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# DEGREE OF UNDERSTANDING: HOW STUDENT BORROWERS IN MONTANA UNDERSTAND STUDENT LOANS

by

Teresa Snyder Borrenpohl

A dissertation

submitted in partial fulfillment

of the requirements for the degree of

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Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

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## ABSTRACT

Higher education costs in the United States have increased by 69% in the last decade. Simultaneously, state legislatures have decreased the level of funding provided to institutions of higher education while states have initiated campaigns to encourage students to obtain a post-secondary education. With increased costs, decreased support, and enhanced pressure to attend college, students rely heavily upon student financial aid to cover college expenses. Currently, the aggregate federal student loan balance in the United States is $1.4 trillion. Because institutions depend upon student tuition dollars and most students must borrow money to afford college, institutions of higher education have a responsibility to ensure students have a strong understanding of their borrowing obligations.

This study, determined the level of understanding of Montana undergraduate students, 18 years or older with student loan balances have of their student financial aid obligations and the factors that may influence their understanding.

Statistical analyses found that Montana undergraduate students misrepresent their actual student loan balances by 23.5%. There was no relationship between the confidence students had in their perception of their loan balances and debt deviation. Moreover, 1 in 5 students who had a debt deviation of 31% or more expressed confidence in their ability to accurately report their student loan balances. This study determined that students who had loans outside the student federal aid program were more likely to have higher loan debt deviation and that upperclassmen were more likely to have lower loan debt deviations. This study also determined that students who had met with a financial aid counselor while in high school were more likely to have a lower debt deviation. Early

interventions are necessary to help students improve their understanding of their financial aid obligations. Building high school and college partnerships would ensure that students have practical and personalized assistance in their first interaction with student financial aid.

# CHAPTER I: INTRODUCTION

Student loan default rates are commonly discussed in popular media as a growing problem throughout the United States. News stories highlight the increasing cost of college tuition and chronicle the post-college lives of students who are unable to repay their student loans. Unfortunately, very little is written about the financial literacy of students. The student loan narrative must include the repayment obligations of the student as well as the role of the federal government, financial institutions, and universities to educate students about loan terms, amounts, and repayment. Without a basic knowledge of the lending process, it is difficult to understand the long-term implications of education attainment and student debt.

A college degree is often hailed as the ticket to the middle class in the United States. A college education "is valued not just as a good in itself, but also as a means to the end of greater economic security and the primary lever for economic mobility" (Elliott & Lewis, 2015, p. 416). To a student, higher education represents an opportunity cost of time and income in order to acquire the skills needed to secure a career that promises higher lifetime earnings than the earnings of peers without college degrees. In order to fund post-secondary education in 2013, a significant majority of students (71%) received some form of financial aid. Of the students receiving financial aid, 47% were awarded direct loans from the federal government (National Center for Education Statistics, 2016). In 2013, the average student borrower graduated with $26,000 in student loan debt. Today, the aggregate student loan balance in the United States exceeds $1.4 trillion (Federal Reserve of the United States, 2017).

As student loan balances increase, so does the default rate on student loans. The United States federal government measures student loan default rates through a cohort model. The cohort default rate is the percentage of a school's borrowers who enter repayment on student loans during a federal fiscal year (October 1 to September 30) and default on their payments prior to the end of the next one to two fiscal years (United States Department of Education, 2013a). A student borrower who does not begin repayment within 270 days of leaving college and does not make alternate arrangements is included in the student cohort default rate. In 2010, the two-year cohort default rate was 10% nationally, representing 475,538 students who attended public institutions and defaulted on their student loans within two years of leaving college (United States Department of Education, 2013b). After hitting a decade-low rate of 4.5% in 2003, the two-year cohort default rate more than doubled to 11.8% in 2013 (United States Department of Education, 2015a). The most recent cohort default rate shows a slight decrease falling to 11.3% nationally in 2015 (United States Department of Education, 2015b)

In aggregate, the federal government now holds $40.1 billion in government-backed, defaulted student loans (United States Department of Education, 2013a). Because government-backed student loans can rarely be discharged through bankruptcy and because the federal government has the ability to garnish wages and offset tax refunds in order to gain repayment, defaulting on student loans can be detrimental to the financial well-being of a borrower (United States Department of Education, 2015c).

Student loans are important to American college students and their families. Determining the appropriate level of student financing for college is a dynamic and

multifaceted decision. Students and their families must weigh college choice, degree choice, financing levels, and funding sources against the benefits of a college education. Included in education attainment decisions are complex financial systems of subsidized education costs, interest rates, forbearance benefits, and commitments to long-term repayment. Many students and families faced with making decisions to finance post-secondary education have little or no experience with the direct loan program or the modern university system. As a result of misinformation and misunderstanding of student financing, consumers of higher education may not make the best choices about financing their education. To compound the difficult decisions of school choice, degree selection, and borrowing levels, students are likely to receive different financial aid packages each year, accrue interest at varying rates, encounter loan origination fees, and pay increasing fees and tuition with each academic year (Sharpe, 2016; United States Department of Education, 2015d; United States Department of Education, 2014a).

For students to determine the accurate costs and benefits of attending college, they must have complete and accurate information, including how to navigate the financial aid process, the opportunity cost of being in school, the level of educational attainment needed to achieve future career goals, and an understanding of the post-college job market. An accurate cost/benefit analysis is based on the 19th century rational choice theory. The rational choice theory is based on models of social and economic behavior, examining how the choices individuals make mirror the choices of the aggregate society. The rational choice theory assumes the individual will maximize personal utility based upon full knowledge of the situation and personal preferences. Rational choice theory applies to all choices in an individual's life although the premise

of perfect rational choice is not likely to occur because full information is not usually available, especially full information pertinent to student borrowing (Coleman & Fararo, 1992).

Rational choice theory assumes students have a full understanding of their ultimate educational and professional goals and have a clear understanding of how to navigate the higher education system to achieve their goals. Utilizing market forces, the student would have full understanding of financial aid options, opportunity costs, college choices, education requirements, and career options. As a result of full information, rational choice theory suggests that individuals would maximize personal utility, otherwise known as maximizing personal benefit, resulting in an optimal education and borrowing experience for the student. However, the perfect rational actor does not exist. There are too many factors that are complex and always changing, such as optimal college funding levels, job markets, and future earnings.

Student loans are very different from other types of financial products. Debt can serve as both the barrier and the facilitator to life transitions, which highlights the importance of looking at debt both as a monetary issue and as a carrier of social significance (Nau, Dwyer & Hodson, 2015). First, many financial products result in the borrower entering repayment immediately upon signing for a loan. Most consumer loans begin with a defined principal loan amount that decreases as payments are made. Student loans, on the other hand, typically do not require repayment until six months after a student leaves college, which means repayment may not begin for years after the loan originated. Throughout the time a student spends in college, he or she may have multiple loans annually to pay for university tuition and fees, housing, transportation, and other

expenses, thus increasing a student's loan balance. Exiting school, either through graduation or dropping out, triggers the repayment of the student's loan balance as a monthly payment, starting six months after the student leaves the institution.

Most financial products use the monthly payment as the primary marketing tactic, allowing borrowers to understand their monthly budget needs. Institutions of higher education do not provide this information to students at the beginning of the borrowing process due to varying types of student borrowing and the unique financial aid package a student receives each year. In contrast to other financial products, when students do begin repayment on college loans, they are not monetarily incentivized to make payments on time because the United States Department of Education does not allow lenders to assess students with late fees (Delisle & Holt, 2014). Therefore, students are not punished with late fees if they do not pay on time, which is different from other financial products.

With many financial products, such as home or auto loans, the application process is time consuming and intrusive, requiring a healthy credit history. With student loans, virtually all students attending an accredited institution of higher education are eligible for financial aid upon completing the Free Application for Federal Student Aid (FAFSA). When compared to other financial products, the application process is coupled with incomplete information such as future tuition rates and the total cost of necessary course materials. Home and auto loan borrowers have a more accurate understanding of their future incomes and are deemed credit-worthy, whereas most students have not entered the professional workforce and do not have an accurate understanding of their future expected earnings. Future expected income and, therefore, the ability to repay a student loan are not considerations for obtaining a student loan. Students that are unable to repay

the money they have borrowed upon leaving college have options to postpone repayment. Students do not have to face repayment immediately as they can defer loans or go into forbearance. While these methods of postponing payment appear convenient in the short run, students face compounding interest and higher monthly payments in the long run.

Student loans are different from traditional loans because the asset for which the loan debt was accrued cannot be seized. Long-term default on a house or car will lead to the bank seizure of that asset. It is impossible for the federal government to seize a college degree in the same way that banks are able to seize physical assets. An earned degree and the associated knowledge cannot be taken away from a graduate because of student loan default. Private financial products and federal direct loans are similar, however, in that the lack of repayment will result in a late-payment or non-payment report to credit bureaus, negatively affecting the borrower's credit score.

With the many differences between student loans and other financial products, students may be confused by the complex and unconventional rules and procedures related to their loans and repayment. Conventional wisdom from consumer lending does not apply to most student-borrowing situations. As a result, "Debt may enhance economic mobility, supporting otherwise impossible investments in human capital and small business, or it may function as economic quicksand, trapping low-income consumers in an inescapable cycle of obligation" (Brown & Mazewski, 2015, p. 1).

One way that student financial aid and traditional financial products are alike is that, in aggregate, the collapse of a given financial sector can have a large effect on the greater economy. Financial publications often entertain the implications of mass student loan default by comparing the current $1.4 trillion in student loan government-backed

debt to the housing crisis of 2008. During the housing crisis, consumers were approved for loans without having to prove they had the income to pay the mortgage for the duration of the lending period. These loans were then packaged with high quality mortgages and sold on secondary markets. When borrowers were unable to pay their mortgages, investments tanked, causing retirement accounts to decrease, housing prices to drop, and borrowers to be left in financial ruin. As student loans are guaranteed by the United States government, large amounts of student loan default could have a large impact on the United States economy (LaDuke, 2016). Student loans, like other financial products, must be paid back. The federal government has contracted with outside companies for debt collection services as well as attempting to collect debts themselves.

Paying on their student loans likely means that students are limited consumers in other sectors of the economy. Borrowers "have far less credit, and less credit means fewer big-ticket consumer items from refrigerators to cruises to automobiles – in short, the kinds of things that drive our economy" (LaDuke, 2016, para. 6). The hidden losses to the economy silently hinder the nation's economy. Starting in 2000, the government outsourced debt collection. In 2015, the federal government recentralized some debt collection in the Treasury Department. This reintroduction of debt collection started with an $80 million portfolio of defaulted loans shared by 5,729 borrowers. The Treasury's Bureau of Fiscal Service sent 33,000 letters and made 21,000 phone calls but was able to collect on only 4% of the borrowers in default. Over the same period of time, the outsourced debt collection companies recovered 5.5%, which, when adjusted for the number of lenders serviced, was three times higher than the government's efforts (Barrett & Holt, 2016).

The housing crisis of 2008 and the subsequent downturn of the economy had an impact on higher education in the United States. The economic turmoil resulted in a higher unemployment rate, leading students to return to college to gain new skills or academic credentials. Ironically, the large number of students going back to school created "credential inflation," sometimes leaving students with the same level of employability they had before their new credentials (LaDuke, 2016).

In summary, most students are dependent upon student financial aid to pay for higher education. As students continue to add to the more than one trillion dollar student loan aggregate balance in the United States, defaulting on student loan repayment continues to be a problem (Bleemer, Brown, Lee, & Klaauw, 2015; Jesse, 2016). In order to provide for the long-term financial well-being of students, the families of students, institutions of higher education, and the greater economy, it is important to study students' understanding of their student loan obligations. When the default phenomenon is better understood, corrective action can be taken to ensure the financial stability of students, institutions, and the federal student aid program.

**Statement of the Problem**

United States Department of Education (2014c) statistics showed the cost of higher education has risen by an average of 69% at public four-year institutions over the last decade. As a result, borrowing is increasingly relied upon, raising the aggregate United States student loan debt balance. While student debt increases, students do not seem to understand the intricacies of their debt, causing them to default on their loans and causing direct impacts on the individual, the institution, and the federal government (Higher Education Opportunity Act, 2008). Problems with debt are compounded for low-

income students who accumulate debt at a greater rate because they do not have the personal or family financial assistance needed to mitigate their need to borrow.

Public institutions of higher education in the United States have seen a dramatic increase in the cost of tuition over the past 15 years. In 2012 dollars, the average cost of a four-year public education in 2001 was $9,916. The average cost of a four-year public education in 2012 was $16,789. The average cost of college tuition between 2001 and 2012 increased 69%. A similar trend was witnessed in tuition costs at America's two-year institutions. In 2012 dollars, the average tuition cost at two-year institutions in the United States in 2001 was $5,137, rising to $8,561 in 2012, an increase of 67% (United States Department of Education, 2014a).

While the cost of tuition has steadily increased over the past 15 years, wages have not kept pace. Desilver (2014) reported that the average earnings for full-time workers in the United States decreased by 3.7% among workers in the lowest tenth of the earning distribution, expanding the gap between tuition costs and income. While grants cover an increasing percentage of student tuition, privately funded scholarships are often awarded on scholastic merit, leaving students who are not in the elite ranks academically with few scholarship options.

The cost of a college education affects low- and middle-income families very differently. For middle-income students, tuition is approximately 27% of a family's annual income. For low-income students, tuition can be as much as 72% of a family's annual income (Lynch, Engle, & Cruz, 2011). Loan-based packages enable low-income students to attend college, but, due to the rate at which these students accumulate student loan debt, it can be very dangerous for the individual student to borrow as much money

as may be allowed because the student may make misinformed decisions about his or her financial future. Low-income students are more likely to be first-generation college students, making the navigation of the higher education system unfamiliar to them and their parents, which may have a negative impact on their persistence in college (United States Department of Education, 2013b). For students who drop out of college with student loan debt, the problem is exacerbated as they have not earned the academic credentials needed to obtain the career they had originally sought.

Student loan default is not just a problem for individual borrowers. According to Section 435(a)(2) of the Higher Education Act (1965), institutions with a cohort default rate greater than or equal to 25% for three consecutive years or a default rate of 40% for one year will have student loans suspended. This condition means that institutions would not be allowed to participate in the federal direct loan programs (Higher Education Act, 1965). The suspension of student loans at a college or university means that the institution's students would not be allowed to use federal aid to fund their higher education. With more than 70% of students receiving federal financial aid, colleges that cannot award student financial aid packages would be at a severe disadvantage for recruiting and retaining students and, therefore, maintaining financial viability.

According to the United States Department of Education (2015c), the State of Montana, which is the focus of this study, had a three-year cohort student loan default rate of 10.5% in 2011. Montana's default rate was slightly higher than the national average of 10%. In 2011, 24 public and private institutions in the state of Montana had a total of 12,938 borrowers who entered repayment. Of these 12,938 borrowers, 1,367 were in default. In 2011, 61% of students in the Montana University System secured loans to

attend higher education with an average annual loan debt of $5,500 (Montana University System Strategic Plan, 2014). Montana State University, a comprehensive four-year institution, had the lowest three-year cohort default rate in Montana in 2012 at 4.8%. Great Falls College Montana State University had the highest default rate in the Montana University System with a three-year cohort default rate of 17.9% in 2012 (United States Department of Education, 2015e). The 2012 student loan default rates are of concern because the national default rate in 2008 was 7.1% when compared to the 10.5% cohort default rate of the Montana University System. The 2012 3-year cohort default rates for Montana public institutions are listed on Table I.

Table I

*Montana Default Rates by Institution*

| Institution | Institution Level | 3-Year Cohort Default Rate | # of Students in Default | # of Students in Repayment |
|---|---|---|---|---|
| City College at MSU Billings | 2-Year* | 11% | 187 | 1,700 |
| Dawson Community College | 2-Year | 15.7% | 22 | 140 |
| Flathead Valley Community College | 2-Year | 12.8% | 77 | 601 |
| Gallatin College Montana State University | 2-Year* | 4.8% | 151 | 3,083 |
| Great Falls College Montana State University | 2-year | 17.9% | 136 | 756 |
| Helena College University of Montana | 2-year | 15.3% | 70 | 457 |
| Highlands College of Montana Tech | 2-year* | 9% | 36 | 400 |
| Miles Community College | 2-year | 11% | 21 | 190 |
| Missoula College University of Montana | 2-year* | 9.9% | 414 | 4,158 |
| Montana State University – Billings | 4-year or above | 11% | 187 | 1,700 |
| Montana State University – Bozeman | 4-year; Flagship | 4.8% | 151 | 3,083 |
| Montana State University – Northern | 4-year or above | 13.1% | 62 | 472 |
| Montana Tech of the University of Montana | 4-year or above | 8.2% | 58 | 705 |
| University of Montana – Missoula | 4-year, Flagship | 9.9% | 414 | 4,158 |
| University of Montana – Western | 4-year or above | 9% | 36 | 400 |

(United States Department of Education, 2015e).

*denotes 2-year institutions that are embedded with 4-year or above institutions; rates reflect the total default rate of both institutions.

Members of the Montana Board of Regents of Higher Education, the governing board of higher education in the state of Montana, commented about the increase in student loan default rates in 2014. Regent Major Robinson stated, “The [student loan default] rates continue to rise and that is incredibly alarming” (Kidston, 2014, para. 6), Regent Paul Tuss commented, “These numbers are too darned high” (Kidston, 2014, para. 3).

Both the federal student financial aid program and the Montana Office of the Commissioner of Higher Education (OCHE) have implemented measures to educate students about their financial aid commitments. Student financial aid requires a base level of financial aid counseling and education in order for institutions to provide federal assistance to students. These base-level requirements include entrance counseling, exit counseling, basic institutional information, and the signing of a promissory note. Once the basic requirements are met, institutions may provide additional services but cannot mandate additional programs or services (Student Financial Aid, 2016). With such loose programming parameters, it is possible for institutions to provide different financial aid and financial literacy programming to students.

Capitalizing on the opportunity to provide additional financial aid education, the Office of the Commissioner of Higher Education and the Montana University System Office of Student Financial Services (OCHE-SFS) developed and implemented *Get Money Smart*. This product has the goal of providing students with "financial skills and tools that will assist in becoming financially savvy" and is geared toward current college students and recent graduates (Office of the Commissioner of Higher Education Student Financial Services, 2016). In addition to the Get Money Smart program, OCHE-SFS also provides a financial literacy curriculum called *Dollars and Sense*. The expressed purpose of the publication is "to provide a resource that will help develop financial literacy skills" (Montana University System, 2016b, p. 3). The 68-page workbook includes chapters on beginning sound money management, budgeting, credit and credit cards, higher education and financial aid, and student loan repayment (Montana University System, 2016b).

To comply with federal policy, the state of Montana cannot mandate the completion of the workbook in order for a student's financial aid package to be awarded, but the workbook can be included as coursework or as a part of a program in which students may elect to participate (Student Financial Aid, 2016). These items are readily available to all schools within the Montana University System.

Each institution in the Montana University System meets the basic requirements for providing financial aid information to students. These requirements include consumer information and school reports, promissory note access, entrance counseling information, and exit counseling information. Any additional programming is a matter of institutional choice and voluntary student participation (Student Financial Aid, 2016).

Research indicates that students entering college lack financial literacy (Andruska, Hogarth, Fletcher, Forbes & Wohlgemuth, 2014; Hays, 2010; Lusardi, Mitchell, & Curto, 2010). A lack of financial literacy is a problem when students assume growing amounts of debt to cover rising tuition costs. In a 2010 study of financial literacy among college students, researchers found that less than 33% of young adults possessed basic knowledge of interest rates and inflation (Lusardi et al.). Hayes (2012) using data from the Center for Economic and Entrepreneurial Literacy found that 81% of students underestimated the amount of time it would take to repay credit card charges "by a large margin," (p. 8) showing a lack of ability to forecast future financial obligations. A 2014 study of student borrowers and their understanding of financial obligations found that 13% of students reported not having student loans when, in fact, they did have student loans (Andruska et al., 2014). Andruska et al. (2014) also found that 40% of students underestimated the balance of their student loans. Studies by Lusardi et al. (2010), Hayes

(2012), and Andruska et al. (2014) showed a lack of general financial literacy among college-age students. While these studies showed a lack of financial literacy among students, few studies have examined student loans specifically in an effort to determine students' understanding of their college loans.

It is important to determine the effects of poor financial literacy on the steadily increasing costs of higher education. Poor financial literacy and rising tuition costs may impact students to a greater degree as the average wages of American families have stagnated (Desilver, 2014). In order to pay for the increasing gap between family income and college costs, students are borrowing at higher levels (Izzo, 2014). As students enter the repayment phase of borrowing, more students are defaulting on their student loans (United States Department of Education, 2013a).

Few studies have been conducted to assess the level of understanding that students have about their student borrowing obligations and the traits that predict a student's level of financial literacy. In order to increase the knowledge students have of their borrowing obligations, researchers must have a benchmark by which to develop and then measure the effects of student borrowing policies. Additionally, if research can identify the traits that predict the level of understanding students have of their borrowing obligations, interventions can be better targeted and more effective.

A lack of financial literacy for college students can lead to a tenuous financial future, a decrease of finance options for colleges, and an insolvent student loan program for the government. In order to ensure student borrowers in Montana are prepared for their financial lives after college, it is crucial to determine the level of Montana students' understanding of student loans.

**Purpose of the Study**

It is important to determine how students' understanding of their financial obligations while they are still in college. Students attending college at full- or part-time status, have not yet entered the repayment phase and are, therefore, accumulating student debt. This study determined the base level of Montana student financial literacy and student loan knowledge. The purpose of this study was to identify Montana students' knowledge about their borrowing obligations, particularly in regard to their student loans.

**Research Questions**

The research questions that guided this study were the following:

1. What is the difference between perceived and actual student loan balances of student borrowers in the Montana University System?
2. What is the relationship between the deviations of students' perceived and actual student loan balances and the level of confidence students have in their knowledge of their student loan balances?
3. What relationships exist among the deviation of students' perceived and actual student loan balances, the level of confidence students have in their knowledge of their student loan balances, and other predictors?
4. What is the relationship between the deviation in students' perceived and actual student loan balances by institutional type? What is the relationship between the deviation in students' perceived and actual student loan balances by institution?
5. What is the relationship between student financial literacy and institutional type? What is the relationship between student financial literacy and institution?
6. What relationships exist between the students' loan balance deviations by percentage and student loan education methods?

**Research Design**

In order to determine the understanding students have of their student loan balances and the levels of confidence students have in their perceived student loan balances, quantitative methods and an exploratory design were employed. The population examined for this study was students enrolled in the Montana University System who were 18 years of age or older, were enrolled in college, and had a student loan balance. The population size (*N*) was 25,277 student borrowers in the university system. In an attempt to achieve an adequate sample, the survey were sent to ten times the number of respondents needed for this study.

Data for this study were collected through an online e-mail survey platform. The survey contained 49 questions that examined the student's financial aid knowledge, financial literacy, and demographics. Specifically, students were asked to provide what they believed their student loan balances to be and the level of confidence they had in that balance being accurate. Later in the survey, students were directed to the National Student Loan Data System (NDLDS) where they were able to identify their actual student loan balance. The deviation between these two numbers was used to determine how clearly students understood their financial obligations to date. In order to ensure students did not go back to the original question regarding their perceived student loan balances, the "back" button on the online survey was disabled (see survey in Appendix A).

The survey was distributed to students through college-issued student e-mail accounts. Survey participants were queried from institutional databases utilizing the parameters defined by the researcher: a student had to be 18 years of age or older, currently enrolled at a Montana University System institution, and have a student loan

balance. Once these names were identified, they were placed in a Microsoft Excel document and randomized. The requisite number of students will be selected from the randomized list. Upon completion of the data collection, data were exported from the Qualtrics survey software into a Microsoft Excel spreadsheet for univariate, multivariate, and ANOVA analysis.

**Definition of Terms**

The financial industry, including student borrowing, includes much industry jargon. Listed below and recorded in Appendix B are definitions of terms necessary for understanding this study:

**Award Amount:** The total financial aid package, including grants, loans, and work study, awarded to students by the federal government for educational expenses (United States Department of Education, 2014b).

**Cohort Default Rate:** The percentage of borrowers who enter repayment on federal student loans within a given fiscal year but who do not make a payment for 270 days upon leaving an institution of higher education. As an equation, this rate is determined by the number of the institution's borrowers who defaulted within the cohort period divided by the number of the institution's borrowers who entered repayment within a given federal fiscal year (United States Department of Education, 2015a).

**Default:** The failure to repay a loan according to the terms of a loan. For federal direct loans, failure to make a payment within 270 days of leaving college without making other arrangements qualifies as a default on a student loan (United States Department of Education, 2014b).

**Direct Loan:** Student loans through the William D. Ford Federal Direct Loan Program that enable students to pay for a higher education. Direct loans include Direct Subsidized Loans, Direct Unsubsidized Loans, Direct PLUS Loans, and Direct Consolidation Loans (United States Department of Education, 2014b).

**Expected Family Contribution (EFC)**: An index number that college financial aid staff use to determine a student's level of financial need. This number is calculated using a family's taxed and untaxed income, assets, and liabilities (United States Department of Education, 2014c).

**Financial Aid Package**: A student aid offer including the types and amounts of financial aid a student may receive from federal, state, private, and school sources (United States Department of Education, 2014c).

**Financial Literacy:** Knowledge and skills related to personal finances, including mathematical ability, knowledge of financial instruments, knowledge of financial theory, and the ability to apply this knowledge effectively (Finke & Huston, 2014).

**Financial Need**: The margin between what families are able to pay for a higher education and the cost of higher education, resulting in the amount of financial need a student has in order to attend college. Financial need is determined by subtracting the expected family contribution from the cost of attendance (United States Department of Education, 2014c).

**Free Application for Federal Student Aid (FAFSA):** An online form that must be completed annually for a student to qualify for federal student aid funding. This form determines eligibility for student financial aid packages based upon the cost of attendance

at a given institution, the student's expected family contribution, and the student's financial need (United States Department of Education, 2014b).

**Full-Time Student:** A student who is enrolled in 12 or more undergraduate credits (United States Department of Education, 2014b).

**Master Promissory Note (MPN):** A legal document in which the borrower agrees to repay a loan and any accrued interest and fees to the lender (United States Department of Education, 2014c).

**Part-Time Student:** A student who is enrolled in fewer than12 but more than six undergraduate credits (United States Department of Education, 2014b).

**Repayment:** To pay back assets one borrows by making scheduled payments to the lender (United States Department of Education, 2014b).

**Repayment Period:** The maximum amount of time one has to repay a loan. For federal student loans, the repayment period may range from 10 to 30 years, depending on loan amount, type, and repayment plan (United States Department of Education, 2014b).

**Student Borrower:** The student who signs and agrees to the terms of the loan and is responsible for the repayment of the loan (United States Department of Education, 2014b).

**Student Loan:** Money borrowed to pursue post-secondary education at an accredited institution of higher education that must be paid back, usually including interest (United States Department of Education, 2014b).

## Limitations of the Study

Limitations are influences that occur outside the researcher's control during a study (Creswell, 2003). Limitations serve as potential weaknesses to a study and can pose

a threat to internal validity. As this study included elements beyond the control of the researcher, the following limitations were identified:

1. Students were asked to self-report their levels of financial literacy understanding and their student loan balances. Therefore, the results may not be accurate.
2. This study cannot be considered as representative of borrowers outside the state of Montana. Results cannot be generalized to students in other states.
3. Each Montana institution developed its own implementation process for this study, including contact person and survey delivery method, although each institution randomly selected its sample according to the parameters determined by the researcher.

**Delimitations**

Delimitations are variables that narrow the scope of a study and threaten external validity (Creswell, 2003). Delimitations are choices made by the researcher that define the boundaries for the study. As this study included student surveys and a reliance on administrative data, the following delimitations were identified:

1. This study included only institutions in the state of Montana.
2. Only public institutions were included in the study.
3. The population for this study consisted only of students within the Montana University System who had student loan balances, were 18 years of age or older, and who were students at a Montana University System institution.
4. Students had to access the NDLDS database and, therefore, had to leave the survey to access the database. When students saw that they had to enter their FSAID login and password to access their student loan balances, they may have chosen not to go through the steps or they may not have known their FSAID log-in information.

5. This study examined only federal student loans because institutions of higher education do not have access to information about private loans.
6. Each school had a different survey delivery procedure, which may have caused some schools to use delivery behaviors that encouraged participation in the study while others may have used delivery behaviors that discouraged participation in the study.
7. The contact persons at the institutions were in various intuitional positions, which meant that some contact persons were able to complete research needs immediately while others had to consult their administrative supervisors for approvals.

**Assumptions**

An assumption in research is an expectation that is believed to be true, although no adequate evidence exists to substantiate the postulation (Lewis-Beck, Bryman, & Liao, 2004). Assumptions are important to research as they provide a foundation on which to develop theories. The following assumptions applied to this study:

1. Students have some knowledge about their student loans.
2. Students lack adequate knowledge about the student loan process and implications of loan default.
3. The Montana University System provided accurate data so that students who matched the sample parameters could be identified.
4. Students were honest in responding to the survey.
5. Students understood the terms used in the survey and the intent and meaning of each question.
6. The NDLDS system in which students identified their actual student loan amounts would be up-to-date, working, and accessible.

**Significance of Study**

This study was important because it established a baseline knowledge of student borrower understanding in Montana thereby assisting students to become better informed borrowers, assisting lenders to become better lenders, and assisting institutions to become better stewards of the student education process, including educating students about their financial obligations related to borrowing. If students become better borrowers, their financial futures can be strategic and stable. As institutions of higher education depend on student tuition dollars, largely leveraged through student borrowing, they have an ethical imperative to ensure that students are prepared to borrow with adequate knowledge of the risks, rewards, costs, and benefits. With better informed borrowers, lenders become stronger financial institutions as investments become more stable.

Examining the way students understand their student loan commitments is crucial to preparing students for financial security post-graduation. Identifying the students who are least informed about their borrowing obligations can allow for appropriate intervention before these students enter repayment. Identifying the traits of the students who are predisposed to uninformed borrowing and which institutional interventions are successful would assist institutions in implementing more effective interventions. Uninformed student borrowing can lead students to over-leverage their financial obligations, causing problems such as low credit scores, not having enough money to live independently, delaying the purchase of a house or other assets, influencing family or marital decisions, and altering career choices.

Because student loans are rarely dischargeable in bankruptcy and the federal government can garnish wages and tax returns, the best way for students to find financial

security is to make sound financial decisions before borrowing funds for college. Proactively approaching student borrowing can mitigate negative borrowing decisions before students are obligated to begin repaying their student loans. In order to better prepare students for a healthy post-graduation financial life, students must have a better understanding of their future incomes, the current costs of their college education, and the future value of a college education. This study was important because it identified the level of understanding students had of their financial status and their borrowing decisions.

Post-college financial viability of students is important to the parents of students. Recent college graduates have often been called the "boomerang generation" in popular media for their propensity to return home after college (Otters & Hollander, 2015). A generation ago, graduates had fewer and smaller student loans and so were able to pay rent, purchase cars, and start their independent, professional careers. Research shows that students who "relied more heavily on student debt" while in school have a "higher rate of transition home to parents, and a lower rate of transition away from parents" (Bleemer et al., 2015). Today, students may need to devote the money that was once spent on everyday life expenditures to repaying their student loans. This study was important to parents because it provided information about student knowledge of financial aid obligations.

Society is not immune from a student's poor borrowing choices. Due to the growing level of debt, students may not be able to take service jobs in the public sector, such as non-profit, education, and social work, which contribute positively to the public welfare but which typically pay lower salaries (Sufi, 2014). Students may want to

contribute to the public good through jobs in service industries but cannot afford to work in service fields after graduation due to large student loan payments. Students who consider the costs and benefits of a college education prior to borrowing may scrutinize degree choices early in their higher education, avoiding majors that lead to low-paying jobs altogether. Financial literacy and full information of the college process may help students to prepare financially and to make degree choices that will allow them to work in public service fields.

Understanding the level at which students comprehend their borrowing obligations is also important for institutions of higher education. When students default on their student loans, the federal government can impose sanctions that drastically affect the financial stability of that college. As of October 2014, 76 United States colleges or universities were subjected to this penalty, while 455 other intuitions faced a lower level of scrutiny (Stratford, 2015). Most colleges depend on tuition dollars to support their operations, and as 70% of college students receive some form of financial aid, many institutions would no longer be financially solvent if they were no longer able to participate in the federal financial aid program. Because tuition dollars, funded largely by student loans, keep many institutions open, it is the college's ethical and financial obligation to ensure that student borrowers are knowledgeable about their financial commitments.

Informed borrowing is not just important to the finances of an institution but to provide a complete education for students as well. Student services offices exist to provide structure and support outside of the classroom. To ensure students will be prepared for their financial future post-college, student services professionals must ensure

that students gain valuable financial literacy before leaving college. Knowledgeable borrowing is also important to the recruitment efforts of the institution. When students encounter difficulty in paying off their student loans, they may become contemptuous about their college experience. A growing culture of students who are unable to pay off their student loans can be detrimental to recruiting new students. In order to ensure college is a positive experience for students, building the financial literacy of students is crucial.

Lenders, including the federal government, are dependent on repayment of loans in order to maintain the financial solvency of the student lending program long term. Over leveraging federal financing can increase interest rates for future students and cause a financial aid bubble similar to the housing bubble of 2008. Because federal loans are secured by the United States government, taxpayers are ultimately held responsible for repayment of defaulted loans. In order to have a stable student loan program at the government level, students must understand their financial obligations to increase the likelihood of loan repayment. For students, institutions, and the federal student financial aid program to remain financially stable, students must be knowledgeable about their borrowing obligations and be financially literate.

**Organization of Study**

This study will be organized into five chapters. Chapter I included the introduction to the problem, the problem statement, the purpose of the study, research questions, research design, definition of terms, limitations, delimitations, assumptions, and the significance of the study. Chapter II will present the current and relevant literature about the state of student borrowing. Chapter III will describe the methodology

used to conduct this study. Chapter IV will present the results of this study. Chapter V will discuss the findings, conclusions, recommendations for application of the findings, and recommendations for future research.

# CHAPTER II: LITERATURE REVIEW

The United States student loan balance exceeds one trillion dollars (Bleemer et al, 2015). Student loan debt is owed by a record one-in-five American households (Fry, 2012). While the aggregate total is difficult to comprehend, individuals making payments are acutely aware of their portion of the balance. Former Secretary of Education Arne Duncan lamented in a 2013 speech that the student loan "crisis" has grown so large that it poses "a threat to the American dream" (National Press Club, 2013). This literature review discusses the history of financial aid in higher education, rational supporting students' financial aid need, the financial literacy of college-aged students, financial aid regulations, and the implications of student debt after college. This literature review also examines research related to the understanding students have of their borrowing obligations.

## The History of Financial Aid in the United States

In 1944, the Servicemen's Readjustment Act, more commonly known as the GI Bill, initiated the federal government's involvement in financing higher education tuition for students in the United States (Servicemen's Readjustment Act of 1944). The GI Bill, authored by Kansas lawyer Harry W. Colmery, a former National Commander of the American Legion, provided veterans of World War II with assistance in their readjustment to civilian life, including college tuition, home loans, and unemployment benefits. Before World War II, college was, for the most part, an unreachable dream for the average American. Upon signing the GI Bill, President Franklin D. Roosevelt said, "The signing of this bill. . . gives emphatic notice to the men and women in our armed

forces that the American people do not intend to let them down" (Pencak, 2009, p. 554). In 1947, veterans accounted for 49% of college admissions throughout the nation.

In the 1950's, the Cold War between the United States and the Union of Soviet Socialist Republics (USSR) represented an ideological competition between capitalism and communism. In 1957, the USSR launched Sputnik, the first satellite in space. In order to become more competitive in the space race, Congress passed legislation to extend financial aid to students who were not veterans. The National Defense Student Loan program (NDSL) began in 1958 as a direct loan program financed with United States Treasury funds. These funds encouraged the study of science, mathematics, engineering, education, and foreign languages. This program would later be called the Perkins Loan program.

President Lyndon B. Johnson's War on Poverty initiated the next major evolution in financial aid for higher education. The Economic Opportunity Act of 1964 provided impoverished people with opportunities to earn a respectable wage and established the College Work-Study (CWS) program that paid students for work completed on campus. This program targeted low income students who needed to earn money in order to attend college (Economic Opportunity Act of 1964).

One year after the Economic Opportunity Act was signed, the Higher Education Act was passed by Congress. The Higher Education Act of 1965 established Title IV programs, which included Direct Subsidized and Unsubsidized Loans, Direct Graduate PLUS Loans, Supplemental Educational Opportunity Grants, and Perkins Loans (High Education Act of 1965). These financial assistance programs were created to pay for student tuition, mandatory fees, and room and board when the student contracted with the

university financial aid program for the loans. The Higher Education Act not only provided funds to the individual student to attend college, but it also provided increased federal allocations for universities. This legislation included the first grants available to the general student population, rather than being based upon ethnicity, military status, or degree program, and created the Guaranteed Loan program (Higher Education Act of 1965). The term *guaranteed* referred to the fact that these funds were backed by state and federal government funds. The Higher Education Act would be reauthorized in 1968, 1972, 1976, 1980, 1986, 1992, 1998, and 2008. A decade after the Higher Education Act of 1965 was passed, the Middle Income Assistance Act of 1978 expanded Educational Opportunity Grant eligibility and raised the Guaranteed Student Loan program income ceiling to help more students become eligible for financial aid (Middle Income Assistance Act of 1978).

In 1980, the United States Department of Education was created. Separating the Education Department from the former Department of Health, Education and Welfare provided a greater focus on education. The directive given to the Department of Education was to "ensure equal access to education and to promote educational excellence throughout the nation" (Department of Education Organization Act of 1979, p. 2).

Throughout the 1980's, various changes were made to previous higher education legislation to enhance efficiency of the financial aid programs. The 1986 Higher Education Amendments made minor changes in the Higher Education Act. The legislation improved student loan collection methods to reduce default rates, and a greater focus was placed on the distribution of student loan subsidies to ensure programs were

helping those in greatest need (Higher Education Amendments, 1986). In the Higher Education Technical Amendments Act of 1987, the name of the Guaranteed Student Loan program was changed to the Stafford Loan program to honor Robert T. Stafford, a Vermont Republican, for his work for higher education.

The Higher Education Act was reauthorized twice in the 1990s. In 1992, the Free Application for Federal Student Aid (FAFSA) was initiated with the requirement that the application remain free in the future. FAFSA became an on-line application program in 1997. In 1994, a pilot program introduced the Direct Loan Program at 100 schools. It would later be implemented at 1,200 schools throughout the nation. The Direct Loan Program provided low-interest loans directly from the Department of Education for students and parents to pay for higher education expenses rather than relying on a bank or other financial institution (Improving America's Schools Act of 1994, 1994).

In 1997, the Taxpayer Relief Act provided tax incentives for attending higher education. The HOPE Scholarship Tax Credit provided $1,500 in tax credits for students during their first two years of college. The Lifetime Learning Credit provided up to 20% of the first 20% of tuition and fees in tax credits. Additionally, interest paid on student loans was deductible from a student's or a parent's tax liability. Finally, tax-free saving for college was made possible through Education Individual Retirement Accounts (IRA) (Taxpayer Relief Act of 1997). President Bill Clinton signed the Higher Education Amendments of 1998 that included such changes as raising the maximum funding levels for Pell Grants, expanding eligibility for financial aid by lowering maximum income levels, and extending Pell Grants to some post-baccalaureate students who were preparing to go into teacher education. The time that a student had to begin repayment of

student loans was changed from 180 days to 270, drastically decreasing the student loan default rate. Also in 1998, rules were put into place that defined when institutions would be banned from participating in government student aid programs because of high student loan default rates. Default rates of 25% for three consecutive years or a 40% default rate for one year would lead to institutions being punished through decreased funding, greater reporting, or being eliminated from the government student aid programs (Higher Education Amendments of 1998).

In 2002, Congress passed a law mandating that interest rates for student loans issued after July 2006 be at fixed rates rather than at variable rates. Stafford Loans were set at 6.8%, and Parent Loan for Undergraduate Students (PLUS) loans were set at 7.9% (Higher Education Reauthorization Act of 2002). In 2005, the Higher Education Reconciliation Act was passed, which set the maximum Pell Grant at $4,050 and reduced loan fees from 4% to 1% (Higher Education Reauthorization Act of 2005).

In 2005, Department of Education Secretary Margaret Spellings initiated The Commission on the Future of Higher Education as the result of her frustrations in helping her own daughter research colleges. The group determined that the value of higher education, access to education, accountability, and financial aid should be the targets of reform (Fuller, 2014). While these objectives were not immediately codified, they established a framework for future legislation. Two years after the Commission on the Future of Higher Education report, the College Cost Reduction Act “discontinued any remaining debt after ten years of full-time employment in public service positions” (Fuller, 2014, p. 60). Public service positions included the following:

. . . a full-time job in emergency management, government, military service, public safety, law enforcement, public health, public education (including early childhood education), social work in a public child or family service agency, public interest law services (including prosecution or public defense or legal advocacy in low-income communities at a nonprofit organization), public child care, public service for individuals with disabilities, public service for the elderly, public library sciences, school-based library sciences and other school-based services, or at an organization that is described in section 501(c)(3) of the Internal Revenue Code of 1986 and exempt from taxation under section 501(a) of such Code; or (ii) teaching as a full-time faculty member at a Tribal College or University as defined in section 316(b) and other faculty teaching in high-needs areas, as determined by the secretary. (College Cost Reduction and Access Act, 2007, p. 19)

The Higher Education Opportunity Act of 2008 served as the Higher Education Act revision for the same year. In this revision, the increasing costs of higher education were addressed.

"The Act directed the Department of Education to report the top five percent of institutions with the highest tuition and fees and the highest net cost, and required institutions with the highest increase in cost to report how their leaders plan to cut costs" (Fuller, 2014, p. 58).

Additionally, the Higher Education Opportunity Act of 2008 did the following: …Implemented institutional requirements for a net-price calculator, simplified lending and loan consolidation practices, introduced new loan repayment and forgiveness

opportunities, and coordinated efforts of the Federal Family Educational Loan program, and ensured the Continued Access to Student Loans Act of 2008. (Fuller, 2014, p. 58)

Following the economic downturn of 2008-2009, the number of students on financial aid assistance and the average loan amount increased (Fuller, 2014). In 2005, there were 23.5 million student borrowers in the United States. By 2012, that number grew by 66% to 38.8 million students. Over that same time, the average student loan grew by 49% from $16,651 in 2005 to $24,803 in 2012. The total student loan balance in the United States increased from almost $400 billion in 2005 to almost $950 billion in 2012 (Bleemer et al, 2014).

Title II of The Health Care and Education Reconciliation Act (HCERA) of 2010 transitioned from banks providing federally insured loans to a system by which financial aid funds were loaned by the Department of Education through the William D. Ford Federal Direct Loan Program. During this same time, Pell Grant awards increased both in the number of grants distributed and the average maximum award amount. Those paying off student loans benefited from the HCERA because loan repayment decreased from 15% of discretionary income that had to be spent on monthly repayment to just 10% (Health Care and Education Reconciliation Act of 2010). This legislation was originally called the Student Aid and Fiscal Responsibility Act of 2009 but was ultimately included in the HCERA.

From repaying military personnel for their service through a free higher education to competing for global excellence in science and technology, the United States has created a complex and ever-changing system of financial aid for students in higher education, including grant funds, subsidized and unsubsidized loans, program-specific

funding, tax credits, and tax deductions. Fuller (2014) found this complex structure to be "a bewildering maze of programs and options that, due to. . . inefficiencies, is predisposed to under-perform in meeting students' needs" (p. 61). While increasing the accessibility of higher education for millions of Americans, the tradeoff has been "increased student debt, increased competition for jobs, and an entrenched sense of entitlement to financial aid" (Fuller, 2014, p. 60).

**Students Need Financial Aid**

Since the implementation of the Higher Education Act of 1965, higher education has undergone dramatic change in institutional funding sources. In 1988, tuition dollars accounted for only 23.8% of higher education funding with the rest of the funding coming from many external sources, including community, state, and federal resources. By 2003, institutions relied more on tuition, with 34.2% of funding coming from tuition. By 2013, 47.4% of university funding came from tuition. To pay for tuition increases, students needed more financial aid.

The dramatic shift away from state-based funding to student-funded higher education has left students holding the bill. This change was especially apparent during the great recession that began in 2008. Between 2004 and 2012, "total student loan [amounts] in the United States nearly tripled, from $364 billion in 2004 to $966 billion in 2012" (Brown, Haughwout, Lee, Scally, & Klaauw, 2014, p. 39) or an increase from 23 million borrowers in 2004 to 39 million borrowers in 2012. During the same 12-year period between 2004 and 2012, "the average debt per borrower increased by 70 percent, from about $15,000 to about $25,000" (Brown et al., 2014, p. 40).

States have yet to allocate the same level of funding for America's colleges as they had allocated before the recession. According to a 2014 study conducted by the Center of Budget and Policy Priorities, 48 states spent less per student post-recession than they did before the 2008 recession when adjusted for inflation. On average, state funding for higher education dropped 23% between 2008 and 2014 (Mitchell, Palacios, & Leachman, 2014). That 23% accounted for approximately $500 billion in reduced university funding (Steele, 2016).

The largest contributing factor to the rising student loan balance is the ever-increasing cost of higher education tuition, which has outpaced inflation rates and median family income levels for the past decade (College Board, 2011; Desilver, 2014). Since 1978, college fees and tuition have increased by 1,120%, four times faster than the increase in the Consumer Price Index (CPI) (Jamrisko & Kolet, 2012). Paired with an increased number of students attending college and an increased number of students borrowing money to attend college, the rise in tuition cost has resulted in dramatic growth to the national student loan debt balance.

A decrease in financial support from states has resulted in institutions of higher education moving toward customer-based recruitment. Customer-based recruitment means that institutions have an incentive to direct their product (higher education) toward the student through enhanced facilities and amenities in addition to academics. In his 2012 analysis of the current state of higher education, researcher Ronald Ehrenberg suggested that tuition is on the rise as "institutions have aspirations to be the best in every aspect of campus and academic life" (p. 193). As a result, universities leverage the perception of higher education choices as a form of customer-based marketing. Public

opinion suggests that “high-priced, selective institutions confer unique educational and economic benefits to the student” (Ehrenberg, 2012, p. 193), so institutions are driven to deliver this prestige, whether perceived or real, to students and their families.

This customer-based approach may have far-reaching implications, even if the financial health of the states improves. As institutions seek tuition-paying students, they are likely to focus on out-of-state and international students, who pay a higher premium for education. When state institutions shift toward out-of-state and international students, state legislatures are less likely to fund institutions that they perceive as not benefiting the state’s constituents. Ultimately, the shift from serving state residents to serving monetarily more valuable non-resident tuition payers could result in the severance of funding between states and public institutions (Burd, 2015). According to Ehrenberg (2012), this shift in resident versus non-resident demographics and the subsequent ramifications are an unknown factor influencing the funding future of higher education. It is clear, however, that as state allocations comprise a smaller part of the university budgets, the increasing cost of higher education falls on the student.

A meta-analysis of the value of higher education in the United States examined current trends in policy throughout the nation. Overwhelmingly, accountability, affordability, access, and equality were defined as the foci of state and institutional policy (Conner & Rabovsky, 2011). These attributes highlight the stated values of higher education but may not reflect the values upon which states and legislatures base policy decisions. State legislatures and state boards maintain control of higher education and accountability through policies related to affordability, access, and equality while simultaneously providing fewer resources. Higher education institutions must comply

with the policies in spite of inadequate funding. This lack of funding decreases affordability for students, thus limiting access to higher education for the citizens of the state. State legislatures, however, may argue that students are receiving an asset that will likely earn them a greater income in the future and should, therefore, be paid for by the students. This shift from perceiving higher education as a benefit to society and for which society as a whole should pay through taxes to perceiving higher education as a benefit only to the student for which the student should pay is reflected in actions by legislatures and other policy and governing agencies, illustrating the debate of higher education as a public or private good.

In a 2012 study, institutional financial aid resources and federal financial aid resources were compared, examining the proportion of funding granted and the systems used to determine funding levels (Turner, 2012). This comparison illustrated a "benefit incidence analysis by showing that the intended cost reductions of tax-based federal aid are substantially offset by institutional price increases for a sample of four year colleges and universities" (p. 463). The study highlighted the way in which increasing tuition rates consume financial aid package allotments. The cycle of increased financial aid packages needed to meet increased tuition and fees leaves students holding ever-increasing debt balances.

**Students and Financial Literacy**

The cost of higher education continues to increase, but students may not have any better financial knowledge to make informed monetary decisions than earlier students had before financial aid was so common. A 2006 study sought to discover "what [college freshmen] admit to not knowing with regard to important financial topics" (Manton,

English, Avard & Walker, 2006, p. 43). The study, conducted at Texas A&M, tested freshmen in English 101 courses about their financial literacy. Of the 407 freshman students tested, the highest test score achieved was 80% with a 34.8% average and a 32.5% median score. This study was unique in that students were given the opportunity to select "I don't know" as an answer rather than selecting a definite answer. Selecting "I don't know" did not result in an incorrect answer for the student. Therefore, a student could select "I don't know" throughout the entire test and receive a 100%. Women, non-business majors, underclassmen, and those who had worked fewer than six years had lower levels of financial literacy when compared to other students in the study.

In a study of financial literacy among college students, Lusardi, Mitchell, and Curto (2010) found that less than one-third of young adults possessed basic knowledge of interest rates and inflation (p. 358). Utilizing longitudinal data collected in the 1997-1998 academic year and again in the 2007-2008 academic year, the study was designed to "document young adults' transition from school to work" (Lusardi et al., 2010, p. 360). Data were evaluated by *t* tests to assess differences in means between participants within subgroups and over time. Lusardi et al. (2010) found financial literacy "severely lacking among young adults" (p. 374) with only 27% of participants knowing basic facts about interest rates. Women proved to be less financially literate when compared to male counterparts, even when demographics, family background, and peer characteristics were controlled. White males whose parents had college degrees were found to have the highest levels of financial literacy (Lusardi et al., 2010, p. 375). This study informs the greater body of student loan research as it chronicles student financial literacy before and after a student loan is awarded. Tracking this information over time showed the level of

misunderstanding that existed for students making important decisions about their financial futures.

Research conducted by Elliott and Beverly (2011) examined the likelihood of a student attending college, based on whether or not the student had a savings account in his or her name prior to high school graduation. Utilizing a multivariate approach, Elliott and Beverly concluded that students without savings accounts were more likely to prolong the time between graduating from high school and attending college, if they chose to attend at all, while students with savings accounts in their names were six times more likely to attend college immediately after high school graduation.

A 2011 exploratory analysis of student debt consumption and borrowing attitudes found that "students regard themselves as good money managers, but lack control over borrowing and debt" (Chudry, Foxall & Pallister, 2011, p. 119). Interviewing a sample of 112 students who were 50% business students and 50% non-business students, the researchers determined that students "see borrowing as a form of credit to enhance their future" (Chudry et al., 2011, p. 136). Responses from female students suggested that they perceived that they had "less control over their ability to reduce debt and borrowing," while male students seemed to have more "tolerant attitudes toward borrowing than their female counterparts" (Chudry et al., 2011, p. 136).

Hayes (2012) conducted a study addressing financial literacy among college students. Utilizing data from the Center for Economic and Entrepreneurial Literacy, he found that 81% of students underestimated the amount of time it would take to repay credit card charges "by a large margin" (Hayes, 2012, p. 8). It is logical to infer that a student who lacks basic knowledge about credit card debt also lacks an understanding of

financial aid commitments. Such misinformed perceptions could be a result of excessive debt load, the miscalculation of earnings, or general misperceptions of debt repayment. This research lacked the scrutiny of a peer review, although the data informed the reader about a student's understanding of borrowing.

While the research conducted by Lusardi et al. (2010) and Hayes (2012) examined financial literacy of college students, these studies did not specifically address student loans, although they examined components of the lending/borrowing process. Lusardi et al. (2010) addressed the need for financial literacy in college as student loans are being signed, although the reference is made only in the introduction. While these studies did not directly address borrower comprehension of the student loan process, the analysis of financial literacy components showed that students lacked a base level of borrowing understanding.

Avery and Turner (2012) found that students were more likely to invest in their education if they expected to see an economic return. In order to quantify this research, Avery and Turner analyzed the aggregate student debt six years after college. They found the median accumulated debt among students from public four-year institutions from 2004 to 2009 was $7,500 for those who completed a bachelor's degree. "[Of borrowers] in repayment six years after initial enrollment, the mean ratio of monthly payments to income was 10.5%" (p. 187). While the researchers concluded that this burden is acceptable when compared to results in previous research, they also claimed that "from a financial perspective, enrolling in college is equivalent to signing up for a lottery with large expected gains" (p.189); there is a risk of borrowing too much with little return.

Financial literacy is especially important when one examines the levels of economic complexity present in higher education. Oreopoulos and Petronijecic (2013) examined the deciding characteristics of a student obtaining a college degree. College graduate earnings were an important factor in the cost/benefit analysis for students continuing on to higher education. Using investment theory, Oreopoulos and Petronijecic suggested that individuals weigh the returns of the college investment against the costs, including the direct costs of books and tuition and the indirect costs of foregone income while attending college (p. 42). To conduct this cost/benefit analysis means that students must have full information about both tuition and fee charges for their time in school and the financial aid package they will be awarded each year of their time in school in order to make informed decisions. Assuming the equation results in a benefit that is larger than the present value, individuals will choose to seek a degree. Oreopoulos and Petronijecic (2013) agreed, however, that such an analysis can be difficult to conduct because incomplete information may drive students away from an optimal decision.

Oreopoulos and Petronijecic claimed, "[Students] may lack information. . . about the financial aspects of additional schooling" (2013, p. 42). The lack of information is a direct violation of investment theory. A second violation of investment theory is "the cost of navigating through a complex financial aid program," leading students to overestimate the expected outcomes of higher education (Oreopoulos & Petronijecic, 2013, p. 43). A lack of understanding of the borrowing process and over-projected future earnings estimates can leave students unable to pay their student debt obligations, resulting in a default on their loans. The complexities of navigating the financial aid process suggest

that incomplete knowledge leads to a lack of understanding of the costs and benefits of higher education on the part of students.

A cross-sectional study by Hogan, Bryant, and Overmyer-Day (2013) examined the relationship between credit card use in college and the behavior, cognitions, and academic performance of the debtors. A total of 338 public university students were surveyed. The study found that "students' financial woes are related to how they allocate time and energy in college" (p. 102). High levels of debt were associated with lower academic performance when compared to academic performance of peers with lower debt levels.

Clarifying information and expectations for student borrowing are areas of higher education that are continually evolving. As a result of these complexities, students may make ill-informed decisions, driving them away from optimal solutions. Complex information on college costs and benefits may cause students to borrow too much in financial aid and obtain too much education in an economic sense. It is also possible that students can take out too little financial aid while not obtaining enough education (Oreopoulos & Petronijecic, 2013, p. 60). Using investment theory, the Oreopoulos & Petronijecic examined outcomes such as student's majors and labor market projections but did not conclude with quantified results. Investment theory informs the possible scenarios of student borrowing but lacks sufficient data to identify the nature and location of a problem. The logical application of investment theory is especially suspect when pairing it with the lack of student financial literacy found in the studies conducted by Lusardi et al. (2010) and Hayes (2012). Pairing the two areas of research, it could be

expected that investment theory fails due to a lack of specific financial literacy information.

A 2015 attitudinal survey measured student perceptions of the costs and benefits of education. Four classifications were developed on the topic of student debt: uninterested, debt tolerant, debt averse, and trade-off. The results of this study indicated that 35% of respondents were debt tolerant, 25% were uninterested in debt in general, 23% were debt averse, and 16% of students viewed debt as a trade-off for future benefits. The students who fell in the debt tolerant group also ranked the lowest in debt literacy and the highest in credit card misuse among the four groups (Nonis, Hudson, Philhours, & Hu, 2015, p. 24). This study suggested that students who were the most tolerant of debt were also the least knowledgeable of the borrowing process.

In summary, it is clear that students lack financial literacy. The negative long-term implications of a lack of financial literacy increase as college costs rise. Studies have concluded that students admit to not knowing about student debt (Manton et al., 2006), more than two-thirds of young adults do not possess basic knowledge of interest rates and inflation (Lusardi et al., 2010), 81% of students underestimate the time it takes to pay off credit cards (Chudry et al., 2011), and students who are the most debt tolerant are the most financially illiterate (Nonis et al., 2015). Students applying for financial aid face a confusing pool of lending resources and increasing college costs with poor financial literacy.

**Financial Aid Regulations**

The United States Department of Education is the largest provider of student financial aid in the United States. Through the federal student aid program, the United

States Department of Education offers more than $150 billion in grants, loans, and work study to more than 13 million students attending accredited higher education institutions. According to the student aid website, the "Federal Student Aid [program] is responsible for managing the student financial assistance programs authorized under Title IV of the Higher Education Act of 1965" (Federal Student Aid, 2016a, p. 1). It is this entity that provides "oversight and monitoring of all program participants [including] schools, financial entities, and students to ensure compliance with the laws, regulations and policies governing the federal student aid programs" (Federal Student Aid, 2016a, p. 1).

The laws, regulations, and policies governing the federal student aid programs are documented in the *Federal Student Aid Handbook* (Student Financial Aid, 2016). The most recent edition of this resource, the 2016-2017 guide, is provided to all institutions because they need the most current regulations readily available.

Before institutions are able to provide funding to students through federal student aid, colleges must meet basic administrative requirements. Institution are responsible for the verification of student information and the consistency of information across campus. These processes are necessary to ensure that the appropriate students are being awarded educational funding and to ensure that the appropriate level of educational funding is being awarded. For instance, student Social Security numbers must be collected and verified by the institution's admissions office in order to appropriately match the Social Security number listed on FAFSA applications. The process of matching verified identification numbers ensures that the appropriate person is being awarded federal financial aid. The use of the Social Security number is also attached to federal tax

documentation, which ensures a student's financial situation is accurately assessed for an award (Student Financial Aid, 2016).

In addition to administrative processes, colleges must make appropriate consumer information available to all current and prospective students of the institution. This information must include procedures and forms with which students apply for financial aid, the eligibility requirements for federal financial aid, the criteria used for determining awards, and the rights and responsibilities of students receiving awards. Colleges that participate in the federal student aid program must also provide information about the institution's median loan debt, academic programs, estimated textbook costs, retention rates, career and graduate school placement rates, costs, facilities, and processes (Student Financial Aid, 2016). An institution may meet the requirement for mandatory disclosures by posting information on a publically accessible online website for prospective students or on an internet or intranet site that is reasonably accessible for current students and employees (Student Financial Aid, 2016).

Many factors contribute to how financial aid awards are determined. Award criteria include a student's expected family contribution, year in school, the cost of attendance, and enrollment status of part or full time (Federal Student Aid, 2016). First, a student's cost of attendance (COA) is determined for an academic year. COA includes tuition and fees, room and board, the cost of classroom supplies and transportation, and an allowance for child or dependent care. Next, utilizing tax documentation provided in the FAFSA application, the student's expected family contribution (EFC) is determined. The EFC considers taxed and untaxed income, assets, benefits (including unemployment or Social Security), the size of the student's family, and the number of family members

who will attend college during the same year. The EFC is not an amount that must be paid by a family for a student to attend college but serves as a tool to assess student financial need. The EFC and any scholarships awarded to the student are subtracted from the COA to determine the student's financial need. Financial need determines the amount of need-based aid a student may be awarded. Financial need cannot exceed COA. In addition to need-based awards, students may also receive non-need-based awards, including unsubsidized loans (Student Financial Aid, 2016).

In order for a student to have his or her financial aid award dispersed to the institution, the student must sign a master promissory note (MPN). The MPN is "a legal document in which [the student promises] to repay loan(s) and any accrued interests and fees to the United States Department of Education" (Federal Student Aid, 2016c). Specific information is provided about interest calculations, the timeline related to interest charged, available repayment plans, and deferment or cancellation provisions. The MPN also stipulates that if a student does not complete his or her education, cannot get a job upon leaving college, or does not like the education received, he or she is still responsible for the repayment of loans and, in some cases, grants. At most institutions, a student must sign a MPN only once during his or her borrowing history at that school. Master promissory notes are typically signed in an online format although a paper MPN can be obtained. The online MPN can be accessed in the same account and with the same log-in information that a student uses to submit the FAFSA application.

Just as the MPN is mandated by federal student aid, schools are mandated to provide entrance and exit counseling to all student borrowers. Federal financial aid will not be dispersed to the student until the student completes entrance counseling. Entrance

counseling must meet basic requirements as determined in the federal *Financial Aid Handbook* (Student Financial Aid, 2016). Entrance counseling must include an explanation of the MPN, an emphasis on the importance and obligation of repayment, the consequences of default, a sample of monthly repayment amounts, a description of interest accrual, ways the borrower can access his or her student aid records, and loss of eligibility (Student Financial Aid, 2016). Institutions may add criteria, but according to the *Financial Aid Handbook*, additional criteria "must be reasonable as to time, effort, and relevance to students' borrowing decisions and may not be administered in a way that unreasonably impedes [a student's] ability to borrow" (Student Financial Aid, 2016, sec. 2, p. 127). For instance, an institution may require that students take a test to determine financial aid knowledge but cannot impose a requirement of the student achieving a passing score.

Exit counseling must be provided for students who are graduating, leaving school, or changing their enrollment status from full to part time. Exit counseling can be completed online or through a paper form. Schools must provide access to exit counseling to students within 30 days of their leaving the institution. Exit counseling must inform students of their average monthly payment, a review of available repayment plans, information on loan consolidation and debt management strategies, lender contact information, and the likely consequences of default. Student financial aid offers both entrance and exit counseling curricula online for students. Schools may elect to provide counseling through in-person sessions or through a written format. Schools may provide additional programs, resources, and advisement, but according to the *Financial Aid Handbook*, institutions cannot mandate additional programming (Student Financial Aid,

2016). Suggested supplemental programming includes helping students to "develop a budget, estimate need for loans, and plan for repayment" (Student Financial Aid, 2016, sec. 2, p. 131). It is also suggested that college financial aid offices reinforce messages to borrowers, including the importance of satisfactory academic performance and employment planning.

The *Financial Aid Handbook* (Student Financial Aid, 2016) specifically highlights the need to provide financial literacy information to students and to identify at-risk students. Financial aid offices are encouraged to do the following:

Provide borrowers with counseling at various stages of enrollment, interactive tools to manage debt, repayment options, school contact information, and information about the income potential of occupations relevant to their course of study. [This information can be provided] through a variety of media such as face-to-face counseling, classes, publications, e-tutorials, e-mailed newsletter, and supplements to award letters. . . You can offer a financial literacy course on a credit or non-credit basis as long as receiving a loan is not contingent upon taking the course. (Student Financial Aid, 2016, sec. 2, p. 131)

In regard to at-risk students, financial aid offices are encouraged to "identify and provide special counseling" for these students, including students who do not make satisfactory academic progress or withdraw prematurely from their educational programs (Student Financial Aid, 2016, sec. 2, p. 131).

In order to provide the mandated and suggested financial aid programming as outlined in the *Financial Aid Handbook*, institutions are allowed to contract with third-party services. Third-party servicers may conduct required student consumer information

services on the institution's behalf. While a third-party servicers may be contracted by an institution, the institution is still responsible for the "use of FSA funds and will be held accountable if the [servicer] mismanages the programs or program funds" (Student Financial Aid, 2016, sec. 2, p. 44).

**Implications of Student Debt**

Student loan indebtedness has a direct impact on students after graduation. The Pew Research Center conducted a survey on the value of college as determined by individuals who were no longer in college but took out college loans while in school. Approximately half of respondents (48%) said that "paying back [their student loan] has made it harder to make ends meet" (Pew Research Center, 2011, p.10). A quarter of the respondents expressed that they were having difficulty in purchasing a home because of borrowing to attend college. Almost a quarter of borrowers (24%) reported that their student loan burden had an impact on the kinds of careers they were able to pursue. Seven percent of students said that they had delayed starting a family or getting married as a result of their student loan debt obligations (Pew Research Center, 2011).

Elliott and Nam (2013) conducted a study that examined the net worth of student loan borrowers and non-student loan borrowers. Utilizing the Survey of Consumer Finances, they found that the average net worth of non-borrowers in 2009 was $117,700 compared to the average net worth of $42,800 for student loan borrowers. While the average non-borrower net worth was nearly three times greater than that of non-borrowers, the researchers cautioned that "this topic is complex and more research is needed before suggesting policy prescriptions," although "outstanding student debt may jeopardize the short-run financial health of United States households" (Elliott & Nam,

2013, p. 405). Compounding factors of the relationship between net worth and student loan indebtedness may include the fact that students who do not need to borrow to attend college are likely students who come from families that have a greater net worth or who have been taught financial literacy and were able to avoid borrowing by having savings or working.

At a conference of Certified Financial Analysts in 2014, Amir Sufi, Professor of Finance at the University Of Chicago Booth School Of Business, discussed the effect of student loans on the United States economy. Sufi stated, "Student loan debt can help to explain the weak spending growth among younger people between the ages of 25 and 35," as related to the United States economy recovering from the great recession (p. 19). Sufi (2014) highlighted that during a recession "graduates are forced to accept jobs with lower wages" because they are responsible for their debt obligations, regardless of the overall health of the economy (p. 19). While Sufi (2014) cautioned that the current state of student borrowing in the United States is not a huge crisis, he stated that student debt is an "important drag on economic activity" (p. 19).

A 2014 Federal Reserve Bank report documented the residence choices of millennials, highlighting the change in the independence of young people. Researchers found a "steep increase in the rate of [young people] living with parents or other substantially older household member" (Bleemer et al., 2014, p. 2). Supporting this trend, "homeownership at age thirty shows a precipitous drop following the recession, particularly for student borrowers" (Bleemer et al., 2014, p. 2). Utilizing data from Equifax and the Federal Reserve Bank of New York, researchers examined residential trends at the local level. The researchers determined that municipalities with strong youth

labor markets had greater residential independence while municipalities with rising local home prices sent independent youth back into dependent residential living situations (Bleemer et al., 2014). The study concluded that students who were heavily reliant on student debt while in school were significantly more likely to move in with their parents even though they had previously lived independently (Bleemer et al., 2014).

Elliott and Lewis (2015) addressed the financial health of student loan borrowers upon exiting college. Whether students graduate or prematurely exit from college, Elliott and Lewis found that "there is a price to pay for having to borrow money to go to college" (p. 614). Students who borrow money to attend college had "lower net worth, less home equity, and compromised ability to accumulate assets" when compared to their counterparts without student loan debt (p. 614). Elliott and Lewis highlighted "the long-term, volatile, and often hidden effects of student loan dependence" as students with loans are placed at an economic disadvantage compared to their peers without loans.

A study by Nau, Dwyer, and Hodson (2015) of personal finance and student loans examined the role of debt and the transition to parenthood. Utilizing data from the National Longitudinal Study of Youth, Nau et al found a "delay in fertility for women, particularly [those with] very high levels of [student loan] debt" (p. 118). In contrast, women with high levels of home mortgage or credit card debt did not delay childbearing. Nau et al. attributed this contrast to the immediate consumption and benefit of home and credit card debt as compared to the long-term benefits of student loan debt. The researchers stressed that "the double-edged nature of debt as both barrier and facilitator to life transitions highlights the importance of looking at debt both as a monetary issue and also as a carrier of social meanings" (p. 114).

In summary, The United States Department of Education is the largest provider of student financial assistance. In order to ensure that funds are equitably distributed to students, that students have access to information about institutions and their loans, and that institutions maintain a high standard of institutional quality and lending, the Department of Education has developed a series of guidelines. Institutions must meet the standards outlined in the *Financial Aid Handbook* (Student Financial Aid, 2016) and have the ability to offer additional financial aid programs and counseling, but programming and counseling beyond the scope of the Department of Education's standards cannot be mandated. If institutions do not meet the standards outlined in *Financial Aid Handbook,* they risk losing access to federal student assistance; if students do not meet the minimum requirements outlined in the *Financial Aid Handbook* (Student Financial Aid, 2016), they are not able to receive federal financial assistance for their education.

**Summary**

The body of financial literacy research is broad. While the literature related to student finance sometimes lacks specific information about student loans, inferences can be made based upon similarities and trends in related research to theorize outcomes for future studies specific to student loans. To quantify this information rather than making inferences, research must be conducted to confirm data appropriate for comparison. Based upon the literature examined, there are gaps in the current body of research that discusses student financial literacy as it pertains to student borrowing. Moreover, there is a need to quantify the level of understanding that students have about college financing through quantitative results rather than economic theory. To fill the research gap, it is

appropriate to conduct research of current college students' level of understanding of their student loan obligations, future loan payment totals, and projected income to determine how well students comprehend their use of and implications for using financial aid.

# CHAPTER III: METHODOLOGY

This chapter provides the methodological context for this study, including descriptions of the participants, the data collection instruments, the research procedures, and the analysis of data. To identify the difference between perceived student loan balances and actual student loan balances, as well as the traits that predict student loan understanding, a quantitative method and exploratory design were employed. Bryman (2008) described quantitative research as emphasizing the "quantification in the collection and analysis of data" (p. 697). Quantitative data prioritize breadth of data collection over depth of data collection. An exploratory design is appropriate because this study seeks to consider a large number of data points and will use a survey to collect these data with the intent of defining students' understanding of their student financial aid obligations.

## Purpose Statement

This study determined the base level of Montana student financial literacy and student loan knowledge. The purpose of this study was to identify Montana students' knowledge about their borrowing obligations, particularly in regard to their student loans.

## Research Questions

The research questions that guided this study were:

1. What is the difference between perceived and actual student loan balances of student borrowers in the Montana University System?
2. What is the relationship between the deviations of students' perceived and actual student loan balances and the level of confidence students have in their knowledge of their student loan balances?

3. What relationships exist among the deviation of students' perceived and actual student loan balances, the level of confidence students have in their knowledge of their student loan balances, and other predictors?
4. What is the relationship between the deviation in students' perceived and actual student loan balances by institutional type? What is the relationship between the deviation in students' perceived and actual student loan balances by institution?
5. What is the relationship between student financial literacy and institutional type? What is the relationship between student financial literacy and institution?
6. What relationships exist between the students' loan balance deviations by percentage and student loan education methods?

**Population and Sample**

Students attending 14 of the 15 public institutions in the Montana University System (MUS), 18 years of age or older, currently enrolled in the MUS, and had student loan balances, constituted the population for this study. The Montana institutions of higher education included two comprehensive universities, five four-year institutions, four two-year colleges embedded within universities, and four independent two-year colleges. There were 25,277 students who fit the population parameters (Montana University System, 2016a). Montana State University – Northern was the only MUS institution that chose not to participate in this study.

Table II displays institution type, spring 2017 enrollment, the approximate number of student borrowers at each institution, the desired sample size from each institution, and the number of surveys that were to be distributed at each institution.

Table II

*Institutional Survey Sample Data*

| Institution | Level | Spring 2017 Enrollment | Approx Population | Desired Sample Size (5%) | # of Surveys Sent | Confidence Level and Interval |
|---|---|---|---|---|---|---|
| City College at MSU Billings | 2-Year* | 1,406 | 998 | 50 | 250 | 99%; ±3 |
| Dawson Community College | 2-Year | 335 | 209 | 10 | 50 | 99%; ±3 |
| Flathead Valley Community College | 2-Year | 2,416 | 1,606 | 80 | 400 | 99%; ±3 |
| Gallatin College Montana State University | 2-Year* | 698 | 365 | 18 | 90** | 99%; ±3 |
| Great Falls College Montana State University | 2-year | 1,761 | 830 | 42 | 210 | 99%; ±3 |
| Helena College University of Montana | 2-year | 1,298 | 991 | 50 | 250 | 99%; ±3 |
| Highlands College of Montana Tech | 2-year* | 589 | 552 | 28 | 140 | 99%; ±3 |
| Miles Community College | 2-year | 576 | 357 | 18 | 90 | 99%; ±3 |
| Missoula College University of Montana | 2-year* | 1,609 | 1,484 | 74 | 370 | 99%; ±3 |
| Montana State University – Billings | 4-year + | 2,716 | 2,102 | 105 | 525 | 99%; ±3 |
| Montana State University – Bozeman | 4-year + Flagship | 14,526 | 11,307 | 565 | 2,825** | 99%; ±3 |
| Montana State University – Northern | 4-year + | 1,182 | 875 | 44 | 0*** | 99%; ±3 |
| Montana Tech of the University of Montana | 4-year + | 1,923 | 1,443 | 72 | 360 | 99%; ±3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| University of Montana – Missoula | 4-year +Flagship | 10,006 | 7,334 | 367 | 3600 | 99%; ±3 |
| University of Montana – Western | 4-year + | 1,404 | 1,066 | 53 | 265 | 99%; ±3 |
| Total | | 42,445 | 31,876 | 1,594 | 9,425 | 99%; ±3 |

*Note.* (Montana University System, 2016a)
*denotes 2-year institutions that are embedded within 4-year or above institutions.
**denotes 500% of responses needed to be sent out to Montana State University and Gallatin College students.
***No surveys sent; did not participate.

Because the institutions in the Montana University System operate as independent campuses within the Montana University System, the institutions handled requests from this researcher differently. For this study, each institution directed the researcher to a point of contact. These contacts included financial aid directors, institutional researchers, and a provost. While the point of contact served as the institution's point of communication, he or she was not always able to give the necessary approvals to the researcher. Therefore, the timeline from initial contact to survey approval at each school varied in length. Some institutions required a copy of the researcher's Institutional Review Board approval from Idaho State University, while others just required the approval from a vice-president or president. Each institution strived to ensure that the additional workload would not be a burden on the individuals who would carry out the survey responsibilities of pulling data and sending out e-mails. Some schools chose to distribute the survey internally while others provided a list of students for the researcher to contact. Surveys were distributed between January 23, 2017 and February 24, 2017.

Table III of this study identifies the job title of the point of contact for each MUS institution and the method by which surveys were distributed.

Table III

*Institutional Point of Contact and Survey Distribution Method*

| Institution | Position of Point of Contact | Survey Distribution Method |
|---|---|---|
| City College at MSU Billings | Institutional Researcher | E-mail sent from institution with researcher as originator |
| Dawson Community College | Financial Aid Director | E-mail sent from institution with researcher as originator |
| Flathead Valley Community College | Financial Aid Director | E-mail sent from institution with researcher as originator |
| Gallatin College Montana State University | Institutional Researcher | E-mail addresses provided by institution with the researcher sending the e-mail from Qualtrics survey software. |
| Great Falls College Montana State University | Institutional Researcher | E-mail sent from institution with researcher as originator |
| Helena College University of Montana | Institutional Researcher | E-mail sent from institution with researcher as originator |
| Highlands College of Montana Tech | Institutional Researcher | E-mail sent from institution with researcher as originator |
| Miles Community College | Financial Aid Director | E-mail sent from institution with researcher as originator |
| Missoula College University of Montana | Institutional Researcher | E-mail sent from institution with researcher as originator |
| Montana State University – Billings | Institutional Researcher | E-mail sent from institution with researcher as originator |
| Montana State University – Bozeman | Institutional Researcher | E-mail addresses provided by institution with the researcher sending the e-mail from Qualtrics survey software. |
| Montana State University – Northern | Not Participating | Not Participating |
| Montana Tech of the University of Montana | Institutional Researcher | E-mail sent from institution with researcher as originator |
| University of Montana – Missoula | Institutional Researcher | E-mail sent from institution with researcher as originator |
| University of Montana – Western | Provost | E-mail sent from institution with researcher as originator |

**Instrumentation**

Data for this study were collected through the online e-mail survey platform Qualtrics. The survey contained 49 questions that examined the student's personal financial aid knowledge and financial literacy. The questions for this survey were developed by the researcher to directly address the research questions for this study. The survey can be viewed in its entirety in Appendix A.

To ensure that students did not fill out multiple surveys, Internet Protocol (IP) numbers were collected by the Qualtrics survey platform. Once an IP number was recorded, that computer or mobile device could not enter another response.

The survey began with a statement of consent. Students were made aware of the risks of participating in the study, the benefits of participating in the study, reasonable confidentiality expectations, survey incentives, the rights of the participant, and the contact information of the researcher. Students had to agree to the terms before they could continue taking the survey. If students did not agree to the terms of participation, the survey ended, and the students were thanked for their time. Of the 616 survey responses, two respondents did not agree to the terms of participation and were eliminated. The 614 students who agreed to the terms of participation were led to the second question in the survey, which asked students to verify that they were 18 years of age or older. If students indicated that they were not 18 or older, the survey ended, and the students were thanked for their time. Two students indicated that they were not over the age of 18 and their responses were eliminated, leaving 612 responses.

The next three survey questions asked students about their personal knowledge of their student loan balances. Students were asked if they had student loans, their current

student loan balances, and their level of confidence in the balances they listed. These questions were important as they directly addressed three of the research questions that guided this study. Surveying students about their perceived student loan balances and their confidence in this response indicated how well students understood their borrowing obligations. If a student indicated that (s)he did not have student loans, (s)he was not asked to indicate their current student loan balances. Of the 614 remaining responses, 11 students noted a perceived student loan balance of $0.

Questions 6 through 23 surveyed students about their higher education financing and their financial literacy history. These questions included who, if anyone, was helping the students to pay for their college expenses. Understanding who was helping the students pay for college indicated to what degree students were responsible for their college expenses and if this responsibility informed their financial knowledge. Additionally, students were asked to identify their educational background in personal finance, the personal finance education available at their institution, and their personal wealth. These questions identified interventions that may help students to better understand their current student loan balances and to understand which traits may have contributed to the level of understanding students had of their student loan balances.

Question 23 of the survey, directed students to the National Student Loan Data System (NDLDS) website where they were able to see their actual student loan balances. The deviation between the students' perceptions of their loan balances and the actual student loan balance helped identify how clearly students understood their current financial obligations. To ensure that students did not go back to the original question regarding their student loan balances to correct an incorrect perceived loan balance, the

"back" button on the online survey was disabled. It was not ideal to send the students away from the study to identify their actual student loan balances, but it was the only way in which to obtain this information. Students accessed their NDLDS accounts using their Financial Student Aid Identification (FSAID) password. This is the same identification number that students must use to request Student Financial Aid and to sign their promissory notes. However, because this number is used only a couple times per year, it is possible that students did not remember their log-in information.

The actual student loan balance question was the most skipped question on the survey. Of the 616 surveys collected, 372 opted to leave this question blank. Students who did not enter values for their actual student loan balances were asked to identify the reason in an open text box. Of the 372 respondents who did not provide their actual financial aid balance information, 87 gave reasons for not providing the information including 42 students that did not know their NDLDS login information, 14 that did not want to share for privacy reasons, 13 students that noted they did not have debt or a total grant balance, 10 students that did not have the time to look up the information, six students that noted technology or internet navigation errors, and two that said it was too depressing to look up. These students were removed from the dataset because the research questions in this study relied on the deviation between the perceived student loan balance and the actual student loan balance. Students were then asked if they had ever looked up their student loan balances before this survey. Of the students still in the dataset, 143 had never looked at their total student loan balances before responding to this survey.

Next, students were asked three short questions that helped to determine if the student understood basic personal finance concepts, such as compound interest, loan terms, and loan repayment options and schedules. These questions were used to determine the students' level of financial literacy.

Finally, students were asked for demographic information, including gender, race and enrollment status, institution of attendance, year in college, work status, major area of study, and other financial literacy predictors. These demographic indicators were identified from other studies on the topic of financial literacy. Gender has been noted as a predictor of financial literacy in previous studies that indicated that males were generally more financially literate than were females (Chudry et al., 2011; Lusardi et al., 2010; Manton et al., 2006). Previous research had found that white students had a greater level of financial literacy than do their peers of other ethnicities (Lusardi et al., 2010). Exposure to financial education and having a base level of financial literacy have been determined to have an effect on the level of students understanding of their borrowing obligations (Elliott & Beverly, 2011). The level of education a student has achieved as well as a student's employment history have been found to be determinates of financial literacy (Manton et al., 2006).

**Validity** Validity is defined as "evidence that a study allows correct inferences about the question it was aimed to answer or that a test measures what it sets out to measure" conceptually (Field, 2013, p. 885). Validity must be satisfied to show that the scientific method has been followed and to determine the extent to which the research can be applied across a larger population. While it is rare to have an instrument that meets a

measure of 100% validity, statistical analysis provides an opportunity to determine the accuracy of the data.

For this study, internal validity refers to the survey's ability to properly gauge if Montana students understood their student loan obligations. External validity refers to the ability to generalize the results of the study to the greater population of Montana University System borrowers. Of the threats to internal validity identified by Campbell, Stanley, and Gage (1963), three must be considered for this study: selection of subjects, statistical regression, and experimental mortality. A fourth threat to internal validity, the John Henry effect, must also be considered (Saretsky, 1972).

**Selection of subjects** As the results of the survey depended on the respondents who completed them, the selection of subjects was crucial to the validity of this study. The researcher was dependent upon the institutions in the Montana University System to provide research participants who were over the age of 18, were undergraduates, and who had student loan balances. Each participating institution ran a database query for all students who fit the research parameters. Institutions then randomized the lists and sent e-mails to the number of students determined by the researcher, selecting the names from the top of the list until the threshold was reached. As the selection process provided an appropriate random sample, the selection of subjects did not violate the validity of the study.

The selection of subjects directly influences the response rate of a survey as a measure of internal validity. The survey instrument in this study was e-mailed to 9,425 prospective participants. Of the 9,425 prospective participants, 618 surveys were returned for a participation rate of 6.5%. The survey response rate may be low for variety of

reasons. First, in the e-mail that accompanied the survey, students were informed that the survey would take approximately 15 minutes. Students may not have been able to commit 15 minutes to the survey if they were checking their e-mail between classes or while engaged in other tasks. The contact information of the researcher was in the e-mail, which indicated an institution outside the state being surveyed. This may have created a level of distrust or disloyalty that prevented students from responding to an unknown source. Lastly, students were told in the accompanying e-mail that there would be no consequence to their grades or financial aid status based upon their participation. This disclaimer may have eliminated any perceived incentive to completing the survey. The low survey response rate was mitigated through the measurement of standard error in order to understand the accuracy of the data collected.

**Statistical regression** Statistical regression, or regression to the mean, can violate internal validity due to extreme characteristics of the subjects. The response rate to a survey may be an indication of threat to internal validity because there may be common traits among students who chose to take the survey. For example, some students may have had a strong understanding of their financial obligations and were confident in completing the survey. Experimental fatigue may be a reason that a large group of students not participating in the study. A 49-question survey about a sensitive topic like student loan debt may have caused students to ignore the survey. Of the 618 students who responded to the survey, only 474 students completed the survey. This represented a 77% completion rate for students who navigated through the entire survey. To entice more students to take the study, a survey participation incentive was provided.

In order to solve for skew and outliers in the dataset, the researcher used the statistical software SPSS to conduct analyses that could account for misleading data. The primary tools to determine relationships was the regression model and chi-square tests. The dependent variable for the regression was the deviation between students' perceptions of their student loan balances and their actual loan balances. The independent variables were the additional data collected in the survey. This statistical exercise, paired with the collection of appropriate data collection satisfied the conclusion validity standards.

As the students were self-selecting, their survey responses and institutional data were assumed to be accurate and the *r* values calculated in the regression satisfy internal validity requirements.

**Experimental mortality** Experimental mortality is the loss of subjects as the study is conducted. Due to students skipping key questions in this study, only 278 surveys of the 619 surveys collected were usable resulting in a usability rate of 3% for the overall study. The most frequently skipped question in the survey instrument asked students to provide their actual student loan balances. Survey fatigue, not knowing log-in information, and having to navigate out of the survey to get the actual student loan balance information are all reasons why validity could have been compromised due to testing effects. As a result, the researcher referred to the standard error in order to understand the accuracy of the data collected.

Response rates and testing errors can be best anticipated by performing a pilot study. This research did not include a pilot study because such a study was not convenient for the participating institutions. In retrospect, had a pilot study been

conducted, the questions in the survey that were poorly worded or did not provide the data the researcher had anticipated would have been eliminated, thereby decreasing the length of the survey.

**John Henry effect** The John Henry effect is the phenomenon of test subjects enhancing their performance because they are aware they are being studied. In this research study, it is possible that when asked about their perceived student loan balances, the students looked up their student loan balances in order to present the most accurate information instead of guessing. If this was the case, it is not a threat to internal validity.

Understanding one's financial aid obligations includes knowing where to find information pertaining to the status of one's loans. Therefore, finding the most accurate information is not over-performing but, rather, utilizing the resources available to a responsible borrower. In order to ensure students could not replace their perceived student loan balances with the actual student loan balance when prompted to look up their actual student loan balances, the back button on the survey was disabled.

**External validity** External validity examines the ability to generalize the findings of a study to a greater population. As this study considered only the students of the Montana University System who have borrowed student loans through the federal student aid program, the conclusions of this study cannot be extended to institutions outside the Montana University System. It can, however, be expanded to the greater population of borrowers in the Montana University System (MUS) due to random sampling and testing for response bias. This study could inform student borrowing behavior beyond Montana, but future researchers should not anticipate that the results of this study would be similar to the results of studies conducted outside Montana.

**Reliability** Reliability addresses the quality of the procedures used to collect data. Reliability ensures that the research and findings can be replicated and that other researchers will generate comparable outcomes to those found in this study. Data collection through this survey and database query, as well as the statistical analyses used in this study are replicable. To ensure reliability is maintained, human error and environmental changes were specifically addressed.

In this study, human error, the most prevalent threat to reliability, must be addressed. This study depended on the 15 MUS institutions of higher education to provide randomized survey participants and accurate contact information and MUS students to provide accurate responses to key questions. While the researcher expected that both groups provided information to the best of their ability and according to the study protocol, error may have occurred. First, this study relied on institutional researchers to provide e-mail contact information for students who fit the population parameters. Response from students who did not fit the population criteria were not included in the data analysis. Because this study surveyed students at one point in time, environmental changes did not challenge reliability.

**Procedures**

The researcher contacted the Office of the Commissioner of Higher Education (OCHE) in Helena, Montana, to determine the feasibility of conducting this study of the Montana University System. Commissioner of Higher Education, Clayton Christians, and Deputy Commissioner for Planning and Analysis, Tyler Trevor, approved the researcher's study for the Montana University System (MUS) and gave permission for the researcher to contact each institution in the MUS in order to garner participation. The

Commissioner and Deputy Commissioner did not mandate that institutions participate in the study. The researcher contacted the Office of Institutional Research at each institution to gauge willingness to participate in the study. Of the 15 Montana University System institutions, 14 expressed a willingness to participate and were included in this study.

The researcher then developed the survey instrument that was distributed to all Montana University System institutions. The survey addressed the specific research questions posed within this study and collected appropriate demographic.

With permission to conduct the study from the Montana University System, a verbal agreement from participating institutions, and a survey instrument, the researcher solicited permission to conduct the study from the Institutional Research Board (IRB) at Idaho State University. Idaho State University requires that students who engage in research involving human subjects receive approval regarding the research procedures prior to the collection of data. The Institutional Review Board at Idaho State University issued approval for the study on June 27, 2017 (see approval letter on page iii). Additionally, Idaho State University policy mandates that researchers engaging in research that involves human subjects have a Collaborative Institutional Training Initiative (CITI) certificate. The researcher in this study completed the CITI training prior to applying for permission to complete the study. As discussed with the Montana University System institutions, the approval of the research procedures by the Idaho State University Institutional Review Board satisfied the ethical considerations of the study.

Once the survey was approved through the Idaho State University Institutional Research Board (IRB), the researcher contacted the institutional researcher at each Montana University System institution. Institutional researchers were provided a copy of

the letter of support for the study from the Commissioner of Higher Education for the State of Montana, a copy of the approval from ISU's IRB, and a copy of the researcher's CITI certification. Next, each institution's preferred point-of-contact was identified as well as the method of survey distribution, the dates on which the survey was to be delivered, and the duration of the survey. The researcher then sent the e-mail to the point-of-contact. The e-mail included a link to the survey where the point of contact and, later, students could review and participate in the research. Each point-of-contact pulled a random list of research participants from the institution's list of students who met the state parameters. At this point, each institution had all of the information it needed to conduct the study.

The survey was distributed, along with a note that included a participation incentive of the chance to win one of two $50 Amazon gift cards. Students who completed the survey had the opportunity to enter to win the gift cards. To enter to win a gift card, students clicked on a separate link that allowed them to enter their e-mail addresses so in order to keep identifying information separate from study data.

When students clicked on the link to complete the survey, responses were automatically listed on the Qualtrics online platform and were immediately accessible to the researcher and only the researcher. Because Qualtrics is double password-protected software, confidentiality is enhanced. Once the survey closed, the researcher downloaded responses into a Microsoft Excel spreadsheet, and began to prepare the data.

**Design**

To identify the difference between perceived student loan balances and actual student loan balances, as well as the student traits that may relate to student financial

literacy, a quantitative method and an exploratory design were employed. Bryman (2008) described quantitative research as emphasizing the "quantification in the collection and analysis of data" (p. 697). Quantitative data prioritize breadth of data collection over depth of data collection. An exploratory design was appropriate because this study considered a large number of data points and a survey was used to collect the data. It would have been inefficient to use an interview method to collect information from students this large of a group scattered across the state of Montana. Therefore, this study employed survey methodology.

**Analysis**

At the close of the survey, data were downloaded from Qualtrics by the researcher and placed into Microsoft Excel. Upon completion of data cleaning, labeling, and coding, data analysis began with the examination of descriptive statistics. Descriptive statistics included central tendency, variability, and skewness. Central tendency examines the distribution of data based upon like numbers. Variability examines the extent to which data are spread out or clustered. Skewness identifies the pattern of data distribution or the patterns in which data are distributed along a curve.

Upon completion of the descriptive statistics, variables were then analyzed through chi square ($x^2$) tests. Chi square tests examine the relatedness of two or more variables. With the use of the chi-square analysis, the researcher was able to describe the association of many variables, including the existence of an interaction, the strength of the interaction, the direction the interaction skewed, and the pattern in which data are displayed.

Upon completion of the chi-square tests, data were then examined through a regression analysis. A regression analysis is a statistical technique used to characterize the pattern of relationship between two variables in terms of a linear equation and the strength of this relationship (Field, 2013). The regression analysis produced the Pearson's *r* or correlation coefficient, which quantified the relationship between the variables. The regression analysis determined the significance level of each relationship, which quantified the presence or lack of presence between variable correlations. Upon completion of data analysis, the conclusions were written, and research questions were addressed.

**Summary**

In order to determine the base level of understanding of financial aid obligations among students of the Montana University System, students were surveyed and demographic data were collected. The data were collected in the online-based survey software, Qualtrics. Data were collected in January and February of 2017. The data were then analyzed using Microsoft Excel and SPSS.

Chapter IV provides the results of the data analysis. The results include the statistical tests of the data from the student survey.

# CHAPTER IV: RESULTS

Student loan debt and default rates have risen steadily over the past 20+ years (United States Department of Education, 2015a). To determine whether or not students enrolled in institutions in the Montana higher education system had the appropriate financial knowledge when they sign promissory notes, committing themselves to the repayment of student loans, research was needed to determine students' knowledge of their borrowing obligations. The purpose of this study was to identify the level of Montana students understanding of their borrowing obligations, particularly in regard to student loans. In this chapter, the analysis of the data is presented. This chapter presents the response rate of survey participants and addresses the research questions.

To understand the analysis of the data related to the research questions, it is first important to describe the respondents included in the dataset. Data were collected from Montana University System students who were over 18 years old, were undergraduates, and had student loan balances. Surveys were sent to students at 14 of the 15 public institutions of higher education in the state of Montana. In total 9,452 surveys were distributed throughout the Montana University System with the number of surveys going to each institution proportionate to the number of students at the institutions who met the research criteria. Of the 9,452 surveys sent out via an online survey tool, 619 surveys, or 6.6%, were returned. Of the returned surveys, 464 respondents reported their institution of attendance, and 278 respondents provided their perceived student loan balances and actual student loan balances. Both of these data points were necessary for the survey to be included in this study. Therefore, the number of usable surveys for this study was 278. Table IV shows the survey response rate by institution in the Montana University System.

Table IV

*Survey Response Rate*

| Institution | # of Surveys Distributed | Surveys Returned | Return Rate | Usable Surveys | Usability Rate |
|---|---|---|---|---|---|
| City College at MSU Billings | 250 | 21 | 8.4% | 17 | 6.8% |
| Dawson Community College | 50 | 8 | 16% | 6 | 12% |
| Flathead Valley Community College | 400 | 49 | 12.3% | 28 | 7% |
| Gallatin College Montana State University | 90 | 2 | 2.2% | 2 | 2.2% |
| Great Falls College Montana State University | 210 | 2 | 1% | 1 | .5% |
| Helena College University of Montana | 250 | 46 | 18.4% | 35 | 14% |
| Highlands College of Montana Tech | 140 | 2 | 1.4% | 2 | 1.4% |
| Miles Community College | 90** | 0 | 0% | 0 | 0 |
| Missoula College University of Montana | 370 | 13 | 3.5% | 9 | 2.4% |
| Montana State University – Billings | 525 | 45 | 8.6% | 29 | 5.5% |
| Montana State University – Bozeman | 2,825 | 136 | 4.8% | 54 | 1.9% |
| Montana State University – Northern | 0* | 0 | 0 | 0 | 0 |
| Montana Tech of the University of Montana | 360 | 44 | 12.2% | 30 | 8.3% |
| University of Montana – Missoula | 3600 | 77 | 2.1% | 53 | 1.5% |
| University of Montana – Western | 265 | 19 | 7.2% | 14 | 5.3% |
| Did not indicate MUS Institution in survey | -- | 155 | -- | 35 | 0% |
| Total | 9,335 | 619 | 6.6% | 278 | 3% |

*Montana State University – Northern did not participate in this study

**Miles Community College agreed to participate, but no surveys were returned.

The return rate and usability rate for this survey were very low. System wide, the survey return rate was 6.6%, and the usability rate was 3%. As a result of the low return rate, the findings of this study may not be representative of the overall population without bias testing. The return rate may have been low for a series of reasons. First, most Montana University System colleges required that the institution send out the survey on behalf of the researcher, which introduced many variations in survey delivery. First, depending on the campus, students received the e-mail from the institutional researcher, the vice president for student affairs, the provost, or the financial aid office. E-mail open rates are likely to be higher when the e-mail is received from a known source on campus. As the researcher was not able to choose the exact delivery method at each institution, it was not possible to control for variations in delivery methods

A second problem that occurs when survey delivery is conducted by someone other than the researcher is that details related to the study procedures may be lost in communication. Although the researcher provided a template e-mail for distribution with the survey, including survey information and the survey link, the instructions were not followed in all cases. For example, at Montana Tech and Highlands College, the researcher's institutional contact was the institutional researcher, but the survey was sent from the Vice President for Student Affairs. Instructions were likely lost in the process because the Vice President for Student Affairs sent out a one-sentence e-mail with a .pdf of the survey attached to the e-mail rather than embedding the survey link in the e-mail, which may have contributed to a low return rate from these institutions. Upon request of the researcher, the institution corrected the error the following day. Additionally, Montana State University - Bozeman and Gallatin College likely included students in the

survey who did not have student loan balances. Students who claimed perceived and actual student loan balances of $0 were eliminated from the final dataset because they did not meet the criterion of having a student loan balance. There were 17 surveys from Montana State University - Bozeman and Gallatin College that claimed $0 for the perceived student loan balance and $0 for the actual student loan balance. This did not happen at any other institution within the Montana University System, and both Montana State University - Bozeman's and Gallatin College's numbers were reported from the same institutional research office at Montana State University. Due to this lack of adherence to the population parameters, the researcher eliminated these 17 completed surveys.

The template e-mail used to deliver the survey included an estimate of the time it would take to complete the survey. Students may have been apprehensive to take the survey because the e-mail indicated a completion time of 15 minutes. The completion time may have been inconvenient for students, leading them to ignore the survey.

Students may have ignored the survey due to the topic of the survey. Many people do not like to talk about their finances and would, therefore, avoid participating in a survey that addresses personal finances, including student loans.

Two $50 Amazon gift cards were offered as incentives for students to take part in the study. In total, 207 of the 619 survey participants entered the drawing to the win the gift cards. However, students who may not be incentivized by monetary prizes may not have been incentivized by this reward enough to participate in the study. In the e-mail, students were reminded, that the survey was voluntary and participation would not affect how students were evaluated for financial aid awards or coursework at. Because students

were informed that there was no consequence for ignoring the survey, not participating in the survey, they may have chosen to ignore it.

Included in the survey was a request that students provide their student loan balances as reported on the NDLDS website. This step forced students to open a second window on their computer or other mobile device, and momentarily leave the survey while retrieving their actual student loan balances. This step may have been especially difficult on a mobile device, as opening a new window in a browser on a smartphone hides the previous window, making it difficult to navigate back to the survey. Approximately 100 students chose not to answer this question. If students skipped reporting their actual student loan balances, they were asked to identify the reason in the following question. Of the 93 students who provided a reason for not filling out their actual student loan balance, 37 responded they did not know their NDLDS login information, 17 claimed to not have student loans, 17 stated they did not want to share their balance due to privacy or embarrassment, eight expressed apathy to the survey, six cited website or survey navigation problems, six said they did not have enough time, and two gave the total they were supposed to have entered in the previous question. If the actual student loan amounts could have been collected from the institutions instead of from the students, the survey response rate and the usability rate would likely have been higher.

Just as it is important to know which students participated in the survey, it is also important to understand the relationship between student loan debt and student perception of loan debt. Descriptive statistics were run to determine absolute deviation, perceived balance, actual balance, negative deviation, zero deviation, positive deviation, and

percent deviation variables. The absolute deviation was the absolute value of the perceived student loan balance minus the student's actual student loan balance. This value allowed the researcher to understand by how much a student over- or under-estimated his or her student loan balance. The perceived balance was the estimate that a student made of his or her current student loan balance. The actual balance was the current student loan balance as indicated on the NDLDS website. The negative deviation was derived from the 131 students who underestimated their student loan balances. The zero deviation was derived from the 47 students who accurately indicated their student loan balance. The positive deviation was derived from the 106 students who overestimated their student loan balances. The percent deviation variable was the absolute deviation divided by the actual balance, which yielded a percentage measure of how much a student over- or under-estimated his or her student loan balance. Utilizing these data, appropriate statistical tests were employed to address the research questions in this study.

**Research Question 1: What is the difference between perceived and actual student loan balances of student borrowers in the Montana University System?**

Table V displays the sample size, range, minimum, maximum, mean, and standard deviation of the actual student loan balance, the perceived student loan balance, perception minus actual student loan balance in absolute value, the negative deviation, positive deviation, zero deviation, and percent deviation. The sample ($n$) is the number of data points found for that variable. The minimum and maximum show the highest and lowest data points within the variable. The range shows the distance between the highest

and lowest data points. The mean shows the average of the variable. The standard deviation indicates the extent of deviation of the variable.

Table V

*Deviation between Actual and Perceived Student Loan Balances*

| | *n* | Min | Max | Range | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| Actual Balance | 278 | $500 | $55,586 | $55,086 | $15,636 | $11,655 |
| Perceived Balance | 277 | $50 | $60,000 | $59,500 | $15,781 | $11,710 |
| Absolute Deviation | 277 | $0 | $30,000 | $3,000 | $3,673 | $5,489 |
| Negative Deviation | 131 | ($26) | ($40,704) | ($40,678) | ($4,446) | ($6,003) |
| Positive Deviation | 106 | $4 | $4,520 | $45196 | $5,307 | $8,299 |
| Zero Deviation | 47 | $0 | $0 | $0 | $0 | $0 |
| Percent Deviation | 27 | .00% | 264% | 2.64% | 23.5% | 35% |

The descriptive statistics described the student loan information for the students who participated in this research study. The participants reported a mean actual student loan balance of $15,636 and a mean perceived student loan balance of $15,781. While the difference between the means of actual and perceived loan balances was only $145, a more accurate illustration is apparent through further analysis

The absolute deviation variable was derived by subtracting the actual student loan balance from the perceived student loan balance and converting the difference to an absolute value. The absolute value showed the variation in the student's perception of his or her student loan balance and their actual student loan balance. The mean of the absolute deviation of this dataset was $3,673, which means that, on average, students over- or under-estimated their student loan balances by $3,673. For the students who underestimated their student loan balances, the mean deviation was -$4,446. For the students who overestimated their student loan balances, the mean deviation was $5,307.

Forty-seven students knew their exact student loan balances, yielding a deviation of $0.00.

The percent deviation (the absolute deviation value divided by the actual balance) determined the amount that students' over- or under-estimated their student loan balances. The percent deviation allowed the researcher to understand by how much students over or underestimated their student loan balances relative to their student loan debt load. On average, students in this study incorrectly predicted their student loan balance by 23.5%.

**Research Question 2: What is the relationship between the deviation of students' perceived and actual student loan balances and the level of confidence students have in their knowledge of their student loan balances?**

In order to determine if there was a relationship between the level of student loan debt a student had and the level of confidence a student had in accurately predicting his or her student loan balance, a chi-square was employed. Chi-square tests assess the direction and strength of a linear relationship between two variables. As shown in Table VI, variables for this test included the level of student loan debt variance by percentage (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the confidence students reported having in their knowledge of their student loan balances (Not Confident/Somewhat Not Confident/Neutral, Somewhat Confident, Confident). The variables of Not Confident, Somewhat Not Confident, and Neutral were combined to provide enough data in the cells for this statistical test. Combining these groups of data was appropriate because these students did not express confidence in their knowledge of their student loan balances.

Table VI

*Student Loan Deviation and Student Confidence in Their Knowledge of Student Loan Balances*

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 14.441[a] | 8 | .071 |
| Number of Valid Cases | 269 | | |

| | | Confidence Level | | | |
|---|---|---|---|---|---|
| | | Not Confident to Neutral | Somewhat Confident | Confident | Total |
| Percent Deviation | Off by 0% | 5 | 14 | 28 | 47 |
| | Off by 1 to 10% | 11 | 40 | 34 | 85 |
| | Off by 11 to 30% | 16 | 27 | 23 | 66 |
| | Off by 31 to 50 % | 9 | 13 | 11 | 33 |
| | Off by more than 50% | 4 | 16 | 18 | 38 |
| Total | | 45 | 110 | 114 | 269 |

Based upon the chi-square test, there is no statistically significant relationship between the level of student loan debt by percentage and the level of confidence students had in their knowledge of their perceived student loan balances ($x2$ =14.441, df = 8, $p$ =.071).

However, the count table produced by the chi-square test further illustrated the level of confidence a student had of their student loan obligation based upon the debt deviation level. The number of students who gave a perceived student loan balance that deviated from the actual student loan balance by 0 to 10% was 132 (Off by 0% = 47; Off by 1 to 10% = 85). Of those students, only 62 (47%) reported that they were confident in their understanding of their student loan balance. Of the 71 students who gave a student loan balance that deviated from the actual student loan balance by 31% or more (Off by 31% = 33; Off by more than 50%=38), 29 students (40%) reported that they were

confident in their understanding of their student loan balance. Additionally, 1 in 5 students expressed confidence in their ability to accurately estimate their student loan debt but had student loan debt deviation of 31% or more ((Off by 31 to 50% and Somewhat Confident (13) + Off by 31 to 50% and Confident (11) + Off by 31 to 50% and Somewhat Confident (16) + Off by more than 50% and Confident (18)) / (n (269)).

To further explore this research question, a second chi-square test was conducted to determine whether or not a relationship existed between the level of loan debt deviation students had and the students having met with college financial aid counselors. While the results of the chi-square test were not statistically significant ($x^2 = 1.205$, df = 4, $p = .877$), Table VII illustrates the rate of students that met with a financial aid counselor and their student loan debt deviation.

Table VII

*Relationship between Student Loan Deviation and Meeting with a College Financial Aid Counselor*

| | | Met with a College Counselor | | |
|---|---|---|---|---|
| | | No | Yes | Total |
| Loan Debt Deviation | Off by 0% | 26 | 21 | 47 |
| | Off by 1 to 10% | 48 | 36 | 84 |
| | Off by 11 to 30% | 38 | 27 | 65 |
| | Off by 31 to 50 % | 22 | 11 | 33 |
| | Off by more than 50% | 21 | 16 | 37 |
| Total | | 155 | 111 | 266 |

Of students who had a debt deviation of 0 to 10%, 44% had visited with a college financial aid counselor ((Off by 0% and Met with College Counselor (21) + Off by 1 to 10% and Met with College Counselor (36) + Off by 0% and Did not Meet with College Counselor (26) + Off by 1 to 10% and Did not Meet with College Counselor (6)) / (Off

by 0% (47) + Off by 1 to 10% (84)). The rate of students having met with a financial aid counselor and having a debt deviation of more than 30% was 39% ((Off by 31 to 50% and Met with College Counselor (11) + Off by more than 50% and Met with a College Counselor (16) + Off by 31 to 50% and Did not Meet with a College Counselor (22) + Off by more than 50% and Did Not Meet with College Counselor (21)) / (Off by 31 to 50% (33) + Off by more than 50% (37)).

**Research Question 3: What relationships exist among the deviation of students' perceived and actual student loan balances, the level of confidence students have in their knowledge of their student loan balances, and other predictors?**

As shown on Table VIII, multiple regression analysis was conducted to examine the relationships among the deviation between students' perceived and actual student loan balances, the level of confidence students had in their knowledge of their student loan balances and various potential predictors, including students that have loans from private lenders, student that have paid the remainder of the students' tuition bills, students perception of families wealth, the students' family income, the number of years students had spent in college, the age of the students, the transfer status of the students, the residency status of the students, the number of jobs held by students, the number of siblings, the grade level of students, the students' GPA, and the gender of the students. Table VIII summarizes the descriptive statistics and analysis results.

Table VIII

*Relationship between Deviation of Students' Perceived and Actual Student Loan Balances and Predictors*

$$\hat{Y} = (.669 \times 2) + (-3.20 \times 4) + 2.279$$

| Model | Unstandardized Coefficients ß | Sig. |
|---|---|---|
| | 2.279 | .032 |
| Confidence in perceived loan balance estimate | -.196 | .093 |
| Students having private loans | .669 | .005 |
| Who paid the remainder of the students' tuition balance | -.013 | .910 |
| Students' perception of family wealth | .052 | .670 |
| Students' family income | .207 | .131 |
| Number of years spent in college | .134 | .373 |
| Students' age | .107 | .152 |
| Transfer status of students | -.206 | .276 |
| Residency status of students | -.094 | .697 |
| Number of jobs a student works | .103 | .064 |
| Number of siblings | .056 | .289 |
| Grade level of students | -.320 | .003 |
| Students' GPA | .075 | .375 |
| Students' gender | .048 | .805 |

| $R^2$ | Adjusted $R^2$ | Sig. F Change |
|---|---|---|
| .140 | .083 | .003 |

The adjusted $R^2$ shows that 8.3% of the total variability in the level of deviation between students' perceived and actual student loan balances was explained by the predictors. In other words, 91.7% of the total variability in the level of student loan deviation was not described by the predictors included in the regression. The *p*-value of .003 ($p > .05$) indicated that there was strong evidence that the regression model had no

explanatory power to predict deviation between students' perceived and actual student loan balances.

However, two variables were statistically significant. Whether or not a student had a student loan outside the federal lending program yielded a *p*-value of .005, and the variable of grade level in college yielded a *p*-value of .003. The beta value of .669 indicates that for every increase in loans outside the federal lending program, debt deviation increased by .669, holding all other variables constant. The beta of -.32 indicates that for every increase in grade level, student loan debt deviation decreased by .32. Because the *p*-value > .05 for all other variables, no other predictor was statistically significant at predicting the deviation between students perception of loan balances and actual student loan balances.

**Research Question 4: What is the relationship between the deviation in students' perceived and actual student loan balances by institutional type? What is the relationship between the deviation in students' perceived and actual student loan balances by institution?**

A chi-square test was conducted to determine the relationship between institutional type (Two-year/Community College, Embedded Two-Year, Four-Year Institution, and Comprehensive Community College) and the level of student loan balance deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%), as shown in Table IX.

Table IX

*Deviation between Students' Perceived and Actual Student Loan Balances and Institutional Type*

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 12.027[a] | 12 | .443 |
| Number of Valid Cases | 269 | | |

3 cells (15.0%) have expected count less than 5. The minimum expected count is 3.43.

| | | Institutional Type | | | | |
|---|---|---|---|---|---|---|
| | | Community College & Two Year | Embedded Two-Year | Four-Year College | Comprehensive University | Total |
| Loan Debt Deviation | Off by 0% | 17 | 5 | 8 | 16 | 46 |
| | Off by 1 to 10% | 21 | 8 | 19 | 38 | 86 |
| | Off by 11 to 30% | 15 | 10 | 20 | 22 | 67 |
| | Off by 31 to 50% | 9 | 2 | 11 | 11 | 33 |
| | Off by more than 50% | 10 | 3 | 14 | 10 | 37 |
| Total | | 72 | 28 | 72 | 97 | 269 |

The results of the chi-square test were not statistically significant ($x^2$ = 12.027, df = 12, $p$=.443). According to this analysis, there is no statistically significant relationship in the deviation between students' perception and actual student loan balances by institutional type.

As shown in Table X, a second chi-square test was considered to determine whether there was a relationship between institutions and level of student loan debt deviation.

Table X

*Deviation between Students' Perceived and Actual Student Loan Balances by Institution*

| College | Deviation between Perceived and Actual Balance | | | | | |
|---|---|---|---|---|---|---|
| | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| City College at MSU Billings | 4 | 5 | 6 | 1 | 1 | 17 |
| Flathead Valley Community College | 4 | 10 | 6 | 4 | 4 | 28 |
| Gallatin College MSU | 0 | 0 | 0 | 1 | 1 | 2 |
| Great Fall College of MSU | 0 | 1 | 0 | 0 | 0 | 1 |
| Helena College of UM | 11 | 8 | 6 | 4 | 6 | 35 |
| Highlands College UM | 1 | 0 | 1 | 0 | 0 | 2 |
| Missoula College UM | 1 | 3 | 4 | 0 | 1 | 9 |
| MSU Billings | 3 | 7 | 7 | 6 | 6 | 29 |
| MSU Bozeman | 8 | 15 | 11 | 7 | 8 | 49 |
| UM Missoula | 8 | 23 | 11 | 4 | 2 | 48 |
| UM Tech | 3 | 10 | 8 | 3 | 5 | 29 |
| UM Western | 2 | 2 | 5 | 2 | 3 | 14 |
| Dawson Community College | 1 | 2 | 2 | 1 | 0 | 6 |
| Total | 46 | 86 | 67 | 33 | 37 | 269 |

The chi-square test was not conducted because the dataset violated the second assumption of a chi-square test, that at least 80% of all data cells contain at least five responses (Field, 2013). In this case, 45 (69.2%) of the cells did not contain at least five data points. Therefore, this test was not conducted.

**Research Question 5: What is the relationship between student financial literacy and institutional type? What is the relationship between student financial literacy and institution**?

A chi-square test was conducted to determine whether or not a relationship existed between institutional type (Two-year and Community College, Embedded Two-Year, Four-Year Institution, and Comprehensive Community College) and the level of student financial literacy as based upon quiz scores (None Correct, One Correct, Two Correct, and All Correct). As shown in Table XI, financial literacy was low throughout the survey with 34 students getting all three quiz questions correct, 27 students getting two quiz questions correct, 174 students getting one quiz question correct, and 45 students missing all three quiz questions.

Table XI

*Relationship between Student Financial Literacy and Institutional Type*

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 13.114a | 9 | .158 |
| N of Valid Cases | 277 | | |

3 cells (18.8%) have count less than 5. The minimum expected count is 2.73.

| | | Quiz Total | | | | |
|---|---|---|---|---|---|---|
| | | Zero Correct | One Correct | Two Correct | Three Correct | Total |
| Institutional Type | Community College & Two Year | 7 | 45 | 9 | 11 | 72 |
| | Embedded Two-Year | 3 | 14 | 6 | 5 | 28 |
| | Four-Year College | 13 | 49 | 5 | 6 | 73 |
| | Comprehensive University | 21 | 65 | 7 | 11 | 104 |
| Total | | 44 | 173 | 27 | 33 | 277 |

The chi-square test results showed that there was no significant relationship between financial literacy and institutional type ($x^2$ = 13.114, df = 9, $p$=.158).

As shown in Table XII, a second chi-square test was attempted to determine whether or not there was a relationship between the institution and the level of financial literacy, based upon quiz scores (None Correct, One Correct, Two Correct, and All Correct).

Table XII

*Relationship of Student Financial Literacy and Institution*

| College | Quiz Total | | | | |
|---|---|---|---|---|---|
| | Zero Correct | One Correct | Two Correct | Three Correct | Total |
| City College at MSU Billings | 3 | 8 | 3 | 3 | 17 |
| Flathead Valley Community College | 2 | 20 | 2 | 4 | 28 |
| Gallatin College MSU | 0 | 1 | 1 | 0 | 2 |
| Great Fall College of MSU | 0 | 1 | 0 | 0 | 1 |
| Helena College of UM | 5 | 20 | 4 | 6 | 35 |
| Highlands College UM | 0 | 0 | 2 | 0 | 2 |
| Missoula College UM | 0 | 5 | 2 | 2 | 9 |
| MSU Billings | 3 | 23 | 2 | 1 | 29 |
| MSU Bozeman | 9 | 34 | 5 | 6 | 54 |
| UM Missoula | 13 | 32 | 2 | 6 | 53 |
| UM Tech | 5 | 20 | 2 | 3 | 30 |
| UM Western | 5 | 6 | 1 | 2 | 14 |
| Dawson Community College | 0 | 4 | 1 | 1 | 6 |
| Total | 45 | 174 | 27 | 34 | 280 |

36 cells (69.2%) have expected count less than 5. The minimum expected count is .10.

The chi-square test was not conducted because the dataset violated the second assumption of a chi-square test: that at least 80% of all data cells contain at least five responses (Field, 2013). In this case, 69.2% of the cells did not contain at least five data points. Therefore, this test was not conducted.

**Research Question 6: What relationships exist between the students' loan balance deviations by percentage and student loan education methods?**

As shown in Table XIII, a chi-square test was conducted to determine if a relationship existed between the student loan debt deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the student having visited a high school financial aid counselor.

Table XIII

*Relationship between Student Debt Deviation and Visiting with a High School Financial Aid Counselor*

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 13.783a | 4 | .008 |
| N of Valid Cases | 260 | | |

0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.88.

| | | Loan Debt Deviation | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| High School | No | 34 | 71 | 55 | 26 | 23 | 209 |
| Counselor | Yes | 13 | 12 | 8 | 4 | 14 | 51 |
| Total | | 47 | 83 | 63 | 30 | 37 | 260 |

The chi-square test showed there was a statistical relationship between the level of student loan balance deviation and the students having visited with a financial aid counselor ($x^2 = 13.783$, df = 4, $p$=.008). A test result of $p < .05$ indicated that the relationship between student loan debt deviation by percentage and a student having met with a financial aid counselor was statistically significant.

As shown in Table XIV, a second chi-square test was conducted to determine the relationship between the student loan debt deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the student having visited with a college financial aid counselor.

Table XIV

*Relationship between Student Debt Deviation and Visiting with a College Financial Aid Counselor*

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 1.205a | 4 | .877 |
| N of Valid Cases | 266 | | |

0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.77.

| | | Loan Debt Deviation | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| College Financial Aid Counselor | No | 26 | 48 | 38 | 22 | 21 | 155 |
| | Yes | 21 | 36 | 27 | 11 | 16 | 111 |
| Total | | 47 | 84 | 65 | 33 | 37 | 266 |

The chi-square test results showed no statistically significant relationship between student debt deviation and a student having visited with a college financial aid counselor ($x^2 = 1.205$, df = 4, $p$=.877).

As shown in Table XV, a third chi-square test was attempted to determine the relationship between the level of debt student loan deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the student having remembered that they had signed promissory notes when the loans originated.

Table XV

*Relationship between Student Debt Deviation and Signing a Promissory Note*

| | | Loan Debt Deviation | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| Promissory Note | No | 3 | 1 | 0 | 2 | 0 | 6 |
| | Yes | 43 | 77 | 60 | 28 | 35 | 243 |
| Total | | 46 | 78 | 60 | 30 | 35 | 249 |

5 cells (50.0%) have expected count less than 5. The minimum expected count is .72.

The chi-square test was not conducted because the dataset violated the second assumption of a chi-square test, that at least 80% of all data cells contain at least five responses (Field, 2013). In this case, 5 (50%) cells did not contain at least five data points. Therefore, this test was not conducted.

As seen in Table XVI, a fourth chi-square test was conducted to determine if a relationship existed between the level of debt student loan deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the students having taken a personal finance class in high school.

Table XVI

*Relationship between Student Debt Deviation and Taking A Personal Finance Class in High School*

| | Value | Df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 2.798a | 4 | .592 |
| N of Valid Cases | 264 | | |

0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.24.

| | | Loan Debt Deviation | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| High School Personal Finance Class | No | 33 | 62 | 53 | 22 | 26 | 196 |
| | Yes | 14 | 22 | 12 | 10 | 10 | 68 |
| Total | | 47 | 84 | 65 | 32 | 36 | 264 |

The chi-square test results showed no statistically significant relationship between student debt deviation and the students having taken personal finance classes in high school ($x^2 = 2.798$, df = 4, $p = .592$).

As shown in Table XVII, a fifth chi-square test was conducted to determine the relationship between the level of debt student loan deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the students having taken personal finance classes in college.

Table XVII

*Relationship between Debt Deviation and Taking Personal Finance Classes in College*

| | | Loan Debt Deviation | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| College Personal Finance Class | No | 44 | 75 | 60 | 31 | 35 | 245 |
| | Yes | 3 | 11 | 6 | 2 | 3 | 25 |
| Total | | 47 | 86 | 66 | 33 | 38 | 270 |

3 cells (30.0%) have count less than 5. The minimum expected count is 3.06.

The chi-square test was not conducted because the dataset violated the second assumption of a chi-square test: that at least 80% of all data cells contain at least five responses (Field, 2013). In this case, 3 (30%) cells did not contain at least five data points. Therefore, this test was not conducted.

As seen in Table XVIII, a sixth chi-square test was conducted to determine the relationship between the level of student loan balance deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the students having talked with their parents about personal finance.

Table XVIII

*Relationship between Debt Deviation and Talking with Parents about Personal Finance*

| | Value | Df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 1.194a | 4 | .879 |
| N of Valid Cases | 267 | | |

0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.67.

| | | Loan Debt Deviation | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| Parents Personal Finance Discussion | No | 14 | 26 | 24 | 12 | 13 | 89 |
| | Yes | 33 | 59 | 41 | 20 | 25 | 178 |
| Total | | 47 | 85 | 65 | 32 | 38 | 267 |

The chi-square test results showed no statistically significant relationship between student debt deviation and the students having talked with their parents about personal finance ($x^2 = 1.194$, df = 4, $p$=.879).

As shown in Table XIX, a seventh chi-square test was conducted to determine the relationship between the level of student loan balance deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and the level of satisfaction students had with their college financial aid experience.

Table XIX

*Relationship between Debt Deviation and Student Level of Satisfaction with College Financial Aid Experience*

| | Loan Debt Deviation | | | | | |
|---|---|---|---|---|---|---|
| | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| Not Confident | 0 | 5 | 2 | 2 | 1 | 10 |
| Somewhat Not Confident | 5 | 10 | 4 | 2 | 3 | 24 |
| Neutral | 6 | 23 | 17 | 9 | 11 | 66 |
| Somewhat Confident | 15 | 26 | 22 | 7 | 6 | 76 |
| Confident | 21 | 22 | 21 | 13 | 17 | 94 |
| Total | 47 | 86 | 66 | 33 | 38 | 270 |

7 cells (28.0%) have count less than 5.

The chi-square test was not conducted because the dataset violated the second assumption of a chi-square test: that at least 80% of all data cells contain at least five responses (Field, 2013). In this case, 7 (28%) cells did not contain at least five data points. Therefore, this test was not conducted.

As shown in Table XX, an eighth chi-square test was conducted to determine the relationship between the students' level of student loan balance deviation (off by 0%, off by 1 to 10%, off by 11 to 30%, off by 31 to 50%, off by more than 50%) and students having checked their student loan balances prior to taking the survey.

Table XX

*Relationship between Debt Deviation and Students Having Checked Student Loan Balances Prior to the Survey*

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 7.859a | 4 | .097 |
| N of Valid Cases | 270 | | |

0 cells (0.0%) had expected counts less than 5. The minimum expected count was 11.61.

The chi-square test results showed no statistically significant relationship between student debt deviation and students having checked their student loan balances prior to the survey ($x^2 = 7.859$, df = 4, $p$=.097).

As shown in Table XXI, to further examine the relationship between students having checked their student loan balances prior to taking the survey and meeting with a college financial aid counselor, a second chi-square was conducted.

Table XXI

*Relationship Between Students having Met with Financial Aid Counselors in College and Students Having Checked Student Loan Balances Prior to the Survey*

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 4.109a | 1 | .043 |
| N of Valid Cases | 273 | | |

0 cells (0.0%) have counts less than 5. The minimum expected count is 40.92.

The chi-square test showed a linear relationship between students having met with a financial aid counselor in college and the students having checked their student loan balance prior to the survey ($x^2 = 4.4109$, df = 1, p=.043). Students who had met with financial aid counselors in college were more likely to have checked their student loan balances prior to the survey.

In summary, statistical analyses found some relationships within the data set. Descriptive statistics showed that students in the Montana University System over- or under-estimated their student loan debt by an average of 23.5%. An analysis of the confidence students had in their perception of their loan balances found that 1 in 5 students had a debt deviation of 30% or more but still expressed confidence in their perceived student loan balances. A regression model found that students who had loans outside of the student federal aid program were more likely to have higher loan debt deviation and that upperclassmen were more likely to have lower loan debt deviations. Finally, a chi-square test found that students who had met with a financial aid counselor while in high school were likely to have a lower debt deviation.

Chapter V discusses the findings, draws conclusions, and makes recommendations for application of the findings and for further research.

# CHAPTER V: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Utilizing a quantitative method and exploratory design, this study sought to determine the base level of Montana financial literacy and student loan knowledge. The purpose of this study was to identify the level of understanding Montana students had about their lending obligations, particularly in regard to their student loans. In order to identify student understanding about their financial aid obligations, the following research questions were addressed:

1. What is the difference between perceived and actual student loan balances of student borrowers in the Montana University System?
2. What is the relationship between the deviation of students' perceived and actual student loan balances and the level of confidence students have in their knowledge of their student loan balances?
3. What relationships exist among the deviation of students' perceived and actual student loan balances, the level of confidence students have in their knowledge of their student loan balances, and other predictors?
4. What is the relationship between the deviation in students' perceived and actual student loan balances by institutional type? What is the relationship between the deviation in students' perceived and actual student loan balances by institution?
5. What is the relationship between student financial literacy and institutional type? What is the relationship between student financial literacy and institution?
6. What relationships exist between the students' loan balance deviations by percentage and student loan education methods?

Data were obtained through a survey instrument that was sent to undergraduate students in the Montana University System who were over 18 years of age, and who student loan balances. The population size (*N*) was 25,277 student borrowers in the university system. Ultimately, 278 (*n*) usable surveys were collected.

**Conclusions**

Students are increasingly dependent on the federal student aid program to pay for their post-secondary education. With the cost of tuition steadily increasing (Turner, 2012), the support from states steadily decreasing 2014 (Mitchell, Palacios, & Leachman, 2014; Steele, 2016), and the societal pressures to attend college increasing (Lynch, Engle, & Cruz, 2011), students fill the funding gap with federal student loans. As a result, institutions of higher education have an ethical and fiduciary obligation to ensure that student borrowers are knowledgeable about their financial aid obligations. This study determined that students in the Montana University System were over- or under-estimating their student loans by an average of 23.5%.

Data and analysis indicated that one out of every five students in this study reported that they were confident in the accuracy of their perceived student loan balance but showed a loan debt deviation of 30% or more. While students claim to know about their debt obligations, this study shows that they may not know that informaiton.

This study shows that early interventions are necessary to enhance the understanding students have of their borrowing obligations. First, students who met with financial aid counselors in high school had a lower debt deviation than did their peers who did not meet with financial aid counselors in high school. This interaction was determined to be crucial, as it proactively engaged the student at the beginning of their

student financial aid journey. Students who met with financial aid counselors were more likely have checked their student loan balances, which demonstrated an understanding of how to utilize the student financial aid resources to stay informed.

As the federal student aid program does not allow colleges to mandate financial literacy programming before students receive student aid, a partnership with high schools could provide a unique opportunity to ensure students gain a stronger financial education as it pertains to their student loans. In a student's senior year of high school, the student applies for and is awarded college financial aid. College financial aid counselors, in partnership with high school guidance counselors, can utilize the individual student's financial aid award to coach them in financial planning, projecting total principal costs, compound interest, and career prospects. These assignments could be part of high school classes, though not as a college mandate.

Upperclassmen were more likely to have an understanding of their financial aid obligations. This finding showed a clear need to bridge the information gap between underclassmen and financial literacy. Approaching students earlier in their college careers would help students to make more informed borrowing decisions. Exercises can be included in freshman orientation or first-year experience courses that support student financial literacy, particularly as it relates to student loan borrowing. While these assignments cannot prohibit students from obtaining their financial aid package, assignments could be related to classes. These real-world exercises, conducted while a student is engaged in making financial decisions can inform and empower the student to make choices that support the life goals of the student.

**Discussion of Results**

The first research question was to generate baseline information about Montana students' understanding of their borrowing obligations, utilizing the deviation between the students' perceived student loan balances and the students' actual student loan balances as the measurement. Because no previous research had been done to determine a baseline level of students' understanding of their loans, this metric informed the researcher about the level of understanding students of the Montana University System had about their student loans.

At first glance, the deviation between perceived and actual student loan balance appeared to be minimal. The mean perceived student loan balance was $15,781, and the mean actual student loan balance was $15,636 for a difference of $145. While the means of these two measurements were similar, hiding beneath the data was another story. Students overestimated their student loan balances by a mean of $4,520 and underestimated their student loan balance by a mean of $3,673. The aggregate data showed a percent deviation of 23.5%. While the layman may suggest it is better for a student to overestimate his or her student loan balance than underestimate it, both estimates show an inaccurate understanding of borrowing obligations. While respondents may have been pleased to have overestimated their student loan balance and then see lower actual student loan balances, these students may not have a concrete understanding of their basic financial obligations, such as compound interest or repayment expectations. Therefore, a mean deviation of 23.5% between perceived and actual student loan balances is of concern.

The second research question examined the relationship between the level of confidence students had in the accuracy of their perceived student loan balances and the inactual student loan balances. A chi-square test returned no significant results. Therefore, when students tell financial aid professionals that they understand their borrowing obligations, they may not actually understand anything more than that they have loans. Students may not know what they do not know. They may be interpreting their student financial aid obligations as they would interpret the financial obligations for other financial products. Because student financial aid is so different from a home or a car loan due to various government interventions like interest subsidies or debt accumulation over the life of the loan, students may have a level of confidence that is clouded with false information. Regardless of the reasons, students proclaimed a level of confidence, but do not show a strong level of financial aid understanding. Respondents in this study expressed level of understanding, but the inadequately reporting of their financial obligations was alarming.

The third research question studied which predictors contribute to the level of understanding students had of their student loans as measured by the deviation between perceived and actual student loan balances. The regression included the age of the student, the grade level in college, the number of jobs the student had worked, and GPA, all of which were determined to be significant in previous research (Manton et al., 2006; Lusardi et al., 2010; Chudry et al., 2011; Nonis et al., 2015). In this study, only the grade level of the student was a significant predictor of level of student loan deviation. As students progressed through college, they decreased their student debt deviation by 32% with each grade level increase. This, however, may be a confounding variable. Because

the deviation of perceived student loan balance to actual student loan balance is measured by percentage, the reporting of lower student loan balances must be more precise in real numbers as the ratio is less forgiving than that of higher student loan balances. Therefore, the regression output that showed that upperclassmen were able to more accurately report their student loan balance may be a representation of loan amount rather than reporting precision.

The second significant result determined by the regression was that student borrowers from lenders outside the student financial aid program were less likely to have an understanding of their borrowing obligations as measured by the deviation between perceived and actual student loan balances. Students who borrowed within the federal student aid program benefited from interest subsidies and low interest rates. Therefore, choosing to borrow within the federal program demonstrated a level of financial aptitude. The cost of borrowing from private lenders was likely to be higher because there were no subsidies available to borrowers and the interest rates on private student loans were much higher than on federal loans. Therefore, students who choose to borrow from the private sector may be less likely to understand their financial aid obligations.

The fourth research question examined the relationship between the deviation in students' perceived and actual student loan balances and the institutional type and institution. There was no statistically significant relationship identified between the institutional type and the level of student loan balance deviation. This result was surprising as students may make the decision to attend two-year institutions for economic reasons. Two-year institutions are typically less expensive than four-year colleges and are, therefore, a prime choice for frugal students. The lack of relationship suggests that

the selection of the type of institution may be based on factors outside of total cost. Additionally, because the deviation between perceived student loan balances and actual student loan balances were measured by percentage, the reporting of lower student loan balances may be more precise in real numbers because the ratio is less forgiving than for higher student loan balances. The researcher was unable to determine whether individual institutions had an impact on debt balance deviation. Because too few surveys were returned from several institutions, to draw any conclusions.

The fifth research question examined the relationship between students' levels of financial literacy and the type of institution the student attended (two-year, two-year imbedded, four-year and comprehensive university) and individual institution. Financial literacy was measured by the score students received on a three-question quiz about basic financial concepts. No statistical relationship was found between institutional type and financial literacy. The researcher was unable to determine whether individual institutions had an impact on financial literacy because too few usable surveys were returned from individual institutions.

The final research question examined the relationship of several financial education variables to the deviation between actual and perceived student loan balances. These variables included students having met with higher school financial aid counselors, students having met with college financial aid counselors, students having taken personal finance courses in high school, students having taken a personal finance course in college, a student remembering that they signed promissory notes, student having talked with to their parents or guardians regarding personal finance, and whether or not students were satisfied with their financial aid borrowing experience. Of these variables, only

having met with a high school financial aid counselor showed an impact on accurately reporting student loan balances. This finding may suggest that early interventions can improve understanding of financial aid obligations.

The rational choice theory assumes the individual will maximize personal utility based upon full knowledge of the situation and personal preferences. Rational choice theory applies to all choices in an individual's life although the premise of perfect rational choice is not likely to occur because full information is not usually available, especially full information pertinent to student borrowing (Coleman & Fararo, 1992). As shown in this research, students may not be making optimal choices about their financial aid decisions as they are unable to accurately report financial aid balances showing students do not have full information. Long-term, financial aid decisions may compound not only the interest of the student loans, but may be reflected in future financial choices including home and car loans, and other financial products.

In addition to the results of the research questions, the methodology and survey structure utilized in this study should be reconsidered. Of the more than 9,000 surveys distributed, only 6.6% were returned, and only 3% of the surveys were determined to be usable. A primary contributor to students not completing the survey or dropping out of the survey may have been the requirement to leave the survey site to check student loan balances on the NDLDS website. Further, when this study was originally designed, the researcher had discussed methodology with personnel at all institutions in the Montana University System. The personnel had agreed to provide data to the researcher, including the actual student loan balances, along with demographic indicators that are a part of students' institutional files, including GPA, number of credits taken, and residency status.

This information from the institutions would have decreased the number of questions a student had to answer on the survey, thereby decreasing the time the survey would take to answer. It would have also provided a more accurate dataset.

The survey may have yielded different results depending on the time of year the students answered the questions. Students can begin to fill out their FAFSA on October 1 for the next academic school year. Students receive award letters the following January. These dates are the window when students are looking at their financial aid accounts and when they might be most aware of their NDLDS login information and student loan balances.

**Recommendations for Application of Findings**

Institutions of higher education have a responsibility to ensure students have a strong understanding of their borrowing obligations as students are increasingly dependent on federal financial aid to obtain a post-secondary education. To enhance the level of understanding students have of their borrowing obligations, the follow recommendations are presented:

- Statistical analysis showed that student that met with a financial aid counselor in high school and the grade level of students both predictors of the level of understanding a student had of their financial obligations. Therefore, early interventions are necessary to ensure that students have the information they need to be successful borrowers early in the student financial aid process.
- Early interventions should be included in the senior year of high school when students have their financial aid award letters and know where they will be attending college. This

intervention is not restricted by financial aid regulations and will help them understand, with real numbers, the financial realities of student financial aid.

- Early interventions should include a financial literacy curriculum in the first- and second-year experience classes at all Montana University System institutions.
- Financial aid counselors should not believe students when students say they have a strong understanding of their financial aid obligations. Instead, counselors should ask students questions to determine their knowledge of financial aid obligations and base financial literacy.
- This study has shown that students are not fully informed about their financial aid obligations. As intuitions are dependent upon tuition dollars to operate and students are dependent upon financial aid to pay their tuition, this study can be utilized to better develop policy that illustrate the ethical obligations of the institution to the student lender.

**Recommendations for Further Research**

Only two research questions in this survey provided significant results. While the lack of explanation for how Montana students understand their financial aid obligations was frustrating, this study provided a strong basis for future research. Suggestions for future research include:

- This study should be conducted with better cooperation from financial aid representative of the Montana University System institutions, with the institutions providing such student data such as the students' current loan balances and demographic indicators to increase the reliability of the data, decrease the number of questions a student had to answer, and increase the number of students who choose to participate in the study.

- A better understanding of the specific interventions by institution and the way in which students are effected by those interventions may better enhance future financial aid policy proposals.
- Enhanced survey participation would allow future researchers to examine the relationship between individual institutions and the understanding students have of their financial obligations and their level of financial literacy. This information would allow conclusions and recommendations about the quality of financial aid education and programming at Montana University System institutions. In order to attain a better instrument for the population, a pilot study is recommended.
- To better understand the borrower, it would be informative to determine the relationship between the loan balance of the student and accuracy of student loan perception.
- To enhance the depth of understanding about students and their financial obligations, qualitative information should be gathered from Montana University System students.
- Students can now fill out their FAFSA on October 1 of the year prior to the fall semester. Future studies may be more successful if they are conducted during a similar time frame when students may be more conscious of their log-in information and current financial aid awards.
- Previous research determined gender, GPA, and work history to be predictors of financial literacy (Manton et al., 2006; Lusardi et al., 2010; Chudry et al., 2011; Nonis et al., 2015). As these variables were not significant in this study, further research is needed to determine their effect on Montana students' understanding of their borrowing obligations.

- This same study should be conducted in the future to determine whether Montana students have become more or less aware of their student loan balances and have become more or less financially literate.
- This study should be replicated in other states to determine the level of knowledge students in those states have of their financial aid obligations.
- The section of the survey that compared perceived to actual student loan balances should be replicated, and the results compared to the baseline level of understanding as determined by this study.
- If the success of a study depends on other people and agencies, the researcher must ensure that communication is properly flowing between the researcher and the research partners.

In summary, the health of the financial aid system is important to student borrowers so they can attend school, to the institution so they can recruit and retain students, and to the federal student loan program to ensure a sustainable federal student aid program. As federal loans are backed by the government and, therefore, the taxpayers. It is in the ethical and economic interest of the nation to ensure borrowers are well informed and confident in their financial and educational choices. Enhancing the financial aid understanding of students within the Montana University System and throughout the nation would ensure the financial viability of the federal student aid program, ensuring educational opportunity for generations to come.

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# APPENDICES

Appendix A: Student Survey

**Informed Consent**
Q1 **Student Loan Comprehension Study | Doctoral Research Survey**

You are invited to participate in a doctoral research study examining how students understand their student borrowing obligations. Please take the time you need to discuss the study with your family and friends. The decision to participate is entirely up to you.

**What is involved in the study:**

If you decide to participate, you will be asked to answer questions about your perceptions of your student loan obligations as well as demographic information. This will take you about 10 minutes to complete.

You may stop the study or take yourself out of the study at any time if you judge doing so is in your best interest. Additionally, the researcher may remove you from the study for various reasons and may do this without your consent. You may stop participating at any time without fear of any negative consequences.

**Risks of participation:**

You will be asked to answer questions regarding your finances. This may cause you to feel uncomfortable. There is a risk of breach of confidentiality. There may be other risks that cannot be predicted.

**Benefits of participation:**

It is reasonable to expect the results of this study may be used to create policies for students receiving financial aid in the Montana University System; however, we can't guarantee that you will personally experience benefits from participating in this study. Others may benefit in the future from the information found from this study.

**Confidentiality:**

The following steps will be taken to keep information about you confidential and to protect it from unauthorized disclosure, tampering, or damage: Once the data are collected from the student surveys, data will be exported from the system into a secure and password-protected Microsoft Excel document. Data will then be stored in a locked

office on the researcher's password-protected computer. The data will contain no identifying characteristics. A unique identifier number will be employed to pair all data points within a given response.

**Incentives:**

Two respondents from this survey project will receive a $50 Amazon gift card. You drawing entry will not be connected to the data collected in this survey.

**Your rights as a research participant:**

Participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time. Deciding not to participate or choosing to leave the study will not result in any penalty or loss of benefits to which you are entitled, and it will not harm your relationship with the researcher or the Montana University System. If you choose not to participate in this research project, please do not complete this survey.

**Contact information for research:**

Contact researcher Teresa Borrenpohl at 406-579-9206 or email borrtere@isu.edu if you have questions about the study, any problems with the study, unexpected physical or psychological discomforts from the study, any injuries, or think that something unusual or unexpected is happening as a result of the study. Dr. Jean Thomas of Idaho State University is directing this research. You may also contact the Human Subjects committee at Idaho State University by contacting the Office of Research at 208-282-2179 or humsubj@isu.edu.

- ❍ I AGREE to the terms listed in the consent form
- ❍ I DO NOT AGREE to the terms listed in the consent form

*If "I do not agree" is selected, the participant will be taken to the end of the survey*

Q2 I am 18 years old or older

- ❍ Yes
- ❍ No

*If "No" is selected, the participant will be taken to the end of the survey*

Q3 Do you currently or have you ever had a federal student loan (loans awarded from filling out a FAFSA)?

- Yes
- No
- I don't know

If No Is Selected, Then Skip To Did you discuss financial aid with a ...

Q4 What is your best estimate of your current student loan balance?

Q5 How confident are you that your estimated student loan balance reflects your actual student loan balance?

- 5 - Confident
- 4
- 3
- 2
- 1 - Not Confident

Q6 In addition to the federal loans received through your FAFSA application, have you borrowed additional funds to pay for college from a private lender such as a bank or credit union?

- Yes
- No
- I don't know

Q7 Did you sign a promissory note for your federal student loans before getting your financial aid award?(Promissory Note: A legal document in which you promise to repay your loan(s) and any accrued interest and fees to the U.S. Department of Education. It also explains the terms and conditions of your loan(s). Promissory notes for students loans may be signed electronically).

- Yes
- No
- I don't know

Q8 Did you complete any form of financial aid counseling, in person or online, before receiving your federal student loans?

- Yes
- No
- I don't know

Q9 How satisfied are you with the financial education your college has provided you about your student loans?

- 5 -Satisfied
- 4
- 3
- 2
- 1 - Dissatisfied

Q10 Once you leave college, how long do you think it will take for you to pay off your student loans?

- Less than one year
- One to five years
- Six to ten years
- More than ten years
- I don't know

Q11 Did you discuss your financial aid options with a counselor while in high school?

- Yes
- No
- I don't know

Q12 Have you met with a financial aid counselor while in college?

- Yes
- No
- I don't know

Q13 How confident are you in your understanding of the positive and negative consequences of taking out student loans?

- ❍ 5 - Confident
- ❍ 4
- ❍ 3
- ❍ 2
- ❍ 1 - Not confident

Q14 To what degree do you feel your college education will benefit your long-term goals?

- ❍ 5 - Greatly
- ❍ 4
- ❍ 3
- ❍ 2
- ❍ 1 - Not at all

Q15 How many scholarships did you apply for before or while in college?

- ❍ None
- ❍ 1-5
- ❍ 6-10
- ❍ More than 10

Q16 Are you using scholarships to pay for college?

- ❍ Yes
- ❍ No
- ❍ I don't know

Q17 Not including your financial aid and scholarships, who is helping you to pay for your tuition, fees and books (select all that apply)?

- ☐ No one. I am paying for it myself.
- ☐ My Parents/guardians.
- ☐ Family members other than my parents/guardians.
- ☐ Other _____

Q18 Did you take a personal finance class in high school?

- Yes
- No
- I don't know

Q19 Did you take a personal finance class in College?

- Yes
- No
- I don't know

Q20 Did you discuss personal finance with your parents or guardians?

- Yes
- No
- I don't know

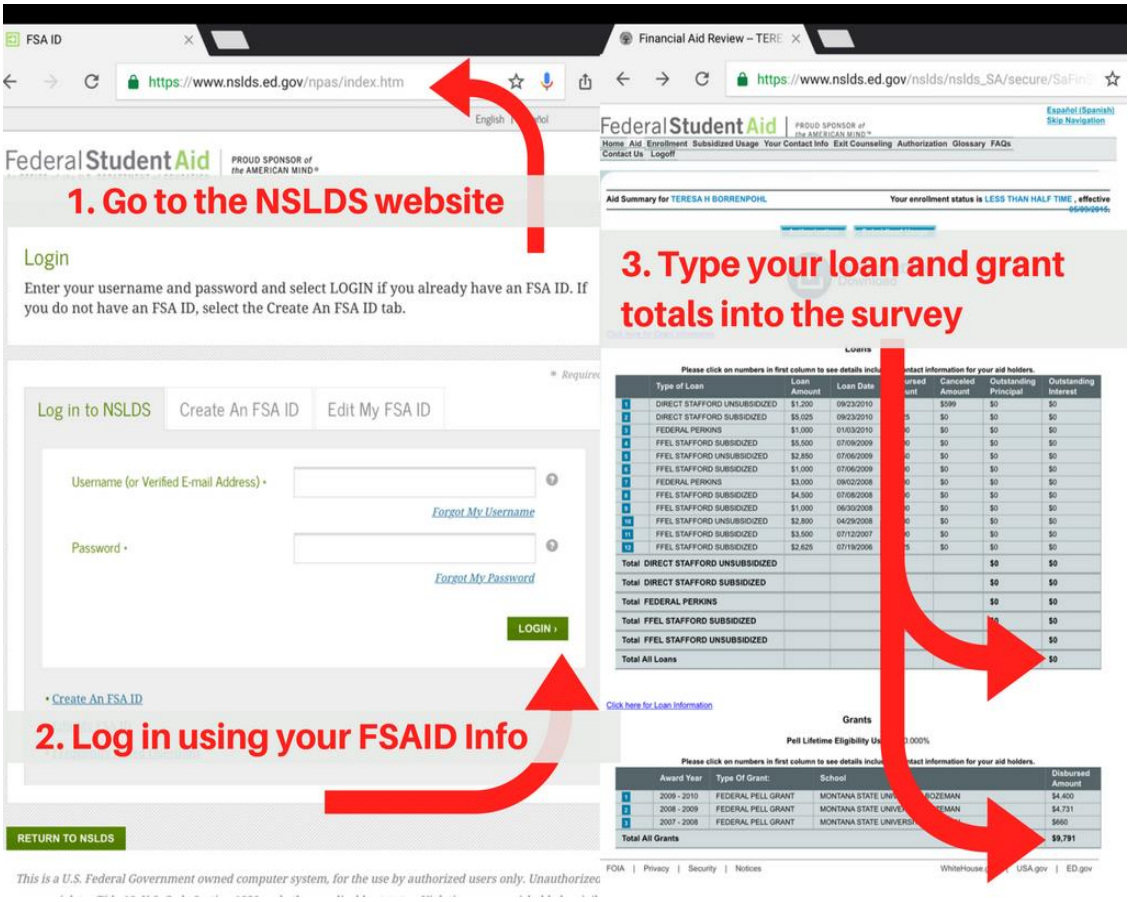
Q21 Growing up, did you perceive your family's financial situation to be

- 5 - Rich
- 4
- 3
- 2
- 1 - Poor

Q22 Growing up, what was your family's income level?

- Less than $20,000 per year
- $20,001 to $50,000 per year
- $50,001 to $100,00 per year
- More than $100,000 per year
- I don't know

Q23




Q24 Find out your actual student loan balance by taking the following steps:In a separate tab,1. Go to https://www.nslds.ed.gov/npas/index.htm2. Type in your FSAID log in information3. Type the "total of all loans" into the box below:

Q25 Type the "total of all grants" in the box below:

Q26 Before taking this survey, had you ever checked your student loan balance?

- Yes
- No

Q27 To date, what is your best estimate of the amount of scholarship dollars you have been awarded in your college career?

Q28 For the rest of my college education I plan to borrow:

- ❍ No additional money
- ❍ I plan to borrow about the same amount of money I borrowed this year
- ❍ I plan to borrow less than I borrowed this year
- ❍ I plan to borrow more than I borrowed this year
- ❍ I don’t know

Q29 If you borrow a $10,000 loan at an interest rate of 5% with a 5-year repayment plan, how much will it cost you to pay off the principal and interest of the loan?

- ❍ Less than $12,500
- ❍ $12,500
- ❍ More than $12,500
- ❍ I don't know

Q30 If you borrow a $10,000 loan at an interest rate of 5% with a 5-year repayment period, approximately how much will you month payment be?

- ❍ Less than $200 per month
- ❍ $200 per month
- ❍ More than $200 per month
- ❍ I don't know

Q31 A 15-year mortgage typically requires a higher monthly payment than a 30 year mortgage but the total interest over the life of the loan will be less.

- ❍ True
- ❍ False
- ❍ I don't know

Q32 Are you currently enrolled in college?

- ❍ Yes
- ❍ No

Q33 Which school do you attend?

- City College at MSU Billings
- Dawson Community College
- Flathead Valley Community College
- Gallatin College MSU
- Great Falls College of MSU
- Helena College of Montana
- Highlands College UM
- Miles Community College
- Missoula College
- Montana State University – Billings
- Montana State University – Bozeman
- Montana State University – Northern
- University of Montana – Missoula
- University of Montana – Tech
- University of Montana – Western

Q34 Year in college

- Freshman (0 to 30 credits)
- Sophomore (31 to 60 credits)
- Junior (61 to 90 credits)
- Senior (more than 90 credits)

Q35 How many years have you been in college?

- 0-2
- 3-4
- 5-6
- 7+

Q36 What is your age?

- 18-20
- 21-24
- 25-30
- 31-35
- Older than 35

Q37 Did you transfer to your current school from a different institution?

- ❍ Yes
- ❍ No

Q38 What is your major?

Q39 I am

- ❍ Male
- ❍ Female

Q40 What is the highest level of education your parent or guardian has?

- ❍ Less than eighth grade level
- ❍ Some high school, no diploma
- ❍ High school graduate or equivalent (GED)
- ❍ Some college credits, no degree
- ❍ College Degree
- ❍ Master's, professional or Doctoral degree

Q41 Did your Parents or immediate family members ever take out student loans?

- ❍ Yes
- ❍ No
- ❍ I don't know

Q42 I am (please select all that apply)

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Latino
- ☐ Other

Q43 I am an

- In-state student
- Out-of-state student

Q44 What is your GPA (Grade Point Average)?

- 4.0
- 3.5 to 3.99
- 3.0 to 3.49
- 2.5 to 2.99
- 2.0 to 2.49
- less than 2.0

Q45 Do you currently or have you ever lived on campus (in college housing such as dorms)?

- Yes
- No

Q46 How many hours per week do you work?

- I am not employed
- 1-5 hours
- 6-10 hours
- 11-15 hours
- 16-20 hours
- 20-25hours
- 26-30 hours
- 35-40
- More than 40

Q47 How many jobs do you work?

- None
- 1
- 2
- 3
- More than 4

Q48 How many siblings do you have that are currently in college?

- None
- 1
- 2
- 3
- 4
- More than 4

Q49 How many dependents are you responsible for?

- None
- 1
- 2
- 3
- 4
- More than 4

Appendix B: Glossary of Terms

**Academic Year**: The period of time institutions of higher education use to measure a period of study. Typically, students begin their academic year in the fall semester and continue through the spring semester. Students may also continue their education during the summer semester. An academic year typically includes the combination of the fall, spring, and summer semesters, in that order (United States Department of Education, 2014b).

**Capitalized Interest**: Unpaid interest that has been added to the principal balance of the federal student loan. Future interest is charged on the increased principal balance, which may increase monthly payment amounts and the total amount that must be repaid over the life of the student loan (United States Department of Education, 2014b).

**Consolidation of Loans**: The process of combining one or more loans into a single new loan (United States Department of Education, 2014b).

**Cost of Attendance**: The total cost to attend an institution of higher education for an academic year as determined by the institution, including tuition, fees, room and board, books, and other educational needs (United States Department of Education, 2014b).

**Debt-to-Income Ratio**: The amount an individual owes versus the amount of income an individual earns (United States Department of Education, 2014b).

**Deferment**: The process allowing a student to temporarily stop making payments on student loans although interest continues to accrue on loans that charge interest (United States Department of Education, 2014b).

**Delinquency**: Loan status if payments are not made within 15 days of being due (United States Department of Education, 2014b).

**Direct Loan**: Student loans through the William D. Ford Federal Direct Loan Program that enable students to pay for a higher education. Direct loans include Direct Subsidized Loans, Direct Unsubsidized Loans, Direct PLUS Loans, and Direct Consolidation Loans (United States Department of Education, 2014b).

**Fees**: Costs assessed to students in addition to tuition, including administrative fees, room and board, class and lab fees, and charges for facilities (United States Department of Education, 2014b).

**Financial Aid Office**: The office at an institution of higher education that is responsible for communicating information to students about loans and for facilitating the lending process. Within this office, students are able to apply for and receive financial aid, including loans, grants, scholarships, and work study funds and are able to seek financial aid counseling (United States Department of Education, 2014b).

**Forbearance**: The process allowing a student to temporarily stop making payments or to reduce payments on federal student loans. Interest will continue to accumulate for loans that stipulate interest rates within the terms of the loan (United States Department of Education, 2014b).

**Full-time Student**: A student who is enrolled in 12 or more undergraduate credits or nine graduate credits (United States Department of Education, 2014b).

**Grace Period**: Beginning on the day after the borrower graduates, leaves school, or drops below half-time enrollment, the grace period allows students to not have to

repay their student loans for six to nine months, based upon the terms stipulated in the loan (United States Department of Education, 2014b).

**Grant**: Financial aid, often based on financial need, which does not need to be repaid unless a student withdraws from school and receives a refund from the institution (United States Department of Education, 2014b).

**Gross Income**: Total income before deductions are assessed (United States Department of Education, 2014b).

**Half-Time Enrollment**: The minimum number of credit hours in which a student must be enrolled to be eligible for a federal student loan, typically defined as six credits per semester (United States Department of Education, 2014b).

**Interest**: The amount of money charged by a lender to a borrower for the use of assets, expressed as a percentage of the principal balance (United States Department of Education, 2014b).

**Interest Rate**: The percentage charged to the principal of a loan, as stipulated within the promissory note (United States Department of Education, 2014b).

**Loan Period**: The portion of the academic year for which a student loan is requested (United States Department of Education, 2014b).

**Low Income Student**: Students who have an expected family contribution of less than $5,198 (United States Department of Education, 2014b).

**Maximum Eligibility Period**: Amount of time expressed in years that is equal to 150% of the published length of the student's current academic program. For example, if a degree program is expected to take four years, a borrower is eligible for financial aid for up to 6 years (4 x 150% = 6) (United States Department of Education, 2014b).

**National Student Loan Data System (NSLDS)**: The central database for student aid. The NSLDS receives data from schools, guaranty agencies, and other Department of Education databases (United States Department of Education, 2014b).

**On-Time Payment**: A payment made within 15 days of the scheduled due date (United States Department of Education, 2014b).

**Principal**: The amount of money an individual borrows excluding loan interest (United States Department of Education, 2014b).

**Rehabilitated Loan**: A loan that has been in default but on which the borrower has since made nine "voluntary, reasonable, and affordable" monthly payments within 20 days of the due date during ten consecutive months (United States Department of Education, 2014b).

**Repayment**: To pay back assets one borrows by making scheduled payments to the lender (United States Department of Education, 2014b).

**Repayment Period**: The maximum amount of time one has to repay a loan. For federal student loans, the repayment period may range from ten years to 30 years depending on loan amount, type, and repayment plan (United States Department of Education, 2014b).

**Repayment Plan**: A plan established and agreed upon by a borrower and a lender that determines the amount the borrower pays toward the loan each month and the number of payments the borrower must make (United States Department of Education, 2015d).

**Standard Repayment Plan**: An arrangement where payments are a fixed amount greater than $50 per month and must be made for up to ten years, not including periods of deferment or forbearance (United States Department of Education, 2014b).

**Student Borrower**: The student who signs and agrees to the terms of the loan and is responsible for the repayment of the loan (United States Department of Education, 2014b).

**Subsidized Loan**: A federal student loan for which a borrower is not responsible for paying the interest while in school, during the grace period, or during a deferment period (United States Department of Education, 2014b).

**Tuition**: A charge assessed by institutions of higher education for teaching and instruction (United States Department of Education, 2014b).

Appendix C: SPSS Readout

**RESEARCH QUESTION 1**

```
GET
 FILE='C:\Users\tsborrenpohl\Desktop\Dissertation\Dissertation.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
DESCRIPTIVES VARIABLES=Actual_Balance Percieved_Balance Deviation_Absolute
Deviation_Negative Deviation_Positive Percent_Deviation
 /STATISTICS=MEAN STDDEV MIN MAX.
```

## Descriptives

[DataSet1] C:\Users\tsborrenpohl\Desktop\Dissertation\Dissertation.sav

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Actual_Balance | 275 | 500 | 55586 | 15765.43 | 11651.303 |
| Percieved_Balance | 274 | 500 | 60000 | 15674.93 | 11720.378 |
| Deviation_Absolute | 274 | 0 | 30000 | 3475.43 | 5174.735 |
| Deviation_Negative | 131 | -40704 | -26 | -4445.69 | 6002.713 |
| Deviation_Positive | 103 | 4 | 45200 | 4829.92 | 7910.046 |
| Percent_Deviation | 271 | .00 | 2.64 | .2351 | .35306 |
| Valid N (listwise) | 0 | | | | |

```
CROSSTABS
 /TABLES=Percent_Deviation BY Confidence
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.

CROSSTABS
 /TABLES=Percent_Deviation_Catagory BY Confidence
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

**RESEARCH QUESTION 2**

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |

| | | | | | | |
|---|---|---|---|---|---|---|
| Percent_Deviation_Catagory * Confidence | 269 | 96.4% | 10 | 3.6% | 279 | 100.0% |

**Percent_Deviation_Catagory * Confidence Crosstabulation**

Count

| | | Confidence | | | |
|---|---|---|---|---|---|
| | | Not Confident to Neutral | Somewhat Confident | Confident | Total |
| Percent_Deviation_Catagory | Off by 0% | 5 | 14 | 28 | 47 |
| | Off by 1 to 10% | 11 | 40 | 34 | 85 |
| | Off by 11 to 30% | 16 | 27 | 23 | 66 |
| | Off by 31 to 50 % | 9 | 13 | 11 | 33 |
| | Off by more than 50% | 4 | 16 | 18 | 38 |
| Total | | 45 | 110 | 114 | 269 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 14.441[a] | 8 | .071 |
| Likelihood Ratio | 14.009 | 8 | .082 |
| Linear-by-Linear Association | 1.910 | 1 | .167 |
| N of Valid Cases | 269 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.52.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .232 | | | .071 |
| | Cramer's V | .164 | | | .071 |
| Interval by Interval | Pearson's R | -.084 | .059 | -1.384 | .167[c] |
| Ordinal by Ordinal | Spearman Correlation | -.108 | .061 | -1.781 | .076[c] |
| N of Valid Cases | | 269 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
REGRESSION
 /MISSING LISTWISE
 /STATISTICS COEFF OUTS R ANOVA
 /CRITERIA=PIN(.05) POUT(.10)
```

/NOORIGIN
/DEPENDENT Percent_Deviation_Catagory
/METHOD=ENTER Who_Pays Gender Siblings_In_College Residency GPA Years_In_College Wealth_Perception Confidence Additional_Loans Jobs_Worked Transfer Age Grade Family_Income.

**RESEARCH QUESTION 3**

## Regression

**Variables Entered/Removed[a]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Family_Income, Transfer, Confidence, Residency, Gender, Siblings_In_College, GPA, Who_Pays, Jobs_Worked, Additional_Loans, Grade, Age, Wealth_Perception, Years_In_College[b] | . | Enter |

a. Dependent Variable: Percent_Deviation_Catagory

b. All requested variables entered.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .375[a] | .140 | .083 | 1.22603 |

a. Predictors: (Constant), Family_Income, Transfer, Confidence, Residency, Gender, Siblings_In_College, GPA, Who_Pays, Jobs_Worked, Additional_Loans, Grade, Age, Wealth_Perception, Years_In_College

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 51.828 | 14 | 3.702 | 2.463 | .003[b] |
| | Residual | 317.163 | 211 | 1.503 | | |
| | Total | 368.991 | 225 | | | |

a. Dependent Variable: Percent_Deviation_Catagory

b. Predictors: (Constant), Family_Income, Transfer, Confidence, Residency, Gender, Siblings_In_College, GPA, Who_Pays, Jobs_Worked, Additional_Loans, Grade, Age, Wealth_Perception, Years_In_College

**Coefficients[a]**

| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|

| | | B | Std. Error | Beta | | |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 2.279 | 1.058 | | 2.153 | .032 |
| | Who_Pays | -.013 | .112 | -.008 | -.113 | .910 |
| | Gender | .048 | .193 | .017 | .247 | .805 |
| | Siblings_In_College | .056 | .053 | .071 | 1.063 | .289 |
| | Residency | -.094 | .242 | -.027 | -.390 | .697 |
| | GPA | .075 | .085 | .060 | .889 | .375 |
| | Years_In_College | .134 | .150 | .088 | .893 | .373 |
| | Wealth_Perception | .052 | .122 | .037 | .427 | .670 |
| | Confidence | -.196 | .116 | -.111 | -1.686 | .093 |
| | Additional_Loans | .669 | .234 | .192 | 2.852 | .005 |
| | Jobs_Worked | .103 | .055 | .125 | 1.860 | .064 |
| | Transfer | -.206 | .188 | -.076 | -1.092 | .276 |
| | Age | .107 | .074 | .107 | 1.437 | .152 |
| | Grade | -.320 | .105 | -.290 | -3.034 | .003 |
| | Family_Income | .207 | .136 | .135 | 1.517 | .131 |

a. Dependent Variable: Percent_Deviation_Catagory

```
CROSSTABS
 /TABLES=Percent_Deviation_Catagory BY Institutional_Type
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

**RESEARCH QUESTION 4**

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Percent_Deviation_Catagory * Institutional_Type | 269 | 96.4% | 10 | 3.6% | 279 | 100.0% |

**Percent_Deviation_Catagory * Institutional_Type Crosstabulation**

Count

| | Institutional_Type | Total |
|---|---|---|

| | | Community College & Two Year | Embedded Two-Year | Four-Year College | Comprehensive University | |
|---|---|---|---|---|---|---|
| Percent_Deviation_Catagory | Off by 0% | 17 | 5 | 8 | 16 | 46 |
| | Off by 1 to 10% | 21 | 8 | 19 | 38 | 86 |
| | Off by 11 to 30% | 15 | 10 | 20 | 22 | 67 |
| | Off by 31 to 50 % | 9 | 2 | 11 | 11 | 33 |
| | Off by more than 50% | 10 | 3 | 14 | 10 | 37 |
| Total | | 72 | 28 | 72 | 97 | 269 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 12.027[a] | 12 | .443 |
| Likelihood Ratio | 11.839 | 12 | .459 |
| Linear-by-Linear Association | .016 | 1 | .899 |
| N of Valid Cases | 269 | | |

a. 3 cells (15.0%) have expected count less than 5. The minimum expected count is 3.43.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .211 | | | .443 |
| | Cramer's V | .122 | | | .443 |
| Interval by Interval | Pearson's R | .008 | .061 | .127 | .899[c] |
| Ordinal by Ordinal | Spearman Correlation | -.007 | .062 | -.121 | .904[c] |
| N of Valid Cases | | 269 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=Percent_Deviation_Catagory BY College
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.

CROSSTABS
 /TABLES=College BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
```

```
/STATISTICS=CHISQ PHI CORR
/CELLS=COUNT
/COUNT ROUND CELL.
```

# Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| College * Percent_Deviation_Catagory | 269 | 96.4% | 10 | 3.6% | 279 | 100.0% |

**College * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | Total |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | |
| College | City College at MSU Billings | 4 | 5 | 6 | 1 | 1 | 17 |
| | Flathead Valley Community College | 4 | 10 | 6 | 4 | 4 | 28 |
| | Gallatin College MSU | 0 | 0 | 0 | 1 | 1 | 2 |
| | Great Fall College of MSU | 0 | 1 | 0 | 0 | 0 | 1 |
| | Helena College of UM | 11 | 8 | 6 | 4 | 6 | 35 |
| | Highlands College UM | 1 | 0 | 1 | 0 | 0 | 2 |
| | Missoula College UM | 1 | 3 | 4 | 0 | 1 | 9 |
| | MSU Billings | 3 | 7 | 7 | 6 | 6 | 29 |
| | MSU Bozeman | 8 | 15 | 11 | 7 | 8 | 49 |
| | UM Missoula | 8 | 23 | 11 | 4 | 2 | 48 |
| | UM Tech | 3 | 10 | 8 | 3 | 5 | 29 |
| | UM Western | 2 | 2 | 5 | 2 | 3 | 14 |
| | Dawson Community College | 1 | 2 | 2 | 1 | 0 | 6 |
| Total | | 46 | 86 | 67 | 33 | 37 | 269 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 40.158[a] | 48 | .782 |
| Likelihood Ratio | 42.667 | 48 | .690 |
| Linear-by-Linear Association | .198 | 1 | .656 |
| N of Valid Cases | 269 | | |

a. 45 cells (69.2%) have expected count less than 5. The minimum expected count is .12.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .386 | | | .782 |
| | Cramer's V | .193 | | | .782 |
| Interval by Interval | Pearson's R | .027 | .059 | .444 | .657[c] |
| Ordinal by Ordinal | Spearman Correlation | .019 | .060 | .308 | .758[c] |
| N of Valid Cases | | 269 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=Quiz_Total BY Institutional_Type
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.

CROSSTABS
 /TABLES=Institutional_Type BY Quiz_Total
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

**RESEARCH QUESTION 4**

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Institutional_Type * Quiz_Total | 277 | 99.3% | 2 | 0.7% | 279 | 100.0% |

**Institutional_Type * Quiz_Total Crosstabulation**

Count

| | | Quiz_Total | | | | |
|---|---|---|---|---|---|---|
| | | Missed All Three Quiz Questions | One Quiz Question Correct | Two Quiz Questions Correct | All Three Quiz Questions Correct | Total |
| Institutional_Type | Community College & Two Year | 7 | 45 | 9 | 11 | 72 |
| | Embedded Two-Year | 3 | 14 | 6 | 5 | 28 |
| | Four-Year College | 13 | 49 | 5 | 6 | 73 |
| | Comprehensive University | 21 | 65 | 7 | 11 | 104 |
| Total | | 44 | 173 | 27 | 33 | 277 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 13.114[a] | 9 | .158 |
| Likelihood Ratio | 12.476 | 9 | .188 |
| Linear-by-Linear Association | 5.911 | 1 | .015 |
| N of Valid Cases | 277 | | |

a. 3 cells (18.8%) have expected count less than 5. The minimum expected count is 2.73.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .218 | | | .158 |
| | Cramer's V | .126 | | | .158 |
| Interval by Interval | Pearson's R | -.146 | .060 | -2.453 | .015[c] |
| Ordinal by Ordinal | Spearman Correlation | -.152 | .059 | -2.547 | .011[c] |
| N of Valid Cases | | 277 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=College BY Quiz_Total
```

```
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ PHI CORR
/CELLS=COUNT
/COUNT ROUND CELL.
```

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| College * Quiz_Total | 277 | 99.3% | 2 | 0.7% | 279 | 100.0% |

**College * Quiz_Total Crosstabulation**

Count

| | | Quiz_Total | | | | |
|---|---|---|---|---|---|---|
| | | Missed All Three Quiz Questions | One Quiz Question Correct | Two Quiz Questions Correct | All Three Quiz Questions Correct | Total |
| College | City College at MSU Billings | 3 | 8 | 3 | 3 | 17 |
| | Flathead Valley Community College | 2 | 20 | 2 | 4 | 28 |
| | Gallatin College MSU | 0 | 1 | 1 | 0 | 2 |
| | Great Fall College of MSU | 0 | 1 | 0 | 0 | 1 |
| | Helena College of UM | 5 | 20 | 4 | 6 | 35 |
| | Highlands College UM | 0 | 0 | 2 | 0 | 2 |
| | Missoula College UM | 0 | 5 | 2 | 2 | 9 |
| | MSU Billings | 3 | 23 | 2 | 1 | 29 |
| | MSU Bozeman | 9 | 33 | 5 | 5 | 52 |
| | UM Missoula | 12 | 32 | 2 | 6 | 52 |
| | UM Tech | 5 | 20 | 2 | 3 | 30 |
| | UM Western | 5 | 6 | 1 | 2 | 14 |
| | Dawson Community College | 0 | 4 | 1 | 1 | 6 |
| Total | | 44 | 173 | 27 | 33 | 277 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 46.264[a] | 36 | .117 |
| Likelihood Ratio | 38.391 | 36 | .362 |
| Linear-by-Linear Association | 3.579 | 1 | .059 |
| N of Valid Cases | 277 | | |

a. 36 cells (69.2%) have expected count less than 5. The minimum expected count is .10.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .409 | | | .117 |
| | Cramer's V | .236 | | | .117 |
| Interval by Interval | Pearson's R | -.114 | .062 | -1.901 | .058[c] |
| Ordinal by Ordinal | Spearman Correlation | -.129 | .061 | -2.157 | .032[c] |
| N of Valid Cases | | 277 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=High_School_Counselor BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| High_School_Counselor * Percent_Deviation_Catagory | 260 | 93.2% | 19 | 6.8% | 279 | 100.0% |

**High_School_Counselor * Percent_Deviation_Catagory Crosstabulation**

Count

| | Percent_Deviation_Catagory | Total |
|---|---|---|

| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | |
|---|---|---|---|---|---|---|---|
| High_School_Counselor | No | 34 | 71 | 55 | 26 | 23 | 209 |
| | Yes | 13 | 12 | 8 | 4 | 14 | 51 |
| Total | | 47 | 83 | 63 | 30 | 37 | 260 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 13.783[a] | 4 | .008 |
| Likelihood Ratio | 12.791 | 4 | .012 |
| Linear-by-Linear Association | 1.020 | 1 | .312 |
| N of Valid Cases | 260 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.88.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .230 | | | .008 |
| | Cramer's V | .230 | | | .008 |
| Interval by Interval | Pearson's R | .063 | .072 | 1.010 | .313[c] |
| Ordinal by Ordinal | Spearman Correlation | .032 | .071 | .518 | .605[c] |
| N of Valid Cases | | 260 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=College_Counselor BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

# Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| College_Counselor * Percent_Deviation_Catagory | 266 | 95.3% | 13 | 4.7% | 279 | 100.0% |

**College_Counselor * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| College_Counselor | No | 26 | 48 | 38 | 22 | 21 | 155 |
| | Yes | 21 | 36 | 27 | 11 | 16 | 111 |
| Total | | 47 | 84 | 65 | 33 | 37 | 266 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 1.205[a] | 4 | .877 |
| Likelihood Ratio | 1.227 | 4 | .874 |
| Linear-by-Linear Association | .272 | 1 | .602 |
| N of Valid Cases | 266 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.77.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .067 | | | .877 |
| | Cramer's V | .067 | | | .877 |
| Interval by Interval | Pearson's R | -.032 | .061 | -.521 | .603[c] |
| Ordinal by Ordinal | Spearman Correlation | -.036 | .061 | -.587 | .557[c] |
| N of Valid Cases | | 266 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=Promissory BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Promissory * Percent_Deviation_Catagory | 249 | 89.2% | 30 | 10.8% | 279 | 100.0% |

**Promissory * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| Promissory | No | 3 | 1 | 0 | 2 | 0 | 6 |
| | Yes | 43 | 77 | 60 | 28 | 35 | 243 |
| Total | | 46 | 78 | 60 | 30 | 35 | 249 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 8.387[a] | 4 | .078 |
| Likelihood Ratio | 8.986 | 4 | .061 |
| Linear-by-Linear Association | 1.128 | 1 | .288 |
| N of Valid Cases | 249 | | |

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .72.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .184 | | | .078 |
| | Cramer's V | .184 | | | .078 |
| Interval by Interval | Pearson's R | .067 | .067 | 1.062 | .289[c] |
| Ordinal by Ordinal | Spearman Correlation | .073 | .073 | 1.152 | .250[c] |
| N of Valid Cases | | 249 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=High_School_Personal_Finance BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

# Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| High_School_Personal_Finance * Percent_Deviation_Catagory | 264 | 94.6% | 15 | 5.4% | 279 | 100.0% |

**High_School_Personal_Finance * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| High_School_Personal_Finance | No | 33 | 62 | 53 | 22 | 26 | 196 |
| | Yes | 14 | 22 | 12 | 10 | 10 | 68 |
| Total | | 47 | 84 | 65 | 32 | 36 | 264 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 2.798[a] | 4 | .592 |
| Likelihood Ratio | 2.898 | 4 | .575 |
| Linear-by-Linear Association | .011 | 1 | .917 |
| N of Valid Cases | 264 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.24.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .103 | | | .592 |
| | Cramer's V | .103 | | | .592 |

| | | | | | |
|---|---|---|---|---|---|
| Interval by Interval | Pearson's R | -.006 | .064 | -.104 | .918[c] |
| Ordinal by Ordinal | Spearman Correlation | -.017 | .064 | -.279 | .781[c] |
| N of Valid Cases | | 264 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=College_Personal_Finance BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| College_Personal_Finance * Percent_Deviation_Catagory | 270 | 96.8% | 9 | 3.2% | 279 | 100.0% |

**College_Personal_Finance * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| College_Personal_Finance | No | 44 | 75 | 60 | 31 | 35 | 245 |
| | Yes | 3 | 11 | 6 | 2 | 3 | 25 |
| Total | | 47 | 86 | 66 | 33 | 38 | 270 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 2.228[a] | 4 | .694 |
| Likelihood Ratio | 2.211 | 4 | .697 |
| Linear-by-Linear Association | .158 | 1 | .691 |
| N of Valid Cases | 270 | | |

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 3.06.

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 17.057[a] | 16 | .382 |
| Likelihood Ratio | 19.565 | 16 | .240 |
| Linear-by-Linear Association | .001 | 1 | .971 |
| N of Valid Cases | 270 | | |

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is 1.22.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .091 | | | .694 |
| | Cramer's V | .091 | | | .694 |
| Interval by Interval | Pearson's R | -.024 | .056 | -.397 | .691[c] |
| Ordinal by Ordinal | Spearman Correlation | -.023 | .056 | -.372 | .710[c] |
| N of Valid Cases | | 270 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=Parents_Personal_Finance BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

# Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Parents_Personal_Finance * Percent_Deviation_Catagory | 267 | 95.7% | 12 | 4.3% | 279 | 100.0% |

**Parents_Personal_Finance * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| Parents_Personal_Finance | No | 14 | 26 | 24 | 12 | 13 | 89 |
| | Yes | 33 | 59 | 41 | 20 | 25 | 178 |
| Total | | 47 | 85 | 65 | 32 | 38 | 267 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 1.194[a] | 4 | .879 |
| Likelihood Ratio | 1.193 | 4 | .879 |
| Linear-by-Linear Association | .601 | 1 | .438 |
| N of Valid Cases | 267 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.67.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .067 | | | .879 |
| | Cramer's V | .067 | | | .879 |
| Interval by Interval | Pearson's R | -.048 | .061 | -.775 | .439[c] |
| Ordinal by Ordinal | Spearman Correlation | -.053 | .061 | -.869 | .385[c] |
| N of Valid Cases | | 267 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=Satisfaction BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

## Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |

| | | | | | | |
|---|---|---|---|---|---|---|
| Satisfaction * Percent_Deviation_Catagory | 270 | 96.8% | 9 | 3.2% | 279 | 100.0% |

**Satisfaction * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| Satisfaction | Not Confident | 0 | 5 | 2 | 2 | 1 | 10 |
| | Somewhat Not Confident | 5 | 10 | 4 | 2 | 3 | 24 |
| | Neutral | 6 | 23 | 17 | 9 | 11 | 66 |
| | Somewhat Confident | 15 | 26 | 22 | 7 | 6 | 76 |
| | Confident | 21 | 22 | 21 | 13 | 17 | 94 |
| Total | | 47 | 86 | 66 | 33 | 38 | 270 |

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .251 | | | .382 |
| | Cramer's V | .126 | | | .382 |
| Interval by Interval | Pearson's R | .002 | .061 | .036 | .971[c] |
| Ordinal by Ordinal | Spearman Correlation | -.001 | .063 | -.016 | .988[c] |
| N of Valid Cases | | 270 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

```
CROSSTABS
 /TABLES=Check_Balance_Before BY Percent_Deviation_Catagory
 /FORMAT=AVALUE TABLES
 /STATISTICS=CHISQ PHI CORR
 /CELLS=COUNT
 /COUNT ROUND CELL.
```

# Crosstabs

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Check_Balance_Before * Percent_Deviation_Catagory | 270 | 96.8% | 9 | 3.2% | 279 | 100.0% |

**Check_Balance_Before * Percent_Deviation_Catagory Crosstabulation**

Count

| | | Percent_Deviation_Catagory | | | | | |
|---|---|---|---|---|---|---|---|
| | | Off by 0% | Off by 1 to 10% | Off by 11 to 30% | Off by 31 to 50 % | Off by more than 50% | Total |
| Check_Balance_Before | No | 14 | 23 | 25 | 16 | 17 | 95 |
| | Yes | 33 | 63 | 42 | 17 | 20 | 175 |
| Total | | 47 | 86 | 67 | 33 | 37 | 270 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 7.859[a] | 4 | .097 |
| Likelihood Ratio | 7.818 | 4 | .098 |
| Linear-by-Linear Association | 6.116 | 1 | .013 |
| N of Valid Cases | 270 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.61.

**Symmetric Measures**

| | | Value | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|---|
| Nominal by Nominal | Phi | .171 | | | .097 |
| | Cramer's V | .171 | | | .097 |
| Interval by Interval | Pearson's R | -.151 | .061 | -2.497 | .013[c] |
| Ordinal by Ordinal | Spearman Correlation | -.151 | .061 | -2.505 | .013[c] |
| N of Valid Cases | | 270 | | | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.