligible student is allowed to apply for a Federal Direct PLUS loan, the credit requirements are strict (Federal Student Aid, 2015a)—in the 2010-2011 school year more than a quarter of applicants were denied (Nelson, 2012). Students whose parents have been denied a Direct PLUS loan are eligible for increased Direct Unsubsidized Loan funding (Federal Student Aid, 2016b). Parent PLUS loans will not be a focus of this analysis, but a basic awareness is important because they may impact student borrowing decisions. For example, parents may carry debt instead of students (Ang & Alexandrov, 2016) or students may take on additional Direct Loan debt due to their parents being denied funding.
Debt complexity and student loan decisions. The above overview represents an extremely brief explanation of federal loan options. Consider a student who must borrow each year of their college career. Due to variable interest rates, a fluctuating cost of attendance, and a FAFSA-defined expected family contribution that is reassessed upon each filing, the types, amounts, and servicers of loans offered to students may change yearly. If a student must take on additional private loan debt to cover unmet need the options balloon even further. For example, The Ohio State University’s financial aid website connects students to a private loan clearinghouse that offers more than fifty options from which to choose (“FASTChoice Loan Options,” n.d.).

While the level of choice and complexity presented to the average college student who relies on loans to finance their higher education journey is immense, most students are ill-prepared to evaluate their options. Research shows that college-bound high schoolers have very limited levels of financial literacy, despite many state-mandated programs that require high school classes on the topic (Fernandes, Lynch, & Netemeyer, 2014). If most students are not relying on a thorough understanding of financial topics to make decisions about student loan debt, then exploring the process by which they make these decisions is of even greater importance for policymakers and educators hoping to lead students to more sound decisions.

As the following sections begin to review what is known about how students make debt decisions, two facets of the process highlighted above must remain in sharp focus: 1.) the information students must use to make debt decisions is ever-changing and,
2.) acquiring education debt is a process that requires many individual choices over the course of a student’s undergraduate career.

**Theoretical and Empirical Studies**

The following section reviews pertinent theoretical and empirical literature on the topic of student debt. Student debt is usually discussed from three distinct vantage points: its impact on pre-enrollment college choice; its impact on educational success measures such as retention, GPA, and/or degree completion; and its impact on students’ lives after graduating or dropping out. Less work is being done on how students make debt decisions, what factors they consider in making those decisions, and what sources of information they consult. Thus, the actual choices behind student debt are all but obscured by the events leading up to them and the fallout that may result from them.

**College Choice**

In the fall of 2016 just over 17.3 million new students enrolled in undergraduate programs in the United States (National Center for Education Statistics, 2015). Each student who enrolls in a postsecondary program makes a series of choices—not only the choice to attend college, but also the choice of which college to attend. This sequence of events—the process by which students decide to attend college, search for colleges that fit their needs, and choose between those that admit them—is broadly framed as the college choice model (Hossler & Gallagher, 1987; Perna, 2006). Literature about college choice has a rich history dating back well over half a century (Perna, 2006), and a full review of it is beyond the scope of this paper. With that said, neglecting to address certain aspects of college choice affected by financial considerations and loans would be remiss.

College choice literature frequently draws upon two theoretical models: the economic model of human capital investment and the sociological model of status attainment (Hossler, Braxton, & Coopersmith, 1989; Perna, 2006). Briefly, the human capital investment model assumes education is one of the best investments a person can make because additional years of study increase earnings through enhanced productivity. It also assumes that humans make rational choices that represent a careful balancing between costs of attending college and the benefits that result. Costs include out-of-pocket expenses as well as foregone opportunities for earnings or leisure time. On the other hand, the benefits include employment benefits, greater long-term earning potential and lowered unemployment risk; personal benefits, like longer life expectancy and more enjoyable work; and immediate benefits, like enhanced social status and enjoyment of learning (Becker, 1993).

The other major school of thought in college choice literature is the sociological model of status attainment. This model examines how differing levels of cultural or social capital impact all stages of college choice (Perna, 2006). Cultural capital represents attributes that students receive from parents and that embody the students’ socioeconomic status (Bourdieu & Passeron, 1977). Social capital, on the other hand, examines both parents’ ability to communicate norms of success as well as structural barriers to accessing success that may arise due to a student’s membership in disadvantaged groups (Bourdieu, 1986; Coleman, 1988). Considering the roles of social and cultural capital
allows college choice studies to examine the effect of context at both an individual level and structural level (Perna, 2006).

Perna (2006) developed a new theoretical model of college choice that brought the role of context to the forefront of the process and used it to integrate the economic and sociological models. The model is a series of layers representing the sources from which students acquire knowledge with which to choose a college. At the center (layer one) is an individual’s habitus, such as their knowledge about college, their family’s social and cultural capital, their access to assistance with the process, and their demographic characteristics. Layer two is the school and community context, such as where a student attends high school and the norms and values of the surrounding community. Layer three brings in the higher education context, such as institutional characteristics, location, and recruitment strategies. Finally, the outer layer considers the social, economic, and policy contexts in which the decision is taking place. Information from all of these layers feeds into how a student thinks about the cost-benefit analysis of college enrollment, located at the center of the layers of context. Once all of these factors have been taken into account, a student makes a choice about which college to attend (Perna, 2006).

Although Perna’s (2006) framework was not developed specifically for considering decisions about debt, it assumes that students consider finances as part of the choice process. The model also acknowledges that knowledge about finances can come from many sources, not just a student’s immediate family. If one considers the “choice” in question to be loan decisions, rather than where to attend college, it serves as an
excellent structural framework from which to construct the process that underlies this study. It not only highlights the many sources of information that students may turn to when making loan decisions, but also explicitly recognizes that these sources affect what students consider to be rational decision-making factors to use when making debt choices. With that foundation built, the following sections will explore the layers of context from which students draw information about financial aid and loans.

Nationwide, the cost of a college education is not far from the minds of students and families. A study released by Sallie Mae (2014) indicated that a majority of families in the 2013-2014 school year refused to even consider certain institutions because of price. A backbone assumption of the economic models of college choice is that students will make rational decisions based on the information to which they have access. It does not assume that students are omnipotent; rather, it recognizes that different students have access to different amounts of accurate information. The many layers of access surrounding that information, as in Perna’s (2006) model, influence the quality and quantity of information a student receives and the decision that they make (Perna, 2006).

This model also reflects the ways in which students come to understand and access financial aid, particularly student loans. A recent literature review by George-Jackson and Gast (2015) examining intersections between college choice and financial knowledge confirmed the overlapping layers of context identified by Perna’s (2006) model a decade earlier. The authors found that, in order of importance, students acquired financial information from: “(1) parents; (2) secondary school counselors and teachers; and (3) higher education institutions’ websites and other Internet sources” (George-
Jackson & Gast, 2015, p. 215). Like Perna’s (2006) model of college choice, the authors furthermore recognize that a source’s ability to affect a student’s financial aid awareness is a function of the degree to which the source itself possesses accurate knowledge, is recognized by the student as a resource, and is able to reach the student in a timely manner (George-Jackson & Gast, 2015). The influence of each source will be explored in detail below.

**Parents.** Parents play a significant role in the way students think about loans, financial aid, and college costs. They typically represent the source of financial information that is closest to and in most contact with the student (Perina, 2006; Shim, Barber, Card, Xiao, & Serido, 2010). Although parental involvement has a positive impact on a student’s college enrollment (Perna & Titus, 2005), “disparities exist across race, ethnicity, income, and educational level” (George-Jackson & Gast, 2015, p. 215) in terms of parents’ abilities to convey accurate information about college costs and financial aid to their students. Part of this discrepancy can be explained by the differential levels of social capital accessible to parents based on their place in society’s structural hierarchy and the relative lack of financial information that may result (O’Connor, Hammack, & Scott, 2010; Perna & Titus, 2005).

For example, Grodsky and Jones (2007) examined the effects of race, ethnicity, and socioeconomic status on parents’ willingness and ability to estimate college costs using data from the 1999 National Household Education Survey. The study found that parents who were White, more educated, and more well-off financially had higher odds of attempting to estimate the cost of college. Even so, all parents in the sample tended to
overestimate the cost of college. The average parent overestimated by 175% of the true price, although the guesses from parents with less social capital displayed a greater variance than those from more privileged categories. This study highlights the difficulties that families face in estimating the cost of college and, in turn, the potential loan burdens that might result. More importantly, however, it highlights that even though parents from privileged groups were no better than parents from less privileged groups in estimating the cost of college, they were more willing to attempt to do so. This finding suggests that, regardless of actual knowledge, parents with more social capital may feel more informed and more willing to help their students engage with college-related financial topics (Grodsky & Jones, 2007).

One study by O’Connor et al. (2010) further examined the role of social capital, measured by parental access of college financial information, in explaining the overrepresentation of Hispanic students at 2-year institutions. The authors found that having parents who actively sought financial aid information, saved for college, or were otherwise involved in students’ financial decisions increased Hispanic students’ likelihood of attending a four-year school at a greater rate than Whites from similar backgrounds. Like the previous study, it suggests that it is not the quality of parents’ financial knowledge but rather their willingness to be involved in the discussion that has a positive impact on students. Yet, all other factors held constant, Hispanic students were less likely than White students to have such “involved” parents (O’Connor et al., 2010).

While this study provides good information regarding the importance of parental involvement in college financial choices, it brings to light the limited consideration that
loans receive in the literature on student financial knowledge. Due to concerns with community college completion and transfer rates, the authors make the near-uniform assumption that attending a four-year school is a more educationally sound choice than attending a two-year school (O’Connor et al., 2010) without considering the increased financial burden that may result (College Board, 2015). For example, if a student chooses to attend a 4-year school but accrues a detrimental amount of debt in the process the choice may not be a positive one (Baum & Schwartz, 2006). Given the prominent role that parents play in students’ financial awareness, the study by O’Connor et al., 2010 would have been improved by including variables designed to measure parents’ attitudes toward student loan debt.

The layers of context from schools and communities that influence students’ financial perceptions shape parents’ as well. For example, one study by Perna (2008) found that parents whose students attended high-resource schools were more likely to view education debt in a positive light or at least as a grudging necessity, even though many expressed that they hoped their children would not need to use loans to pay for school. Most parents at low-income schools, on the other hand, were uncertain that the benefits of loans would ultimately outweigh the costs and were more likely to encourage their students to pursue the lowest cost options. These perceptions of loans were translated to students and influenced their willingness to borrow to pay college prices. (Perna, 2008). This study provides a counterpoint to O’Connor et al.’s (2010) study that suggests parental involvement of any type steers students toward 4-year options. The inherent contrast between the two emphasizes the complex nature of parental influence in
student decision-making. While the levels of context in Perna’s (2006) model are framed as discrete influences, they are perhaps better understood as interlocking systems of knowledge that work together to steer students’ college and financial decisions.

This section provided a brief overview of the role that parents play in students’ financial aid awareness and perception of student loan debt. Although parents obviously play a large role in how students conceptualize these topics, to date no study has attempted to link parental involvement to the actual decision factors that students consider when thinking about debt. More research is needed to determine the interplay between parental involvement and students’ resulting debt decisions.

**Secondary school counselors and teachers.** Outside of family structures, high schools and counselors represent students’ largest sources of information about financial aid and college (George-Jackson & Gast, 2015; Perna, 2006). The information communicated through these channels reflects the values local community, as well as the time and the resources schools are able to devote to college preparation. Schools with fewer resources may lack the capacity to communicate college and financial aid information in a timely fashion due to large caseloads and activities like testing that divert counselor time. Additionally, communities with less accumulated social and cultural capital may send implicit messages to students that work against their capacity to attend college or to understand the financial complexities that come along with enrollment. Thus, students in these areas may be at a disadvantage relative to their more privileged peers in understanding financial aid and loans in the college choice process (George-Jackson & Gast, 2015; McDonough & Calderone, 2006).
McDonough and Calderone (2006) interviewed college counselors in urban high schools to explore their understanding of low-income students’ perceptions of college costs. The authors were primarily interested in the implications that arise when middle-class college counselors advise low-income African American and Hispanic students about the costs of college, but the study also provided a glimpse into what information these student populations have access to regarding loans and financial aid. The study found that the degree of help students received with financial aid was haphazard and dependent on the determination of individual guidance departments, rather than state policy. A notable exception was private high schools, which generally provided more comprehensive assistance. Additionally, the authors found a disconnect between students’ perceptions of affordability and risk and counselors’ ability to communicate the benefits of education. For example, some counselors were unable or unwilling to help students understand why taking on a modest amount of educational debt to attend a top-tier college may be beneficial (McDonough & Calderone, 2006).

The above study demonstrates that students’ knowledge of financial aid and loans is affected by the quality, quantity, and timing of information they receive in the high school setting. The greater level of guidance received by students at private high schools is consistent with what would be expected through social capital analysis, but the authors found no rhyme or reason to the amount of help that students from public high schools received. Looking at equally-resourced public schools, some had robust college advising programs while in other schools these programs were virtually non-existent. From a methodological standpoint, the irregular nature of help received by students at these high
schools illuminates the difficulty in controlling for school context by simple methods such as neighborhood type or resource level. At a deeper level than that, however, the study demonstrates that the forces of social and cultural capital cannot be overcome by individual interactions alone; even though almost all counselors at the under-resourced high schools were middle class, their actions conformed to the lower socioeconomic setting in which they worked. This finding provides evidence for the necessity of considering systemic factors when researching student debt decisions (McDonough & Calderone, 2006)

To explore how students acquire knowledge about financial aid from the students’ perspective, Bell, Rowan-Kenyon, and Perna (2009) conducted interviews with 9th and 11th graders from 15 different high schools to assess their knowledge about college requirements, including the process to apply for and receive financial aid. They found that students had very little knowledge and that the primary source of information shifted over their time in high school. Very few students were able to accurately estimate the cost of college or describe the financial aid process. Ninth graders received information about college primarily from family. Eleventh graders, on the other hand, saw counselors as the primary college resource. Identifying who students turn to for college financial guidance is an essential component of exploring their decision-making process around student loans.

Students’ opinions differed on their counselors’ level of knowledge and interest in helping them understand the college process, highlighting the patchy nature of such assistance that was discussed by McDonough and Calderone (2006). The relative wealth
of the school environment also shaped students’ perceptions of educational debt; those who attended poorly resourced low- and middle-income schools commonly shared stories of “people they knew who were either greatly burdened by paying off loans after graduating or had not completed a degree and still had to pay the loans back” (Bell, Rowan-Kenyon, & Perna, 2009, p. 677). It is unclear whether these narratives are reflective of the school itself or the community in which the school is situated. (Bell et al., 2009).

Additionally, the authors found that counselors and teachers send explicit and implicit messages about the roles that loans should play in students’ college choice. Some students from less well-resourced schools report teachers speaking disparagingly about their own debt burdens or sending messages that make repaying educational debts seem impossible. Others spoke of loans as a necessary, regrettable, and unavoidable step toward low-income students attending college, particularly four-year schools. Some school personnel reported steering students toward lower cost options like community colleges in order to help them avoid debt (Bell et al, 2009; Perna, 2008). While it is perhaps not their intent, these actions play a role in the ways that students conceptualize debt and the decisions that surround it. These findings introduce important elements to consider in research on student debt decisions. One, they suggest that whether or not a student perceives a resource to be knowledgeable affects the degree to which help is sought. Two, they show that students may receive and absorb messages about education debt from their educational environment regardless of whether they are actively seeking information.
Institutions of higher education. Students also receive messaging about debt and financial aid from higher education institutions themselves. Once a student is admitted to a college or university they receive a financial aid package that informs them of costs and available aid (Kane, 1999). The amount and type of aid received plays a role in students’ college choice (Hossler, 2000; Kim, 2004). Although some research suggests that institutions of higher education play a significant role in distributing information about financial aid to students (Kane, 1999), this distribution is almost entirely “reactive” in nature, meaning that students and families bear the onus of seeking it (Heller, 2006). Very little is known about the educational value of this process and additional research is needed to examine what role institutions play in disseminating information about financial aid programs to students (Perna, 2004).

Institutions continue to play a role in educating students about financial aid once they matriculate. Students who are confused about the financial aid process prior to entering may continue to be so throughout their time in college, especially since supports like family or high school counselors can be more difficult to access (Hornak, Farrell, & Jackson, 2010). Once in college, students with questions about financing are usually directed to the financial aid office where they face long lines and a different financial aid counselor with each visit. The ensuing bureaucratic run-around has been shown to discourage students from seeking information about aid options, even when that information is essential to ensuring their financial well-being (Godwin & Markham, 1996; Hornak et al., 2010). More research needs to address how students continue to...
receive messaging about financial aid once they enroll at an institution (McKinney & Roberts, 2012).

**Debt Aversion**

Students’ conceptualizations of debt hold important implications for college access, persistence, and success. Some students may be more averse than others to taking on educational loan debt (Callender & Jackson, 2005; Cunningham & Santiago, 2008; McDonough & Calderone, 2006). This aversion may affect how students make decisions about using debt to finance their education. Cunningham and Santiago (2008) conceptualize debt aversion as “an unwillingness to take a loan to pay for college, even when that loan would likely offer a positive long-term return” (p. 10).

An aversion to debt may impact many decisions that otherwise qualified students make along their higher education journey, including: deciding not to pursue higher education; deciding to delay entrance to higher education; pursuing non-loan financial strategies to address unmet financial need; and paying for educational expenses with credit card debt or private loans instead of federal loans (Cunningham & Santiago, 2008). Exploring the demographics of students who are debt averse, the decisions that result from debt aversion, and the impact of those decisions on college access and success are essential steps in considering how students make choices about debt. Unlike the concept of college choice, which deals with the pre-enrollment decisions made by students, debt aversion goes a step beyond by also incorporating the considerations of students once enrolled. It moves one step closer to untangling the “murky middle” of student loan decisions.
Understanding which populations of students may be debt averse holds important implications for understanding the role that identity plays in the debt decisions that students make. Debt aversion is tied to cultural or demographic characteristics and influences whether students avoid debt or use aversion strategies to temper the amount they owe (Callender & Jackson, 2005; McDonough & Calderone, 2006). What is broadly referred to as “debt aversion” may also group together decision factors or opinions about debt that are disparate in nature. For example, one student’s debt aversion may stem from worries about the amount of debt at graduation while another’s may come from negative cultural attitudes about debt (Callender & Jackson, 2005; Cunningham & Santiago, 2008).

Certain populations of students seem to be more debt averse than others. For example, students from low income backgrounds have been shown to have higher levels of debt aversion relative to their more well-off peers (Callender & Jackson, 2005; McDonough & Calderone, 2006). A 2005 study in the United Kingdom explored the relationships between prospective university students’ attitudes toward debt, their socioeconomic statuses, and their decisions about whether or not to pursue college. The authors found that students with fewer socioeconomic resources displayed greater aversion to debt than those from more advantaged backgrounds. Furthermore, after controlling for a variety of other factors that may influence whether or not a student chooses to pursue higher education, the same study found that students from low-SES backgrounds not only were more debt averse, but also were more likely to choose not to attend higher education due to that debt aversion (Callender & Jackson, 2005).
Other authors have found that low-income students may absorb this type of debt resistance from parents, be hesitant to take on debt or fail to understand that other sources of funding are available (McDonough & Calderone, 2006). Another study found a link between parental educational attainment and student debt aversion, finding that students whose parents held college degrees were less risk averse than their first generation peers (Hryshko, Luengo-Prado, & Sørensen, 2011). These results further underscore the important role that parents and socioeconomic status may play in influencing the decisions students make about debt.

Beyond socioeconomic status, other studies have found that certain groups of students of color may be more debt-averse than their White peers. Some of this reluctance to borrow has been attributed to cultural norms, particularly among Hispanic and Asian students. These groups may borrow less than their peers, even holding income, attendance, and institutional type constant (Cunningham & Santiago, 2008). Hispanic students have developed a reputation as a group of students who are more debt-averse than their peers, with these students reporting reluctance to assume the risk of debt and making decisions about where to attend without regard to financial aid options that may lessen costs. This orientation toward debt has been partially attributed to the over-representation of Hispanic students at community colleges (Cunningham & Santiago, 2008; O’Connor et al., 2010). The debt aversion of Hispanic students deserves further scrutiny, however, as much is anecdotal in nature (Burdman, 2005). The debt aversion of Asian and Pacific Islander students receives even less attention in research, yet the cultural aversion to borrowing is also prevalent. Some Asian families have a negative
perception of debt and may instead rely on extended social networks in order to meet college costs (Cunningham & Santiago, 2008).

Most studies that explore debt aversion do so from a college access angle, positing that students who are debt-averse will choose not to attend college, attend part-time, or attend lower-cost institutions in order to avoid taking on loans (Callender & Jackson, 2005; Perna, 2008). It is important to remember, however, that students who are debt-averse and choose to attend college must make decisions about debt more than once. Students must reapply for financial aid each year and students who qualify for aid will likely be offered loans again. Even so, little research has been done to explore how debt aversion continues to affect students throughout their time in higher education.

**Debt Outcomes**

Although students have different levels of financial aid knowledge and varying levels of debt aversion, each year nearly half of all undergraduate students who go to college will choose to use a loan to finance part of that education (College Board, 2015). The debt they acquire is the product of all of the loan decisions they made over the course of their educational career. While the decisions themselves receive little attention, their results have been researched in detail. The consequences of poor borrowing decisions can be devastating to students’ long-term emotional, financial, and social well-being. Unpacking the consequences that can arise from decisions about debt sheds light on the need to better understand the process by which it is acquired.

**Debt burdens.** Debt burdens represent one output of the debt decisions students make. Most studies assess a student’s debt burden after the end of their educational
career, whether that be graduating from college or dropping out. Many factors influence the amount of debt students acquire. Individual characteristics like age, race, family educational background, socioeconomic status, and financial knowledge play intertwining roles in determining which students carry America’s debt burdens (Callender & Jackson, 2005; R. Chen & Wiederspan, 2014; College Board, 2015; Houle, 2014). Where students choose to attend college and the financial aid policies of the college in question also play a role (College Board, 2015; Waddell & Singell Jr., 2011). These variables have overlapping influences on the way students make decisions about debt and the amounts they will be asked to repay after their education concludes.

**Age and loan debt.** Students’ ages are correlated with both using loans to pay for school as well as the level of debt acquired. In the 2011-2012 school year, bachelor’s degree recipients aged 23 or younger borrowed at the lowest levels, with 34% of this population graduating debt-free. Of the ones who did borrow to finance their degrees, only 11% reported more than $40,000 in total debt. Older age groups reported higher levels of borrowing as well as greater loan burdens upon graduation. In contrast to the youngest age group, only 22% of students between the ages of 24 and 29 as well as those between 30 and 39 graduated without debt. Additionally, students in the 30 to 39 age range reported the highest levels of extreme borrowing, with 33% graduating with more than $40,000 in accumulated debt (College Board, 2015). This pattern may be a recent development; a study from over a decade earlier found that older students (defined as 30 and above) were less likely to borrow, possibly because they were able to draw on other resources (Callender & Jackson, 2005). The recent correlation between age and loan debt
is made more troubling because older students are more likely to default on debt than younger graduates (Gross, Cekie, Hossler, & Hillman, 2009).

**Race and loan debt.** Complex relationships exist between students’ race or ethnicity and their predicted debt upon graduation. The oft-cited *Trends in Student Aid* Report by The College Board (2015) reports that for 2011-2012 Bachelor’s degree recipients, Asian students had the lowest levels of borrowing (57%), followed by White students (68%). In comparison, Black students reported the greatest percentage of students graduating with debt (86%), followed by Hispanic students (73%). In addition to having the highest rates of borrowing, Black students were also most likely to graduate with more than $40,000 in student loan debt. The authors of the study note, however, that there were mitigating factors that made Black students more likely to borrow—for example, Black graduates were more likely to attend for-profit institutions, be older than average, come from less wealthy households, and have dependents of their own (College Board, 2015). For these reasons, analyses that rely on simple correlation do not provide enough nuance to tease apart the relationship between race and debt.

Some research has taken a more sophisticated look at the interplay between these two variables. Most studies confirm that Black students do borrow more than their White counterparts, although the influence of characteristics like institution choice or parental socioeconomic status plays a large role (Jackson & Reynolds, 2013; Price, 2004). In one study by Houle (2013), however, Black students were found to have 51% more student loan debt than White students, even after accounting for parental socioeconomic status,
aid from family, and scholarships. Other results from studies that control for these factors have been mixed (Heller, 2001).

**Parental education and loan debt.** Few studies have attempted to quantify the loan burdens of first generation college students while controlling for factors like race or wealth. Some have found that lower levels of parental education are predictive of higher levels of student debt (Houle, 2014; Martinez, Sher, Krull, & Wood, 2009). Houle (2014) found that students from more well educated families are “relatively protected from debt” (p.1) and graduate with 54% less student loan debt than their first generation peers. Additionally, a study by Chen and Wiederspan (2014) found that first-generation students were more likely than their peers to accumulate debt even when controlling for a variety of individual and institutional characteristics.

**Socioeconomic status and loan debt.** Students with fewer socioeconomic resources are more likely to borrow to finance their education (Callender & Jackson, 2005; Houle, 2014). In the 2003-2004 school year 25% of students in the highest income quartile borrowed to pay for school, compared to 41% in the second-lowest quartile and 39% in the lowest (Callender & Jackson, 2005). A more recent study by Houle (2013) found that students from middle-income families were at the highest risk of borrowing, but that students from low-income families were at the highest risk of taking on very high levels of debt. The same study found that students from high-income families graduated with 240% less debt than their low-income peers (Houle, 2014). This study confirmed and extended previous work by Price (2004) that showed students with fewer socioeconomic resources were more likely to carry “excessive debt burdens” (p. 571).
Institutional characteristics and loan debt. The type of institution that students choose to attend is related to the amount of loan debt they carry at graduation. In the 2013-2014 year, the average cumulative debt per borrower was $25,500 at four-year public institutions and $30,200 at private, non-profit four-year private institutions. Those who attended community colleges were least likely to borrow while those who attended for-profit institutions were most likely to borrow and borrowed the largest amounts. Nearly 50% of students who attend for-profit institutions graduate with more than $40,000 in debt (College Board, 2015). At the other end of the spectrum, of students who graduate from public two-year schools, 62% do not borrow at all and only 5% graduate with more than $20,000 in student loans (Baum, Little, & Payea, 2011).

Implications of debt burdens. While students’ identities and college choices play a role in how much debt they acquire, they must be considered in aggregate and not in isolation. Students acquire debt in complicated ways that are related to all of the identities that they hold. Sometimes disparities exist between students’ borrowing behaviors and their attitude toward loans. For example, low income students seem to have greater debt aversion, yet they also graduate with higher levels of loan debt (Chen & Wiederspan, 2014). Something is happening in the “murky middle” that influences how students make decisions to take on certain levels of debt. A closer examination of what those decision factors are will allow for a clearer understanding of the resulting debt burdens.

Debt impact. The amount of debt is important, but so too is the impact that these burdens have on students’ college success and later livelihoods. It is another outcome of the debt decisions that students make during their educational journey. Student loan debt
represents an investment; according to human capital investment theory those who take it are assuming that the associated costs will be outweighed by the later benefits (Becker, 1993). Student loans are also designed to act as a “consumption-smoothing device” (Cho, Xu, & Kiss, 2015, p. 231) to help students who would otherwise be unable to pay for school. Small amounts of loan debt (typically below $10,000) have been shown to increase a student’s academic performance and retention while in college. It also alleviates the need to work long hours or sacrifice educational experiences for the sake of costs (Dwyer, McCloud, & Hodson, 2012). For some students, the extra financing provided by loans also reduces anxiety over finances (Drentea, 2000). These positive effects represent the ideals behind making student loans available.

Unfortunately, student loan debt also has a darker side. Students who acquire high levels of loan debt may be more likely to drop out (Dwyer et al., 2012) and less likely to attend graduate school (Fox, 1992). Higher levels of loan debt also mean higher repayment levels, limiting recent graduates’ ability to purchase cars, buy homes, save for retirement, or even start families (Houle, 2014). Unable to meet the obligations of repayment, each year many students slip into default or delinquent status on their loans (Greene, 1989; Gross et al., 2009). These effects represent the other side of student loan decision outcomes and those with very high levels of debt will experience them over a lifetime.

**Debt Choices**

While the inputs and outputs of student loan debt have been explored, much is still unknown about what takes place “in-the-now” when students are making decisions
about how much to borrow (Cho et al., 2015). When considering how much to borrow, do students make the decisions themselves or turn to others? Do they understand the terms of their loans, or even that they have loans at all? Do they make savvy choices using financial guidance or just borrow the maximum offered year after year? These questions highlight the aforementioned “murky middle” of student debt decisions. Although some research is beginning to provide answers to these questions, much is still left to be discovered.

**Convenience or necessity.** Most observers of the rising tide of student loans in the country have attributed it to increasing college costs and decreasing state funding (Delisle & Holt, 2015). Some, however, have attributed it to the increased availability of federal loan options that were created as part of the 1992 reauthorization of the Higher Education Act (Kane, 1999; Redd, 1994). A study by Kane (1999) described this as “convenience borrowing” which is defined as “students using loans to substitute for, or to augment, other sources of funding” (p.166) such as working more while enrolled.

Another part of this increase is attributed to what she termed the “goldfish rule: all else being equal, the more a goldfish is fed the more it will eat” (p.166). The argument, then, is that after the limit increase students were uncritically accepting the maximum amount offered to them in their aid packages without consulting a budget or considering the effect that debt might have after graduation (Kane, 1999).

A previous study conducted in Pennsylvania the year after the 1993 loan increase supported this hypothesis. Comparing student borrowing behaviors before and after the loan increase, it found that students borrowed more money after the increase despite their
need remaining constant (Redd, 1994). The authors interpreted this finding as indicating a carelessness on the part of students and suggested that large student debt burdens are more a function of students’ unwillingness to expend other resources or to budget for school effectively. Of course, these studies also assume that the expected family contribution calculated by the FAFSA is a reasonable estimation of a family’s ability to pay for college and that the previous financial aid packages students received were sufficient (Kane, 1999; Redd, 1994).

Recent work has complicated this idea, however, and refocused on the role of rising college prices in increasing debt burdens. Hart and Moustafa (2008) at The Ohio State University were able to examine the effect of increased loan availability on student borrowing due to a 2002 decision by Ohio State to increase the annual per-student Perkins Loan limit by $2,000. They compared the effect of an increase in loans limits to the effect of increases in net cost in explaining how much students borrow, theorizing that if students were more responsive to net cost than to loan increases it would cast doubt on the convenience theory of borrowing set forth by Kane (1999). They found that a “$1,000 increase in net costs…increased average loan amounts by $748…[and] raised the probability of borrowing by 25.9%, while a $2,000 increase in loan limits…led to an additional borrowing of only $106 and a 3.1% higher probability of borrowing” (p.33). Their work argues that it is rising costs, not increased loan limits, that carry much of the burden for increased borrowing. The study also found that students from the lowest income bracket primarily used the increase in Perkins Loans to replace other higher-cost, unsubsidized loans. This decision suggests that these students are not simply abiding by
King’s (1999) “goldfish rule” when making loan decisions, but are instead making nuanced financial decisions regarding their own debt.

**Students’ understanding of their debt burdens.** Hart and Moustafa’s (2008) work suggests that students borrow with some thought to future consequences, but other studies have questioned the extent of that knowledge. Many students are not able to estimate the amount of money they owe correctly or even say whether or not they have used loans to pay for their education (Akers & Chingos, 2014; Andruska, Hogarth, Fletcher, Forbes, & Wohlgemuth, 2014). This lack of knowledge raises concerns about the decision-making process behind student loan choices. Some aspects of making wise debt decisions might include using borrowing decision factors like considering debt upon graduation and budgeting in order to minimize debt burdens (Kane, 1999; McDaniel & Montalto, 2016); these considerations require, however, that students have a firm grasp of their own loan obligations.

Andruska et al. (2014) was one of the first researchers to assess how well students understand the type of loan they have and the amount of money they owe. The authors were interested in examining how variables like “knowledge of college financing…expectations about returns on investment in education…and general level of financial capability” (p. 128) correlated with increased knowledge of debt burdens. They surveyed students at Iowa State University to determine how many were “loan confused,” (p.130) meaning they had debt but thought they didn’t, and how many were “debt confused,” (p.130) meaning they could not estimate how much they owed. The results were concerning. More than one in ten students were loan confused and nearly 40% of
students underestimated the amount they owed. Additionally, 9.1% of students underestimated the amount they had borrowed by more than $10,000. Freshman students, transfer students, students who filed a FAFSA, and students who did not feel personally responsible for their loans were more likely to be confused than their peers. Parents also seem to play a role; those students who reported that their parents taught them money management skills were less likely to be debt confused. Although the study was at a single, non-representative institution it called into question students’ ability to make informed choices about debt.

A study later that year by Akers and Chingos (2014) of the Brookings Institute examined these trends on a broader scale. They conducted two studies; the smaller one took place at a selective four-year institution and the larger one used data from the National Postsecondary Student Aid Study conducted in the 2011-2012 school year. Both assessed students’ ability to estimate college costs and loan amounts. Fewer than half of students in either study were able to estimate their loan amounts within a $1,000 window on either side of the correct amount. Although only a fifth (19%) of students at the selective university underestimated the amount, in the national sample almost half (46%) guessed too low by more than $1,000 and one-quarter underestimated by more than $5,000. These numbers are made more concerning because the national survey data only included first-year, first-time students; unlike upperclassmen, they were only making guesses about a single year of debt. Of most concern to the authors, “more than one-quarter of students [did] not understand they have a loan from the federal government,
and about half of these students appear[ed] to be genuinely unaware of the fact that they have borrowed for their education at all” (p.7).

After examining students’ varying levels of debt knowledge, the authors went on to examine how these relative amounts of knowledge related to individual and institutional demographics. They found no consistent relationship between debt knowledge and race, gender, or expected family contribution. They did find, however, that students from wealthier families were less likely to be aware that they have debt, speculating that parents are taking it out on the student’s behalf with the expectation that the parents themselves will repay it. Additionally, contrary to what might be expected from the attention around for-profit institutions, students at those schools were least likely to underestimate their amount of debt and the least likely be confused about whether they have debt at all (Akers & Chingos, 2014).

This study and the work by Adruska et al. (2014) are the only peer-reviewed studies to date that have examined how well students understand their own loan debt. Contrary to the work by Hart and Moustafa (2008), they lend credence to “goldfish rule” (Kane, 1999) that suggests some students are taking on the debt they are offered with little thought as to what it means and what its long-term implication may be. It should be noted that student loan debt is not the only type of debt that some consumers have difficulty reporting (Brown, Haughwot, Lee, & van der Klaauw, 2011; Zinman, 2009) or understanding (Lusardi & Tufano, 2009).

**Unique nature of student loan debt.** Student loan debt has many unique features that distinguish it from other types of consumer debt (Delisle & Holt, 2015; Houle,
2014). These differences may seem subtle on the surface, but they are essential to understanding the ways in which students make decisions about debt. For example, consider a debt amount of $25,000. If that amount is borrowed to finance a car, it represents a single decision—one point of purchase, one lender, one interest rate. Now, consider a student debt load of $25,000. For most students it would represent many individual decisions to borrow. Within each of these decisions, there may be several different types of loans. If these decisions take place over the course of several years, it is likely that each loan was borrowed at a different interest rate and possibly at a different amount because students make decisions about how much to borrow “incrementally, one semester at a time” (Delisle & Holt, 2015, p. 4).

In order to make these choices in an informed manner, students also must juggle more unknowns than someone deciding to take on a car loan or a mortgage. With a car loan a person is given a firm monthly payment and can compare that against current income to determine if the payment falls within their monthly budget. With student loans, however, students must gamble that they will be able to secure a job after graduation with a salary that is enough to cover the eventual monthly payment. The gamble is made more complicated, however, due to the hodgepodge nature of acquiring debt, the compounding of multiple interest rates, and the resulting difficulty of accurately estimating monthly payments. Additionally, unlike other large loans most student debt does not require a credit check; thus, no formal process exists for helping students think through all of these considerations. Finally, it is worth remembering that student loan debt is not
dischargeable in bankruptcy and that the loan consolidation process can be fraught with difficulty (Delisle & Holt, 2015).

Given these factors, even the most conscientious student may have difficulty making informed, careful decisions about how much to borrow. Some students may not even consider taking loans to be a choice in itself. In a focus group of borrowers conducted by the New America Foundation, some students felt “information about loans was not relevant to them or did not seem important…taking out loans was not a decision unto itself, but part of going to school” (Delisle & Holt, 2015, p. 27). If students don’t consider loan debt to be a choice, then their ability to make careful considerations is in doubt.

Need for Current Study

It is clear that more research is needed to have a better grasp of students’ understanding of their own debt as well as how students make choices related to acquiring that debt. Very little research has directly considered what sources of information students reference when making decisions about debt or how those sources are related to what loan decision factors they choose to consider. Understanding these connections is an important step toward unpacking the “murky middle” of student loan debt decisions.
Chapter Three: Methods

Statement of Purpose

America’s ever-growing level of education debt and its potential implications for both individual and national financial health mean that student loans will continue to loom large in the popular press as well as peer-reviewed research. The purpose of this study is to explore how the sources of information students consult when making loan decisions are related to the borrowing decision factors they use while controlling for selected of demographic, academic, and socioeconomic characteristics.

Research Design

This study uses data from the 2014 Study on Collegiate Financial Wellness (SCFW). The focus of the study will be on the borrowing decisions of traditional-age students attending four-year public universities. Although these students do not represent the average student attending American universities today (National Center for Education Statistics, 2015), they are the population that receive the most focus in both popular media and peer-reviewed work (Delisle & Holt, 2015). A series of binary logistic regression models will be used to answer the stated research question.

Sampling and Procedures

Survey instrument. The data for this study comes from the 2014 Study on Collegiate Financial Wellness (SCFW), previously known as the National Student Financial Wellness Study (NSFWS). The purpose of the SCFW is to “gain a more
thorough and accurate picture of the financial wellness of students throughout the United States” (Study on Collegiate Financial Wellness [SCFW], n.d.). The study included questions on thirteen key concepts, including eleven focused on finances, one focused on academic information, and one focused on demographic information. (SCFW, n.d.)

The SCFW was designed and conducted by the Center for the Study of Student Life at The Ohio State University. Co-investigators included Cuyahoga Community College, DePaul University, Iowa State University, Oberlin College, Ohio University, and Santa Fe College. It was administered to random samples of students from 51 colleges and universities across the United States and one Canadian institution. The single Canadian institution included in the administration was York University; its results are not included due to the distinctive nature of higher education financing in Canada (Looker & Lowe, 2001). The survey administration took place in either autumn 2014 or winter 2015 at the discretion of participating institutions (SCFW, 2015).

**Response rates.** Of the 51 American institutions: 61.5% were four-year public (n=32); 23.1% were private (n=12); and 15.3% were two-year public (n=7). The survey was administered to a random sample of 163,714 students and had an overall response rate of 11.5%. Response rates broken down by number and institutional type are described in Table 1 (SCFW, 2015).
Table 3.1. Response Rates by Institution Type for the Study on Collegiate Financial Wellness

<table>
<thead>
<tr>
<th>Institution Category</th>
<th>Response Rate</th>
<th>Number of Responses</th>
<th>% of All Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four-Year Public Institutions</td>
<td>.117</td>
<td>15,227</td>
<td>.810</td>
</tr>
<tr>
<td>Four-Year Private Institutions</td>
<td>.153</td>
<td>1,869</td>
<td>.099</td>
</tr>
<tr>
<td>Two-Year Public Institutions</td>
<td>.079</td>
<td>1,699</td>
<td>.090</td>
</tr>
<tr>
<td>All Institutions</td>
<td>.115</td>
<td>18,795</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Efforts were made in both the design and administration of the survey to increase response rates. While the average response rate was 11.5%, institution-level responses varied from a low of 4% to a high of 26%. A series of strategies were used to encourage participation. One, the topic of financial wellness is pertinent to those enrolled in colleges and universities. Two, the survey itself was distributed by The Ohio State University, one of the most recognized educational institutions in the nation. Three, the survey was a minimal time investment and written at an accessible level; the average respondent completed the survey in 15 minutes and the survey was written at an 8th grade level for maximum readability. Finally, respondents were emailed up to 4 times, with emails that could be customized to come from recognizable sources at students’ home institutions. Response rates are consistent with other web-based survey administrations directed toward college students (SCFW, 2016b).

*The use of incentives.* The use of incentives was handled on an institution-by-institution basis and was not centrally coordinated by The Ohio Student University or the Center for the Study of Student Life. Schools that offered incentives experienced higher
response rates than those that did not. Of schools with response rates below 10%, three-fourths (74%) offered no incentive. In comparison, of schools with response rates over 15%, 38% offered incentives. All incentives offered were lottery-based and varied significantly in terms of the size and scope of prizes. While offering incentives increased response rates, there was no significant difference in response rates given the type and amount of incentive offered (SCFW, 2016a). These findings are consistent with prior research on the use of incentives in promoting response rates to web-based surveys (Goritz, 2004; Laguilles, Williams, & Saunders, 2011).

**Overall respondent demographics.** Considering the sample as a whole, over two-thirds of respondents were female (67.1%) and over three-fourths identified their race/ethnicity as White. Respondents were split evenly among years of enrollment, with 22% being first-years, 19% being second-years, 21% being third-years, 20% being fourth-years, and 18% being enrolled in five or more years of post-secondary schooling. Three-fourths of students were of traditional college age, which for the purposes of this study will be defined as between 18 and 23 years of age. Of students attending a public institution almost all (87.3%) qualified for in-state tuition (SCFW, 2015).

**Survey structure.** The 2014 SCFW included over 100 questions. No questions were required; respondents could skip any question and still continue with the survey. Additionally, not every respondent saw every question as routing was used to ensure that respondents only saw questions that reflected their experiences. For example, if a student reported that he did not use loans to pay for college he would not see any of the questions pertaining to how he made loan decisions. Some survey questions allowed only single
answers while others asked students to “check all that apply,” meaning that responses to
the latter questions do not add up to 100% (SCFW, 2015).

**Sampling choices.** The sample in this study is chosen from overall survey
responses using several carefully selected variables. Responses are limited to students
that finished the survey (n=14,717). Questions about demographic variables were located
at the end of the survey, so those that exited the survey before completing all questions
did not complete the requisite demographic questions and will not be included in this
analysis.

This study is further restricted to students attending four-year public institutions.
Community college students and students at four-year private institutions were excluded
from analysis for several reasons. The loan burdens of students from these populations
have shown to be distinct from those attending four-year public universities (The College
Board, 2015). Additionally, thus far most of the foundational literature on student loan
decisions upon which this study was designed has taken place at four-year public
universities (Andruska et al, 2014; Mustafa, 2008).

The study’s sample is further limited to traditional-age students, meaning those
between 18 and 23, inclusive. Although many of America’s college students do not fall
into this age range (National Center for Education Statistics [NCES], 2015), they still
carry a large proportion of the debt taken each year and are the population most
frequently discussed in popular media (The College Board, 2015). Additionally, as being
under 24 is a primary qualification for being considered a dependent student for federal
financial aid purposes, these students are most likely to borrow under similar loan
ceilings (Federal Student Aid, 2016).

The sample was further limited to those students eligible to receive in-state tuition
at the institution they attend. The purpose of this restriction is to limit inconsistency in
tuition burdens, thereby reducing inter-institutional variability and creating a more even
set of financial circumstances for sample participants. The sample also excluded
international students and those that did not qualify for federally funded financial aid in
the United States.

Additionally, only students who answered “Yes” to the question “Do you now or
have you ever had a student loan to pay for your college?” were included in the study. It
excluded those who answered “No” and “Don’t Know” as neither group went on to
answer the requisite loan decision making questions that serve as the basis of this
analysis. The sample was further restricted to exclude those students who did not answer
at least one of the questions involved in the study as well as some populations that did not
meet the cell size requirements (e.g. Native American/ American Indian/ Alaskan Natives
under the race/ethnicity category) required in binary logistic regression (Treiman, 2009).

**Resulting sample demographics.** After restrictions the sample used in this
analysis contained 3,326 respondents. Of these, 77% are White, 8% are more than one
race or ethnicity, 6% are Hispanic, 4% are Black or African American, and 4% are Asian
or Asian American. Almost three-fourths (71%) of remaining students are female and
nearly half (46%) are first-generation college students, meaning neither parent has
completed a four-year college degree. The students were split evenly among traditional
school years—17% were first years, 22% were second years, 26% were third years, 25% were fourth years, and 10% were fifth years and beyond. A full summary of their descriptive statistics is included in Table 2.

Table 3.2. Descriptive Statistics among Traditional-Age Students with Loans at Four-Year Public Universities

<table>
<thead>
<tr>
<th>Variables</th>
<th>$M$</th>
<th>$SD$</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Borrowing Decision Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borrow maximum amount</td>
<td>0.25</td>
<td>0.43</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Use budget</td>
<td>0.61</td>
<td>0.49</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Consider total debt at graduation</td>
<td>0.41</td>
<td>0.49</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Borrow as little as possible</td>
<td>0.56</td>
<td>0.50</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Consider amounts borrowed in past</td>
<td>0.38</td>
<td>0.59</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
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<tr>
<td><strong>Information Source</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Decide on own</td>
<td>0.53</td>
<td>0.50</td>
<td>0.00</td>
<td>1.00</td>
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<tr>
<td>Parents/ Family</td>
<td>0.65</td>
<td>0.48</td>
<td>0.00</td>
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<td>Internet</td>
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<td>1.00</td>
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<tr>
<td>Male</td>
<td>0.29</td>
<td>0.45</td>
<td>0.00</td>
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<tr>
<td>Female</td>
<td>0.71</td>
<td>0.45</td>
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<td><strong>Racial/ Ethnic Identity</strong></td>
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<td>Af. Amer./Black</td>
<td>0.04</td>
<td>0.20</td>
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<td>Asian</td>
<td>0.04</td>
<td>0.19</td>
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<td>Hispanic/Latino</td>
<td>0.06</td>
<td>0.24</td>
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<td>Multi</td>
<td>0.08</td>
<td>0.28</td>
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<tr>
<td>White</td>
<td>0.77</td>
<td>0.42</td>
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<tr>
<td>First Generation</td>
<td>0.46</td>
<td>0.50</td>
<td>0.00</td>
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</tr>
<tr>
<td>Non-First Generation</td>
<td>0.54</td>
<td>0.50</td>
<td>0.00</td>
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</table>

Continued
### Table 3.2 Continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
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</thead>
<tbody>
<tr>
<td><strong>Years Enrolled</strong></td>
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<td></td>
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</tr>
<tr>
<td>First Year</td>
<td>0.17</td>
<td>0.37</td>
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</tr>
<tr>
<td>Second Year</td>
<td>0.22</td>
<td>0.42</td>
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<tr>
<td>Third Year</td>
<td>0.26</td>
<td>0.44</td>
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<tr>
<td>Fourth Year</td>
<td>0.25</td>
<td>0.43</td>
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<td>1.00</td>
</tr>
<tr>
<td>Five or More Years</td>
<td>0.10</td>
<td>0.30</td>
<td>0.00</td>
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<tr>
<td><strong>Family Income</strong></td>
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<tr>
<td>Low Income ($0-$30,000)</td>
<td>0.20</td>
<td>0.40</td>
<td>0.00</td>
<td>1.00</td>
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<td>Middle Income ($31,000-$80,000)</td>
<td>0.29</td>
<td>0.46</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>High Income ($80,000+)</td>
<td>0.31</td>
<td>0.46</td>
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</tr>
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<td>Income Unknown</td>
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<td><strong>Employment Status</strong></td>
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<tr>
<td>No work</td>
<td>0.24</td>
<td>0.43</td>
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<tr>
<td>1 to 10 Hours/Week</td>
<td>0.15</td>
<td>0.36</td>
<td>0.00</td>
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</tr>
<tr>
<td>11 to 20 Hours/Week</td>
<td>0.31</td>
<td>0.46</td>
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<tr>
<td>21 to 30 Hours/Week</td>
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<td>0.40</td>
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<td>31+ Hours/Week</td>
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<td>Commuter</td>
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<td>Non-Commuter</td>
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<td>0.00</td>
<td>1.00</td>
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<td><strong>Academic Performance</strong></td>
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<tr>
<td>Grade Point Average</td>
<td>3.25</td>
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<td>0.00</td>
<td>4.00</td>
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<tr>
<td><strong>Financial Knowledge</strong></td>
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<td></td>
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<tr>
<td>Financial Knowledge Score</td>
<td>2.90</td>
<td>1.33</td>
<td>0.00</td>
<td>5.00</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20.55</td>
<td>1.46</td>
<td>18.00</td>
<td>23.00</td>
</tr>
</tbody>
</table>

**Control variables.** The control variables selected for inclusion in the models were chosen through careful consideration and review of literature. The scope of this study is very large; there are almost innumerable factors that could influence how students make decisions about loans. The control variables that were chosen for inclusion
strike a balance between the introduction of too many conflicting variables and the omitted variable bias that may result from including too few (Tremain, 2009).

**Age.** Although limiting the sample to traditional-age students narrowed the scope of the age variable, including age as a controlling measure is important to account for the ways in which decision-making may evolve as students get older. Older students may be less reliant on parents or have more life experiences from which to draw when making decisions about loans. Age has also been tied to the eventual amount of debt owed, with mixed results on whether older students take on more or less debt (Callender & Jackson, 2005). Age will be treated as a continuous variable.

**Gender.** The literature is divided on the impact of students’ gender on loan decisions. Some studies suggest that female students may be less likely to have the requisite financial knowledge base to make smart debt decisions (Chen & Volpe, 2002), while others find that the burden of debt may be more severe for men (Dwyer, Hodson, & McCloud, 2013). Others find that the gender of the student has no impact on the decisions made or the subsequent loan burdens (Chen & Wiederspan, 2013). Given the mixed nature of results, including it in the analysis will add clarity to its role in the loan decision-making process. Gender is treated as a dummy variable with males as the excluded category.

**Race/ethnicity.** There is a great deal of literature to suggest that students’ race/ethnicity plays a role in how students make loan decisions and the ultimate loan burdens that may result (Houle, 2014; Jackson & Reynolds, 2013; Perna & Titus, 2005). Community attitudes toward debt may have an impact on how students think about the
concept of debt and what role it plays in the college experience (Perna, 2008). The race/ethnicity of students is often spoken of concurrently with first generation status and family income, so independent analysis is warranted to help distinguish between these distinct characteristics (Callender & Jackson, 2005; Heller, 2001; Houle, 2014). Race will be dealt with as a set of dummy variables for Black, Asian, Multiracial, and Hispanic students with White students used as the excluded race category (Hart & Mustafa, 2008).

**First generation status.** First generation students are defined as students for whom neither parent has achieved a bachelor’s degree. As was highlighted in the literature review, little research has been done about the ways in which first generation students make decisions about loans. Yet, their decreased access to financial aid information relative to their non-first generation peers may impact the way that they make decisions about debt (Houle, 2014). Non-first generation students, or those students for whom at least one parent is a bachelor’s degree recipient, are the excluded category in the analysis.

**Cumulative GPA.** The cumulative grade point average, or GPA, of students has been tied to a host of loan borrowing habits, including everything from the decision-making process to the eventual amount owed. It has been suggested that students with higher GPAs may be more informed about loan amounts (Adruska et al., 2014). Other studies suggest that having a higher GPA is tied to a willingness to borrow higher amounts, as those students may have a higher expectation for starting salaries or eventual career success (Andruska et al., 2014; Dwyer et al., 2012). GPA will be treated as a continuous variable.
Years enrolled. Given that some students may delay entering college for a variety of reasons, considering the years enrolled as a control variable distinct from age is important. The resources that students use in making loan decisions may change each year as students establish more independence from parents or become more familiar with the process in general. Additionally, as students advance in school the ceiling of their federal loan amount increases (Federal Student Aid, 2015), perhaps allowing some students to avoid borrowing the maximum amount during later years. Years enrolled are treated as dummy variables with year one as the excluded category.

Family income. It has been established that students from lower socioeconomic statuses attending four-year universities are more likely to borrow to finance their education and may acquire greater loan debt than those of higher socioeconomic statuses (Callender & Jackson, 2005; Houle, 2014). The SCFW asked students to estimate their parental income, which will be used to represent family income as part of the study. The responses will be grouped into four income categories: Low Income ($0-$30,000); Middle Income ($31,000-$80,000); High Income ($80,000+); and Income Unknown (students who indicated they did not know their family income). High income students will be used as the reference category in dummy coding. It is important to note that this study captures students’ perceived family financial status and is not an objective measure of family income.

Employment status. Students may use a variety of methods to pay for education; often students will use a combination of paid work and loans to cover educational expenses (SCFW, 2015). Working may also be related to debt aversion. Studies have
shown that some students chose to work more hours or more than one job in order to avoid taking on debt burdens (Callender & Jackson, 2005; Mendoza, 2012). This study will be an opportunity to examine the intersections between how much students work and how students think about debt and debt decisions. Working will be divided into five categories: No Work, for those students who do not work; 1 to 10 Hours/Week; 11 to 20 Hours/Week; 21 to 30 Hours/Week; and 31+ Hours/Week. Each category will be treated as a dummy variable with No Work as the reference category.

**Commuter status.** For the purposes of this study commuters will be defined as students who live outside of walking distance of campus. Little research has been done about the way that commuter students make loan decisions, but some research suggests that students may choose to live off-campus or further away in order to minimize cost of living and, ultimately, the need to borrow in order to pay for school (Kim & Rury, 2011).

**Financial knowledge score.** The SCFW asks a battery of five questions intended to measure a student’s general knowledge of financial topics. Recently there has been a surge in interest regarding the relative financial knowledge of college students (Lusardi, Mitchell, & Curto, 2010) and how that knowledge might influence financial decisions (Fernandes, Lynch, & Netemeyer, 2014). Some studies have suggested that improving students’ financial literacy has a direct, positive correlation with more considered borrowing behaviors (Schmeiser, Stoddard & Urban, 2015).

**Independent variables.** The primary independent variables under investigation are the information sources that students report consulting when making loan borrowing decisions. The survey asked students, “When deciding how much money I will need to
borrow for the school year, I: (select all that apply).” The available responses were: decide on my own how much I need to borrow; consult with a parent, guardian, or family member to determine how much I will need to borrow; consult with a financial aid counselor to determine how much I will need to borrow; and, use information obtained from the internet to determine how much I will need to borrow. Respondents could also choose a fifth option, “Other.”

Students could select between zero and five sources of information. Write-in responses in the “other” category that fit into established categories were recoded into the appropriate section. After that was accomplished there were very few remaining answers left in the “other” response and there was no discernable pattern to the responses. Thus, remaining “other” responses were not included in this study.

**Dependent variables.** The dependent variables explored in each of the five binary logistic regression models were derived from a question in the SCFW that asked students, “When deciding how much money I will need to borrow for the school year, I: (select all that apply).” The available responses were: borrow the maximum amount available in my aid package, regardless of the amount; use my budget to borrow only what I think I will need; try to borrow as little as possible; consider the total amount of debt I will graduate with; and, consider the total amounts I have borrowed in the past.

Students could select between zero and five responses to the question. For the purposes of this study these responses will be considered “borrowing decision factors.” Each of these responses was explored in an independent analysis with the selected control and independent variables.
Data Analysis

Regression models. This study will use binary logistic regression models to explore the likelihood that students used each borrowing decision factor based on the information sources they consulted, controlling for the selected academic, socioeconomic, and demographic variables. Hierarchical variable entry was used to isolate the effect of sources of information relative to other covariates. Block one entry included all control variables while block two included all four sources of information. Binary logistic regression is an appropriate method to utilize because the outcome variables have only two possible responses (Treiman, 2009).

Bonferroni correction. Five independent analyses were run using a dependent variable derived from the same survey question in the 2014 SCFW. Repeated analysis on the same dependent variable increases the likelihood of committing a Type I error (Armstrong, 2014). To minimize this concern, the Bonferroni Correction was used to adjust the significance threshold to $\alpha = .01$. Any results between .05 and .01 will be reported as marginal significance.

Limitations

Several limitations exist that may temper the accuracy and generalizability of this study. Some issues are with the survey design itself and others are related to institutional data access.

Survey design. The 2014 SCFW represents one of the first attempts at a nationwide survey attempting to assess college students’ financial wellness. For this reason, certain flaws exist in the survey design that will be corrected in the upcoming
2017 administration of the survey. The survey failed to ask whether respondents are full-time students or part-time students. As reducing course load is one measure by which students may attempt to reduce debt burdens (Callender & Jackson, 2005), it fails to capture a data point that would otherwise be included as an independent variable in the analysis. It also failed to ask the requisite questions to determine whether a student would be considered “independent” by federal student aid standards; this consideration is important because independent students face different borrowing circumstances than their dependent peers (Federal Student Aid, 2015a).

**Institutional data access.** A major limitation of this study is that all of the data provided is self-reported by the students and cannot be matched against institutional financial aid data. It is also not possible to compare actual loan data against expected loan amounts as has been done in other studies of this type (Akers & Chingos, 2014; Andruska et al, 2014). These studies have shown that students’ understanding of their loans is unreliable, casting doubt on the accuracy of students’ expected loan amounts. Being able to include this information would yield valuable information about the correlation between borrowing decisions and debt burdens.

Despite the stated limitations, this study still represents a critical step forward in understanding more about the “murky middle” of how students make loan decisions. A better grasp on the impacts and implications of those decisions will lead toward a more nuanced understanding of a complicated process. A clearer conceptualization of the topic will allow researchers to ask more thoughtful questions and provide practitioners with the information needed to lead students toward more sound financial decisions.
Chapter Four: Results

Checking Assumptions

Each of the four models were assessed to make sure they met the assumptions associated with binary logistic regression. All variables were checked for issues with collinearity, outliers, and independence of residuals. Continuous predictors were checked for non-linearity in the logit. Analysis proceeded after assumptions of binary logistic regression were satisfied.

Multicollinearity. No severe multicollinearity was detected among the variables in the sample. The variable that captures students who report being in their fourth year of college returned a tolerance value slightly below the .25 threshold, but its associated Eigen value was well above the .005 cut-off so the collinearity risk was determined to be negligible. All other values reported tolerance levels and Eigen values above the cut-off mark for collinearity concerns.

Outliers. Potential outliers in all models were examined through assessment of Cook’s D, leverage statistics, and DfBeta values for each case. The large-sample value for leverage of $2k/n$ was used, resulting in a cutoff of 0.015. Each model had fewer than 100 cases return with leverage values greater than the large-sample cutoff, but they were left in the model as they did not return unacceptable values for either the Cook’s D or the
DfBeta values. Thus, the models were determined to have no severe outliers that would require removal prior to analysis.

**Independence of residuals.** For each model the standardized residuals were plotted against randomly assigned observation numbers to confirm the independence of residuals. Examining the graphs showed that for each model the standardized residuals were distributed randomly and without pattern, satisfying the condition of their independence.

**Linearity of predictors.** The Box-Tidwell test was used to check the linearity of the continuous variables in the models. Each continuous variable was multiplied by its natural log to create interaction variables. In each model these interaction variables were entered in a third block to test whether they produced a statistically significant reduction in model deviance. The addition of these interaction terms to each model did not produce a statistically significant reduction in model deviance (Borrow Max: \(X^2(3)=3.849, p=.278\); Borrow Budget: \(X^2(3)=.448, p=.930\); Borrow Little: \(X^2(3)=5.140, p=.162\); Borrow Past: \(X^2(3)=2.637, p=.451\); Borrow Future: \(X^2(3)=.678, p=.878\)). Thus, the linearity in the logit assumption was satisfied for all continuous variables in all models.

**Model Results**

**Model 1: Borrowing the maximum amount available in aid package, regardless of amount.** Binary logistic regression was used to estimate the likelihood that a student reported borrowing the maximum amount available in their aid package, regardless of amount, relative to information sources used and controlling for selected demographic, socioeconomic, and academic variables.
Table 4.1. Results from Binary Logistic Regression Predicting the Likelihood of Students Reporting Borrowing the Maximum Amount Available in their Aid Package on the 2014 SCFW

<table>
<thead>
<tr>
<th>Information Source</th>
<th>β</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on own</td>
<td>-0.017</td>
<td>0.983</td>
<td>0.103</td>
</tr>
<tr>
<td>Parents/ Family</td>
<td>-0.290</td>
<td>0.748</td>
<td>** 0.107</td>
</tr>
<tr>
<td>Financial Aid Counselor</td>
<td>-0.458</td>
<td>0.632</td>
<td>** 0.139</td>
</tr>
<tr>
<td>Internet</td>
<td>-0.043</td>
<td>0.958</td>
<td>0.114</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demographics</th>
<th>β</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.207</td>
<td>1.230</td>
<td>* 0.096</td>
</tr>
<tr>
<td>Af. Amer./Black</td>
<td>0.577</td>
<td>1.781</td>
<td>** 0.187</td>
</tr>
<tr>
<td>Asian</td>
<td>0.089</td>
<td>1.094</td>
<td>0.212</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>0.025</td>
<td>1.025</td>
<td>0.170</td>
</tr>
<tr>
<td>Multi</td>
<td>0.221</td>
<td>1.248</td>
<td>0.145</td>
</tr>
<tr>
<td>First Generation</td>
<td>0.058</td>
<td>1.059</td>
<td>0.087</td>
</tr>
<tr>
<td>Second Year</td>
<td>-0.037</td>
<td>0.964</td>
<td>0.146</td>
</tr>
<tr>
<td>Third Year</td>
<td>-0.080</td>
<td>0.923</td>
<td>0.167</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>-0.105</td>
<td>0.900</td>
<td>0.195</td>
</tr>
<tr>
<td>Five or More Years</td>
<td>-0.117</td>
<td>0.890</td>
<td>0.244</td>
</tr>
<tr>
<td>Low Income ($0-$30,000)</td>
<td>0.124</td>
<td>1.132</td>
<td>0.125</td>
</tr>
<tr>
<td>Middle Income ($31,000-$80,000)</td>
<td>0.068</td>
<td>1.071</td>
<td>0.109</td>
</tr>
<tr>
<td>Income Unknown</td>
<td>0.075</td>
<td>1.077</td>
<td>0.121</td>
</tr>
<tr>
<td>1 to 10 Hours/Week</td>
<td>-0.206</td>
<td>0.813</td>
<td>0.139</td>
</tr>
<tr>
<td>11 to 20 Hours/Week</td>
<td>-0.116</td>
<td>0.890</td>
<td>0.115</td>
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<tr>
<td>21 to 30 Hours/Week</td>
<td>-0.226</td>
<td>0.798</td>
<td>0.131</td>
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<tr>
<td>31+ Hours/Week</td>
<td>-0.042</td>
<td>0.959</td>
<td>0.158</td>
</tr>
<tr>
<td>Commuter</td>
<td>-0.004</td>
<td>0.996</td>
<td>0.089</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>-0.220</td>
<td>0.803</td>
<td>** 0.079</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>-0.018</td>
<td>0.983</td>
<td>0.032</td>
</tr>
<tr>
<td>Age</td>
<td>0.081</td>
<td>1.085</td>
<td>0.049</td>
</tr>
</tbody>
</table>

Note: * p < 0.05, ** p < 0.01, *** p < 0.001
Model fit. Overall model fit was assessed by comparing deviance in the null model \((D_0)\) with deviance in the final fitted model \((D_M)\) by using a likelihood ratio \(R^2\) test, with \(D_0=3726.304\), \(D_M=3658.389\), and the difference between the two \((G) = 67.915\). The fitted model was found to be a significant improvement over the null model at the \(p = .05\) level, with \((\chi^2(25) = 67.914, p < .000)\). Thus, the model using information sources consulted and demographic, socioeconomic, and academic variables reliably distinguished between students who did and did not report borrowing the maximum amount available in their aid package, regardless of amount.

Deviance explained. A likelihood ratio test was used to assess the amount of deviance accounted for by the model. Approximately 2.0% of the deviance in the model can be accounted for by the fitted model \((R^2_L = 0.01823)\). Estimations using pseudo-\(R^2\) statistics returned more generous estimates of how well the model explains the deviance in the outcome variable, with Cox and Snell pseudo-\(R^2 = 0.020\) and Nagelkerke pseudo-\(R^2 = 0.030\).

Odds ratios. In predicting which students were most likely to report borrowing the maximum amount available in their aid package, consulting with a parent, consulting with a financial aid counselor, GPA, and identifying as Black/ African American were found to be significant at the \(p < 0.01\) level. Identifying as female was found to be of marginal significance at the \(p < 0.05\) level.

Students who reported consulting with a financial aid counselor when making loan decisions were 37% less likely to report borrowing the maximum amount in their aid package regardless of amount \((B = -.458, \exp(B) = .632, p = .001)\). Similarly, students
who reported consulting with a parent or other family were 25% less likely to report this behavior ($B = -0.290$, $\text{Exp}(B) = 0.748$, $p = 0.007$). Students with higher GPAs were also less likely to engage in this behavior; a one-point increase in GPA was associated with a student being 20% less likely to report borrowing the maximum amount available ($B = -0.220$, $\text{Exp}(B) = 0.803$, $p = 0.008$). Conversely, Black or African American students were 78% more likely to report borrowing the maximum amount available in their package regardless of amount relative to their White peers ($B = 0.577$, $\text{Exp}(B) = 1.781$, $p = 0.002$). At a level of marginal significance female students were found to be 23% more likely to engage in this behavior ($B = 0.207$, $\text{Exp}(B) = 1.230$, $p = 0.031$). These results were found while controlling for all other demographic, academic, socioeconomic, and information source variables contained in the model.

**Unique contribution of information sources.** Hierarchical entry was used to isolate the effect of information sources on the likelihood that students are borrowing the maximum amount available in their package regardless of amount. The unique contribution of information sources was determined by calculating the change in likelihood ratio $R^2_L$ where $D_0=3680.145$ and $D_M=3658.389$. After analysis it was found that information sources account for approximately an additional .5% of model deviance ($\Delta R^2_L = .005912$). The addition of information sources represents a small but statistically significant improvement over the model using only demographic, academic, and socioeconomic variables at the $p < .001$ level ($X^2(4) = 21.755$, $p < .001$).

**Model 2: Use my budget and borrow only what I think I will need.** Binary logistic regression was used to estimate the likelihood that a student reported using a
budget to borrow only what they think they will need relative to information sources used and controlling for selected demographic, socioeconomic, and academic variables.

Table 4.2. Results from Binary Logistic Regression Predicting the Likelihood of Students Reporting Using a Budget to Borrow Only What They Think They Will Need in the 2014 SCFW

<table>
<thead>
<tr>
<th>Information Source</th>
<th>β</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on own</td>
<td>0.750</td>
<td>2.116</td>
<td>***</td>
</tr>
<tr>
<td>Parents/Family</td>
<td>0.689</td>
<td>1.992</td>
<td>***</td>
</tr>
<tr>
<td>Financial Aid Counselor</td>
<td>0.864</td>
<td>2.371</td>
<td>***</td>
</tr>
<tr>
<td>Internet</td>
<td>0.512</td>
<td>1.669</td>
<td>***</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Demographics</th>
<th>β</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.038</td>
<td>1.039</td>
<td>0.084</td>
</tr>
<tr>
<td>Af. Amer./Black</td>
<td>-0.382</td>
<td>0.683</td>
<td>*</td>
</tr>
<tr>
<td>Asian</td>
<td>-0.066</td>
<td>0.936</td>
<td>0.194</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>-0.021</td>
<td>0.979</td>
<td>0.154</td>
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<tr>
<td>Multi</td>
<td>0.049</td>
<td>1.051</td>
<td>0.137</td>
</tr>
<tr>
<td>First Generation</td>
<td>0.122</td>
<td>1.130</td>
<td>0.078</td>
</tr>
<tr>
<td>Second Year</td>
<td>0.068</td>
<td>1.071</td>
<td>0.129</td>
</tr>
<tr>
<td>Third Year</td>
<td>0.030</td>
<td>1.030</td>
<td>0.149</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>0.051</td>
<td>1.052</td>
<td>0.176</td>
</tr>
<tr>
<td>Five or More Years</td>
<td>0.095</td>
<td>1.100</td>
<td>0.222</td>
</tr>
<tr>
<td>Low Income ($0-$30,000)</td>
<td>-0.048</td>
<td>0.953</td>
<td>0.113</td>
</tr>
<tr>
<td>Middle Income ($31,000-$80,000)</td>
<td>-0.023</td>
<td>0.978</td>
<td>0.096</td>
</tr>
<tr>
<td>Income Unknown</td>
<td>0.053</td>
<td>1.054</td>
<td>0.108</td>
</tr>
<tr>
<td>1 to 10 Hours/Week</td>
<td>0.004</td>
<td>1.004</td>
<td>0.122</td>
</tr>
<tr>
<td>11 to 20 Hours/Week</td>
<td>-0.103</td>
<td>0.902</td>
<td>0.103</td>
</tr>
<tr>
<td>21 to 30 Hours/Week</td>
<td>0.185</td>
<td>1.203</td>
<td>0.118</td>
</tr>
<tr>
<td>31+ Hours/Week</td>
<td>-0.080</td>
<td>0.923</td>
<td>0.145</td>
</tr>
<tr>
<td>Commuter</td>
<td>-0.032</td>
<td>0.969</td>
<td>0.080</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>0.105</td>
<td>1.110</td>
<td>0.073</td>
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<tr>
<td>Financial Knowledge Score</td>
<td>0.043</td>
<td>1.044</td>
<td>0.029</td>
</tr>
<tr>
<td>Age</td>
<td>-0.016</td>
<td>0.984</td>
<td>0.045</td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01, *** p < 0.001
**Model fit.** Overall model fit was assessed by comparing deviance in the null model \((D_0)\) with deviance in the final fitted model \((D_M)\) by using a likelihood ratio \(R^2\) test, with \(D_0=4456.376, D_M=4293.698\), and the difference between the two \((G) = 162.642\). The fitted model was found to be a significant improvement over the null model at the \(p = .05\) level, with \(\chi^2(25) = 162.642, p < .000\). Thus, the model using information sources consulted and demographic, socioeconomic, and academic variables reliably distinguished between students who did and did not report using a budget to borrow only what they think they will need.

**Deviance explained.** A likelihood ratio test was used to assess the amount of deviance accounted for by the model. Approximately 3.6% of the deviance in the outcome variable can be accounted for by the fitted model \((R^2_L = 0.03650)\). Estimations using pseudo-\(R^2\) statistics returned more generous estimates of how well the model explains the deviance in the outcome variable, with Cox and Snell pseudo-\(R^2 = 0.048\) and Nagelkerke pseudo-\(R^2 = 0.065\).

**Odds ratios.** In predicting which students were most likely to report using a budget to borrow only what they think they will need, all four information sources were found to be significant at the \(p < .001\) level while controlling for all other demographic, academic, and socioeconomic factors. Each information source was found to be associated with an increased likelihood of students using a budget to make loan borrowing decisions. Identifying as Black/ African American was marginally significantly associated with being less likely to use a budget at the \(p < .05\) level.
The greatest increase in likelihood was found for students who reported consulting with a financial aid counselor to decide how much to borrow, with this group being 137% more likely to report using a budget ($B = .864$, $\text{Exp}(B) = 2.371$, $p < .001$). Similarly, both students who reported deciding on their own how much to borrow ($B = .750$, $\text{Exp}(B) = 2.116$, $p < .001$) and those who reported consulting with parents or family ($B = .689$, $\text{Exp}(B) = 1.992$, $p < .001$) were approximately twice as likely to report using a budget to borrow only what they think they will need. The increase in likelihood associated with using the internet was not as large, but students who reported consulting the internet in borrowing decisions were still almost 70% more likely to report using a budget to borrow only what they think they will need ($B = .512$, $\text{Exp}(B) = 1.669$, $p < .001$). At a level of marginal significance students identifying as Black or African American were 32% less likely to report using a budget ($B = -.382$, $\text{Exp}(B) = .683$, $p = .037$). These results were found while controlling for all other included demographic, socioeconomic, academic, and decision-making variables.

**Unique contribution of information sources.** Hierarchical entry was used to isolate the effect of information sources on the likelihood that students reported using their budget to borrow only what they think they will need. The unique contribution of information sources was determined by calculating the change in likelihood ratio $R^2_L$ where $D_0=4432.686$ and $D_M=4293.698$. After analysis it was found that information sources account for approximately an additional 3.1% of model deviance ($\Delta R^2_L = .03136$). The addition of information sources represents a small but statistically
significant improvement over the model using only demographic, academic, and socioeconomic variables at the $p < .001$ level ($\chi^2(4) = 138.989, p < .001$).

**Model 3: Try to borrow as little as possible.** Binary logistic regression was used to estimate the likelihood that a student reported trying to borrow as little as possible relative to information sources used and controlling for selected demographic, socioeconomic, and academic variables.
Table 4.3. Results from Binary Logistic Regression Predicting the Likelihood of Students Trying to Borrow as Little as Possible in the 2014 SCFW

<table>
<thead>
<tr>
<th>Information Source</th>
<th>$\beta$</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on own</td>
<td>0.379</td>
<td>1.460</td>
<td>***</td>
</tr>
<tr>
<td>Parents/Family</td>
<td>0.522</td>
<td>1.685</td>
<td>***</td>
</tr>
<tr>
<td>Financial Aid Counselor</td>
<td>0.566</td>
<td>1.761</td>
<td>***</td>
</tr>
<tr>
<td>Internet</td>
<td>0.330</td>
<td>1.391</td>
<td>**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demographics</th>
<th>$\beta$</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>-0.068</td>
<td>0.934</td>
<td>0.083</td>
</tr>
<tr>
<td>Af. Amer./Black</td>
<td>-0.466</td>
<td>0.628</td>
<td>*</td>
</tr>
<tr>
<td>Asian</td>
<td>-0.148</td>
<td>0.862</td>
<td>0.188</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>0.154</td>
<td>1.167</td>
<td>0.152</td>
</tr>
<tr>
<td>Multi</td>
<td>0.002</td>
<td>1.002</td>
<td>0.132</td>
</tr>
<tr>
<td>First Generation</td>
<td>-0.064</td>
<td>0.938</td>
<td>0.076</td>
</tr>
<tr>
<td>Second Year</td>
<td>0.138</td>
<td>1.148</td>
<td>0.127</td>
</tr>
<tr>
<td>Third Year</td>
<td>-0.011</td>
<td>0.989</td>
<td>0.146</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>-0.094</td>
<td>0.911</td>
<td>0.172</td>
</tr>
<tr>
<td>Five or More Years</td>
<td>-0.187</td>
<td>0.829</td>
<td>0.217</td>
</tr>
<tr>
<td>Low Income ($0-$30,000)</td>
<td>-0.063</td>
<td>0.939</td>
<td>0.110</td>
</tr>
<tr>
<td>Middle Income ($31,000-$80,000)</td>
<td>-0.099</td>
<td>0.905</td>
<td>0.094</td>
</tr>
<tr>
<td>Income Unknown</td>
<td>0.015</td>
<td>1.015</td>
<td>0.106</td>
</tr>
<tr>
<td>1 to 10 Hours/Week</td>
<td>0.199</td>
<td>1.220</td>
<td>0.120</td>
</tr>
<tr>
<td>11 to 20 Hours/Week</td>
<td>0.042</td>
<td>1.043</td>
<td>0.101</td>
</tr>
<tr>
<td>21 to 30 Hours/Week</td>
<td>0.169</td>
<td>1.184</td>
<td>0.115</td>
</tr>
<tr>
<td>31+ Hours/Week</td>
<td>0.062</td>
<td>1.064</td>
<td>0.143</td>
</tr>
<tr>
<td>Commuter</td>
<td>-0.046</td>
<td>0.955</td>
<td>0.078</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>0.203</td>
<td>1.225</td>
<td>**</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>0.096</td>
<td>1.100</td>
<td>**</td>
</tr>
<tr>
<td>Age</td>
<td>-0.018</td>
<td>0.983</td>
<td>0.044</td>
</tr>
</tbody>
</table>

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

**Model fit.** Overall model fit was assessed by comparing deviance in the null model ($D_0$) with deviance in the final fitted model ($D_M$) by using a likelihood ratio $R^2$ test, with $D_0=4557.127$, $D_M=4432.432$, and the difference between the two ($G$) = 124.696. The fitted model was found to be a significant improvement over the null model.
at the p = .05 level, with ($\chi^2(25) = 124.696, p < .000$). Thus, the model using information sources consulted and demographic, socioeconomic, and academic variables reliably distinguished between students who did and did not report trying to borrow as little as possible.

**Deviance explained.** A likelihood ratio test was used to assess the amount of deviance accounted for by the model. Approximately 2.7% of the deviance in the model can be accounted for by the fitted model ($R^2_L = 0.02736$). Estimations using pseudo-$R^2$ statistics returned more generous estimates of how well the model explains the deviance in the outcome variable, with Cox and Snell pseudo-$R^2 = 0.037$ and Nagelkerke pseudo-$R^2 = 0.049$.

**Odds ratios.** In predicting which students are most likely to report trying to borrow as little as possible, all four information sources as well as a student’s GPA and financial knowledge score were found to be significant at the p < .01 level. Identifying as African American or Black was also found to be of marginal significance in this model.

Like the previous two models, consulting with a financial aid counselor when making borrowing decisions was found to be associated with the greatest likelihood increase. Students who consulted with financial aid counselors were 76% more likely to report trying to borrow as little as possible ($B = .566, \text{Exp}(B) = 1.761, p < .001$). Students who consulted with parents or family were 69% more likely ($B = .522, \text{Exp}(B) = 1.685, p < .001$), those who reported deciding on their own were 46% more likely ($B = .750, \text{Exp}(B) = 2.116, p < .001$), and those who reported using the internet were 39% more likely ($B = .330, \text{Exp}(B) = 1.391, p = .001$) to report trying to borrow as little as possible.
Having a higher GPA ($B = .203$, $\text{Exp}(B) = 1.225$, $p = .004$), and a higher financial knowledge score ($B = .096$, $\text{Exp}(B) = 1.100$, $p = .001$) were also associated with students being more likely to try to borrow as little as possible. Conversely, at a level of marginal significance Black or African American students were 37% less likely to report borrowing as little as possible ($B = -.466$, $\text{Exp}(B) = .628$, $p = .010$). All results were found while controlling for academic, socioeconomic, demographic and information source variables.

**Unique contribution of information sources.** Hierarchical entry was used to isolate the effect of information sources on the likelihood that students will try to borrow as little as possible. The unique contribution of information sources was determined by calculating the change in likelihood ratio $R^2_L$ where $D_0 = 4497.827$ and $D_M = 4432.432$. After analysis it was found that information sources account for approximately an additional 1.5% of model deviance ($\Delta R^2_L = .01454$). The addition of information sources represents a small but statistically significant improvement over the model using only demographic, academic, and socioeconomic variables at the $p < .001$ level ($\chi^2(4) = 65.396$, $p < .001$).

**Model 4: Consider the total amount of debt I will graduate with.** Binary logistic regression was used to estimate the likelihood that a student reported considering the total amount of debt they will graduate with relative to information sources used and controlling for various demographic, socioeconomic, and academic variables.
Table 4.4. Results from Binary Logistic Regression Predicting the Likelihood of Students Reporting Considering the Total Amount of Debt They Will Graduate With in the 2014 SCFW

<table>
<thead>
<tr>
<th>Information Source</th>
<th>( \beta )</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on own</td>
<td>0.810</td>
<td>2.247</td>
<td>*** 0.090</td>
</tr>
<tr>
<td>Parents/ Family</td>
<td>0.673</td>
<td>1.960</td>
<td>*** 0.096</td>
</tr>
<tr>
<td>Financial Aid Counselor</td>
<td>0.710</td>
<td>2.034</td>
<td>*** 0.115</td>
</tr>
<tr>
<td>Internet</td>
<td>0.695</td>
<td>2.003</td>
<td>*** 0.101</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demographics</th>
<th>( \beta )</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.289</td>
<td>1.335</td>
<td>** 0.085</td>
</tr>
<tr>
<td>Af. Amer./Black</td>
<td>-0.242</td>
<td>0.785</td>
<td>0.189</td>
</tr>
<tr>
<td>Asian</td>
<td>-0.101</td>
<td>0.904</td>
<td>0.194</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>-0.194</td>
<td>0.824</td>
<td>0.157</td>
</tr>
<tr>
<td>Multi</td>
<td>-0.188</td>
<td>0.829</td>
<td>0.136</td>
</tr>
<tr>
<td>First Generation</td>
<td>0.136</td>
<td>1.145</td>
<td>0.078</td>
</tr>
<tr>
<td>Second Year</td>
<td>0.101</td>
<td>1.107</td>
<td>0.128</td>
</tr>
<tr>
<td>Third Year</td>
<td>0.069</td>
<td>1.071</td>
<td>0.149</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>0.099</td>
<td>1.104</td>
<td>0.176</td>
</tr>
<tr>
<td>Five or More Years</td>
<td>-0.121</td>
<td>0.886</td>
<td>0.225</td>
</tr>
<tr>
<td>Low Income ($0-$30,000)</td>
<td>0.026</td>
<td>1.026</td>
<td>0.113</td>
</tr>
<tr>
<td>Middle Income ($31,000-$80,000)</td>
<td>0.051</td>
<td>1.052</td>
<td>0.096</td>
</tr>
<tr>
<td>Income Unknown</td>
<td>0.025</td>
<td>1.025</td>
<td>0.108</td>
</tr>
<tr>
<td>1 to 10 Hours/Week</td>
<td>-0.014</td>
<td>0.986</td>
<td>0.122</td>
</tr>
<tr>
<td>11 to 20 Hours/Week</td>
<td>-0.064</td>
<td>0.938</td>
<td>0.104</td>
</tr>
<tr>
<td>21 to 30 Hours/Week</td>
<td>0.046</td>
<td>1.047</td>
<td>0.117</td>
</tr>
<tr>
<td>31+ Hours/Week</td>
<td>-0.088</td>
<td>0.916</td>
<td>0.148</td>
</tr>
<tr>
<td>Commuter</td>
<td>0.053</td>
<td>1.055</td>
<td>0.080</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>0.176</td>
<td>1.192</td>
<td>* 0.073</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>0.092</td>
<td>1.096</td>
<td>** 0.029</td>
</tr>
<tr>
<td>Age</td>
<td>-0.034</td>
<td>0.967</td>
<td>0.045</td>
</tr>
</tbody>
</table>

*Note:* * p < 0.05, ** p < 0.01, *** p < 0.001

**Model fit.** Overall model fit was assessed by comparing deviance in the null model \( D_0 \) with deviance in the final fitted model \( D_M \) by using a likelihood ratio \( R^2 \) test, with \( D_0=4501.251, D_M=4289.145 \), and the difference between the two \( G = \)
The fitted model was found to be a significant improvement over the null model at the p = .05 level, with \( \chi^2(25) = 212.106, p < .000 \). Thus, the model using information sources consulted and demographic, socioeconomic, and academic variables reliably distinguished between students who did and did not report considering the total amount of debt they will graduate with.

**Deviance explained.** A likelihood ratio test was used to assess the amount of deviance accounted for by the model. Approximately 4.7% of the deviance in the model can be accounted for by the fitted model (\( R^2_L = 0.04712 \)). Estimations using pseudo-\( R^2 \) statistics returned more generous estimates of how well the model explains the deviance in the outcome variable, with Cox and Snell pseudo-\( R^2 = 0.062 \) and Nagelkerke pseudo-\( R^2 = 0.083 \).

**Odds ratios.** All four information sources, gender, and a student’s financial knowledge score were found to be significant at the p < .01 level in predicting which students consider debt at graduation when making borrowing decisions. GPA was found to be marginally significant.

Students reporting that they decided on their own how much to borrow was associated with the greatest likelihood that students considered total debt at graduation when making borrowing decisions; students who reported deciding on their own were 125% more likely to do so (\( B = .810, \exp(B) = 2.247, p < .001 \)). Students who reported consulting a financial aid counselor (\( B = .710, \exp(B) = 2.034, p < .001 \)), using the internet (\( B = .695, \exp(B) = 2.003, p < .001 \)), and consulting with parents or family members (\( B = .673, \exp(B) = 1.960, p < .001 \)) were also approximately twice as likely to
consider total debt at graduation when making borrowing decisions. Females were 34% more likely to do so relative to males ($B = .289$, $\text{Exp}(B) = 1.335$, $p = .001$). Similarly, students who scored one point above average in financial knowledge were 10% more likely to consider total debt at graduation ($B = .092$, $\text{Exp}(B) = 1.096$, $p = .002$) and, at a marginal level of significance, a one-point increase in GPA was associated with a 19% increase in likelihood ($B = .176$, $\text{Exp}(B) = 1.192$, $p = .016$). All results were found while controlling for academic, socioeconomic, demographic and information source variables.

**Unique contribution of information sources.** Hierarchical entry was used to isolate the effect of information sources on the likelihood that students will think about the total amount of debt they will have at graduation. The unique contribution of information sources was determined by calculating the change in likelihood ratio $R^2_L$ where $D_0=4462.769$ and $D_M=4289.145$. After analysis it was found that information sources account for approximately an additional 3.9% of model deviance ($\Delta R^2_L = .03890$). The addition of information sources represents a small but statistically significant improvement over the model using only demographic, academic, and socioeconomic variables at the $p < .001$ level ($X^2(4) = 173.624$, $p < .001$).

**Model 5: Consider the amounts I have borrowed in the past.** Binary logistic regression was used to estimate the likelihood that a student reported considering the amounts they have borrowed in the past relative to information sources used and controlling for various demographic, socioeconomic, and academic variables.
Table 4.5. Results from Binary Logistic Regression Predicting the Likelihood of Students Reporting Considering the Amounts they have Borrowed in the Past in the 2014 SCFW

<table>
<thead>
<tr>
<th>Information Source</th>
<th>β</th>
<th>Odds Ratio</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on own</td>
<td>0.736</td>
<td>2.087</td>
<td>***</td>
</tr>
<tr>
<td>Parents/ Family</td>
<td>0.715</td>
<td>2.043</td>
<td>***</td>
</tr>
<tr>
<td>Financial Aid Counselor</td>
<td>0.395</td>
<td>1.485</td>
<td>**</td>
</tr>
<tr>
<td>Internet</td>
<td>0.798</td>
<td>2.221</td>
<td>***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demographics</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.228</td>
<td>1.256</td>
<td>**</td>
</tr>
<tr>
<td>Af. Amer./Black</td>
<td>-0.223</td>
<td>0.800</td>
<td>0.192</td>
</tr>
<tr>
<td>Asian</td>
<td>-0.379</td>
<td>0.685</td>
<td>0.202</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>-0.291</td>
<td>0.747</td>
<td>0.161</td>
</tr>
<tr>
<td>Multi</td>
<td>0.008</td>
<td>1.008</td>
<td>0.135</td>
</tr>
<tr>
<td>First Generation</td>
<td>0.213</td>
<td>1.238</td>
<td>**</td>
</tr>
<tr>
<td>Second Year</td>
<td>0.478</td>
<td>1.614</td>
<td>***</td>
</tr>
<tr>
<td>Third Year</td>
<td>0.485</td>
<td>1.624</td>
<td>**</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>0.349</td>
<td>1.418</td>
<td>0.181</td>
</tr>
<tr>
<td>Five or More Years</td>
<td>0.239</td>
<td>1.270</td>
<td>0.229</td>
</tr>
<tr>
<td>Low Income ($0-$30,000)</td>
<td>0.144</td>
<td>1.155</td>
<td>0.115</td>
</tr>
<tr>
<td>Middle Income ($31,000-$80,000)</td>
<td>0.281</td>
<td>1.325</td>
<td>**</td>
</tr>
<tr>
<td>Income Unknown</td>
<td>0.134</td>
<td>1.144</td>
<td>0.110</td>
</tr>
<tr>
<td>1 to 10 Hours/Week</td>
<td>0.125</td>
<td>1.134</td>
<td>0.124</td>
</tr>
<tr>
<td>11 to 20 Hours/Week</td>
<td>0.067</td>
<td>1.069</td>
<td>0.106</td>
</tr>
<tr>
<td>21 to 30 Hours/Week</td>
<td>0.197</td>
<td>1.218</td>
<td>0.119</td>
</tr>
<tr>
<td>31+ Hours/Week</td>
<td>-0.042</td>
<td>0.959</td>
<td>0.151</td>
</tr>
<tr>
<td>Commuter</td>
<td>0.031</td>
<td>1.032</td>
<td>0.081</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>0.205</td>
<td>1.098</td>
<td>0.074</td>
</tr>
<tr>
<td>Financial Knowledge Score</td>
<td>0.057</td>
<td>1.058</td>
<td>0.029</td>
</tr>
<tr>
<td>Age</td>
<td>0.762</td>
<td>1.014</td>
<td>0.046</td>
</tr>
</tbody>
</table>

Note: * p < 0.05, ** p < 0.01, *** p < 0.001

Model fit. Overall model fit was assessed by comparing deviance in the null model ($D_0$) with deviance in the final fitted model ($D_M$) by using a likelihood ratio $R^2$ test, with $D_0=4418.450$, $D_M=4208.295$, and the difference between the two ($G$) = 210.154. The fitted model was found to be a significant improvement over the null model.
at the $p = .05$ level, with ($\chi^2(25) = 210.154, p < .000$). Thus, the model using information sources consulted and demographic, socioeconomic, and academic variables reliably distinguished between students who did and did not report considering the amounts they have borrowed in the past.

**Deviance explained.** A likelihood ratio test was used to assess the amount of deviance accounted for by the model. Approximately 4.8% of the deviance in the model can be accounted for by the fitted model ($R^2_L = 0.04756$). Estimations using pseudo-$R^2$ statistics returned more generous estimates of how well the model explains the deviance in the outcome variable, with Cox and Snell pseudo-$R^2 = 0.061$ and Nagelkerke pseudo-$R^2 = 0.083$.

**Odds ratios.** In predicting which students were more likely to report considering amounts borrowed in the past, all four information sources, status as a first generation college student, being a second or third year student, and being a middle income student were found to be significant.

Students who used information obtained on the internet to make loan borrowing decisions were approximately 120% more likely to report considering the amounts they had borrowed in the past than than those who did not ($B = .798, \text{Exp}(B) = 2.221, p < .001$). Students who reported deciding on their own how much to borrow ($B = .736, \text{Exp}(B) = 2.087, p < .001$) and those who reported consulting with parents or family ($B = .715, \text{Exp}(B) = 2.043, p < .001$) were also more than twice as likely to report considering amounts borrowed in the past. Students who consulted with a financial aid counselor were 49% more likely to do the same ($B = .213, \text{Exp}(B) = 1.238 p = .007$). Students’
year of enrollment also rose to significance, with second year students being 61% more likely than their first year peers to consider the amounts they had borrowed in the past ($B = .478$, $\text{Exp}(B) = 1.614$, $p < .001$) and those in their third year being 62% more likely to do so ($B = .485$, $\text{Exp}(B) = 1.624$, $p = .001$). Additionally, first generation college students were 24% more likely relative to non-first generation college students ($B = .213$, $\text{Exp}(B) = 1.238$, $p = .007$), females were 26% more likely relative to males ($B = .228$, $\text{Exp}(B) = 1.256$, $p = .008$), and middle income students were 33% more likely relative to high income students ($B = .281$, $\text{Exp}(B) = 1.325$, $p = .004$) to report considering the amounts they borrowed in the past when making loan borrowing decisions. All results were found while controlling for academic, socioeconomic, demographic and information source variables.

**Unique contribution of information sources.** Hierarchical entry was used to isolate the effect of information sources on the likelihood that students will think about the total amount of debt they will have at graduation. The unique contribution of information sources was determined by calculating the change in likelihood ratio $R^2_L$ where $D_0 = 4364.797$ and $D_M = 4208.295$. After analysis it was found that information sources account for approximately an additional 3.6% of model deviance ($\Delta R^2_L = .03586$). The addition of information sources represents a small but statistically significant improvement over the model using only demographic, academic, and socioeconomic variables at the $p < .001$ level ($X^2(4) = 173.624$, $p < .001$).
Chapter Five: Discussion

Summary of Results

The results of this study indicate that the sources of information students consult when making loan decisions have broad, positive effects on the likelihood of them giving considered thought to the amount of money that they’re borrowing. All four sources of information—students deciding on their own, consulting family, consulting financial aid counselors, and consulting the internet—had a significant, positive relationship with students choosing to use each of the borrowing decision factors. Two sources of information—consulting with parents and consulting with a financial aid counselor—were also related to students being less likely to borrow the maximum amount of loans available, regardless of the amount.

These relationships exist despite controlling for a wide variety of demographic, socioeconomic, and academic information that previous research indicates could affect the quality of financial guidance that students receive. (Andruska et al., 2014; Callender & Jackson, 2005; R. Chen & Wiederspan, 2014; Houle, 2014; Martinez et al., 2009; McDonough & Calderone, 2006). With low levels of debt literacy in society (Brown et al., 2011; Lusardi & Tufano, 2009), students’ own conceptualization of loans as well as the information they receive from parents and the internet may be incomplete or ill-informed. Yet, even controlling for many factors that previous research indicates could
impact the quality of advice students receive, each source of information had a strong relationship with students being more likely to exhibit the considered borrowing behaviors (Kane, 1999; McDaniel & Montalto, 2016).

Certain demographic and academic characteristics also played a role in students’ decision-making. Relative to men, women were more likely to consider the amount of debt they’d borrowed in the past as well as the amount with which they will graduate. Students identifying as Black or African American were significantly more likely to borrow the maximum amount available to them and, at a marginal level of significance, less likely to use a budget or try to borrow as little as possible. Both first generation college students and those reporting family incomes between $31,000 and $80,000 were more likely to consider the amounts they had borrowed in the past when making borrowing decisions. Relative to their first year peers, second year and third year students were also more likely to report considering the amounts they borrowed in the past. Students with above-average GPAs were more likely to report using a budget and trying to borrow as little as possible and less likely to report borrowing the maximum amount. Finally, higher financial knowledge scores were linked to students being more likely to try to borrow as little as possible and to consider total debt upon graduation.

This study found that the sources of information students consulted and certain demographic characteristics were related to the borrowing decision factors they used when making decisions about using loans to finance their education. It suggests that students who either turn to others for assistance or feel personally responsible for their loan decisions are more likely to exhibit considered borrowing behaviors. Yet, even when
controlling for sources of information, there are still elements of students’ experiences or identities that shape the way they think about debt choices. Exploring the nuances of these decisions is an important first step in not only beginning to deconstruct what happens in the “murky middle” of the loan acquisition process, but also designing policies that could have a tangible impact on students’ borrowing behaviors.

**Sources of Information Matter**

The strong connection between the sources of information students consult and the borrowing decision factors they use confirms prior research that shows students’ decisions are influenced by their environment (Bell et al., 2009; Hossler & Gallagher, 1987; O’Connor et al., 2010; Perna, 2006). Perna’s (2006) model of college choice suggests that students use information acquired from parents, institutions of learning, and the broader society to inform the decisions that they make. This study is unable to assess the ultimate decision made by students, such as whether talking to their parents led them to reduce the amount they borrowed, but it does provide a glimpse into the the process by which these decisions are made. Considering the relationship between each information source and the borrowing decision factors helps provide a framework for understanding student debt choices.

**Deciding on my own.** Students who reported deciding on their own how much to borrow were at least twice as likely to use a budget, to think about the total debt with which they will graduate, and to think about the amounts they have borrowed in the past. They were also more likely to try to borrow as little as possible. While students deciding on their own is being classified as an information source for the purposes of this study,
that is perhaps not the most accurate description of what is taking place. Students reporting that they “decided on my own” does not represent seeking outside information in the way that consulting parents or conducting internet research might. Without a qualitative component it is impossible to know what “deciding on my own” means for students answering the survey, but it is reasonable to assume that it represents a sense of ownership over the loan decisions that are made or a recognition of their own participation in the process. This study suggests that such a sense of obligation plays a vital role in encouraging students to make considered decisions about loan debt.

This finding expands the conclusions of previous studies that suggest students’ sense of responsibility for their educational debt plays a role in how well they understand it (Akers & Chingos, 2014; Andruska et al., 2014). The high level of confusion among many students regarding their debt could indicate they do not feel personally responsible for their loans or they believe that their parents will carry the burden of repayment. For example, Andruska et al., (2014) found that students who lacked a sense of personal accountability for their debt were less likely to know the amount they owe or the type of loan they held. Similarly, Akers and Chingos (2014) speculated that many students’ lack of debt awareness stemmed from parents either making decisions for them or planning to take responsibility for repayment. Although some students receive assistance from parents in repaying loans, there may be a disconnect between most students’ expectations for assistance and how much parents are willing or able to contribute (Sandy, Baum & O’Malley, 2003). This study expands on previous research by providing a plausible
explanation for why students who feel more responsible for their debt also have a better understanding of it.

Despite the positive association between students reporting deciding on their own exhibiting and more considered borrowing behaviors, only about half (54%) of the students in this study took an active role in their loan decisions. This finding might suggest that many students delegate decisions about loans to family (Akers & Chingos, 2014; Christie & Munro, 2003) or that students just want to complete the process of obtaining loans as quickly as possible without giving much thought to the consequences (Johnson, 2012). Another possible explanation is that some students do not view acquiring student loans as an active choice, but rather a non-negotiable necessity for pursuing higher education (Christie & Munro, 2003; Delisle & Holt, 2015). This study suggests that finding ways to encourage more students to take responsibility for their own borrowing decisions could lead to them making more considered choices about debt.

**Consulting parents or family.** Consulting with parents or family was significantly related to all five borrowing decision factors. Students who reported consulting with family when making borrowing decisions were approximately twice as likely to use a budget, consider debt at graduation, and consider the amounts they had borrowed in the past. They were also more likely to try to borrow as little as possible and less likely to borrow the maximum available, regardless of amount. Thus, controlling for other information sources and demographic characteristics, students who asked their parents or family for advice about debt choices were much more likely to make considered borrowing decisions.
Of the four information sources examined in this study, parents and family represent the source most used by students (64%) when making loan decisions. There are several reasons why this might be the case. First, many studies have emphasized the important role that parents and family play in molding how their children conceptualize financial aid and educational debt (George-Jackson & Gast, 2015; O’Connor et al., 2010; Perna, 2008; Perna & Titus, 2005; Shim et al., 2010). Family’s wide utilization by the students in our sample makes sense given that families are in a high degree of contact with students and represent their primary source for financial knowledge (George-Jackson & Gast, 2015; Shim et al., 2010). Second, barring a handful of very specific qualifications, federal financial aid regulations require that students report their parents’ financial information when filling out the FAFSA (Federal Student Aid, 2015a). In this study’s sample of traditional-age students it is likely that fewer than 5% would be exempt from this regulation (Hart & Mustafa, 2008). While this qualification does not mean that students are required to consult parents when obtaining loans, it does introduce parents as an integral part of the broader process of acquiring financial aid. Finally, as most traditional-age students receive some help from parents in meeting college costs (Sallie Mae, 2010), parents are already part of the financial conversation and students may be consulting with them to determine how much money they will need to borrow in order to meet the gap between parental support and cost of attendance.

This study’s finding that students who consult their parents make more considered borrowing decisions extends work by Adruska et. al (2014) that found students whose parents taught them money management skills were more likely to know the amount of
money they had borrowed to finance their education. Even so, in influencing their students’ borrowing behaviors parents may be transmitting a broad orientation toward debt rather than sound financial knowledge. Most parents have a shaky understanding of college prices and financial aid (George-Jackson & Gast, 2015; Johnson, 2012) and several studies have indicated that they are skittish about the increase in student indebtedness (Christie & Munro, 2003; Perna, 2008; Sallie Mae, 2010). The relationship between consulting with family and making more considered borrowing decisions could be a function of students absorbing their parents’ concerns about loans and thus working to minimize their use. Whether this behavior reflects a transmission of knowledge, a transmission of attitudes, or a combination of both, it is clear that communication between parents and students plays a vital role in promoting more considered borrowing behavior.

Consulting a financial aid counselor. Students who sought the advice of financial aid counselors were much more likely to make considered borrowing decisions. This group of borrowers was twice as likely to use a budget, as well as twice as likely to think about their total debt at graduation and the amounts they borrowed in the past. They were also less likely to borrow the maximum no matter the amount and more likely to try to borrow as little as possible.

Despite the positive associations found in this study, little research has examined the role that financial aid counselors play in helping students navigate the financial aid process once they are already enrolled (Castleman & Page, 2016). The research that does exist often paints financial aid offices in a negative light. Many studies report students
feeling frustrated by the bureaucratic runaround, confused by complicated regulations, or
discouraged by feelings of procedural anonymity (Godwin & Markham, 1996; Hornak et
al., 2010). It is unsurprising that students find the process to be impersonal given that the
financial aid counselor-to-student ratio is often astronomical, sometimes in excess of
1,500-to-1 at public universities (Bettinger, Boatman, & Long, 2013; McKinney &
Roberts, 2012). Given these numbers, most students do not have a single financial aid
counselor assigned to their case and instead must rely on a rotating selection of “on-call”
staff members whenever they have a question (Hornak et al., 2010). For these reasons
students are not receiving the type of intrusive financial aid counseling and advising that
has been shown to improve success and retention (Bettinger et al., 2013; Castleman &
Page, 2016).

While most of the research about students’ experiences with financial aid
counselors focuses on negative occurrences, a handful of studies do shed light on the
positive outcomes that can arise from these relationships. For example, one study
conducted at community colleges found that the counselors themselves have an innate
desire to help students but feel unable to do so due to their large caseloads (McKinney &
Roberts, 2012). Another study found that a text-message campaign that encouraged
students to complete the FAFSA and allowed them to have a text conversation with a
financial aid counselor about the process increased the retention rate of students at
community colleges (Castleman & Page, 2016).

This study contributes to this literature by suggesting that students who are able to
discuss their loan decisions with financial aid counselors are more likely to make
considered decisions about how much to borrow each semester. Given the large caseloads of counselors and the negative perceptions of financial aid offices, however, it is unsurprising that financial aid counselors represent the least utilized resource in this study. Only 12% of students reported consulting a financial aid counselor when making borrowing decisions, and most of those that did were in their first year of enrollment. Yet, the ones that sought out this important source of assistance clearly had experiences that allowed them to take a more informed look at their loan decisions. More research is needed to explore the role of financial aid counselors further.

**Using information obtained from the internet.** Using information obtained from the internet was related to students being significantly more likely to use a budget, to try to borrow as little as possible, to think about the amounts they have borrowed in the past, and to think about the total debt with which they will graduate. Like the “decide on my own” information source, it is unclear what exactly students mean when they say they “used information obtained on the internet” in their borrowing choices. Nevertheless, the positive relationships suggest that online resources merit further consideration.

Very little research has been done to understand the role that consulting the internet plays in student borrowing decisions, but students are known to use it for activities such as obtaining personal loans (Cahn, 2011) and finding course-relevant information (Tsai & Tsai, 2003). Although many students use internet resources like online banking to manage their finances, one study examining financial socialization found that only 11% of student consumers reported learning “a fair amount” or more about financial topics from online resources (Hogarth & Hilgert, 2002). In our study
fewer than 20% of undergraduates reported consulting the internet when making their own loan decisions.

The low utilization of the internet as a resource is concerning not only because this study links internet research to higher levels of considered borrowing, but also because almost all information about loan policies exists online. The federal student aid website and students’ institutional financial aid websites both provide a wide variety of information about loan policies, interest rates, and borrowing limits (Federal Student Aid, 2015a). They are the only place students have 24-hour access to such information. The internet is also where most students conduct the majority of their business regarding financial aid, such as filling out the FAFSA (Castleman & Page, 2016), completing required loan entrance counseling (Johnson, 2012), and eventually repaying the amounts they owe (Boatman, Evans, & Soliz, 2014). Given the breadth of knowledge available online, it is unclear why so few students report consulting the internet for information and raises questions about which specific sources of information, if any, students are using to understand the policies of the debt they are acquiring.

**More needs to be known about the role of information sources.** This study represents the first attempt to link consulting certain sources of information with specific borrowing decision factors as they relate to educational debt. The results are encouraging. Students who either take ownership of their own choices or actively consult family members, financial aid counselors, or the internet are often twice as likely to make considered decisions about how much to borrow each year. Future research should explore the role that other sources of information, such as friends or faculty, play in
influencing these important choices. Other studies should also examine whether consulting any of the above sources of information led students to not only consider their borrowing decisions more closely, but also engage in more positive behaviors such as borrowing less or borrowing fewer unsubsidized loans.

**Borrowing Decision Factors**

Although all of the sources of information were associated with more considered borrowing behaviors, variation exists in their relationships to individual borrowing decision factors. This suggests that each decision factor may be capturing a different consideration that students make when choosing to take on loan debt. Looking at each decision factor in more depth will allow for a better understanding of how sources of information may influence which borrowing decision factors students use.

**The choice to borrow the maximum amount.** This borrowing decision factor stands out from the rest for two reasons. One, it is the only decision factor for which only two sources of information are significant. In this case, only speaking to parents and speaking to a financial aid counselor predicted which students were less likely to report borrowing the maximum amount available in their aid package, regardless of amount. Two, it is the only one of the decision factors that indicates students are not making more considered borrowing choices or taking time to consider the present or future impact of the decisions they make. Thinking about why students might report engaging in this behavior and what implications it might have provides a fuller picture of the borrowing process.
In Kane’s (1999) analysis of why student loan burdens are increasing, she suggests that students simply take whatever amount of debt has been offered to them because loans are an easy source of funding that does not require upfront sacrifice. She goes on to suggest that when available loan amounts increase, students either accept them without thinking or use them to avoid working more often or budgeting more tightly in order to pay for school. Students who report borrowing the maximum amount available, regardless of amount could be seen as displaying the type of “goldfish rule” (p.166) behavior with which Kane (1999) was so concerned.

On the other hand, rather than indicating carelessness on the part of student borrowers, using this borrowing decision factor may instead indicate a sense of helplessness. A study by Delisle and Holt (2014) indicated that some students don’t see taking on loan debt as a stand-alone choice. For these students, deciding to go to college is the choice and accumulating loan debt is an inevitable consequence of that path. In the face of stagnating state support (Baum, 2014), institutions’ increased use of merit-based aid rather than need-based aid (Baum & Schwartz, 1988), and the rise of federal policies that favor higher-income families (Long & Riley, 2007), students from more modest backgrounds are left with few options other than loans with which to finance their college educations (Delisle & Holt, 2015). Additionally, a student’s financial aid package may be “gapped,” meaning that the combination of scholarships, grants, loans, work-study, and other forms of aid offered does not cover the gap between the student’s expected family contribution and the cost to attend school (Anthony & Massa, 1986). In these instances students may take the full amount of federal loans offered and still be forced to look for
other sources of aid. Often, this unmet need is addressed through additional private loan borrowing (Rube, 2003).

There are a multitude of reasons why students may choose to borrow the maximum amount available, regardless of amount. In this study one-quarter (26%) of students selected this as a component of their most recent borrowing decision, but it was the sole decision factor reported for only 13% of respondents. For the students that selected it alongside other decision factors it is conceivable that they tried to budget and thought about the amounts that they borrowed in the past, for example, but were still forced to take all of the loans that were available to them in order to meet their financial obligations. More research is needed to better understand which of our students are borrowing carelessly and which of them may trying their best to make smart decisions but finding themselves with few feasible options.

**Budgeting and borrowing as little as possible.** Two decision factors dealt with students’ attempts to control the amounts that they borrowed. Students who reported using a budget to borrow only what they think they need and those who reported trying to borrow as little as possible were engaged in behaviors designed to limit their loan burdens. While both of these indicate more considered borrowing behaviors, they may reflect different attitudes about debt and its role in financing higher education.

**Budgeting to borrow only what is needed.** Over half (61%) of students in the sample reported using a budget to borrow only what was needed. This result is consistent with previous research that indicates the majority of college students attempt to use budgets to control expenses (Kidwell & Turrisi, 2004). The use of a budget by student
borrowers has been shown to have the capacity to reduce their debt burdens (Chan, Chau, & Chan, 2012; Munro & Hirt, 1998) and improve their overall financial well-being (Chan et al., 2012; Gutter & Copur, 2011).

A full exploration of the research regarding college student budgeting is beyond the scope of this study, but a look into the literature regarding why some college students budget and others do not is relevant to understanding borrowing behaviors and how to influence them. A negative attitude toward debt, a positive attitude toward the importance of budgeting, and a perceived personal ability to build and maintain a budget are all positively associated with increased budget use among college students (Kidwell & Turrisi, 2004). These attitudes relate to the amount of control students feel that they have over their financial circumstances, which may explain why students who reported deciding on their own how much to borrow were more than twice as likely to report using a budget. Additionally, other studies have tied greater parental financial socialization and expectations to an increased likelihood of students using budgets (e.g. Serido, Shim, Mishra, & Tang, 2010; Shim et al., 2010). Given the positive outcomes that can result from using a budget to determine loan needs (Chan et al., 2012; Kidwell & Turrisi, 2004; Munro & Hirt, 1998), more needs to be known about what makes students more or less likely to budget.

**Trying to borrow as little as possible.** Of all the borrowing decision factors in this study, information sources were associated with the smallest increases in likelihood of students trying to borrow as little as possible. While at first glance students attempting to minimize their loan burdens may seem like a positive choice, it is also an indicator that a
student might have an aversion to borrowing (Cunningham & Santiago, 2008). A negative attitude toward debt may encourage students to seek help or to pursue alternative methods of paying for college (Callender & Jackson, 2005; Cunningham & Santiago, 2008; Kane, 1999; Kidwell & Turrisi, 2004), but it might also cause them to take drastic measures like working full-time while enrolled, stopping out or dropping out, or pursuing the lowest-cost educational option without regard to quality (Avery & Turner, 2012; Cunningham & Santiago, 2008). For these reasons, trying to borrow as little as possible may be a double-edged sword; while it could reduce unnecessary borrowing for some, it may indicate others are avoiding debt at the expense of their personal well-being or academic success.

It is worth remembering that debt is designed to act as a consumption-smoothing device (Cho et al., 2015) and that debt loads under $10,000 have been associated with improved student success (Dwyer et al., 2012) and reduced financial anxiety while students are enrolled (Drentea, 2000). These facts could explain the relatively moderate relationship between sources of information and students trying to borrow as little as possible. Some students may be encouraged by family or financial aid counselors to take on moderate amounts of debt in lieu of other, more extreme debt-aversion measures (Avery & Turner, 2012; Perna, 2008).

While there is concern that certain populations of students are under-borrowing to their own detriment, for most students attempting to limit their loan burdens has the potential for positive effects both during their time in college and over the course of their lives (Avery & Turner, 2012; Heller, 2001). More needs to be known about what
strategies work best to encourage these balanced borrowing behaviors and what role institutions, families, and peer groups can play in promoting them. This particular area of research is ripe for cross-discipline collaboration between fields such as student development, consumer science, sociology, and economics in order to take a more holistic view of this type of student behavior and decision-making.

**Considering loan amounts.** The remaining two decision factors capture whether students think about loan amounts, past and future, when making borrowing decisions. Students who indicated they considered the amounts borrowed in the past or thought about the total debt with which they will graduate may be considering the lump-sum implications of their loan choices.

*Consider the total debt I will graduate with.* The amount of debt that students accumulate by graduation is one of the most studied impacts of student borrowing decisions (Chen & Wiederspan, 2014; College Board, 2015; Dwyer et al., 2012; Heller, 2001), but it is not an easy calculation for the students themselves to make. Students attempting to estimate their ultimate debt burden must be able to not only recall the amounts they have borrowed in the past (discussed more in the next section), but also estimate the amount of time they have left until graduation and the amount of borrowing needed to get them there. Given the piecemeal way in which debt is acquired (Delisle & Holt, 2015), students’ unreliable understanding of their past borrowing choices (Andruska et al., 2014), and the accumulation of interest on most loans, it is doubtful that many students are able to conceptualize the amount they will owe at graduation with any degree of accuracy.
Nevertheless, research suggests that the amount of debt with which students graduate holds important implications for their career choices, graduate school attendance, and participation in major life activities like having children or buying houses (Christie & Munro, 2003; Dwyer et al., 2012; Heller, 2001). Perhaps students thinking about their total debt at graduation are already anxious about the effects it might have on their life after college. Some research undercuts that assumption, however, finding that the debt burdens students carry during college neither decrease their sense of financial well-being nor increase their sense of financial anxiety (Archuleta, Dale, & Spann, 2013). If students have a poor understanding of the amounts they owe and experience no increased anxiety about the debt with which they will graduate, then the degree to which this borrowing decision factor may influence behavior is unclear. More research is needed to understand how thinking about debt at graduation has the potential to impact (or not) the ultimate loan decisions that students make.

**Consider the amounts I have borrowed in the past.** The limited research that explores how accurately students are able to estimate the amounts they’ve borrowed in the past is discouraging. Many students underestimate the amount they owe, misunderstand the origin of their loans, or are unaware they have borrowed money to finance their education in the first place (Akers & Chingos, 2014; Andruska et al., 2014). Even a study that only looked at first-year students, those with only a single year’s worth of borrowing to recall, returned the same results (Akers & Chingos, 2014). Given the wobbly nature of students’ knowledge of their own debt, it is doubtful that most of
them are seeing the whole picture when they report considering the amounts they have borrowed in the past when making borrowing decisions.

The difficulty inherent in these calculations is perhaps why this borrowing decision factor is the one least utilized by the sample respondents (38%). As students continue through their education the number of decisions they have made about whether to borrow, how much to borrow, and perhaps which loans to use continues to increase (Delisle & Holt, 2015). While some recent improvements at the federal and state level have made it easier for students to keep track of the amounts they owe (Federal Student Aid, 2015a), it has historically been much more difficult and many students may still be uninformed about recent improvements (Andruska et al., 2014; Delisle & Holt, 2015).

More needs to be known about how considering the amounts borrowed in the past may affect the borrowing choices that students make. Students who are able to generate an accurate estimation of the amounts they owe might not only be more likely to make more informed borrowing decisions in the present, but also be less likely to be surprised at the eventual amount they owe (Delisle & Holt, 2015).

**More information is needed about the impact of borrowing decision factors on student loan decisions.** After reviewing the individual borrowing decision factors it is clear that much more needs to be known about how students make use of each of them individually when making debt decisions. Knowing which borrowing decision factors have the potential to alter students’ loan decisions will allow students, families, financial aid professionals, and policy-makers to design interventions with the potential to begin making a dent in America’s ever-increasing student loan debt.
Importance of Seeking Help

This study shows a substantial link between the act of asking for guidance—from family, from financial aid counselors, from the internet—and making more considered borrowing decisions. The SCFW makes no attempt to control for the quality of information students receive when they seek out assistance; despite the fact that the advice they are receiving could be poor, the positive associations remain. It calls into question the role that knowledge-centric concepts like financial literacy play in shaping students’ borrowing behaviors. It also highlights how help-seeking behaviors can encourage students to make better decisions about debt.

Does the quality of information matter? The SCFW made no attempt to control for the quality of advice students received from the sources of information they consulted. It is reasonable to assume that students who spoke with financial aid counselors received knowledgeable advice (McKinney & Roberts, 2012), but the same is not true for the other three information sources. Given the poor general understanding of debt in American society (Lusardi & Tufano, 2009) and the role of social and cultural capital in controlling information (Bourdieu & Passeron, 1977; Perna, 2006), it is at least as likely that students looking for advice about loans received poor suggestions rather than well-informed guidance from parents or the internet. Similarly, there is nothing to suggest that the students who reported “deciding on my own” were any more financially savvy than those that did not. In fact, previous research using the same 2014 SCFW survey data found that students who reported deciding on their own how much to borrow were more likely to be first generation college students, students of color, and low
income students (McDaniel & Montalto, 2016), all identities that have been associated with lower levels of financial knowledge (Houle, 2014; Martinez et al., 2009; McDonough & Calderone, 2006).

Yet, even controlling for many of the demographic and academic characteristics associated with lower levels of financial knowledge, students who sought help were still significantly more likely to make considered borrowing decisions. While techniques like successful budgeting may require more advanced forms of financial literacy (Kidwell & Turrisi, 2004), trying to borrow as little as possible, thinking about past debt, and thinking about future debt may just require a casual conversation to bring the concept of debt to the forefront of students’ minds. If this is the case, institutions of higher education should be doing more to encourage students to not only seek professional financial guidance, but also to engage with the topic frequently in more casual settings.

**Help-seeking behaviors.** Many studies have commented on the positive role that financial help-seeking behaviors can play in influencing student financial decisions (e.g. Grable & Joo, 2001; Lim, Heckman, Letkiewicz, & Montalto, 2014). While no study has examined the role that financial help-seeking behavior may play in influencing student loan decisions specifically, several authors have explored the demographics of the students most likely to seek help, the type of help they seek, and the influence that help may have in their financial decisions. The positive associations this study found between seeking help and making more considered borrowing decisions contribute to the previous literature that suggests the act of seeking help itself is a positive step in changing financial behaviors (Grable & Joo, 1999).
Research by Grable and Joo (1999) found that people who were younger, who were experiencing higher levels of financial stress, and who were exhibiting more poor financial behaviors were more likely to seek help in making financial decisions. A follow-up study by the same authors in 2001 further differentiated between students that sought professional sources of help, like financial aid counselors, and students that sought non-professional sources of help, like consulting with family members or the internet. It found that students who had higher levels of financial risk tolerance and higher levels of financial satisfaction were more likely to seek out professional sources of help when making decisions (Grable & Joo, 2001). They explained the role of those variables by suggesting that some students may avoid seeking professional help because they are reluctant to put themselves in situations where could be “ridiculed, behaviorally constrained, or reprimanded” on the basis of their financial choices (Grable & Joo, 2001, p. 70). Although the authors present non-professional help as less desirable than professional assistance, this study suggests that in the context of student loan decisions non-professional sources also have a role to play in promoting more considered borrowing behavior. At the same time, the positive behaviors associated with consulting financial aid professionals suggests that helping students overcome the psychological barriers to seeking professional financial help is well worth it.

Research suggests that one way to increase students’ willingness to seek help is by increasing their sense of financial self-efficacy (Grable & Joo, 2001; Lim et al., 2014). Bandura (1977) describes self-efficacy as the feeling that a person can effectively manage a situation; financial self-efficacy, then, is when a person feels capable of managing their
finances. Higher levels of financial self-efficacy have been associated with lower levels of debt, lower stress, and fewer financial problems (Lapp, 2010). This concept could help explain why students who decided on their own how much to borrow were significantly more likely to make considered borrowing decisions. If these students have a higher level of financial self-efficacy, they may be less likely to worry about potential negative reactions to seeking help and more confident in their ability to make good choices.

More research needs to be done in order to explore the relationships among sources of information, borrowing decision factors, financial help-seeking behaviors, financial self-efficacy, and the ultimate borrowing choices students make. Much of the explanation offered above is speculative in nature as the 2014 SCFW did not ask questions that permitted measurement of self-efficacy. Nevertheless, this study presents compelling indications that the act of seeking help itself, independent of the quality of information received, can be a powerful influence in helping students making more considered borrowing decisions.

**Demographics Matter**

Students’ academic, socioeconomic, and demographic characteristics were not a primary focus of this study, but several patterns that emerged merit brief discussion. The borrowing considerations of Black students, female students, students with higher GPAs, and students with higher financial knowledge scores differed significantly from their peers even when controlling for the use of all four information sources and other selected variables. Exploring the places where these results corroborate prior research as well as
the places where they diverge from it can provide inspiration for future studies that seek to understand the behavior patterns of specific groups.

**Black students’ experiences.** Studies have shown there are marked differences in the way that Black undergraduate students think about, acquire, and experience the impact of student loan debt relative to their White peers (Houle, 2014; Jackson & Reynolds, 2013; Nelson, 2012; Price, 2004). Black students are less likely to have reliable information about student debt when entering college (McDonough & Calderone, 2006), more likely to acquire large amounts of debt (Houle, 2014), and more likely than other groups to have trouble repaying the amounts they owe (Gross et al., 2009). Yet, they are also more likely to seek assistance in making financial decisions (Grable & Joo, 2001; Lim et al., 2014), which research suggests should lead to improved financial decision-making (Britt, Canale, Fernatt, Stutz, & Tibbetts, 2015; Lim et al., 2014). Taken together, these results suggest that the positive effects of financial help-seeking behaviors may be diluted for America’s Black college students.

Even when controlling for the positive relationships of all four information sources and a variety of other variables such as socioeconomic status and relative financial knowledge, in this study Black students were still less likely to use a budget to borrow only what they think they will need or to try to borrow as little as possible in comparison to their White peers. They were also nearly twice as likely to report borrowing the maximum amount available in their aid package.

Prior research suggests several possible explanations for these results. One, Black students may be experiencing greater financial constraints than their White peers. Houle
(2014) found that, on average, Black students borrow 240% more than White students even when controlling for socioeconomic status and other financial aid awards. Black students may see less utility in considering how much to borrow, already knowing that they will need every cent and then some to access higher education. Another possible explanation is that attitudes about debt in predominantly Black communities do not promote more considered borrowing behavior (Perna, 2006) due to lower levels of knowledge about financial aid and education loans (George-Jackson & Gast, 2015; Kim, 2004; McDonough & Calderone, 2006). These explanations for the gaps found in this study are speculative; more information is needed to understand the unique circumstances under which Black students borrow to finance their educations.

**Female students’ experiences.** Research on the experience of females in managing debt decisions is mixed. Some studies have indicated that women have lower levels of financial literacy and less interest in learning about the subject than their male counterparts (Chen & Volpe, 1998; Chen & Volpe, 2002). Identifying as female has also been associated with lower levels of financial self-efficacy and higher levels of anxiety regarding personal finances (Chen & Volpe, 2002; Drentea, 2000; Hayes, 2006). Additionally, some research suggests high levels of undergraduate educational debt are more likely to deter women from attending graduate school (Fox, 1992). These findings are not universal, as other studies have found no difference in how females and males make debt decisions, understand loan burdens, or acquire debt (Andruska et al., 2014; Chen & Wiederspan, 2014).
These inconsistent findings about women’s experiences are also reflected in the current study. When making borrowing decisions, women were found to be more likely than men to consider the total debt with which they will graduate as well as the amounts they had borrowed in the past. At the same time, they were also marginally more likely to report borrowing the maximum amount offered. All of these seemingly contradictory results support some of the previous research on female debt decisions. On the one hand, while thinking about debt amounts could be indicative of more informed borrowing decisions, it could also be a marker of increased anxiety around the debts women are accruing (Drentea, 2000; Hayes, 2006). Similarly, women might be more likely to report borrowing the maximum amount available because they feel less personal control over their financial circumstances (Hayes, 2006) or because they have lower confidence in their own ability to make smart financial choices (Chen & Volpe, 2002). Regardless, the observed differences in this study call into question previous research that has found no difference in the borrowing behaviors of men and women (Andruska et al., 2014; Chen & Volpe, 2002).

**The role of knowledge in borrowing behaviors.** Both students’ cumulative grade point average (GPA) and their financial knowledge score were predictive of more considered borrowing behaviors. While the role of financial acumen in borrowing behaviors has been studied extensively (Chan et al., 2012; Lapp, 2010; O’Connor et al., 2010), less is known about the role that GPA plays in these decisions.

**Grade Point Average (GPA).** Higher GPAs were associated with students being more likely to try to borrow as little as possible, less likely to borrow the maximum
available without regard to amount, and, at a marginal level of significance, more likely to think about their total debt at graduation. Relatively little work has been done to explore the role that GPA plays in how students make decisions about loan debt. In most cases it is treated as a control variable (e.g. Heller, 2001; Kim, 2004) or only explored in studies that look at causes for post-college payment delinquency or default (e.g. Greene, 1989; Volkwein & Szelest, 1995). Andruska et al. (2014) did find that students with higher GPAs were less likely to be confused about the amount they owe and less likely to underestimate their own loan burdens. This study provides a plausible explanation for why that might be the case – if students are making more considered decisions at the moment when borrowing occurs, it makes sense that they would later be better able to recall their own behaviors. It also adds a study by Harrast (2004) which found that a one-point increase in GPA predicted a $4,000 decrease in total debt at graduation. Although the author offered no explanation at the time, the relationship between higher GPAs and more considered borrowing behavior found in this study could play a role. Additionally, as students with higher GPAs have shown more inclination to attend graduate school (Monks, 2001), they could be attempting to reduce undergraduate borrowing in anticipation of future heavy debt burdens that may come with medical school or law school.

Financial knowledge score. Although much research has focused on the role of financial knowledge in students’ decision-making about finances and borrowing behaviors (Fernandes et al., 2014; Lapp, 2010; Lusardi & Tufano, 2009; McDaniel & Montalto, 2016), in this study it played a limited role in predicting which borrowing
decision factors students used when making loan choices. An above-average financial knowledge score only predicted a 10% increase in students trying to borrow as little as possible and considering total debt at graduation. No relationship was found between financial knowledge and budgeting, which is also surprising given the amount of research that has connected the two (Chan et al., 2012; Munro & Hirt, 1998; Serido et al., 2010). One possible explanation is that knowledge alone may play a limited role in the decisions students make; rather, it may be the interplay between having correct knowledge and feeling pressure to make use of that knowledge that leads students to more considered borrowing choices. If students are knowledgeable but don’t feel pressure to reduce borrowing (Archuleta et al., 2013), don’t face family pressure to make careful decisions (O’Connor et al., 2010; Shim et al., 2010), or aren’t easily able to expand that knowledge by asking informed questions (Castleman & Page, 2016), they still might make poor decisions by not putting that knowledge to good use.

**Implications for Practice**

This study provides compelling evidence that higher education institutions need to do more to encourage students to engage in critical conversations about their debt decisions. Consulting outside sources of information and feeling personally responsible for debt has been shown to have significant, positive associations with making more considered borrowing decisions. As studies find that many students are unaware of their personal indebtedness (Akers & Chingos, 2014; Andruska et al., 2014), the need for more informed decisions about borrowing is evident. By making it easier for students to engage in informed discussions about their own borrowing behaviors institutions could not only
help students borrow thoughtfully, but also encourage behaviors that could lead to a
decrease in their overall indebtedness.

Money can be a difficult topic of conversation for students, families, and
institutional professionals alike. Students may be reluctant to broach the topic for fear of
being embarrassed or seeming ill-informed (Britt et al., 2015). Yet, this study and other
research demonstrates the positive relationship between talking about finances and
making more informed decisions (Cho et al., 2015; Lapp, 2010). Additionally, services
like the U.S. Department of Education’s College Scorecard now grade schools on debt-
related metrics like students’ average debt upon graduation and typical monthly student
loan payments (U.S. Department of Education, n.d.), providing a powerful incentive for
colleges to help students reduce borrowing. If institutions want to encourage better
borrowing behaviors, the onus is on them to make encouraging financial conversations a
top priority.

**Help students take more ownership of their debt.** The strong, positive
relationship between students deciding on their own how much to borrow and making
more considered borrowing decisions suggests that helping students feel more in control
of their financial choices is important. One way colleges could encourage students to take
ownership of their finances is by making it easier for them to keep track of the loans
they’ve already borrowed. Students can check their loan balances by visiting the federal
student aid website, but few students may be aware of this option and the site only reports
students’ federal loans. Several start-up companies are trying address the issue by making
it easier for students to both keep track of what they’ve borrowed as well as understand
what those amounts could mean in terms of repayment (Snyder, 2014). One of the most promising companies is Tuition.io (pronounced “tuition I owe”), which allows students to view all their loans in a single place, keep track of repayment, and see the implications of different repayment plans. This service is currently being marketed toward employers of recent graduates as a desirable benefit to entice young professionals to work for a company (Tuition.io, n.d.). Even so, the product would work equally as well for students still enrolled in college. Institutions interested in making it simpler for students to track their loan burdens could work with companies like Tuition.io to provide an opt-in loan tracking service.

If purchasing a product were not an option due to budget constraints, colleges and universities could still direct students to the many free services that exist by advertising them on the institutional financial aid website or mentioning them in financial aid award letters. If students took advantage of these services, they might be more likely to stay up-to-date about their own borrowing behaviors and feel more personal responsibility for the loans they are acquiring.

**Encouraging parents to play a role.** Even controlling for student demographics and socioeconomic status, speaking with parents about loan decisions was related to more considered borrowing behavior. Parents with more social capital may already feel comfortable engaging in these conversations (Perna & Titus, 2005; Serido et al., 2010), but parents who do not feel as knowledgeable might be hesitant to discuss these topics with their children (Grodsky & Jones, 2007). Institutions can play a critical role in helping parents bridge this gap.
Many colleges and universities already have a specific office dedicated to managing their relationship with the parents of students that attend (Carney-Hall, 2008), providing a perfect platform for also disseminating information about student loans. These offices could send out communications to parents encouraging them to engage their students in constructive conversations about their borrowing behaviors. To help parents that may be less knowledgeable, the office could include some general information as well as suggestions for specific questions to ask (e.g. “How are you deciding how much to borrow this year? Have you considered using a budget?”). Institutions could also include statistics like average debt upon graduation, average amount borrowed per semester, and average monthly repayment amount to help parents understand whether their students’ behavior is in line with institutional norms. Encouraging parents to take an active role in these conversations is an important step toward helping all students make more considered borrowing decisions.

**Facilitate access to financial aid counselors.** Although financial aid counselors were the least-utilized resource for students, consulting them on loan decisions was strongly related to more considered borrowing behaviors. Yet, due to institutional policies and limited resources financial aid professionals may be the most difficult source of information to access. Barriers such as long lines, limited office hours, high counselor to student ratios, and impersonal service discourage many students from taking advantage of the expertise that financial aid counselors can offer (Bellia, 1971; Godwin & Markham, 1996; Hornak et al., 2010; McKinney & Roberts, 2012). Despite constraints of
time and budget, institutions can and should do more to help connect students with this important resource.

A few simple changes could make it easier for students to contact the financial aid office with questions about borrowing. To accommodate students with busy class and work schedules, offices could consider staying open later one or two nights a week. Financial aid offices could also work to increase their presence on campus by tabling at campus resource fairs and presenting to student groups and first-year seminar classes. Giving students an opportunity to meet the people behind an often impersonal process may make them more comfortable reaching out for help. Similarly, if possible, institutions should assign students to the “caseloads” of specific counselors or administrators. Already a common practice at small schools, this could help decrease feelings of anonymity and allow students to develop a trusting relationship that might make it easier to reach out for assistance. Even if institutions are not able to provide personalized help by financial aid counselors, they could consider referring students to peer-run or community-based services that have also proven to be effective (Britt et al., 2015; Lim et al., 2014).

Research is also exploring the role that “nudging” could play in helping students make positive choices about financial aid. In this case, nudges can be thought of as “timely, personalized reminders” (Page, Castleman, & Meyer, 2016, p. 4) that encourage students to engage in a specific behavior. Several prior studies demonstrated the effectiveness of text-messaging students about necessary financial aid processes like completing the FAFSA. In these studies, if a student responds to the “nudge” by texting
back a question it is immediately directed to a person with knowledge of their account who can help address their issues in an informed, timely manner (Castleman & Page, 2016; Page et al., 2016). Institutions could use similar strategies to reach students at times when they may be making decisions about how much to borrow.

The role of student affairs professionals. Student affairs professionals are in a unique position to lead the charge on encouraging more informed conversations on student borrowing behaviors. Present in many areas of campus life, they play an important role in shaping the undergraduate experience. Given these prominent positions, student affairs professionals should make it a priority to educate themselves about basic financial aid policies, understand their institutions’ payment deadlines, and use their influence to encourage students to open up about their borrowing decisions. By taking these proactive steps student affairs professionals would provide students with an important opportunity to engage in conversations about loan decisions with a trusted adult, hopefully leading to more careful borrowing behavior.

To realize these opportunities, however, the profession as a whole will need to begin to take seriously its role in helping students navigate not only the academic and social aspects of college life, but also the financial ones. With the vast majority of students using financial aid and loans to pay for school (College Board, 2015), it is imperative that professionals charged with developing the whole student have a holistic understanding of the undergraduate experience. At this time, however, the field has done very little to encourage student affairs professionals to educate themselves about how to support students’ financial wellness. For example, the words “financial aid” do not
appear a single time in the forty-page report on *Professional Competency Areas for Student Affairs Educators* jointly produced by the American College Professional Association (ACPA) and the National Association of Student Personnel Administrators (NASPA) (ACPA & NASPA, 2010).

This oversight is egregious. If one of the core competencies of student affairs administrators is to “create learning environments that foster equitable participation of all groups while seeking to address and acknowledge issues of oppression, privilege, and power” (ACPA & NASPAA, 2010, p. 13), then acknowledging the inequities that arise from increased reliance on student debt by marginalized populations should also be addressed (Houle, 2014). Given the positive relationship between consulting sources of information and more informed debt decisions, student affairs administrators at all levels should do more to engage in and promote intrusive, informative conversations about students’ borrowing behaviors.

**Future Research Directions**

This study highlighted the important role that sources of information play in helping students make more considered borrowing decisions. While it has added to the limited amount of information about what takes place in the “murky middle” of student loan decisions, it has also made apparent how little is known about how students make year-to-year choices about loans while enrolled. Adding to this body of knowledge will allow both scholars and practitioners to have a fuller understanding of how these choices are made and, eventually, what type of timely interventions might encourage students to make better ones.
One limitation of this study is that it is unable to connect the borrowing decision factors used to the loan decisions students made. While on the surface it makes sense to assume that students who try to borrow as little as possible will have reduced loan burdens, in practice it might prove otherwise. Testing that hypothesis would require researchers to collaborate with financial aid offices or government agencies in order to connect students’ intended behaviors with their actual borrowing choices. Student-specific financial aid data is difficult to acquire due to Federal Education Rights Privacy Act (FERPA) considerations, Higher Education Act (HEA) restrictions, and best practice guidelines of the National Association of Student Financial Aid Administrators (NASFAA) (National Association of Student Financial Aid Administrators, 2016). Conducting this type of inquiry would require close collaboration between higher education scholars and financial aid practitioners, a partnership that has the opportunity to both facilitate data sharing and encourage theory-to-practice considerations in all aspects of the research process.

Another opportunity to expand on the work of this study would be to broaden the sample size to include all types of institutions and a broader range of students. Although this study’s focus on in-state, traditional age students at public four-year institutions followed the selection choices of prior research (Andruska et al., 2014; Avery & Turner, 2012) and decreased the variability between sample subjects, it does not represent the average student attending college today (College Board, 2015; National Center for Education Statistics, 2015). Research that includes the experiences of all indebted students would contribute to the generalizability of the findings. Future studies on this
topic should consider using Hierarchical Linear Modeling (HLM) techniques to account for clustering and shared variance at individual institutions and institution types.

While all four information sources explored in this study were significantly related to almost every borrowing decision factor, they accounted for very little (<10%) observed variance even when controlling for demographic, socioeconomic, and academic variables. More research should be done to explore what other factors influence which borrowing decision factors students use. The results of this study suggest that further inquiry into topics such as help-seeking behaviors, financial self-efficacy, pre-college financial experiences, and sociocultural capital could provide additional explanatory power in future models.

A wealth of research has explored both students’ pre-college attitudes toward debt and the post-college impact of the decisions they make. Although these considerations are important, it is time for researchers to turn more of their attention to the “murky middle” in between the two in order to better understand how students conceptualize the year-to-year decisions they make about whether and how much to borrow. This study adds to that literature by suggesting that students who take time to seek help are more likely to make considered borrowing choices, but much more needs to be known about the process by which these decisions are made and what can be done in the moment to influence them.
Conclusion

By the fall of 2025 the National Center for Education Statistics predicts that almost 20 million undergraduate students will be enrolled in the American higher education system (National Center for Education Statistics, 2015). With rising college costs and decreasing government support (Fuller, 2014), it is likely that borrowing will continue to play a primary role in how students finance their higher education journeys. For some students, loans may be their only option if they want access to higher education and the lifelong benefits it can provide (Delisle & Holt, 2015). Although small levels of debt can smooth a student’s educational journey (Dwyer et al., 2012), a wealth of research shows that high levels of it can eat away at both their lifetime earnings and their personal wellbeing (Cho et al., 2015). Even more concerning, recent studies have highlighted the fact that many students do not even have a firm understanding of how much they owe (Akers & Chingos, 2014; Andruska et al., 2014).

Part of students’ confusion stems from the piecemeal, haphazard way that education debt is acquired. Most students will make many individual decisions to borrow over the course of their educational career. To make informed choices, with each year’s financial aid award they must not only decide whether to borrow, but also consider which loans to take, how much money they will need, and what the interest rates are on each loan (Delisle & Holt, 2015). Additionally, how well they are able to understand the
financial implications of these decisions is related to their levels of financial knowledge and financial literacy (Chan et al., 2012; H. Chen & Volpe, 1998). Despite the large role that decision-making plays in how students acquire loan debt, few studies have explored the process by which these choices are made. Most research either focuses on students’ pre-college attitudes toward borrowing or their post-college loan burdens. Few studies explore the “murky middle,” or the time during college when these decisions are being made.

This study provides compelling evidence that knowing more about what takes places during the “murky middle” could allow educators and policymakers to design strategies that have real potential to help students make more considered borrowing decisions. Students who asked for help from parents or financial aid counselors, sought information on the internet, or felt personally responsible for the borrowing choices they made were much more likely to use budgets to determine how much money they need, to try to borrow as little as possible, and to consider the amounts they have borrowed in the past and will borrow in the future. These results suggest that, regardless of the amount of sociocultural capital to which students have access, behaviors like seeking help and building financial self-efficacy can propel them toward more informed borrowing choices (Grable & Joo, 1999; Lim et al., 2014).

Given these results, the onus is on institutions to find more ways to engage students in conversations about their debt. Interventions designed to encourage students to dialogue about their loans have the potential both to improve in-the-moment borrowing decisions and to reduce the levels of debt with which students graduate. Yet, much more
evidence is needed to know how the sources of information students consult and the 
borrowing decision factors they use relate to the ultimate choices that are made. A more 
complete understanding of this process will allow institutions to provide holistic support 
to the students navigating this critical time period; doing so will not only help the 
students themselves understand the implications of their choices, but also begin to chip 
away at the $1.3 trillion in educational debt facing the nation at large.
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