Factors affecting student loan default: Nevada System of Higher Education

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FACTORS AFFECTING STUDENT LOAN DEFAULT RATES:
NEVADA SYSTEM OF HIGHER EDUCATION

by

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ABSTRACT

Factors Affecting Student Loan Default: Nevada System of Higher Education

by

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Nevada’s rate of default on college loans is among the highest in the nation. At the time of this study, there were no research studies on defaulters in the state of Nevada. The present study was designed for initial exploration regarding the relationship between various kinds of student factors and default rates from institutions at the Nevada System of Higher Education. The purpose of this exploratory study was to gain a better understanding of default in Nevada.

To gain a better understanding of student loan default in Nevada, the following questions were considered: (1) What is the relationship between age, ethnicity, gender, residency, graduation rate, and degree major and loan default rates? (2) To what extent does that relationship differ between Nevada System of Higher Education institutions? To answer these questions, secondary data was collected from the Division of Default Prevention and Management at the United States Department of Education and the Department of Institutional Research at
the Nevada System of Higher Education. Since this study aimed at learning about relationships between several independent variables and a dependent variable, a regression strategy was utilized. Among the findings and conclusions of this study were the following: (1). There was a significant and negative relationship between the factor of age and default rates in the Nevada System of Higher Education, (2). There was a significant and positive relationship between the factor of residency and default rates in the Nevada System of Higher Education. (3). There was no significant relationship between the graduation rates and default rates in the Nevada System of Higher Education. Implications of these findings and future researcher are discussed in the final chapter.
TABLE OF CONTENTS

ABSTRACT ......................................................................................................................... iii

LIST OF TABLES .............................................................................................................. viii

ACKNOWLEDGMENTS ...................................................................................................... ix

CHAPTER 1 INTRODUCTION ............................................................................................. 1
  Background of the Study ............................................................................................. 2
  Problem Statement .................................................................................................... 6
  Purpose of the Study ................................................................................................. 8
  Significance of the Study .......................................................................................... 9
  Analytical Approach of the Study ........................................................................... 10
  Overview of the Methodology .................................................................................. 11
  Research Questions .................................................................................................. 11
  Limitations ................................................................................................................ 12
  Delimitations ............................................................................................................. 13
  Assumptions .............................................................................................................. 13
  Definition of Key Terms ........................................................................................... 14
  Summary ..................................................................................................................... 23
  Organization of the Dissertation ............................................................................... 23

CHAPTER 2 REVIEW OF THE LITERATURE ....................................................................... 25
  History of Federal Student Loan Program ............................................................. 25
  The Default Dilemma ............................................................................................... 38
  Consequences of Default ......................................................................................... 40
  Competing Perspectives ........................................................................................... 44
  Conceptual Framework ............................................................................................. 45
  Theoretical Perspectives ........................................................................................... 46
  Default Factors ........................................................................................................ 47
  Summary of Loan Default Research ....................................................................... 57
  Critical Analysis ....................................................................................................... 57
  Summary of the Literature ......................................................................................... 59

CHAPTER 3 METHODS ....................................................................................................... 60
  Research Perspective ................................................................................................. 60
  Research Design ...................................................................................................... 61
  Research Questions .................................................................................................. 62
  Subjects, Participants, and Population ..................................................................... 63
LIST OF TABLES

Table 1  State of Nevada Cohort Default Rates .................................................. 39
Table 2  Operationalized Variables in the Study................................................... 72
Table 3  Association between Independent Variables and Default Rate at all NSHE Institutions: \( Y = f(X) \) ........................................................................ 82
Table 4  Association between Independent Variables and Default Rate at UNLV: \( Y = f(X) \) ........................................................................ 87
Table 5  Association between Independent Variables and Default Rate at UNR: \( Y = f(X) \) ........................................................................ 90
Table 6  Association between Independent Variables and Default Rate at CSN: \( Y = f(X) \) ........................................................................ 93
Table 7  Association between Independent Variables and Default Rate at TMCC: \( Y = f(X) \) ........................................................................ 95
Table 8  Association between Independent Variables and Default Rate at GBC: \( Y = f(X) \) ........................................................................ 97
Table 9  Association between Independent Variables and Default Rate at WNC: \( Y = f(X) \) ........................................................................ 99
Table 10 Association between Independent Variables and Default Rate among NSHE Institutions (Simple Linear Regression) .................. 105
Table 11 Association between Independent Variables and Default Rate among NSHE Institutions (Multiple Linear Regression) .......... 106
Table 12 Association between Independent Variables and Default Rate among NSHE Regions ................................................................. 107
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*Nochipa.*

*Mexica tiahui.*
CHAPTER 1

INTRODUCTION

Nevada's rate of default on college loans is among the highest in the nation. On September 16, 2008, the U.S. Secretary of Education, Margaret Spelling, announced the fiscal year 2006 national student loan cohort default rate remained historically low at 5.2% (Glickman & Babyak, 2008). While default rates for most states remained historically low, Nevada has traditionally struggled with high default rates. Despite federal intervention, the institutions in the Nevada System of Higher Education (NSHE) continued to experience student loan default rates which exceeded: the national average cohort default rate; the national average cohort default rate for community colleges; the national average cohort default rate for public four-year institutions and Nevada's average cohort default rate (Nevada System of Higher Education [NSHE], 2007). From the 1990s and through the 2000s, Nevada led the nation in the percentage of its students who failed to repay the federal government for money borrowed to cover the costs of higher education. Among other states, Nevada earned a position among the top ten states with the highest default rates.

In an effort to better understand student loan default in Nevada, this research focused on the relationship between NSHE loan default rates and
NSHE undergraduate student factors. The study examined cohort default rates at Nevada's six institutions of higher education. The primary method of data collection comprised secondary data from the Department of Institutional Research at the Nevada System of Higher Education and the Division of Default Prevention and Management at the United States Department of Education. The results assessed the extent to which undergraduate student factors influenced cohort default rates at each of the six institutions. If relationships are found between one or more student factors and default rates, development of system-wide default prevention plans for students who were most likely to default could provide valuable insight into the problem. The formulation and implementation of default prevention plans by Nevada institutions, based on the type of student most likely to default, may contribute to lowering cohort default rates in Nevada's six institutions of higher education.

Background of the Study

This study was set in the state of Nevada. A broad, web-based search on "student loan default and Nevada" provided limited results, suggesting that student loan default in Nevada was not a long-term problem; but instead represented a more recent trend. However, a closer look at student loan default and Nevada, research that made use of regional publications provided ample results that confirmed a problematic past. This problematic past with default both built a case for the problem statement and placed the problem in an appropriate context (Calabrese, 2006).
One of the first references alluding to the national default crisis appeared in the *Las Vegas Sun* in 1996 when unpaid student loans came under public scrutiny following defaults in the 1980s and early 1990s. Congress indicated that taxpayers were forced to pay billions of dollars in losses due to defaulted loans. From 1983 to 1989 loan defaults increased by 338%, four times greater than the increase in loan volume (Levy, 1996). The *Las Vegas Sun* detailed the impact of high default rates on higher education institutions in Nevada. A separate *Sun* article reported the negligence of Nevada students with regard to repayment of their loans. This negligence caused the default rate to climb to more than 30% a few years ago and it has remained in the high 20s in subsequent years (Bass, 1996).

A 1997 article in the *Las Vegas Review-Journal* reported that Nevada led the nation in the percentage of students failing to repay federal loans. A huge segment of students in Nevada were failing to repay government student loans borrowed to cover tuition costs for academic programs offered at public colleges (Patton, 1997). An excerpt in that same article served as a glance into the past regarding the status of student loan default in Nevada: “The rate of students refusing to pay back their loans in Nevada had a rate of 34% three years ago” (Patton, 1997, p.1). David Perlman, who led Nevada’s Commission on Postsecondary Education, expressed concern about Nevada’s high student loan default rate, stating: “The amount of money collected on defaulted loans doubled from about $1 billion in 1992 to $2.2 billion in fiscal 1996” (Patton). In 1999, a *Las Vegas Sun* newspaper reporter interviewed the University of Nevada, Las Vegas
Director of Student Financial Services, who indicated lower default rates allowed schools to participate in federal financial programs and suggested lower default rates provided increased flexibility in delivering money to students (Grimes, 1999).

In 2007, the *Las Vegas Review-Journal* reported that college students in Nevada had the highest rate of default on federal loans among the 50 states (Mower, 2007). Sharon Wurm, Director of Financial Aid for the Nevada System of Higher Education, indicated default to be a state-wide issue (Mower, 2007). A year later, in 2008, the *Las Vegas Sun* announced the latest numbers from the federal government regarding Nevadans who began repaying federal student loans in fiscal 2005-06 defaulting at higher rates than borrowers in 45 other states (Hsu, 2008).

Without research, federal administrators, state officials and financial aid administrators speculated endlessly about the default dilemma in Nevada. Despite a total lack of foundation in terms of research or analysis, a series of statements and assumptions about default in Nevada began to gain traction. A higher education administrator in Nevada, for example, presumed the reason that the default rate was so high because of the segment of the population his school served (Bass, 1996). He speculated that students took on higher loan burdens, which equated to higher loan payments upon graduation and thereby fostered a greater likelihood of default. He also assumed many students did not have a family able to support and assist them with their loan payment if they ran into trouble. Another administrator felt Nevada topped the default list due to its
transient population and because students found themselves in situations where they were unable to pay (Patton, 1997). A financial aid director proposed high default rates were the result of students receiving funding from several institutions and losing contact with one or more of them (Grimes, 1999). A loan coordinator supposed many students defaulted on their loans because they were single mothers or students who struggled with gambling or substance abuse (Mower, 2007). She also opined that defaulters did not tend to complete college (Mower, 2007). State officials viewed Nevada's transient population as the main contributor to the high default rates, but other problems persisted in increasing the default rate (Mower). Another financial aid director assumed low graduation rates probably contributed to high default rates (Hsu, 2008). While these speculations may have merit, they were not supported by research.

At the time of this study, there were no research studies on defaulters in the state of Nevada. Historically, despite the status of default as a major issue for the state of Nevada, higher education officials have little data on what types of students are most likely to default (Hsu, 2008). Why Nevadans have such a poor track record of repaying on time has been a bit of a mystery and as with most mysteries, the key to its solution can often be found through an understanding of the facts. “Perhaps the key to lowering the default rates in Nevada is by gaining a better understanding of who is most likely to default” (Hsu, 2008, p. 2). The lack of a basic understanding of who is most likely to default in Nevada makes corrective action problematic.
Problem Statement

Because there is no reliable information on why students default, this exploratory study aimed to break new ground by yielding new insights into default in Nevada. The most recent numbers from the federal government show Nevadans, who began repaying federal student loans in the most recent fiscal year defaulted at higher rates than borrowers in 45 other states (Hsu, 2008). Given that Nevada holds the dubious distinction of consistently occupying the top ten worst states nationally, the state eventually attracted unwanted attention from the federal government. In November 2004, John Pierson and Eileen Marcy of the U.S. Department of Education Default Prevention Division facilitated a system-wide meeting to address Nevada's default crisis (NSHE Default Rates, 2006). Representatives from the U.S. Department of Education have visited Nevada every year since 2004 to meet with institutions and discuss default prevention (NSHE Default Rates, 2007). Despite federal intervention, however, Nevada cohort default rates did not improve.

The national default rates for public two-year colleges in 2004, 2005, and 2006 were 8.1%, 7.9% and 8.4% respectively. NSHE default rates for two-year colleges in 2004, 2005, and 2006 were 12.2%, 11.1% and 9.4% respectively, exceeding the national average each of those years (2005 NSHE Default Rates, 2007). The 2004, 2005, and 2006 national default rates for public four-year colleges were 3.5%, 3.0%, and 3.4% respectively. The NSHE default rates for public four-year colleges were 3.5%, 3.1% and 3.8% which exceeded the national averages for 2004, 2005, and 2006 respectively. Since the U.S.
Department of Education issued the first national default rates for fiscal year 1987 in calendar year 1989, Nevada has consistently exceeded the national cohort default rate (U.S. Department of Education, 2008).

A researcher must first choose what type of study is to be conducted: confirmatory or exploratory (Straub, Gefen, & Boudreau, 2004). While confirmatory studies seek to confirm or test a pre-specified relationship, exploratory studies define possible relationships in only the most general form and then allow multivariate techniques to estimate a relationship(s). Straub et al. characterizes an exploratory researcher as one who is not looking to "confirm" any relationships specified prior to the analysis, but instead allows the method and the data to define the nature of the relationships.

For this quantitative study, regression analysis was conducted for each of the six Nevada System of Higher Education institutions. It is important to note that this study investigated institutional rates, not individual students. This study measured the degree of relationship between rates of institutional student factors and rates of institutional default. The institutional default rates and the rates of student factors were from NSHE institutions between 1995 and 2005.

"To use regression analysis, the variables must be interval- or ratio-scaled, which means they must naturally take the form of numbers (such as income or age). An exception to this is any variable that takes the form of a DICHOTOMY, such as gender, or a multicategory variable, such as education, that is collapsed to two categories such as ‘less than university’ and ‘some university or more’" (Johnson, 2001, p. 256).
Purpose of the Study

The present study was designed as an initial exploration regarding the relationship between various kinds of student factors and default rates from institutions at the Nevada System of Higher Education. The purpose of this exploratory study was to gain a better understanding of default in Nevada. Exploratory studies are most typically executed to satisfy the researcher’s desire for better understanding (Babbie, 2004). It has been hypothesized (Flint, 1997; Woo, 2002; Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002) that certain student factors are associated with default rates. Studies have shown that default behavior is caused by factors which are at least partially under the borrowers’ control (Steiner & Teszler, 2005; Woo, 2002; Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998). The current study investigated institutional rates representing student factors such as age, gender, ethnicity, residency, major and graduation; then compared those factors to NSHE default rates.

A quantitative exploratory research study is appropriate because this method examines an issue or problem where few or no earlier studies exist. Exploratory studies have also been appropriate for more persistent phenomena (Babbie, 2004). This work focuses on exploring both institutional default rates and rates of student factors, making a quantitative approach the best methodological choice. Neill (2003) explained that in quantitative research one ends up with numbers that are analyzed and interpreted in light of the research question and other research findings. To generate these numbers for quantitative research data, it is necessary to accurately convert some human phenomenon
into numerical data. The process of converting phenomena into data is called “measurement” (Neill, 2003). Gaining a better understanding of the default phenomena in Nevada may help understand student defaulter across Nevada’s institutions of higher education.

Significance of the Study

Student loan default is worthy of study (Flint, 1997). This study promises to add to the literature by analyzing default rates in a state known for having the highest rates in the country. There is a need to research student trends in higher education as it relates to students who default on their student loans (Harrast, 2004). In an attempt to lower default rates, it is important for individual institutions of higher education and the federal government to identify potential student loan defaulters (Volkwein & Szelest, 1995). Likewise, systems of higher education with high default rates, such as the Nevada System of Higher Education, must put forth an effort to identify, or at least attempt to identify, the propensity of students who are most likely to default. Results from this research may help both individual institutions and systems of higher education in providing intense debt management counseling for students who are at risk of potential default. A proactive stance to counsel students at risk of default may lower the institutions’ default rate (Seifert & Wordern, 2001). Finally, this study presents an alternative model for examining student loan default and understanding how student loan default rates might be improved.
Analytical Approach of the Study

The analytical approach for this work is that of Steiner (Pell Institute, 2007), who conducted studies on student loan default, debt burden, and forbearance. His work both as a senior research analyst and as a leading figure in the default research field has been instrumental in default prevention—activities designed to prevent default. A common theme of Steiner’s studies focused on the determination of characteristics related to default (Steiner, 2006). Another familiar concept to Steiner’s research was his approach; Steiner analyzed individual schools using campus data. His framework benefited campuses by making results institution-specific. The relevance of Steiner’s technique has provided consistent results, which were often generalized to other institutions of higher education. Setting Steiner’s work apart from other studies was his focus on individual institutions—one at a time. His design structure utilized more campus-based data and determined which borrower characteristics were most important in predicting default scenarios (Steiner, 2006).

Steiner’s method primarily incorporated multivariate analysis. His studies divided variables into two broad categories: Characteristics that were partially under the control of the borrower, college major and factors that the borrower could not control, such as ethnicity (Steiner, 2006). These factors were then cast as either raising or lowering the likelihood of default. Steiner’s work influenced both the conceptual and theoretical frameworks described in the next chapter. Lastly, Steiner’s findings provided data for institutional leaders concerned with student loan default.
Overview of the Methodology

The design of this study is exploratory and quantitative. The method of secondary data analysis from NSHE institutions was conducted. Secondary data analysis is a form of research whereby one researcher investigates data that has been already collected and processed by another researcher for a different purpose (Babbie, 2004). This study employs a regression analysis technique by conducting an analysis of numerical data consisting of values represented by a dependent variable and several independent variables. A separate, yet identical, regression analysis model was run for each of the six institutions thus creating six models or six cases for this study.

Research Questions

To achieve the objective of the study, answers to the following questions were sought:

1. What is the relationship between age, ethnicity, gender, residency, graduation rate, and degree major and loan default rates?

2. To what extent does that relationship differ among Nevada System of Higher Education institutions?
Limitations

This study is first and foremost limited to the quality and quantity of data gathered by each institution on an individual basis. This study is also limited to data collected from records of the 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004 and 2005 school years. This study is limited to public institutions of higher education within the Nevada System of Higher Education (NSHE). The Nevada System of Higher Education comprises two doctoral-granting universities, a state college, four comprehensive community colleges and one environmental research institute. This exploratory study only focuses on six institutions of higher education within NSHE: the University of Nevada Las Vegas (UNLV); the University of Nevada Reno (UNR); Community College of Southern Nevada (CSN); Truckee Meadows College (TMC); Great Basin College (GBC); and Western Nevada College (WNC). Nevada State College was excluded because this study analyzed institutional data from 1995 to 2005 and it did not open its doors until 2002. Desert Research Institute was excluded because it is not a degree granting institution.

The chief shortcoming of exploratory studies is that they seldom provide satisfactory answers to research questions, though they can hint at the answers and can suggest which research methods could provide definitive answers (Babbie, 2004). Findings derived from this research may not necessarily generalize to other systems of higher education in other states due to regional, demographical and student population variables, such as the limited number of institutions of higher education in Nevada. Moreover, results of this study may
not be applicable to proprietary schools or vocational schools due to differences in student populations and demographics.

Delimitations

This study is delimited in several ways. First, the decision to study default rates and student characteristics in Nevada limits the ability to generalize findings outside the state. Second, the study is delimited to data collection between the years 1995 and 2005, inclusive.

Assumptions

It is assumed that if default rates are to be lowered, attention needs to be directed toward identifying the propensity to default among students. As such, it is important to identify student characteristics that have been shown to act as predictors of student loan defaults. This study assumed a link exists between certain student factors and default rates. Prior studies evaluated the associations between borrower or institutional characteristics and default behavior (Hossler, Gross, Cekic & Hillman, 2008). Recent studies indicate that default behavior is caused by factors, which are at least partially under the student's control (Steiner & Teszler, 2005; Woo, 2002; Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998). Some factors included: degree completion, satisfactory academic progress, and the length of time student loan borrowers spend in college (Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002). The recent studies on student loan default have served as a foundation for including
variables such as grade point average, choice of college major, and average loan indebtedness (Christman, 2000; Steiner & Teszler, 2003; Baum & O'Malley, 2003). From the literature, it is proposed that certain student factors are important informants to default propensity.

**Definition of Key Terms**

The following are important terms, which for the purpose of this study, are defined as follows:

**Accrued Interest**: Interest that accumulates on the unpaid principal balance of a loan (U.S. Department of Education, 2008a).

**Borrower**: The person who received loan funds and is legally obligated to repay those proceeds with interest at a future date per the conditions established in a promissory note (U.S. Department of Education, 2008a).

**Classification of Instructional Programs (CIP)**: CIP codes were originally developed by the US Department of Education's National Center for Education Statistics (NCES). CIP is used in all NCES surveys and is the accepted government standard on programs for education information surveys. It is also used by state agencies and national associations (U.S. Department of Education, 2008a).

**Cohort Default Rate**: A measurement of the percentage of a school's borrowers who enter repayment in a federal fiscal year and default on their loans before the end of the next federal fiscal year (U.S. Department of Education, 2008a).

**Collection**: The activities and/or actions by lenders, guarantors, servicers, and
collection agencies to obtain payment on unpaid loan principal and interest from a borrower after that borrower defaults on the loan (U.S. Department of Education, 2008a).

**Collection Agency:** A business organization that receives delinquent or defaulted loan accounts from lenders and attempts to collect on those accounts. A fee is charged for the service (U.S. Department of Education, 2008a).

**Collection Charges:** Costs incurred by the lender or its agents in collecting overdue payments. These charges may include, but are not limited to, attorney's fees, court costs, and telegrams. They may not include routine costs associated with preparing letters or notices or making telephone calls to the borrower (U.S. Department of Education, 2008a).

**Debt-Management Counseling:** Counseling provided to a student about debt and accumulated indebtedness. Counseling is required both before the student receives the first disbursement of the first loan, often referred to as *entrance counseling*, and at the point when the student is scheduled to complete an academic program, commonly referred to as *exit counseling* (U.S. Department of Education, 2008a).

**Default:** Failure to repay a student loan according to the agreed-upon terms of a promissory note. The school, lender, as well as state and federal governments may take legal action against the borrower to recover defaulted loan funds (U.S. Department of Education, 2008a).

**Default Aversion:** The activities of a guaranty agency that are designed to prevent a default by a borrower who is at least 60 days delinquent and that are
directly related to providing collection assistance to the lender (U.S. Department of Education, 2008a).

**Default Reduction Assistance Program (DRAP):** A program established by ED wherein a school can ask the Department to send a borrower a letter warning the borrower of the seriousness of default (U.S. Department of Education, 2008a).

**Deferment:** A period during which a borrower that meets certain criteria may suspend loan payments. For some types of loans, the federal government pays the interest during a deferment. On others, the interest accrues and is capitalized and the borrower is responsible for paying it (U.S. Department of Education, 2008a).

**Delinquency:** Failure to make monthly loan payments when due. Delinquency begins with the first missed payment (U.S. Department of Education, 2008a).

**Department of Education:** The United States Department of Education is the regulatory body which manages federal student loan programs. The Department of Education’s official acronym is ED, for Education Department (U.S. Department of Education, 2008a).

**Direct Loan:** A federal program, also called the William D. Ford Federal Direct Loan Program, through which the U.S. Government rather than a commercial lender provides four types of education loans to student and parent borrowers: Subsidized and Unsubsidized Stafford Loans for students; PLUS Loans for parents and Consolidation Loans for all borrowers (U.S. Department of Education, 2008a).

**Dependent Student:** A student who must provide parental information on the
FAFSA. A dependent student is an undergraduate who is not married, is under 24 years of age, has no legal dependents, is not an orphan or ward of the court, nor a veteran of the U.S. Armed Forces (U.S. Department of Education, 2008a).

**Entrance Counseling:** First-year, first-time students borrowing federal educational loans are required to receive counseling before they receive their first loan disbursement, during which the borrower's rights and responsibilities and loan terms and conditions are reviewed (U.S. Department of Education, 2008a).

**Exit Counseling:** Institutions participating in the Federal Perkins Loan, FFEL, and Direct Loan Programs (excluding FFEL PLUS Loans and Direct PLUS Loans) must offer loan counseling called *exit counseling* to borrowers. For Federal Perkins Loan borrowers, the interview must take place before the borrower leaves school. In the case of FFEL and Direct Loan student borrowers, the interview must take place shortly before the borrower ceases to be enrolled at least half time (U.S. Department of Education, 2008a).

**Federal Family Education Loan Program (FFELP):** The Federal Stafford, Federal PLUS, Federal SLS, and Federal Consolidation Loan programs. These programs offer loans that are funded by private lenders, guaranteed by guarantors, and reinsured by the federal government (U.S. Department of Education, 2008a).

**Federal Loan:** Loans guaranteed by the U.S. Government (U.S. Department of Education, 2008a).

**Federal Perkins Loan Program:** A Campus-Based loan program provides low-interest student loans to undergraduate and graduate students with financial need (U.S. Department of Education, 2008a).

Financial Need: The difference between the cost of attendance at a college and the expected family contribution (U.S. Department of Education, 2008a).

Federal Need Analysis Methodology: A standardized method for determining a student's (and family's) ability to pay for postsecondary education expenses; also referred to as Federal Methodology (FM). The single formula for determining an Expected Family Contribution (EFC) for Pell Grants, campus-based programs, FFEL programs, and Direct Loan program; the formula is defined by law (U.S. Department of Education, 2008a).

Forbearance: A temporary delay or reduction of loan payments agreed to by the lender and borrower. Interest continues to accrue during forbearance (U.S. Department of Education, 2008a).

Free Application for Federal Student Aid (FAFSA): A student financial aid application form completed by students and parents to apply for federal student aid. The information provided is the source for all FSA need analysis computations, including the student's Expected Family Contribution (EFC) (U.S. Department of Education, 2008a).

Grace Period: Specified period of time between the date a student graduates or drops below half-time status and the date loan repayment begins (U.S. Department of Education, 2008a).

Higher Education Act (HEA): Federal legislation passed in 1965, and its subsequent amendments and reauthorizations (most recently in 1998),
authorizing the majority of Federal postsecondary student financial aid programs and mandating that the programs be regulated and administered by the Secretary of Education (U.S. Department of Education, 2008a).

**Interest:** A fee charged to the borrower for use of a lender's money (U.S. Department of Education, 2008a).

**Independent student:** An applicant for FSA program assistance who meets certain criteria. To be classified as an independent student for FSA purposes, a student must meet at least one of the following criteria: (a) be at least 24 years old by December 31 of the award year for which aid is sought; (b) be an orphan or be (or have been until the age of 18) a ward of the court; (c) be a veteran of the Armed Forces of the United States; (d) have legal dependents other than a spouse; (e) be a graduate or professional student or (f) be married (U.S. Department of Education, 2008a).

**Lender:** A financial institution that provides funds to a borrower (U.S. Department of Education, 2008a).

**Loan:** An advance of funds guaranteed by a signed promissory note in which the recipient of the funds promises to repay a specified amount under prescribed conditions. A financial source that is available to students and their parents through student loan programs with varying interest rates and repayment provisions to supplement the family's financial resources, scholarships and grants (U.S. Department of Education, 2008a).

**Loan Balance:** The total unpaid amount of a specific loan. This sum includes outstanding principal, capitalized interest, accrued interest, late charges, and any
miscellaneous fees such as returned check fees (U.S. Department of Education, 2008a).


Need: The difference between the Cost of Education (COE) and the Expected Family Contribution (EFC) is the student's financial need. It is the gap between the cost of attending the school and the student's resources (U.S. Department of Education, 2008a).

Need-Based: A means of determining eligibility for certain types of financial aid using financial need as the determining factor (U.S. Department of Education, 2008a).

Nevada System of Higher Education: The Nevada System of Higher Education, comprised of two doctoral-granting universities, a state college, four comprehensive community colleges and one environmental research institute, serves the educational and job training needs of the nation's fastest growing state. The NSHE provides educational opportunities to more than 108,000 students and is governed by the Nevada Board of Regents (Kulman, 2008).

Non-Subsidized Loan: A loan that is not eligible for federal interest benefits. The borrower is responsible for paying the interest on the outstanding principal balance of a non-subsidized loan throughout the life of the loan. During the in-school grace and deferment periods these interest payments are normally made
on a monthly or quarterly basis, or are capitalized (U.S. Department of 
Education, 2008a).

**Non-traditional Student:** A student who is married, divorced, separated, a single 
parent, over 24 years old or is attending part time (Woo, 2002).

**Parent Loans for Undergraduate Students (PLUS):** PLUS loans enable parents to 
borrow federal funds to pay the education expenses of each child who is a 

**Percentage:** A proportion or share in relation to a whole (Webster’s New 
Riverside University Dictionary, 1994).

**Promissory note:** The promissory note is the legally binding document that is 
evidence of a borrower’s indebtedness to the school (for Perkins Loans), the 
lender (for FFEL program loans) and the federal government (for Direct Loans) 

**Proportion:** A part considered in relation to the whole (Webster’s New 
Riverside University Dictionary, 1994).

**Rate:** A measure of a part with respect to a whole: PROPORTION (Webster’s 
New Riverside University Dictionary, 1994).

**Ratio:** Relation in number or degree between two similar things (Webster’s New 
Riverside University Dictionary, 1994).

**Reauthorization:** The process of continuing and changing current legislation 
because the existing law has expired and has to be reenacted. It is conducted 
every five to seven years in the case of the Higher Education Act (HEA). The 
most recent HEA reauthorization was in 1998 (U.S. Department of Education,
Repayment: The time during which a borrower actively pays back an education loan (U.S. Department of Education, 2008a).

Repayment Period: The period during which interest accrues on a borrower's loan and principal payments are required. The repayment period excludes any period of authorized deferment or forbearance (U.S. Department of Education, 2008a).

Subsidized Loan: A FFEL or Direct Loan that is eligible for interest benefits paid by the federal government. The federal government pays the interest that accrues on subsidized loans during an in-school, grace, authorized deferment, and (if applicable) post-deferment grace periods if the borrower meets certain eligibility requirements (U.S. Department of Education, 2008a).

Traditional Student: An undergraduate student who is usually between the ages of 17 and 23, pursuing a bachelor's degree and attending on a full-time basis (Woo, 2002).

Undergraduate Student: A degree-seeking student at a college or university who has not earned a first bachelor's degree (U.S. Department of Education, 2008a).

Unsubsidized Loan: A loan given to a student not eligible for (or who has exhausted his/her eligibility for a subsidized loan) that will begin accruing interest charges from the disbursement date forward. Interest is charged on these loans from the date of disbursement. While the student is in school, in the grace period or in deferment, students may elect to pay the interest or have it capitalized and added to the principle (U.S. Department of Education, 2008a).
Summary

Using a quantitative method, this study explores existing relationships between various kinds of student factors and default rates. The general purpose of this study is to better understand the default dilemma in Nevada. Financial aid, state and federal administrators have all expressed anxiety over high default rates. The overall goal is to determine how student factors affect default by inquiring, “What is the relationship between student factors and loan default rates? And to what extent does that relationship differ among Nevada System of Higher Education institutions?” Utilizing a quantitative exploratory approach, this study examined a regional phenomenon that had not previously been subjected to appropriate research. The results from this inquiry proposed to add scholarship and insight to a topic needing attention and lacking scientific support.

Organization of the Dissertation

This dissertation is divided into five chapters. Chapter One introduces the background to the study, the problem statement, the purpose of the study, the significance of the study, limitations, delimitations, assumptions, and definition of key terms. A brief overview of the methodology of the study is also provided. Additionally, the research question providing the foundation to this study is discussed. Chapter Two contains a review of the literature and research related to the broad topics of student loan default. These topics are pre-college, in-college, and post-college characteristics of student loan defaulters. Methodology for this study is presented in Chapter Three and includes the research design,
population, data collection procedures, and data analysis procedures. Results obtained from this method are available in Chapter Four. The final chapter (Chapter Five) contains a discussion of the study and suggestions regarding future research possibilities.
CHAPTER 2

REVIEW OF THE LITERATURE

This chapter begins with a lengthy history of the federal student loan program and is followed by a brief, universal comment on the default dilemma. An important discussion regarding the consequences of default for both students and institutions of higher education is provided. Several competing perspectives drawn from the breadth of default research is included. Next, conceptual and theoretical frameworks are provided. A synthesis of the research and a critical analysis is briefly summarized. The chapter concludes with a conclusion of the literature review.

History of Federal Student Loan Program

Federal student aid programs have expanded remarkably in scope and volume in the past fifty years: “The first major investments in generally available federal student aid came in the form, not of grants, but of student loans under the National Defense Education Act of 1958” (Hearn & Holdsworth, 2004, p. 41). Under President Eisenhower’s direction, Congress provided institutions of higher education funding for low-interest loans, presently known as the Perkins Loan Program—specifically targeted at low-income students (Parsons, 2004). The
Federal Perkins Loan Program is a campus-based loan program where federal funds are given directly to institutions. Loan funds, meanwhile, are administered to students, by institutions, in compliance with regulations established and monitored by the U.S. Department of Education (U.S. Department of Education, 2005c). The National Defense Education Act of 1958 set the foundation for the Guaranteed Student Loan Program created by the Higher Education Act of 1965.

The Higher Education Act of 1965 was authorized by President Johnson "to strengthen the educational resources of our colleges and universities and to provide financial assistance for students in postsecondary and higher education" (PL 89-329, p.1). The passage of this law increased federal funding to post-secondary educational institutions and generated campus-based programs to support student academic achievement. The intent of the Higher Education Act was to increase access and opportunity for ethnic minorities and women to colleges and universities (Gánadara, 1995). Two need-based programs were the College Work-Study Program and the Educational Opportunity Grant Program, a precursor to the Pell Grant (Hearn, 2001). Need based programs are awarded to students who have financial need as determined by the U.S. Department of Education.

Facilitating access was developed through the Educational Opportunity Grant Program, which provided financial assistance to students without obligation to repay the awards. By circumventing repayment of financial support, students were able to focus on their academic goals. In addition to grants, the Higher Education Act of 1965 created a new low-interest federal student loan program.
for students needing additional financial assistance for their educational expenses.

Prior to 1965, only one federal loan program was available—the Federal Perkins Loan—formerly the National Defense Student Loan Program (Hearn, 2001). In 1965 the Guaranteed Student Loan Program (GSLP) was enacted to help students finance their educations by providing additional funds to compensate for mounting educational expenses. The GSLP provided federal subsidies to financial institutions and other private lenders who then provided low-interest loans to students. According to Gánadara (1995), federal student loans were created due to the reluctance of financial institutions to provide large sums of money to traditionally young students because of their tendency to lack a credit history, earn low incomes, and lack significant collateral should they fail to repay or default on the loan.

Were it not for the reluctance of private lenders to fund students, perhaps the Guaranteed Student Loan Program of 1965 would have never become the predecessor for the present-day federal student loan program. The federal student loan program, included in the Higher Education Act of 1965, has been subject to periodic reauthorization. Reauthorization is the process by which Congress prescribes changes, additions, and deletions to the Higher Education Act (Kaplin & Lee, 2000). During the reauthorization process, legislation is developed, and current programs are adjusted to meet the changing needs in education (Parsons, 2004). The Higher Education Act of 1965 was reauthorized in 1968, 1972, 1976, 1980, 1986, 1992, 1998, and 2008.
According to Parsons, before each reauthorization Congress amended additional programs, changed the language and policies of existing programs or made other changes (2004). Despite being reauthorized eight times over the past 43 years, the development of the modern day federal loan program has remained true to the Higher Education Act’s original purpose: To strengthen resources to institutions of higher education and to provide financial support to students who attend those institutions. Johnson’s Higher Education Act of 1965 not only created a legislative program but laid the foundation for the development of a higher education policy arena (Parsons, 2004).

The first major development of higher education policy came in the U.S. Senate with Edward Kennedy and Claiborne Pell. Pell, a Democrat, guided the 1972 reauthorization that created the framework for the first major student aid programs. Pell was so highly regarded by his colleagues that they gave his name to the largest student grant program—the Pell Grant (Parsons, 2004). Federal student grant programs have not changed significantly since the creation of the Pell Grant (Hearn & Holdsworth, 2004). After 1972, however, one finds a proliferation of well-funded entitlements—an alphabet soup of the BEOG, SEOG, and SSIG—that comprised the Basic Educational Opportunity Grant (now the Pell Grant), the Supplemental Opportunity Grant, and the State Student Incentive Grant (Thelin, 2004). According to Thelin (2004), these programs served to expand affordable access to higher education in the same way these grants do today. Unlike federal student grants—which have not changed greatly—the present-day federal student loan programs have evolved.
Perhaps one of the first major developments in higher education policy to impact the Guaranteed Student Loan Program of 1965 came with amendments to the Higher Education Act of 1978. Unquestionably, the growing loan emphasis and the parallel increased focus on meeting the needs of the middle class and on shifting responsibility from parents to students represent the most fundamental changes in the federal programs since the mid-1970s (Hearn & Holdsworth, 2004). Prior to 1965, there were three types of students who had access to higher education: wealthy students; students who received scholarships; and students who attended school under the G.I. Bill. In 1965, Congress responded to students from lower socioeconomic backgrounds by providing guaranteed, low-interest loans to students for post-secondary educational costs. After 1965, further development in higher education aid policy was established to meet the needs of the middle class baby boomers. The Middle Income Student Assistance Act (MISAA) brought access to college loans to the middle class by removing the income limit for participation in federal aid loan programs. With the passage of the Middle-Income Student Assistance Act of 1978, federal policymakers adopted, emphasized and provided more resources to middle-and higher-income students and their families (Burman, Maag, Orszag, Rohaly, & O'Hare, 2005). With the enactment of MISAA, the government loosened the definition of need and removed the income ceiling, thereby granting Guaranteed Student Loan Program eligibility to almost anyone. This policy made it possible for all students from all walks of life to finance their education.

One of the core tenets of aid programs in the early 1980s was the notion
that parents had the responsibility for a major portion of the costs of their child’s postsecondary education (Hearn & Holdsworth, 2004). Because of this fundamental principle, new higher education policy was developed to assist the families who were unable to pay. Because parents had a greater responsibility toward their children, more so than the government, legislation was passed to offer them financial relief. When the Higher Education Act of 1965 was reauthorized again in 1980, the federal government offered support to parents of students with a new federal student loan program—for parents. The Parent Loan for Undergraduates Students or PLUS gave parents of dependent undergraduate students the ability to borrow low-interest federal loans to pay for their children’s education for the first time in history.

In the late 1980’s, the Guaranteed Student Loan Program was again subject to change, although these changes were mostly cosmetic. In 1988, Vermont Republican Senator Stafford was so respected by his colleagues that they named the largest federal student loan program after him—the Stafford Loan Program (Parsons, 2004). While the late 1980s brought minor changes to the federal student loan program, the early 1990s would bring historical changes to the newly named Stafford Loan Program.

While changes to the federal student loan program were on the horizon, federal student loan defaults were increasing. National cohort default rates for 1990, 1991, 1992, and 1993 were at all-time highs with national rates of 17.2%, 21.4%, 22.4% and 17.8% respectively. Congress responded with several legislative measures intended to curb the number of defaults (Jackson, 2004). As
the number and size of guaranteed loans had increased, the cost of loan defaults multiplied as well (Podgursky, Ehlert, Monroe, Watson & Wittstruck, 2002).

Whereas federal loan volume grew by 58% during the 1980s, the dollar value of default claims grew by 1200%, accounting for over a fifth of total program costs (Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998). To make matters worse, in the fiscal year 1988, the national student loan cohort default rate was 17.2%, and increased to an all time high of 22.4% in fiscal year 1990 (Jackson, 2004).

In the early 1990s the problem was viewed as reaching crisis proportions, for at that time defaults were the fastest growing line item in the budget of the Department of Education (Flint, 1997).

Because the federal government was assuming a large share of the burden associated with defaulted loans, Congress responded by passing a series of measures with the intention of decreasing the number of defaults, deterring students from defaulting and holding institutions accountable (Jackson, 2004). One such measure, enacted in 1989, was a mandate from the U.S. Department of Education for student loan borrowers to undergo financial counseling from schools before borrowing. Congress also enacted two similar measures, the Student Loan Reconciliation Amendments of 1989 and the Student Loan Default Prevention Initiative Act of 1990.

The Omnibus Budget Reconciliation Act of 1989, P.L. 101-239, December 19, 1989, Title II, subtitle A of this law, the Student Loan Reconciliation Amendments of 1989, included many amendments related to controlling default (Fraas, 1991). The amendments included requirements compelling lenders to
extend loan forbearance to students with medical or dental internships or residencies; prohibiting access to loans at institutions where cohort default rates were 30% or more for the most recent fiscal year; requiring students who borrow to have earned a high school diploma or a certificate of high school equivalency; requiring a 30-day delay of loan disbursement for students within their first year of study and authorizing the Secretary of Education to suspend program participation by lenders and institutions for up to 30 days.

The Omnibus Budget Reconciliation Act of 1990, P.L. 101-508, November 5, 1990, Title III, subtitle A of this law, The Student Loan Default Prevention Initiative Act of 1990, included many provisions aimed at controlling default (Fraas, 1991). Institutions, for example, were prohibited from carrying cohort default rates of 35% or more in the three recent fiscal years from student loan program participation. The Act gave institutions the ability to refuse to certify a loan if the institution determined a student's cost of attendance may be paid with other sources of aid and required students who did not complete high school to pass examinations approved by the Secretary of Education for student aid eligibility. It also required a 30-day delay in the disbursement of loans for students within their first year of study.

The act aimed at reducing the number of defaulted loans by rendering institutions with high default rates ineligible to participate in certain student loan programs (Kaplin & Lee, 2006). Finally, in 1990, President George H. W. Bush signed an act touted as "the centerpiece of the largest deficit reduction package in history..." (Wooley & Peters, n.d., p.1). The Omnibus Reconciliation Act of
1990 sanctioned those colleges and universities subject to high federal student loan default rates by revoking that school’s eligibility to accept federal student loans. With new legislation in place, the federal government shared the defaulted loan burden with students and institutions alike.

With student loan default prevention measures set in place; the federal student loan program was developed and modified from higher education policies of the past—access, choice, and affordability. It is necessary to lend students money to achieve the financial aid goals of providing students access to, and choices among, post-secondary educational opportunities (Greene, 1989). In the 1990s, federal legislation promoted loans in response to college affordability (Hearn & Holdsworth, 2004). An increase in student borrowing was fueled, in large part, by legislative changes enacted early in the 1990’s. These legislative changes led to an overhaul of the federal student loan program.

The Reauthorization of Higher Education Act of 1992 was a defining moment in the history of federal financial aid because it established the direction in which the federal government would support postsecondary education in subsequent years (Wei, Li, & Berkner, 2004). Prior to 1992, the Stafford Loan Program offered educational loans to students based on demonstrated financial need. These loans were subsidized, meaning the federal government would pay the interest while the student was in school. Because of new loan program rules in the federal 1992 Reauthorization of the Higher Education Act, federal and state financial aid policies shifted significantly—to provide even more loan opportunities (Pascarella & Terenzini, 2005). In the 1992 reauthorization of the
Higher Education Act, Congress broadened eligibility for subsidized federal student loans, raised annual loan limits, and created a new unsubsidized student loan program—the Unsubsidized Stafford Loan Program—open to all students, regardless of income or need (American Council on Education, 2004).

As a result of the 1992 amendments, middle-income students who were previously ineligible for need-based student aid were now eligible, primarily in the form of subsidized student loans. The 1992 amendments redefined need by mandating a single need analysis methodology. The federal need analysis methodology was a standardized method for determining a student's (and family's) ability to pay for postsecondary education expenses; this process is also referred to as Federal Methodology (FM). The single formula for determining an Expected Family Contribution (EFC) for Pell Grants, campus-based programs, FFEL programs, and Direct Loan program; the formula is defined by law U.S. Department of Education, 2008a). Annual and aggregate limits for federal student loans were also increased (Jackson, 2004).

The Higher Education Amendments of 1992 increased annual Stafford loan limits for sophomores, juniors, seniors and graduate students, along with increases in the aggregate limits. It also introduced the unsubsidized Stafford loan, increased the annual PLUS loan limit to cost of attendance minus aid, and eliminated the aggregate PLUS loan limit (Kantrowitz, 2008). Stafford annual loan limits for sophomores increased from $2,625 to $3,500; while annual loan limits for juniors and seniors increased from $4,000 to $5,500. Graduate students annual loan limits increased from $7,500 to $8,500. Aggregate limits for
undergraduates and graduates increased to $46,000 and $138,500 respectively.

The newly created Federal Unsubsidized Stafford Loan Program was designed to assist students who did not qualify for a subsidized loan, or whose subsidized eligibility was limited to borrowing additional funds (Center for Higher Education Support Services, 2003). Unlike a subsidized loan, an unsubsidized loan requires students to pay back the amount of money borrowed on their loan including the interest that was accrued on the loan while in school, and until the loan is paid off in full (US Department of Education, 2007a). In part, the restructuring of the federal loan program placed fewer restrictions on the ability to borrow larger amounts to finance a students' education.

The Guaranteed Student Loan Program of 1965—renamed the Stafford Loan Program in 1988—evolved from a single source of funds for helping students finance their education to an extensive federal student loan program (Kesterman, 2003). The extensive federal loan program included subsidized and unsubsidized loans for students and federal loans for parents. Originally, federal aid policies developed ways for low-income students to finance their education (Hearn, 1998). Subsequently, new policies were developed to extend student loan eligibility to both middle and upper class students regardless of income level (American Council on Education, 2004). The Reauthorization Act of 1992 was steadfast to the areas of access, affordability and choice.

Not only did the Reauthorization Act of 1992 develop policies to expand student access and their choice of institutions; it now gave students participating in federal loan programs a choice. Students could now choose between two
different loan programs: the newly named Federal Family Education Loan Program (FFELP) and the newly created Federal Direct Loan Program (FDLP). The result of the reauthorization created a total of two loan programs that were funded by the same source—the U.S. Department of Education. In 2009, FFELP is a public-private partnership that provides affordable private sector financing for students and their families seeking a higher education while the FDLP offers loans financed directly by the government (Hearn, 1998). Both federal loan programs assisted students in financing their education; however, the two programs differed in structure.

The Federal Family Education Loan Program structure used private funding from lending institutions throughout the United States to provide students with loans to pay for educational expenses. FFELP lending institutions included banks and credit unions as well as other financial institutions (Peters, 2003). Lending institutions provided loan origination, disbursement, service and collection. FFELP educational loans consisted of: Federal Subsidized Stafford loans, Federal Unsubsidized Stafford loans, Federal PLUS loans (for parents and graduate/professional students) and Federal Consolidation loans (U.S. Department of Education, 2007a).

The Federal Direct Loan Program (FDLP) used federal funds to provide loans to eligible borrowers to finance their education (Hearn, 1998). The Higher Education Act of 1992 allowed the Department of Education to provide student loans directly rather than through private lenders. This program allowed students to borrow directly from participating schools that, in turn, received funds directly
from the U.S. Department of Education (Center for Higher Education Support Services, 2003). The program was named after U.S. Representative William David Ford, who sat on the United States House Committee on Education and Labor. The U.S. Department of Education provides origination, approval, customer, and collection services. The FDLP offers four types of educational loans: Direct Subsidized loans, Direct Unsubsidized loans, Direct PLUS loans (for parents and graduate/professional students) and Direct Consolidation loans.

The Higher Education Amendments of 1992 modernized the face of the federal student loan programs and little has changed regarding the structure of the federal student loan programs since its passage. Legislation stemming from this reauthorization affirmed and altered the altruistic position of providing access to low-income students through need based grants and promotion of the idea of loans as a means to pursue higher education. The advocacy of student loans was clearly evident. Eligibility for subsidized loans was broadened; loan limits were increased; unsubsidized loans were opened to all students; parent loans were created; and students were given a choice between not one, but two federal loan programs.

As a result, loans have grown dramatically, especially in the form of unsubsidized, non-need-based loans (Hearn & Holdsworth, 2004). Growing debt levels and significant default costs for student loans highlight the need to better understand student loan indebtedness in order that students and society be made better, not worse off, by student borrowing (Harrast, 2004).
The Default Dilemma

The default dilemma began shortly after the inception of federal student loan programs. Student loan defaults have been a concern since the inception of the guaranteed student loan program in 1965 (Webster, Meyer, & Arnold, 1998). Decades later, the failure to repay higher education loans has gone from problematic to epidemic. Given increasing tuition costs and a decrease in need-based grants, federal student loans are becoming central to the ability to finance a higher education. Although total grant aid increased only 55% over the 1990s in constant-dollar terms, federal student loans increased 125% (Hearn & Holdsworth, 2004). Growth in loan volume has not only created a culture of debtors, but a sizeable class of defaulters as well.
Table 1
State of Nevada Cohort Default Rates

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th># of Borrowers Entering Repayment</th>
<th># of Borrowers In Default</th>
<th>Official Cohort Default Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>10,699</td>
<td>769</td>
<td>17.0%</td>
</tr>
<tr>
<td>1996</td>
<td>9,072</td>
<td>759</td>
<td>11.6%</td>
</tr>
<tr>
<td>1997</td>
<td>8,620</td>
<td>733</td>
<td>13.6%</td>
</tr>
<tr>
<td>1998</td>
<td>7,506</td>
<td>643</td>
<td>8.1%</td>
</tr>
<tr>
<td>1999</td>
<td>7,005</td>
<td>493</td>
<td>7.7%</td>
</tr>
<tr>
<td>2000</td>
<td>6,718</td>
<td>476</td>
<td>7.0%</td>
</tr>
<tr>
<td>2001</td>
<td>5,985</td>
<td>464</td>
<td>7.0%</td>
</tr>
<tr>
<td>2002</td>
<td>5,576</td>
<td>453</td>
<td>8.5%</td>
</tr>
<tr>
<td>2003</td>
<td>5,678</td>
<td>775</td>
<td>8.5%</td>
</tr>
<tr>
<td>2004</td>
<td>5,967</td>
<td>691</td>
<td>8.3%</td>
</tr>
<tr>
<td>2005</td>
<td>5,772</td>
<td>979</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

Not all students who borrow money through the federal student loan programs pay back their loans (Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002). In 2004, the director of the collections division at the U.S. Department of Education announced that the outstanding federal student loan portfolio would soon exceed 400 billion dollars (personal communication, November 30, 2004). Of the 400 billion dollar outstanding federal student loan debt in that year, Hopkins confirmed that 31 billion dollars would be classified "in default" status (personal communication, November 30, 2004).

To be classified "in default" status, a federal student loan scheduled
payment must be overdue by a specified number of days (Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002). The federal government defines a student loan as being in default when the debtor has failed to pay on a monthly installment loan for at least 270 days (U.S. Department of Education, 2008a). Students default by failing to repay a student loan in accordance with the terms of their promissory note. A promissory note is a contract a student loan borrower signed in which they promising to repay the loan with interest. Seifert and Worden (2001) indicated that breaking the promise to repay these loans leads to negative consequences for both the student borrowers and the institutions of higher education they attend.

Consequences of Default

**Student Impact**

Default impacts both institutions of higher education as well as student loan defaulters. Student loan borrowers who default encounter highly unfavorable consequences and are faced with numerous legal ramifications. Woo (2002) indicated students who default face such potential consequences as ruined credit, garnished wages, tax offsets and lawsuits as well as collection-oriented phone calls, embarrassment; and humiliation. Student loan defaulters are reported to the three credit agencies which affect their credit scores and buying power for at least seven years (U.S. Department of Education, 2003). A defaulted student loan can result in multiple negative entries - the original default plus subsequent collection agency listings (Charge Off.net, 2008).
According to the Collections Guide to Defaulted Student Loans, wages are garnished for those student loan defaulters who are employed, although federal law limits the amount of garnishment to 15% of the borrower's take-home pay (U.S. Department of Education, n.d.). Defaulters expecting federal and state income tax refunds may find them seized. Additionally, the defaulter may be liable for costs associated with loan collection, court costs and attorney fees. Students who fail to repay their loans can be sued for the entire amount of their loan.

Unemployed student loan defaulters failing to repay their loans are not immune from being forced to make repayment. Student loan borrowers who both default and receive Social Security benefits may find their benefit payments partially withheld by the federal government (Kantrowitz, 2008). In 2005, Lockhart v US queried the United States Supreme Court whether the Department of Education could collect defaulted student loans by offsetting a portion of a debtor's Social Security benefits without regard to the ten-year limitation period under the Debt Collection Act, 31 U.S.C. 3716(e) (1), given that Congress had expressly abolished all otherwise applicable statutes of limitations for the collection of student loans. It was held that the United States could offset Social Security benefits to collect a student loan debt outstanding for over 10 years (Lockhart v US, 2005).

If legal ramifications are not enough, student loan defaulters are further negatively impacted after defaulting when they find it difficult to secure basic consumer needs such as auto loans, mortgage loans, and credit cards since
defaulted loans appear on individual credit records (U.S. Department of Education, 2007a). Basic federal financial assistance eligibility is lost as a result of student loan default (U.S. Department of Education, 2004). Student loan defaulters also lose out on loan deferment benefits. These deferment benefits include the federal government paying all interest costs while borrowers are enrolled in college and during a six-month grace period after leaving their institution of higher education (U.S. Department of Education, 2007a). Student loan default can impact a student’s chance of accessing gainful employment, possibly undermining one of the main reasons for seeking higher education in the first place.

**Institutional Impact**

The impact of student loan default is no less severe and damaging on institutions of higher education. For institutions with relatively high default rates, the effects of exclusion from federal financial aid programs are devastating to revenues and enrollments (Flint, 1997). According to the U.S. Department of Education, cohort default rates are just as important for institutions as they are for students because defaulted federal student loans cost taxpayers money (2005b). The government provides sanctions to pressure schools to work with borrowers to reduce default. Sanctions may prevent schools with a high percentage of defaulters from continuing to participate in the federal financial aid programs (U.S. Department of Education, 2005b). With the threat of sanctions, the U. S. Department of Education challenged institutions of higher education to maintain lower cohort default rates, sustain a low percentage of defaulters and
help save taxpayers money.

Consequences are severe for institutions of higher education with high cohort default rates—typically schools having rates of 25% or higher. The U.S. Department of Education defines a cohort default rate as a measure of the percentage of an institution’s student borrowers who have defaulted on their federal student loans (2005b). For institutions with unacceptably high default rates, federal policy required their termination from some or all federal student aid programs (Flint, 1997). Unacceptable cohort default rates refer to those schools having a cohort default rate of 25% or more for each year during the three most recent fiscal years. For example, the cohort default rate measurement for 2008 would be based on fiscal years 2005, 2006, and 2007.

Institutions with cohort default rates of 40% or higher for the most recent fiscal year automatically lose their eligibility to participate in the federal student loan programs (U.S. Department of Education, 2005b). Consequently, the impact on institutions that lose financial aid program eligibility is reciprocal; students rely on financial aid to access higher education and institutions rely on financial aid to access students.

Given the negative consequences both for student loan defaulters and the institutions of higher education they attend, a study of student loan defaulters may lead to solutions designed to prevent borrowers from reaching “in default” status.

As stated earlier in this chapter, to be classified “in default” status, a federal student loan scheduled payment is a specified number of days overdue
Preventing students from defaulting and preventing institutions from high cohort default rates is in the best interest of both the borrower and the schools. By maintaining low cohort default rates, schools benefit by ensuring current and future students access to federal financial assistance programs. Similarly, borrowers who avoid default benefit by not damaging their credit rating, thereby making it easier to get a loan (i.e. transportation and housing). It has also become common practice for employers to check creditworthiness before hiring an individual. Increasing their chances to become employed is perhaps most beneficial for borrowers avoiding default and bad credit.

Competing Perspectives

In reviewing the body of literature related to student loan default several competing theoretical perspectives were suggested (Flint, 1997; Steiner, 2006). Efforts to understand and to minimize student loan defaults have primarily drawn upon theoretical perspectives from three disciplines: economics, sociology, and psychology (Flint, 1997). From these three disciplines, four theoretical perspectives were offered in the form of literature: Human Capital Theory; Theory of Ability to Pay, Structural-Functional Theory and Student-Institutional Fit Model Theory (Flint).

The four theoretical perspectives encompassing student loan default in the literature provided a series of descriptions. Webster, Meyer, & Arnold’s (1998):

Human Capital Theory focuses on the inherent value of a person’s skills
and knowledge and relates acquisitions of skills and knowledge to educational investment. Theory of Ability to Pay relates income levels of students and of parents to the borrower's ability to repay loans. Structural-Functional Theory posits that organizational characteristics exert influence on student choices and behavior including the repayment of loans. Student-Institution Fit Model Theory from other literature comprises many individual student traits to help explain repayment behavior (p.1). Each of these four competing theoretical perspectives was considered as a viable foundation for this study. The conceptual and theoretical framework sections below describe, in detail, the rationale by which one competing perspective was chosen over the others.

Conceptual Framework

The conceptual framework developed for this study is based on an exploration of the relationship between people and the environment; specifically, students and institutions of higher education. As stated, in the previous chapter, the present study is designed for initial exploration regarding the relationship between various student factors and default rates from institutions of the Nevada System of Higher Education. This study was constructed by emulating the research of Steiner (2006). His work explored the relationship between student characteristics and individual institutions of higher education by identifying factors affecting student loan default. Steiner's research resulted in discovering that certain student factors correlated with default (2006). The groundwork laid by
Steiner has guided this study to identify and analyze key variables such as age, gender, ethnicity, and residency when considering their predilection to default.

Theoretical Perspectives

Two sociological perspectives were selected to serve as frameworks for this project. The Student Institutional Fit Model and Structural-Functional theoretical perspectives were chosen as theoretical perspectives for this study because they identified the implications of student educational achievement and shortcomings in higher education settings (Flint, 1997). Both status attainment and social integration models have had great influence on higher education research, particularly in the areas of educational attainment and student departure (Flint, 1997). Because this study involves student factors, and considers how those factors affected institutions, these social theoretical frameworks are especially appropriate. Measures of academic and social integration of students among their peers and their faculty are critical to the Student Institutional Fit Model Theory. Similarly; critical to the Structural-Functional Theory are student values and behaviors that may be influenced by institutional mission, size, and environmental factors (Flint, 1997).

Theoretical frameworks connect to the problem statement and address the following questions: (1) How does the theory provide an explanation for what you believe is happening? (2) What other theory or theories provide an alternative explanation (Calabrese, 2006)? The Student Institutional Fit Model and Structural-Functional Theories connect to this study’s problem statement:
College students in Nevada have the nation’s highest rate of defaulting on federal student loans. Analyzing the relationship between student factors and the institutions may help solve the problem. Other theoretical frameworks identified in the literature provided alternative explanations to student loan default such as economic perspectives, psychological perspectives, federal policy and integrative perspectives.

There are three different strands of literature related to student loan default. The first strand of literature addressed default by describing the background of the borrower or the type of institution they attended (McMillion, 2004). The second strand of literature addressed default by describing the borrower characteristics after a borrower leaves school. The third strand of literature addressed default by describing borrower characteristics while the borrower is in school. Of the three different strands of the literature related to student loan default, it is the third strand which best supported the line of inquiry behind this study because all else being equal, students who are successful in their studies tend to have lower default rates than those who are not and loan repayment appears to hinge on factors that are at least partially under the control of the borrower, the school or both (McMillion, 2004). The following section provides identified patterns, themes, common findings and gaps.

Default Factors

Synthesis of the Research

A synthesis of prior research identified studies that examined various
characteristics of student loan defaulters and found common student characteristics associated with default. These studies investigated: (1) graduation, (2) grade point average, (3) continuous enrollment, (4) college major, (5) class level, (6) unemployment, (7) income, (8) personal and family, (9) gender, (10) age, and (11) ethnicity (Woo, 2002; Steiner & Teszler, 2003; Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002; Volkwein & Szelest, 1995; Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998; Flint, 1997). Factors that may have been identified in one sample may not hold true when applied against a larger and different sample (Harrast, 2004; Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002).

While there was a general lack of agreement as to which characteristics of students led to default, similar findings did occur (Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002). The student characteristics identified in the existing literature were classified into three broad categories, each with several defining characteristics: Pre-College Student Loan Defaulters, whose characteristics included gender, age, ethnicity, family background, household size and household income; In-College Student Loan Defaulters, whose characteristics were defined by grade point average, program completion/degree recipient, academic level, and type of institution attended; and finally, Post-College Student Loan Defaulters, which included characteristics such as loan indebtedness, and type of career.
Factors of Pre-college Student Loan Defaulters

Pre-college student loan defaulter characteristics refer to evaluated characteristics that reflect the borrower's experience before college (Barone, 2006). Examples of evaluated pre-college characteristics studied include graduation from high school, high school rank, and ACT scores (Woo, 2002; Steiner & Teszler, 2003; and Podgursky, Ehler, Monroe, Watson, & Wittstruck, 2002). Gender, age, ethnicity, family background and income were also variables found in some research models (Flint, 1997; Volkwein & Szelest, 1995; Volkwein, Szelest, Cabrera, & Napier斯基-Prancl, 1998; Podgursky, Ehler, Monroe, Watson & Wittstruck, 2002) in the literature. According to Volkwein & Szelest (1995), background characteristics were those that students brought with them to college. These are characteristics that an institution has little or no ability to affect, such as age, gender, ethnicity, parents' education and income, high school curriculum and achievement.

Podgursky, Ehler, Monroe, Watson, & Wittstruck (2002) research mentioned both gender and age. Their work (2002) showed that males were more likely to default than females while also commenting that each year of the students age (older students) raised the default ratio. Volkwein, Szelest, Cabrera, & Napier斯基-Prancl (1998) identified that the population with the highest default rates were African Americans. Supporting Volkwein’s research was Podgursky, Ehler, Monroe, Watson, & Wittstruck (2002) who also determined that African Americans were more likely to default than whites. Overall, the literature identified that a high percentage of defaulters had minority backgrounds (Flint,
Family background and income were two important default influencing factors identified in the literature. Volkwein, Szelest, Cabrera, & Napierski-Prancl (1998) found that having a college-educated parent and having a family income of more than $30,000 decreased the chances of default, especially for African American borrowers. In general, parental educational attainment and high family income were positive characteristics for preventing student loan default (Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998).

Racial and ethnic factors were found to be relevant in predicting student loan defaulters. Being African-American or American Indian, as identified by Volkwein, Szelest, Cabrera, & Napierski-Prancl (1998), usually meant having a higher risk of non-repayment. In one study (Flint, 1997), the researcher found that being African-American increased default probability by 11.7%. Another study indicated African-American and Hispanic defaulters had significantly higher rates of unemployment and were frequently dissatisfied with their education and had personal issues that impacted their ability or willingness to repay their student loans (Volkwein & Cabrera, 1998).

Volkwein and Szelest (1995) and Knapp and Seaks (1992) found no significant differences between the default rates of male and female borrowers. However, a study conducted by Woo (2002) found that being female decreased a borrower’s chance of default by 36%. A study of student loan borrowers in Missouri by Podgursky (2002) found that men were more likely to default than
women. Likewise, Flint (1997) indicated in a national study that being male increased default probability by 5.8%.

Volkwein and Szelest (1995) indicated that having a marital status of divorced, separated or widowed played a major role in identifying potential defaulters. Volkwein, Szelest, Cabrera, & Napierski-Prancl (1998) found through their study that having dependent children combined with being single, separated, divorced or widowed produced default rates above 40%.

A borrower's age was considered to be an insignificant factor in predicting default as presented in studies undertaken by Woo (2002), and Flint (1997). Podgursky, Ehlert, Monroe, Watson, & Wittstruck, (2002) found that non-traditionally aged students were more likely to default than traditionally aged students in researching student loan borrowers in Missouri. Flint (1997) found default probability to increase 3% each year beyond the age of 21.

Volkwein and Cabrera (1998) found the number of family members in the household to be a significant predictor of default because this created a lower level of disposable income for student loan repayment.

The research indicated a link between a student's income and the likelihood to default. Woo (2002) found that borrowers with high earnings after they left school were less likely to default than those with low earnings. However, Woo also indicated that unemployment or dropping out of school was a stronger indicator of default. Volkwein and Cabrera (1998) found that students who earned less than $10,000 had a higher probability of default; while borrowers who earned more than $25,000 decreased their chances of falling into default.
Flint found that having little disposable income indicated a high risk factor for default (1997). In a study that surveyed defaulters, factors such as unemployment, low income, other debts, personal issues and dissatisfaction with their education contributed to default (Dynarski, 1994).

Characteristics of In-college Student Loan Defaulters

In-college student loan defaulter characteristics refer to evaluated characteristics such as college performance variables. College performance variables are those characteristics borrower’s experience in college (Barone, 2006). Examples of evaluated in-college characteristics that have been studied include graduation from college, college graduation status, and college grade point average (Steiner & Teszler, 2005; Volkwein & Szelest, 1995 and Woo, 2002).

College major, academic achievement and degree completion were common variables found in the literature to measure potential student loan defaulter characteristics. Volkwein, Szelson, Cabrera, and Napierski-Prancl (1998), Volkwein and Szelest (1995), Flint (1997), Podgursky, Ehler, Monroe, Watson, and Wittstruck, (2002), Seifert and Wordern (2001), and Harrast (2004), had at least one “in college” variable in their research. Science and Engineering majors, according to Volkwein and Szelest (1995), modestly decreased the potential of default. Moreover, Flint (1997) found that high academic achievement such as high grade point averages significantly reduced default probability.

Perhaps one of the most important factors identified in the literature addressing the question of why students defaulted on their student loans was
degree completion. "The variable with the largest effect on the default odds ratio was continuous enrollment or program completion" (Podgursky, Ehlert, Monroe, Watson, & Wittstruck, 2002, p. 19). Podgursky found that continuously enrolled students or those who completed their degree were far less likely to default than were students who dropped out. Overall, the literature found that student's behavior weighed more heavily than a student's background when determining the likelihood of student loan default.

Some of the studies cited in 1997, 1998, 2002 and 2003 indicated a positive relationship between college grade point average and loan repayment. Woo (2002), Steiner and Teszler (2003), Flint (1997), and Volkwein, Szelest, Cabrera, and Napeirski-Prancl (1998) found the higher a student's GPA, the higher the rate of repayment. Christman (2000) found grade point average was significant for defaulted borrowers.

Volkwein and Szelest (1995) found that a student's grade point average might serve as a replacement for ability and motivation—characteristics associated with success later in life as well as in college.

Woo (2002), Steiner and Teszler (2003), Knapp and Seaks (1992), Volkwein, Szelest, Cabrera, and Napeirski-Prancl (1998), and Volkwein and Cabrera (1998), found that completion of college and degree attainment decreased a student's propensity to default. Studies (Volkwein, Szelest, Cabrera, & Napeirski-Prancl, 1998; Steiner & Teszler, 2003; and Woo, 2002) implied that degree completion had an even greater impact, compared to grade point average, in decreasing a student's inclination to default. In addition, the
successful completion of educational programs may lead to better employment opportunities, thereby increasing the chances of student loan repayment.

Testing for academic level was also generally included as a variable in the studies. Academic level was positively related to repayment of loans for students receiving their first loan as seniors or graduates (Herr & Burt, 2005). Herr and Burt also found freshmen, sophomore, and junior level students were more likely to default on their loans than were seniors.

According to Volkwein, Szelest, Cabrera, and Napeirski-Prancl (1998), borrowers who attended doctoral-granting institutions had a lower potential to default compared to borrowers who attended proprietary schools. Comparing two-year programs to four-year programs, Woo (2002) found students who attended shorter programs had higher default rates than students in longer programs. On the contrary, Volkwein and Szelest (1995) found little evidence to support that institutional type (two-year or four-year) had any influence on whether students defaulted. Moreover, their research indicated the likelihood of default could be predicted by individual borrower characteristics, college major, performance in college, and post-college behavior. According to Knapp and Seaks (1992) the size of an institution did not have an impact on the possibility of default. To support this research, Knapp and Seaks indicated that smaller schools with opportunities to focus on students would equate to lower default rates, but data did not support this hypothesis. Research supported the fact that smaller schools had a greater likelihood of tallying higher default rates.
Characteristics of Post-college Student Loan Defaulters

Post-college student loan defaulter characteristics refer to evaluated characteristics that occur after a borrower has left school and include educational and occupational attainment (McMillion, 2004). Post-college variables are those characteristics borrower's experience after college. Examples of evaluated post-college characteristics that have been studied include unemployment, income, personal and family factors (Woo, 2002; Volkwein, Szelest, Cabrera, and Napeirski-Prancl, 1998; Flint, 1997; and Volkwein & Szelest, 1995).

Some studies focused on the characteristics of student loan borrowers once they have left their institution of higher education. Whereas pre-college characteristics focused on student borrowers’ backgrounds while in-college characteristics focused on student borrowers’ behavior and institutional characteristics, studies on post-college characteristics examined student loan borrower background and behavior—after college. The researchers in this area looked at post-college unemployment, income, and personal and family status.

Volkwein, Szelest, Cabrera, and Napeirski-Prancl (1998) found that across the U.S. the most important reasons for default were unemployment and low wages on the part of borrowers. Harrast (2004) also found unemployment was a barrier for students in repayment of student loan debt. While Volkwein (1995) showed post-college incomes impacted defaulter probability, Flint (1997) found very little to support income as a default predictor.

Personal and family backgrounds were significant in the research of Volkwein (1998) and Baum & O'Malley (2003). Blacks and Hispanics as
compared to whites, in this study, had lower levels of degree attainment, lower levels of academic achievement, almost twice the number of children, and almost twice as many cases of separation and divorce. These circumstances, rather than race/ethnicity, appeared to be the reasons for their repayment and default behaviors (Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998).

Baum and O'Malley (2003) found indications of increasing negative attitudes toward education over the course of time. Borrowers, especially those from low-income families, were more likely than others to report repayment difficulties. By and large, background and behavior characteristics of post-college student loan defaulters were shown to be significant when students default during this specific time period.

High debt was not a factor in predicting default (Woo, 2002). Steiner and Teszler (2003) reported student loan borrowers with smaller debts tended to have higher default rates perhaps because students with small debts tended not to stay in school for long periods and had lower graduation rates. Conversely, Volkwein, Szelest, Cabrera, and Napierski-Prancl (1998) indicated that taking on a larger loan contributed to students staying in school longer and enhancing the likelihood of degree attainment; therefore, allowing students to find quality employment and higher income potential increased the probability of loan repayment. Woo (2002) found that borrowers who borrowed less increased their chances of defaulting on their loans compared to those who borrowed more. Yet, other researchers found that the amount of money borrowed did not have an impact on default rates. Baum and O'Malley (2003) found low-income borrowers
had lower starting salaries and current earnings, resulting in higher average payment-to-income ratios, making repayment difficult.

Summary of Loan Default Research

A review of previous research resulted in the location of three major strands in the literature: characteristics of pre-college student loan defaulters, characteristics of in-college student loan defaulters, and characteristics of post-college student loan defaulters. Two strands of the literature did not support this study's conceptual or theoretical frameworks. The strands of literature that discussed Characteristics of Pre-college Student Loan Defaulters and the Characteristics of Post-college Student Loan Defaulters did not support the sociological perspectives that serve as a foundation for the present study. However, literature that focused on the Characteristics of In-college Student Loan Defaulters was fairly congruent and supportive of the Student Institution Fit Model and Structural-Functional Theoretical Frameworks.

Critical Analysis

A synthesis of the research provided an opportunity to critically analyze prior research. An evaluation of the investigations found several vital factors influencing default. For Flint (1997), age, gender, race and cumulative grade point average proved to be prominent pre-college background characteristics in identifying students most likely to default. By comparing students who were continuously enrolled with students who dropped out, Podgursky, Ehlert, Monroe,
Watson and Wittstruck (2002) showed that behavior "in college" was significantly related to defaulting and that degree completion was the most crucial factor. By studying borrowers after they graduated or entered the period of repayment, Seifert and Wordern (2001) and Harrast (2004) found post-college background and behavior characteristics to be common among those who defaulted. While these studies each provided a link between default and some characteristics, other studies presented inconsistent outcomes. However, the most consistent finding in the literature showed borrowers who graduated had a much lower probability of defaulting on their loans, as compared to borrowers who did not graduate (Steiner & Teszler, 2005). Whereas a characteristic or factor may have predicted the likelihood of default in one study, that same characteristic or factor may have been insignificant in another study. Important variables identified in the studies included unemployment, income (salary), and personal and family environment such as marital status, dependent children, and income-to-debt ratios. As a result, one can conclude that there are many factors, often interrelated, that predict the likelihood of default (Woo, 2002). Because student loan default rates were a concern to the federal government, colleges and universities, as well as their administrators, it is imperative for stakeholders to determine which factors, or combination of factors, have the greatest impact on causing student loan borrowers to default.
Summary of the Literature

Regardless of what causes defaulting to occur, it is well documented that student loan default exists and the impact of default on students and institutions is unfavorable. There are several lenses, or perspectives through which default is examined and measured: pre-college, in-college and post-college. This study examines student loan default by using the in-college lens. The rationale for using the in-college lens is to discover existing relationships between student factors and default rates in Nevada.
CHAPTER 3

METHODS

This chapter includes both the research perspective and design for this study. Also included is a restatement of the research questions. The chapter highlights the research methodology and procedures used in this study, which consist of the following sections: population and units of analysis, a brief description of the research variables, procedures and data collection, and statistical analysis. A section on setting and environment and a summary is provided at the end of the chapter.

Research Perspective

A theoretical perspective that is sociological in nature guides this research study. If the unit of analysis is to study groups or organizations, it is fitting to look at the sociological literature (Creswell, 2008). Sociological positivism—the belief in a logically ordered, objective reality—serves as guiding framework because it proposes that serious scientific inquiry should not search for ultimate causes from some outside source but must be confined to the study of the relationships that exist between facts which are directly accessible to observation (Babbie, 2004). Sociological positivism was fitting for this study because this study sought
to understand the relationship between student factors and default rates observed at several institutions.

Similarly, student/institution fit models have stemmed from recent college outcome studies (Cabrera, Nora, & Castaneda, 1993; St. John, Cabrera, Nora, & Asker, 2000) the result of a sociological tradition in higher education research (Flint, 1997). The belief that colleges and universities exert considerable influence on the actions of their students is supported by student loan policy and national legislation (Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998). Higher default rates may be a function of the types of students who enroll in the programs rather than factors associated with the schools themselves (Woo, 2002). Default behavior may be predicted by the characteristics of individuals, including choice of major and performance in college (Volkwein & Szelest, 1995).

Research Design

The design selected for this study was a multiple institutional design. Because the study investigated the affect of student factors on default rates at multiple institutions, the institutional design was an appropriate choice (Delaney, 2005). A search through several annotated bibliographies on student financial aid research and policy and other sources reveal few studies of student loan default that are both multi-institutional and multivariate in nature (Flint, 1997; Volkwein, Szelest, Cabrera, & Napierski-Prancl, 1998; & Woo, 2002). Broadly, this institutional study design involved the collection and analysis of quantitative data about individual institutions. Specifically, this multi-institutional design was a
retrospective review of student factors and default rates from six Nevada institutions of higher education from 1995 to 2005. This study examined student characteristics and default in Nevada on an institutional level, that is, one institution at a time.

It is important to note that this study design did not analyze individuals, but rather formal social organizations—colleges and universities. Woo indicated the type of schools students attended were some of the most powerful influences on predicting default (2002). Multiple institutional researchers often engage in data analysis, ranging from simply testing whether differences in reported data are statistically significant to developing and using causal and predictive statistical models (Association for Institutional Research, 2008). This multiple institutional study engaged in regression analysis, measuring whether degrees of relationship in reported NSHE data were statistically significant. Johnson affirmed that regression analysis may be used when variables take the form of a dichotomy or a multi-category variable that is collapsed to two categories (2001). A brief description of the variables is provided in this chapter.

Research Questions

To achieve the objective of the study, answers to the following questions were sought:

1. What is the relationship between age, ethnicity, gender, residency, graduation rate, and degree major and loan default rates?
2. To what extent does that relationship differ among the Nevada System of
Higher Education institutions?

Subjects, Participants, and Population

Subjects and Participants

This multiple institutional design does not study individual subjects; rather, the focus of this study is on student factors within individual institutions. Consequently, no participants enrolled for this study (Appendix F). While there are no individual subjects or participants in this study, a collection of individuals (Njogu, 2002) were subject to study.

Population

A population is a collection of individuals who have one or more personal or environmental characteristics in common (Williams & Highriter, 2003). The population in this multiple institutional study is comprised of students who attended one of six Nevada System of Higher Education institutions from 1995 to 2005. This study is unique due to the fact that research is rarely able to study all the members of a population (Babbie, 2004). This multi-institutional study analyzed a set of data consisting of all conceivable observations of its focus—default.

Units of Analysis

The unit of analysis is the focus of a particular study (Calabrese, 2006). Moreover, the “what” or “whom” being studied are referred to as the units of analysis (Babbie, 2004). While most units of analysis are individual people, data collection and statistical analyses for this study focused on organizations. Since
social organizations may be the units of analysis in social sciences research, this study specifically identified the units of analysis as Nevada institutions of higher education. Furthermore, units of analysis are those things that can be examined in order to create summary descriptions of all such units and to explain differences among them (Babbie, 2004).

Research Variables

Based on the research question identified for this study, several independent variables and one dependent variable were identified. According to Babbie, independent variables are variables with values that are not problematical in an analysis but are taken as simply as givens (2004). Independent variables are also factors that are measured, manipulated, or selected by the experimenter to determine their relationship to an observed phenomenon (Siegle, 2008). For this study, the six factors selected as independent variables are age, ethnicity, gender, residency, graduation rate, and degree major. A brief description of the independent variables and dependent variable is found in the following section of this chapter.

Babbie (2004) defines a dependent variable as a variable assumed to depend or be influenced by independent variables. A dependent variable, also known as an outcome variable, is that factor which is observed and measured to determine the effect of the independent variable (i.e. that factor that appears, disappears, or varies as the experimenter introduces, removes, or varies the independent variable) (Siegle, 2008). For this study, the observed phenomenon
and dependent variable are institutional rates of student loan default.

Johnson (2001) asserted that variables that are dichotomous in nature or variables that can be collapsed into two categories may be measured using regression analysis. As an example, Johnson used regression analysis to show the relationship between two variables. Johnson measured the percentage of a population that was literate \((X)\) and a population's life expectancy \((Y)\) to discover a positive relationship between literacy and life expectancy to show the higher literacy was; the longer people tended to live on the average. Similarly, this study measured rates or percentages of a population.

**Brief Description of Variables**

**Independent Variables**

**Age:** For purposes of this study, the independent variable of age was reduced to represent a ratio of traditionally-aged students. Several steps were taken to reduce the age variable from its original format. Secondary data for age was collected from the Department of Institutional Research at the Nevada System of Higher Education. Nine categories of age groups were provided: 18-19, 20-21, 22-24, 25-29, 30-34, 35-39, 40-49, 50-64 and 65 and over. From these nine categories, two groups were created to represent traditionally-aged students (18-24) and non-traditionally aged students (24 and over).

**Ethnicity:** For this study, the independent variable of ethnicity was reduced to represent a ratio of White students. Several steps were taken to reduce the ethnicity variable from its original format. Secondary data for ethnicity was collected from the Department of Institutional Research at the Nevada System of
Higher Education. Seven categories of ethnicity were provided: Nonresident alien, Black non-Hispanic, American Indian or Alaska Native, Asian or Pacific Islander, Hispanic, and White non-Hispanic. From these seven categories, two groups were created to represent White students (White non-Hispanic) and non-White students (combination of remaining six ethnic categories).

**Gender:** For purposes of this study, the independent variable of gender was reduced to represent a ratio of female students. Secondary data for gender was collected from the Department of Institutional Research at the Nevada System of Higher Education. Two categories of gender were provided: male and female. From these two categories, the percentage of females was used.

**Residency:** For this study, the independent variable of residency was reduced to represent a ratio of Nevada students. Secondary data for residency was collected from the Department of Institutional Research at the Nevada System of Higher Education. Two categories of residency were provided: Nevada residents and non-Nevada residents. The ratio of Nevada residents represented the category of residency for this study.

**Graduation Rate:** For this study, the independent variable of graduation rate was represented by a ratio of students who graduated annually. Secondary data for graduation rate was collected from the Department of Institutional Research at the Nevada System of Higher Education.

**Degree Major:** For this study, the independent variable of degree major was represented by three major categories: humanities, sciences and technical/other. Several steps were taken to reduce the degree major variable from its original
format. Secondary data for degree major was collected from the Department of Institutional Research at the Nevada System of Higher Education. The process by which this data was reduced down to three main categories is discussed separately in this study.

**Dependent Variable**

**Default Rate**: For this study, the only dependent variable was represented by institutional cohort default rates. A cohort default rate is simply a ratio of students who defaulted compared to students who began repayment. Specifically, a cohort default rate measures the percentage of a school’s borrowers who enter repayment in a federal fiscal year and default on their loans before the end of the next federal fiscal year (U.S. Department of Education, 2008a).

**Data Collection Procedures**

Student factor and default rate information for this study was obtained through a retrospective review of multiple institutional data. Institutional data was collected for six institutions of higher education within the Nevada System of Higher Education. Before data was collected, an Exempt Research Application Form was completed and submitted to the Office for the Protection of Research Subjects. After approval from IRB, data collection planning was initiated (Appendix F). To answer the research questions this study sought, two sets of crucial data were essential. The first set of data fundamental to collect was information representing the independent variables of age, ethnicity, gender, residency, graduation rate, and degree major. The second set of data collected
represented the dependent variable—the default rates for the University of Nevada Las Vegas, College of Southern Nevada, University of Nevada Reno, Truckee Meadows Community College, Great Basin College and Western Nevada College. The data collection procedures were deemed appropriate by IRB and were consistent with institutional research.

Data Collection and Statistical Analysis

Data Collection

Babbie (2004) defined secondary analysis as a form of research in which the data collected and processed by one researcher are reanalyzed—often for a different purpose—by another. This multi-institutional study reanalyzed collected data from warehoused quantitative data and reports gathered by Nevada colleges and universities.

The data analyzed in this study originated from three primary sources. Data sets—a collection of data—was requested in writing. The first primary source which provided quantitative data sets for the majority of the study’s independent variables was the Department of Institutional Research at the Nevada System of Higher Education. The second primary source providing secondary data came from the Department of Financial Aid Offices at each of the Nevada Higher Education institutions included in this study. The NSHE Institutional Departments of Financial Aid provided data on loan indebtedness; however, loan indebtedness was excluded from the final list of independent variables for this study. The final primary source providing secondary data for this
study is the Division of Default Prevention and Management at the United States Department of Education. The United States Department of Education provided data sets for the only dependent variable in this study—institutional default rates. Analyzing existing (secondary) data provided by the three primary sources above was the objective of this study.

Method Used To Reduce Degree Majors into Twelve Broad Categories

The twelve categories reflected dominant fields of study in Nevada schools of higher education. Majors were grouped into these categories using a simple principle: In what (dominant) field will the degree be used? Using the different colleges at the six institutions and the degrees and certificate programs available, the following fields became broad categories: performing arts, education, business, engineering, architecture, sciences, agriculture, liberal arts, geosciences, general studies, certificate programs, and technologies. The Department of Institutional Research at the Nevada System of Higher Education provided broad categories by major. An even more broad range of categories was necessary to group together related disciplines/majors:

1. Performing Arts received its own category instead of combining with Liberal Arts because the performing/visual/fine arts degrees were assumed to be a significantly different field than majors such as social science degrees which fall under Liberal Arts. Hence, majors grouped under the Liberal Arts category are majors related to social services/social sciences (political science, psychology, sociology)/administrative/literature/journalism/ethnic studies/legal services. Anything related to the field of providing public/humanitarian/social
services were placed under Liberal Arts. English/Literature/History/Philosophy degrees were placed under Liberal Arts.

2. The Business category included majors that would typically fall under any business college: management, marketing, business administration, recreation, hospitality, etc.

3. Engineering category only included computer science and computer information degrees—that normally fell under an engineering college. Degrees/certificates that focused on engineering technologies were placed under a new category: “Technologies” in order to distinguish between those who seek an engineering degree at a four-year degree institution and those who only seek specialized training in engineering technologies, military technologies, communications technologies, etc. In fact, the latter degrees were overwhelmingly dominant in community colleges.

4. Architecture and Agriculture have their own categories. Agriculture Production/Business Management were placed under Business category.

5. The Sciences category included majors in biology, chemistry, physics, health professions, math and statistics. Mathematics was not made its own field since it is assumed that majors that require more math courses than usual are usually majors in the sciences. (Although engineering degrees also require more math than other majors, it was decided that the engineering degree/s have their own specialized math classes.

6. The Geosciences category was a combination of degrees in environmental studies, geology and conservation studies. It was decided that
these fields were related specifically to the study of the earth—whether past or present and surrounding issues.

7. The General Studies category included degrees in family and consumer science and general degrees /human services and multi/interdisciplinary studies.

8. The Certificates category included majors that were two year programs (hinted by list of programs provided in each institution) or specialized vocational programs. It included construction on trades, personal and culinary services, mechanic and repair, precision and production and transportation and materials.

Method Used To Reduce Degree Majors from Twelve Broad Categories to Three Main Categories

The twelve broad categories above were further reduced to establish three main categories as follows: the Social Sciences and Humanities; the Hard Sciences; and Technical and Other.

1. For the Social Sciences/Humanities category the following previously determined categories were merged: Education and Liberal Arts.

2. For the Hard Sciences category the following three previously determined categories were merged: Sciences and Math; Geosciences/Environmental Studies/Conservation; and Engineering.

3. For the Technical/Other category seven previously determined categories were merged: Performing Arts, Business, Architecture, Agriculture, General Studies, Certificate(s), and Technologies.
Table 2
Operationalized Variables in the Model

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>SPSS Abbreviation</th>
<th>Source</th>
<th>Values by Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>AGE</td>
<td>NSHE</td>
<td>Traditional-aged</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>ETHN</td>
<td>NSHE</td>
<td>White Students</td>
</tr>
<tr>
<td>Residency</td>
<td>RES</td>
<td>NSHE</td>
<td>Nevada Residents</td>
</tr>
<tr>
<td>Graduation</td>
<td>GRAD</td>
<td>NSHE</td>
<td>Graduation Rate</td>
</tr>
<tr>
<td>Degree Major</td>
<td>DEGREE1</td>
<td>NSHE</td>
<td>Social Sciences/Humanities</td>
</tr>
<tr>
<td>Degree Major</td>
<td>DEGREE2</td>
<td>NSHE</td>
<td>Sciences</td>
</tr>
<tr>
<td>Degree Major</td>
<td>DEGREE3</td>
<td>NSHE</td>
<td>Technical/Other</td>
</tr>
</tbody>
</table>

Statistical Analysis
Quantitative analysis is the numerical representation and manipulation of observations for the purposes of describing and explaining the phenomena that those observations reflect (Babbie, 2004). When the data was collected for the purpose of describing and explaining default in Nevada, it was converted to a numerical form and was subject to statistical analysis that Babbie described as “converting social science data into a machine-readable form—a form that can be read and manipulated by computers and similar machines used in quantitative analysis” (pg. 396). In quantitative research the aim is to determine the relationship between one thing (an independent variable) and another (a
dependent or outcome variable) in a population (Hopkins, 2001). Because this study examined several variables simultaneously, the type of quantitative data analysis technique used was regression analysis.

Babbie (2004) defines regression analysis as a method of data analysis in which the relationships among variables are represented in the form of an equation, called a regression equation. While there are various forms of regression analysis, this study incorporated two types: simple linear regression analysis and multiple regression analysis. For Babbie, simple linear regression is a form of statistical analysis that seeks the equation for the straight line that best describes the relationship between two variables. The second type of regression analysis used in this study analyzes two or more variables at once. Babbie indicated that very often social researchers find that a given dependent variable is affected simultaneously by several independent variables. When social researchers encounter such situations, multiple regression analysis provides a means of analysis. Babbie defines multiple regression analysis as "a form statistical analysis that seeks the equation representing the impact of two or more independent variables on a single independent variable" (p. 450).

This study examined how multiple independent variables such as age, ethnicity, gender, residency, graduation rate, and degree major related to default rates. Babbie (2004) indicates quantitative analysis, such as simple linear regression and multiple regression analysis, is almost always done by computer programs such as SPSS, a statistics program. The Statistical Package for the Social Sciences (SPSS) was the statistical software program of choice because it
is widely used for statistical analysis in the social sciences and is highly compatible for both simple linear regression and multiple regression analysis.

As Babbie (2004) acknowledged, although no single method unlocks all puzzles, there is no limit to the available methods for developing information. This is especially effective when the researcher zeroes in on an issue from several independent directions, thereby gaining that much more expertise. Flint found other predictive studies of student loan default typically involved borrowers from one campus within a single state system (1997). While prior default research focused on one campus, this study sought to augment the research by focusing on multiple campuses. Finally, the purpose of this study was to learn more about the relationship between several selected institutional characteristics and default rates in Nevada.

**Setting and Environment**

This study focused on public institutions of higher education in Nevada. However, not all of the eight public institutions of higher education in Nevada were included in this study because a few of these institutions did not possess required data for this research project. The two institutions that have been excluded from this study are the Desert Research Institute and Nevada State College. These institutions were excluded because the study analyzed institutional data from 1995 to 2005. Nevada State College was not included for this study because, as the newest public institution of higher education in Nevada, it did not open its doors until 2002. Likewise, the Desert Research Institute...
Institute was excluded because it is not a degree granting institution.

The six institutions included in this study must have met two important criteria. The first is that they are a public, four-year or two-year degree granting institution that collected and reported quantitative data regarding their respective students between 1995 and 2005. In addition, these institutions must have earned an institutional cohort default rate between 1995 and 2005. The following institutions met the criteria for this study: the University of Nevada Las Vegas (UNLV), the University of Nevada Reno (UNR), the College of Southern Nevada (CSN), Truckee Meadows Community College (TMCC), Great Basin College (GBC), and Western Nevada College (WNC).

The colleges and universities chosen for this multi-institutional study are diverse in nature. Established in 1957, UNLV is a public, doctoral/research coeducational university with a headcount of 31,000 students, located in metropolitan Las Vegas, the most populous city in Nevada. Founded in 1971, the College of Southern Nevada is a public, two-year community college with a student population of 38,990, having multiple campuses in Las Vegas, Nevada. Of note, CSN is the largest public higher education institution in Nevada and the third largest of its type in the nation.

As the Land Grant institution for the state of Nevada, originally founded in 1874, UNR is a public four-year university with a population of 15,146 students, set on an urban campus, located in the micropolitan area of Reno, a small city set in northern Nevada. Founded in 1971, Truckee Meadows Community College is a public, two-year community college with a student population of over 12,000
students, set in mid-sized city in northern Nevada. Opened in 1967, Great Basin College is a public two to four-year college with a student population of 3,410 students, set on a rural campus, located in the small northeastern town of Elko, Nevada. Founded in 1971, Western Nevada College is a public community college with a student population of 5,300 students, set on a rural campus, located in the northeastern small city of Carson City, Nevada.

Summary

In an effort to understand the phenomenon of default, a sociological theoretical perspective was drawn upon for this research study. In order to discuss the relationship between student factors and default rates among six institutions of higher education in Nevada, this study adhered to a quantitative design. This quantitative design, a multiple institutional study, served as a retrospective review of student factors and default rates between the years of 1995 and 2005. This multi-institutional study analyzed student factor and default rate data sets. These data sets were collected and processed by way of secondary data analysis. Simple linear regression and multiple regression analysis functioned to measure the degree to which each of the student factors contributed to default. These results reflected the data collected from Department of Institutional Research at the Nevada System of Higher Education, the Nevada System of Higher Education Departments of Financial Aid, and the Division of Default Prevention and Management at the United States Department of Education.
CHAPTER 4

FINDINGS

The preceding chapters have introduced the background, the problem, the purpose, and the significance of the study. Earlier chapters also provided a foundation for this study by introducing a review of the literature and the methods applied, including research perspective, research design, research questions and statistical analysis. The results of the study are presented in Chapter Four. These results are presented in six major sections given the multi-institutional design of the study. The Statistical Package for the Social Sciences (SPSS) was the statistical software program employed to evaluate the data collected for this research study. SPSS is widely used for statistical analysis in the social sciences and is highly compatible for both simple linear regression and multiple regression analysis. The objective of both simple linear and multiple regression analysis was to conduct an analysis of numerical data consisting of values represented by a dependent variable and one or more independent variables. For purposes of this study, bivariate and multivariate regression analysis models were conducted for each of the six institutions under analysis, thereby creating six models. Each model provided results for the independent variables as they were measured against the dependent variable.
Research Questions

To achieve the objective of the study, answers to the following questions were sought:

1. What is the relationship between age, ethnicity, gender, residency, graduation rate and degree major and loan default rates?
2. To what extent does that relationship differ among Nevada System of Higher Education institutions?

Findings associated with both research questions are provided throughout this chapter. Related to the first research question are found in the association between independent variables and default rates at all NSHE institutions shown in Table 3. Likewise, findings related to the second research question are found in subsequent headings entitled, NSHE Two-Year Institutional Comparison, NSHE Four-Year Comparison and NSHE Regional Comparison.

Methodology Summary

Regression analysis is used in social science research to describe the association between two variables. While there are many forms of regression analysis, this study incorporated two forms, simple linear regression and multiple regression analysis. The method of regression analysis used in this study was in accordance with proper social research practices. Johnson (2001) endorsed the following:
To use regression analysis, the variables must be interval- or ratio-scale, which means they must naturally take the form of numbers (such as income or age). An exception to this is any variable that takes the form a DICHOTOMY, such as gender, or a multicategory variable, such as education, that is collapsed to two categories such as "less than university" and some university or more" (p. 256).

This study examined multicategory variables such as age, residency, gender, ethnicity, graduation rates, and degree majors. A brief description of these variables is summarized in Chapter 3. The following social statistics sections describing simple linear and multiple regression analysis heavily refer to The Practice of Social Research by Earl Babbie.

*Simple Linear Regression*

Before conducting multiple regression analysis (MLR), it was helpful to examine the data by evaluating the relative impact of each independent variable on the default rate via simple linear regression (SLR).

One of the most widely used statistical techniques is simple linear regression. This technique is used to relate a measured response variable, \( Y \), to a single measured predictor (explanatory) variable, \( X \), by means of a straight line. It uses the principle of least squares to come up with values of the "best" slope and intercept for a straight line that approximates the relationship. (Stephenson, n.d., p. 1)

For this study, this technique was used to relate the measured response variable of default, \( Y \), to single predictor (explanatory) variables, \( X \). Predictor variables for
this study served as the independent variables. The selected independent variables for this study were the rates of age, ethnicity, gender, residency, graduation, and degree major. According to Babbie, the general formula for describing the association between two variables is $Y = f(X)$ and is read "$Y$ is a function of $X$" or meaning that $Y$ can be explained in terms of variations in the values of $X$ (2004).

Simple linear regression is both descriptive and inferential in nature. It is descriptive because "the regression line offers a graphic picture of the association between $X$ and $Y$, and the regression equation is an efficient form for summarizing that association" (Babbie, 2004, pg. 448). It is important to note that this study focused on relationships (associations) between variables rather than causal relationships. If the regression equation can correctly describe the association between two variables, according to Babbie, the same regression equation may be used to predict other sets of values. A straight line on a graph is represented by an equation of the form $Y = a + bX$, where $X$ and $Y$ are values of two variables. In this equation, $a$ equals the value of $Y$ when $X$ is 0, and $b$ represents the slope of the line...knowing the values of $a$ and $b$ allows us to calculate an estimate of $Y$ for every value of $X$. Regression analysis then can be defined as:

A technique for establishing the geometric line that comes closest to the distribution of points on a graph; therefore, a regression equation provides a mathematical description of the relationship between the variables, and it allows us to infer values of $Y$ when we have values of $X$. (p. 449)
Although simple linear regression (SLR) may indicate that $X$ causes $Y$, so the value of $X$ may determine the value of $Y$, this study employed simple linear regression to plainly describe the association between two variables.

In SLR, to estimate the values on one variable from values of another, a regression line in the form of a regression equation is constructed. This regression equation is formatted in the following manner: 

$$Y' = a + b(X),$$

where $a$ and $b$ are computed values, $X$ is a given value on one variable, and $Y'$ is the estimated value on the other. Babbie indicates the values of $a$ and $b$ are computed to minimize the differences between actual values of $Y$ and the corresponding estimates ($Y'$) based on the known value of $X$ (p. 449).

After a calculation of the equation is completed, two variations are produced. The unexplained variation is the sum of squared differences between actual and estimated values of $Y$ while the difference between the total variation and the unexplained variation is referred to as the explained variation. Babbie indicates by dividing the explained variation by the total variation produces a measure of the proportionate reduction of error, also known as the correlation squared: $r^2$. "Thus, if $r = .7$, then $r^2 = .49$, meaning that about half the variable has been explained" (Babbie, 2004, p. 449). The formula for describing the association between two variables was tabulated and is presented in Table 3. Table 3 describes the relationship between each independent variable and the default rate using the data from all institutions by means of SLR analysis. Tables 4 though 9 describe relationships between variables by institution.
Table 3

Association between Independent Variables and Default Rate at all NSHE Institutions: $Y = f(X)$

<table>
<thead>
<tr>
<th>$f(X)$</th>
<th>B</th>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.301</td>
<td>.796</td>
<td>0.633*</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.143</td>
<td>.280</td>
<td>0.078</td>
</tr>
<tr>
<td>Gender</td>
<td>.495</td>
<td>.525</td>
<td>0.276</td>
</tr>
<tr>
<td>Residency</td>
<td>.375</td>
<td>.742</td>
<td>0.550*</td>
</tr>
<tr>
<td>Degree Major (Soc)</td>
<td>-118.</td>
<td>.634</td>
<td>0.401</td>
</tr>
<tr>
<td>Degree Major (Sci)</td>
<td>-179.</td>
<td>.611</td>
<td>0.473</td>
</tr>
<tr>
<td>Degree Major (Tech)</td>
<td>-135.</td>
<td>.493</td>
<td>0.243</td>
</tr>
</tbody>
</table>

*p < .05.

Simple linear regression analysis describes the relationship between each independent variable and the dependent variable. The first phase of analysis produced several important findings. The first finding indicated a significant and negative relationship between age and default rate. In a negative relationship, as the values of one of the variables increase, the values of the second variable decrease or as the value of one of the variables decreases, the value of the other variable increases (Neill, 2003).
The relationship between age and default rate was found to be negative because as the variable of age increased, it had a negative impact on the rate of default. Given $r^2$ is a measure of association, simple linear regression analysis indicated that 63% of the variance in the values of $Y$ was explained by knowing the value of age. As the rate of traditionally-aged students increased at NSHE institutions, default rates drastically decreased. Simply put, older students in Nevada’s public institutions of higher education tended to have lower default rates. This result was contrary to findings established in the review of the literature. Woo (2002) found older students were more likely to default than their younger counterparts for the reason that older students could not rely on their parents and family to assist them during times of financial distress. Podgursky, Ehlert, Monroe, Watson, & Wittstruck (2002) found non-traditionally-aged students were much more likely to default compared to traditionally-aged students. Beyond any other variable measured by simple linear regression, age had the highest relationship to loan default rate.

The second important finding indicated a significant and positive relationship between residency and default rate. The linear regression model indicated that 55% of the variance in the values of $Y$ was explained by knowing the value of residency. Compared to other variables measured by simple linear regression, residency had one of the strongest relationships to default rate. As the percentage of Nevada residents increased at NSHE institutions, so did default rates. Nevada residents tended to have higher default rates. This result complimented findings in the review of the literature. A default study at the
University of Texas found residency to have a strong relationship to loan default. In their study, Herr and Burt (2005) used regression analysis to find three variables to be statistically significant; among them was Texas residency status.

The third and fourth findings were not statistically significant; however, their marginal importance was worth noting. The third finding indicated a weak negative relationship between the percentage of social science majors and the default rate. As the proportion of students majoring in social sciences increased, default rates tended to decrease. The fourth finding also indicated a weak negative relationship between the proportion of students majoring in science and default rate. Overall, the finding indicated the higher the proportion of science majors at NSHE institutions, the lower the default rate they were likely to experience. It is important to note that these measures of associations were very weak (40% and 47% respectively), compared to the very strong relationships of age and residency.

The second phase of simple linear regression analysis described the relationship between each independent variable and dependent variable, by institution. Simple linear regression analysis (SLR) produced findings at three of the six Nevada System of Higher Education institutions and is summarized in Tables 4 through 9.

**Multiple Regression Analysis**

The third and final phase of statistical analysis for this study used the statistical tool of multiple regression analysis. When utilizing multiple regression analysis it is important to check for multicollinearity. Multicollinearity exists when
there are high intercorrelations among a set of independent variables. For this study, to ensure the independent variables of age, ethnicity, gender, residency, graduation rates and degree major were not highly correlated, a Pearson product-moment correlation coefficient measure was used to test for multicollinearity. As a result, the degree if collinearity between all the variables were .90 or below, indicating that multicollinearity is not problematic.

Because social life is so complex, simple linear regression does not always suffice given that phenomena is often influenced by more than one variable at one time. When researchers encounter a dependent variable influenced simultaneously by several independent variables, they often make use of multiple regression analysis (Babbie, 2004).

In the review of the literature, researchers found default rates to be affected simultaneously by several independent variables. Multiple regression analysis seeks the equation representing the impact of two or more independent variables upon a single dependent variable. A multiple regression equation is written: 

\[ Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e. \]

Compared to the simple linear regression model, several \( X \)'s take place of the single \( X \). Here, Babbie noted \( X \)'s represent the independent variables while the \( Y \) is represented by the dependent variable. By calculating the \( b \) values in the equation, relative contributions of the several independent variables in determining the dependent variable are provided. The \( e \) in the equation, a residual factor, represents the variance in \( Y \) that is not accounted for by the \( X \) variables analyzed. Finally, Babbie explained the multiple-correlation coefficient is calculated to indicate the
extent to which all independent variables influence the dependent variable:

This follows the same logic as the simple bivariate correlation reported as a capital $R$. If $R = .877$, meaning that 77% of the variance ($0.877^2 = .77$) in the dependent variable is explained by the six variables acting in concert.

(p. 450)

Multiple regression analysis found various variables to simultaneously impact default rates. Multiple linear regression analysis (MLR) produced several findings among the Nevada System of Higher Education institutions. These findings are summarized in Tables 4 through 9.
### Table 4

Association between Independent Variables and Default Rate at UNLV: \( Y = f(X) \)

<table>
<thead>
<tr>
<th>NSHE Institution</th>
<th>( f(X) )</th>
<th>B</th>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNLV</td>
<td>Age</td>
<td>-.452</td>
<td>.876</td>
<td>0.767*</td>
</tr>
<tr>
<td></td>
<td>Ethnicity</td>
<td>.270</td>
<td>.856</td>
<td>0.732*</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-1.76</td>
<td>.859</td>
<td>0.737*</td>
</tr>
<tr>
<td></td>
<td>Residency</td>
<td>.558</td>
<td>.810</td>
<td>0.656*</td>
</tr>
<tr>
<td></td>
<td>Graduation</td>
<td>.563</td>
<td>.298</td>
<td>0.089</td>
</tr>
<tr>
<td></td>
<td>Degree Major (Soc)</td>
<td>-130.</td>
<td>.539</td>
<td>0.290</td>
</tr>
<tr>
<td></td>
<td>Degree Major (Sci)</td>
<td>-54.9</td>
<td>.122</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>Degree Major (Tech)</td>
<td>-251.</td>
<td>.347</td>
<td>0.121</td>
</tr>
</tbody>
</table>

\*\( p < .05 \).
Simple linear regression produced four results found at the University of Nevada Las Vegas. The first finding confirmed a significant and negative relationship between age and default rate at UNLV. The linear regression model indicated that 76% of the variance in the values of $Y$ was explained by knowing the value of age. As age increased at UNLV, default rates decreased. This result could suggest that non-traditionally-aged students at UNLV may have found financial resources with employment and support from their immediate family to repay their loans in a timely manner.

The second finding using simple linear regression verified a significant and positive relationship between residency and loan default rates at the University of Nevada Las Vegas. The linear regression model indicated that 65% of the variance in the values of $Y$ was explained by knowing the value of residency. As the proportion of Nevada residents increased at UNLV, rates for default also increased. The finding hinted at the fact that the majority of students who default at UNLV tended to be residents of Nevada. In-state students tend to borrow less than their out-of-state counterparts. With that being said, Woo (2002) indicated that borrowers with small debts are more likely to default than those with large debts. If students with smaller debts are more likely to be Nevada residents then it is not surprising that students who borrow less are more apt to stay in school a short time. If Nevada residents stay in school for only a short time period, this trend would point to lower graduation rates, perhaps making it difficult to obtain gainful employment and making repayment difficult.

A third finding discovered a significant and positive relationship between
ethnicity and UNLV default rates. The linear regression model indicated that 73% of the variance in the values of $Y$ was explained by knowing the value of ethnicity. As the percentage of the White student population increased, the default rate also increased. This institutional finding contradicted the literature which indicated non-Whites were more apt to default than Whites.

Finally, the last finding produced by simple linear regression pointed to a significant and negative relationship between gender and UNLV loan default rates. The linear regression model indicated that 73% of the variance in the values of $Y$ was explained by knowing the value of gender. As the proportion of UNLV female students increased, the rate of default decreased. At UNLV, analysis indicated females were less likely to default compared to males.

In addition to simple linear regression, multiple linear regression analysis was engaged to measure the relationship between the independent variables simultaneously against the rate of default at UNLV. The multivariate model used to measure age, ethnicity, residency, graduation, and degree major produced one of the strongest significant relationships found in this study. Age explained 91% of the variance ($0.959^2 = .91$) in the UNLV default rate when measuring all six independent variables at once. Found was a strong negative relationship between the proportion of traditionally-aged students at UNLV and default rates. As the proportion of traditionally-aged students increased, default rates decreased.
Table 5

Association between Independent Variables and Default Rate at UNR:

\[ Y = f(X) \]

<table>
<thead>
<tr>
<th>NSHE Institution</th>
<th>( f(X) )</th>
<th>B</th>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNR</td>
<td>Age</td>
<td>-.196</td>
<td>.887</td>
<td>0.786*</td>
</tr>
<tr>
<td>UNR</td>
<td>Ethnicity</td>
<td>.387</td>
<td>.903</td>
<td>0.815*</td>
</tr>
<tr>
<td>UNR</td>
<td>Gender</td>
<td>-.819</td>
<td>.820</td>
<td>0.673*</td>
</tr>
<tr>
<td>UNR</td>
<td>Residency</td>
<td>-.139</td>
<td>.294</td>
<td>.086</td>
</tr>
<tr>
<td>UNR</td>
<td>Graduation</td>
<td>-.735</td>
<td>.474</td>
<td>0.225</td>
</tr>
<tr>
<td>UNR</td>
<td>Degree Major (Soc)</td>
<td>-2.79</td>
<td>.016</td>
<td>0.000</td>
</tr>
<tr>
<td>UNR</td>
<td>Degree Major (Sci)</td>
<td>88.2</td>
<td>.253</td>
<td>0.064</td>
</tr>
<tr>
<td>UNR</td>
<td>Degree Major (Tech)</td>
<td>-386.</td>
<td>.704</td>
<td>0.500*</td>
</tr>
</tbody>
</table>

\*p < .05.
Simple linear regression analysis produced four findings at the University of Nevada Reno. Analysis found a significant negative relationship between age and default rates at the University of Nevada Reno. The linear regression model indicated that 78% of the variance in the values of $Y$ was explained by knowing the value of age. Like the University of Nevada Las Vegas, as age increased at UNR, default rates decreased. Of note, the findings regarding age and loan default at both UNLV and UNR had strong negative associations. This is important given that other institutions did not have any relationships in common.

Analysis using SLR also found a significant and positive relationship between ethnicity and default rates. The linear regression model indicated that 81% of the variance in the values of $Y$ was explained by knowing the value of ethnicity. At UNR, as the number of White students increased, default rates increased. A significant and negative relationship between gender and default rates at UNR was found. The linear regression model indicated that 67% of the variance in the values of $Y$ was explained by knowing the value of gender. As the percentage of female students at UNR decrease, the default rate at UNR increases. Lastly, SLR found a significant and negative relationship between the proportion of students majoring in technology fields and the rate of default at UNR. The linear regression model indicated that 50% of the variance in the values of $Y$ was explained by knowing the value of the technology degree major. At UNR, as the percentage of students majoring in technology increased, UNR default rates decreased.
Multiple linear regression analysis was engaged to measure the relationship between the independent variables simultaneously against the rate of default at UNR. The multivariate model used to measure age, ethnicity, residency, graduation, and degree major produced a strong relationship. Ethnicity explained 99% of the variance \((.995^2 = .91)\) in the UNR default rate when measuring all six independent variables at once. Found was a significant negative relationship between the number of White students at UNR and default rates. As the proportion of White students increased, default rates decreased.

Tables 6 through 9 clearly indicate the lack of relationships among variables and institutional default rates at the College of Southern Nevada, Truckee Meadows Community College, Great Basin College and Western Nevada College.
Table 6
Association between Independent Variables and Default Rate at CSN: $Y = f(X)$

<table>
<thead>
<tr>
<th>NSHE Institution</th>
<th>$f(X)$</th>
<th>B</th>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSN</td>
<td>Age</td>
<td>.247</td>
<td>.351</td>
<td>0.0123</td>
</tr>
<tr>
<td>CSN</td>
<td>Ethnicity</td>
<td>-.215</td>
<td>.408</td>
<td>0.166</td>
</tr>
<tr>
<td>CSN</td>
<td>Gender</td>
<td>.339</td>
<td>.155</td>
<td>0.024</td>
</tr>
<tr>
<td>CSN</td>
<td>Residency</td>
<td>-1.26</td>
<td>.305</td>
<td>0.093</td>
</tr>
<tr>
<td>CSN</td>
<td>Graduation</td>
<td>-.344</td>
<td>.322</td>
<td>0.110</td>
</tr>
<tr>
<td>CSN</td>
<td>Degree Major (Soc)</td>
<td>256.</td>
<td>.258</td>
<td>0.067</td>
</tr>
<tr>
<td>CSN</td>
<td>Degree Major (Sci)</td>
<td>278.</td>
<td>.222</td>
<td>0.049</td>
</tr>
<tr>
<td>CSN</td>
<td>Degree Major (Tech)</td>
<td>467.</td>
<td>.439</td>
<td>0.193</td>
</tr>
</tbody>
</table>

*p < .05.*
Simple linear regression produced no significant relationships for any of the independent variables and default rates at the College of Southern Nevada.

Multiple linear regression analysis was engaged to measure the relationship between the independent variables simultaneously against the rate of default at CSN. The multivariate model used to measure age, ethnicity, residency, graduation, and degree major produced a relationship. Ethnicity explained 74% of the variance ($0.861^2 = 0.74$) in the CSN default rate when measuring all six independent variables at once. Found was a significant negative relationship between the number of White students at CSN and default rates. As the proportion of White students at CSN increased, CSN default rates decreased.
Table 7

Association between Independent Variables and Default Rate at TMCC: \( Y = f(X) \)

<table>
<thead>
<tr>
<th>NSHE Institution</th>
<th>( f(X) )</th>
<th>B</th>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMCC</td>
<td>Age</td>
<td>-.222</td>
<td>.513</td>
<td>0.263</td>
</tr>
<tr>
<td>TMCC</td>
<td>Ethnicity</td>
<td>.667</td>
<td>.606</td>
<td>0.367</td>
</tr>
<tr>
<td>TMCC</td>
<td>Gender</td>
<td>1.76</td>
<td>.604</td>
<td>0.365</td>
</tr>
<tr>
<td>TMCC</td>
<td>Residency</td>
<td>-.895</td>
<td>.363</td>
<td>0.132</td>
</tr>
<tr>
<td>TMCC</td>
<td>Graduation</td>
<td>.281</td>
<td>.172</td>
<td>0.030</td>
</tr>
<tr>
<td>TMCC</td>
<td>Degree Major (Soc)</td>
<td>4.37</td>
<td>.005</td>
<td>0.000</td>
</tr>
<tr>
<td>TMCC</td>
<td>Degree Major (Sci)</td>
<td>-.282</td>
<td>.314</td>
<td>0.099</td>
</tr>
<tr>
<td>TMCC</td>
<td>Degree Major (Tech)</td>
<td>227.</td>
<td>.136</td>
<td>0.018</td>
</tr>
</tbody>
</table>

*\( p < .05 \).*

95
Simple linear regression produced no significant relationships for any of the independent variables and default rates at Truckee Meadows Community College.

Multiple linear regression analysis was engaged to measure the relationship between the independent variables simultaneously against the rate of default at TMCC. The multivariate model used to measure age, ethnicity, residency, graduation, and degree major produced a strong association. Ethnicity explained 94% of the variance ($0.973^2 = 0.94$) in the TMCC default rate when measuring all six independent variables at once. Found was a significant and negative relationship between the number of White students at TMCC and default rates. As the proportion of White students at TMCC increased, TMCC default rates decreased.
Institution 5: Great Basin College

Table 8

Association between Independent Variables and Default Rate at GBC: \( Y = f(X) \)

<table>
<thead>
<tr>
<th>NSHE Institution</th>
<th>( f(X) )</th>
<th>B</th>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBC</td>
<td>Age</td>
<td>-.577</td>
<td>.612</td>
<td>0.374</td>
</tr>
<tr>
<td>GBC</td>
<td>Ethnicity</td>
<td>.772</td>
<td>.284</td>
<td>0.081</td>
</tr>
<tr>
<td>GBC</td>
<td>Gender</td>
<td>-.528</td>
<td>.373</td>
<td>0.365</td>
</tr>
<tr>
<td>GBC</td>
<td>Residency</td>
<td>-1.62</td>
<td>.717</td>
<td>0.514*</td>
</tr>
<tr>
<td>GBC</td>
<td>Graduation</td>
<td>.604</td>
<td>.619</td>
<td>0.383</td>
</tr>
<tr>
<td>GBC</td>
<td>Degree Major (Soc)</td>
<td>-132.</td>
<td>.468</td>
<td>0.219</td>
</tr>
<tr>
<td>GBC</td>
<td>Degree Major (Sci)</td>
<td>-600.</td>
<td>.392</td>
<td>0.154</td>
</tr>
<tr>
<td>GBC</td>
<td>Degree Major (Tech)</td>
<td>-339.</td>
<td>.428</td>
<td>0.183</td>
</tr>
</tbody>
</table>

*\( p < .05 \).
Simple linear regression found a negative association between Nevada residents at GBC and Great Basin College default rates. The linear regression model indicated that 51% of the variance in the values of Y was explained by knowing the value of residency. As the proportion of Nevada residents at GBC increased, default rates at the college decreased.

Multiple linear regression analysis found a significant and positive relationship between the rate of students who graduated and default rates at GBC. Graduation explained 93% of the variance \((.966^2 = .93)\) in the GBC default rate when measuring all six independent variables at once. As the number of students graduating increased, default rates increased at GBC.
## Association between Independent Variables and Default Rate at WNC: \( Y = f(X) \)

<table>
<thead>
<tr>
<th>NSHE Institution</th>
<th>( f(X) )</th>
<th>B</th>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>WNC Age</td>
<td></td>
<td>-.288</td>
<td>.409</td>
<td>0.168</td>
</tr>
<tr>
<td>WNC Ethnicity</td>
<td></td>
<td>.094</td>
<td>.059</td>
<td>0.003</td>
</tr>
<tr>
<td>WNC Gender</td>
<td></td>
<td>1.01</td>
<td>.468</td>
<td>0.219</td>
</tr>
<tr>
<td>WNC Residency</td>
<td></td>
<td>-3.56</td>
<td>.613</td>
<td>0.375</td>
</tr>
<tr>
<td>WNC Graduation</td>
<td></td>
<td>-.349</td>
<td>.169</td>
<td>0.028</td>
</tr>
<tr>
<td>WNC Degree Major (Soc)</td>
<td></td>
<td>-406.</td>
<td>.277</td>
<td>0.077</td>
</tr>
<tr>
<td>WNC Degree Major (Sci)</td>
<td></td>
<td>485.</td>
<td>.238</td>
<td>0.057</td>
</tr>
<tr>
<td>WNC Degree Major (Tech)</td>
<td></td>
<td>-453.</td>
<td>.462</td>
<td>0.213</td>
</tr>
</tbody>
</table>

*\( p < .05 \).*
Simple linear regression produced no relationships for any of the individual independent variables and default rates at the Western Nevada College. While no results were found by means of simple linear regression, a multivariate model measuring all the independent variables simultaneously against WNC default rates identified a significant and negative association. Age explained 94% of the variance ($0.941^2 = 0.88$) in the WNC default rate when measuring all six independent variables at once. As the rate of traditionally-aged students increased at WNC, default rates decreased.

NSHE Two-Year Institutional Comparison

By way of simple regression analysis and multiple regression analysis, all of the two-year public institutions (CSN, GBC, WNC and TMCC) were examined for relationships between institutional student factors and institutional default rates. Neither bivariate nor multivariate model produced results indicating independent variables independently or simultaneously influenced default at any of the two-year public institutions.

NSHE Four-Year Institutional Comparison

At UNLV and UNR, age was the only independent variable found to influence default rates at Nevada’s four-year public institutions. The linear regression model indicated that 71% of the variance in the values of $Y$ was explained by knowing the value of age. As the percentage of traditionally-aged students increased, default rates fell.
An examination of UNLV and UNR by means of multiple regression analysis found a significant and positive relationship between the rate of science degree majors and default rates. The rate of student majoring in sciences explained 83% of the variance (.912^2 = .83) in the default rate at four-year public NSHE schools when measuring all six independent variables at once. As the percentage of science degree majors increased at UNLV and UNR, the rates of defaults increased at both schools.

NSHE Regional Comparison

Simple linear regression uncovered several differences when southern Nevada and northern Nevada institutions were compared. For southern Nevada schools there was a significant and negative relationship between residency and default. The linear regression model indicated that 57% of the variance in the values of Y was explained by knowing the value of residency. In southern Nevada, found was a significant and negative relationship between social science degree majors and default. The linear regression model indicated that 54% of the variance in the values of Y was explained by knowing the value of social science degree majors. Also found was a significant and negative relationship between technical degree majors and default. The linear regression model indicated that 51% of the variance in the values of Y was explained by knowing the value of technical degree majors.

For northern Nevada schools there was a significant and negative relationship between age and default. The linear regression model indicated that 66% of the variance in the values of Y was explained by knowing the value of
age. A significant and positive relationship between residency and default was also found for northern Nevada schools. The linear regression model indicated that 52% of the variance in the values of $Y$ was explained by knowing the value of residency. Lastly, single linear regression analysis found a significant and positive relationship between the rate of science degree majors and default rates. The linear regression model indicated that 50% of the variance in the values of $Y$ was explained by knowing the value of science majors.

Multiple linear regression analysis found two relationships to exist among northern and southern Nevada institutions. For northern Nevada schools multiple linear regression analysis established a significant and negative relationship between the rate of age and default rates. The rate of age explained 75% of the variance ($0.867^2 = .75$) in the default rate for northern NSHE schools when measuring all six independent variables at once. For southern Nevada schools a multivariate model produced a significant and negative relationship between the rate of students majoring in social science and default rates. The rate of students majoring in social sciences explained 71% of the variance ($0.847^2 = .71$) in the default rate for northern NSHE schools when measuring all six independent variables at once.

Summary of the Findings

The initial phase of the statistical analysis consisted of describing the relationship between each independent variable and the dependent variable. Simple linear regression analysis was used to identify associations that existed
between independent variables and default rates. A variable that was significant and positively related with default rates included residency ($r^2=.55$, $p<.05$). A variable that was significant and negatively related with default rates included age ($r^2=.63$, $p<.05$). One variable that was not statistically significant and negatively related with default rates included social science major rates ($r^2=.40$, $p>.05$). Another variable that was not statistically significant and positively related with default rates included science major rates ($r^2=.47$, $p>.05$). When measured with simple linear regression analysis, the following variables were found to have no significant relationships with default rates: ethnicity, gender, graduation rates, and technical major rates.

The second phase of the statistical analysis consisted of a description of the relationship between each independent variable and dependent variable on an individual institutional basis. Simple linear regression was used to establish associations between dependent and independent variables by institution. Variables that were significant and positively related with default rates at UNLV included ethnicity ($r^2=.73$, $p<.05$) and residency ($r^2=.65$, $p<.05$). Variables that were significant and negatively related with default rates at UNLV included age ($r^2=.76$, $p<.05$) and gender ($r^2=.73$, $p<.05$). One variable that was significant and positively related with default rates at UNR included ethnicity ($r^2=.81$, $p<.05$). Variables that were significant and negatively related with default rates included age ($r^2=.78$, $p<.05$); technology major rates ($r^2=.50$, $p<.05$); and gender ($r^2=.67$, $p<.05$). One variable that was significant and negatively related with default rates at GBC included residency ($r^2=.51$, $p<.05$). A simple linear regression analysis
summary indicating which independent variables were significant to individual institutions is provided in Table 10.

The third phase of the statistical analysis measured how the dependent (default rate) was affected simultaneously by the independent variables. Multiple regression analysis provided a means of analyzing how the rate of default was impacted simultaneously by rates of age, ethnicity, gender, residency, graduation rate and degree major. Multiple linear regression analysis (MLR) produced several findings among the Nevada System of Higher Education institutions. Variables that were significant and positively related with default rates included GBC graduation rates ($r^2=.93, p<.05$) and NSHE four-year public institution science degree major rates ($r^2=.71, p<.05$). Variables that were significant and negatively related with default rates included UNLV age ($r^2=.91, p<.05$); UNR ethnicity ($r^2=.91, p<.05$); CSN ethnicity ($r^2=.74, p<.05$); TMCC ethnicity ($r^2=.94, p<.05$); and WNC age ($r^2=.94, p<.05$). A multiple linear regression analysis summary indicating which independent variables were significant to individual institutions is provided in Table 11.

Multiple regression analysis found no significant relationships to exist between independent variables and default rates for any of the four two-year public NSHE institutions. However, variables that were significant and negatively related with state-wide default rates included northern NSHE institution age rates ($r^2=.75, p<.05$) and southern NSHE institution social science major rates ($r^2=.71, p<.05$). A summary indicating which variables were significant by NSHE regions is provided in Table 12.
Table 10

Association between Independent Variables and Default Rate among NSHE Institutions (Simple Linear Regression)

<table>
<thead>
<tr>
<th></th>
<th>UNLV</th>
<th>UNR</th>
<th>CSN</th>
<th>TMCC</th>
<th>GBC</th>
<th>WNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.767*</td>
<td>.786*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.732*</td>
<td>.815*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Gender</td>
<td>.737*</td>
<td>.673*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Residency</td>
<td>.656*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Graduation</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.514*</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Soc)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Sci)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Tech)</td>
<td>--</td>
<td>.500*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*p < .05.
## NSHE Institutions

### Table 11

Association between Independent Variables and Default Rate among NSHE Institutions (Multiple Linear Regression)

<table>
<thead>
<tr>
<th></th>
<th>UNLV</th>
<th>UNR</th>
<th>CSN</th>
<th>TMCC</th>
<th>GBC</th>
<th>WNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.919*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.886*</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>--</td>
<td>.991*</td>
<td>.742*</td>
<td>.947*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Gender</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Residency</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Graduation</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.933*</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Soc)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Sci)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Tech)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

* *p < .05.
Table 12

Association between Independent Variables and Default Rate among NSHE Regions (Simple and Multiple Linear Regression)

<table>
<thead>
<tr>
<th></th>
<th>NSHE Two-Year</th>
<th>NSHE Four-Year</th>
<th>NSHE South</th>
<th>NSHE North</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>--</td>
<td>.716*</td>
<td>--</td>
<td>.668*</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Gender</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Residency</td>
<td>--</td>
<td>--</td>
<td>.576*</td>
<td>.525*</td>
</tr>
<tr>
<td>Graduation</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Soc)</td>
<td>--</td>
<td>--</td>
<td>.549*</td>
<td>--</td>
</tr>
<tr>
<td>Degree Major (Sci)</td>
<td>--</td>
<td>.832*</td>
<td>--</td>
<td>.505*</td>
</tr>
<tr>
<td>Degree Major (Tech)</td>
<td>--</td>
<td>--</td>
<td>.514*</td>
<td>--</td>
</tr>
</tbody>
</table>

*p < .05.
CHAPTER 5

SUMMARY and DISCUSSION

For the benefit of the reader, this final chapter of the dissertation provides a restatement of the research problem and reviews the methodology used in the study. The sections of this chapter summarize the results and discuss their implications.

As stated in Chapter 1, the problem is that college students in Nevada have the highest rate of defaulting on federal student loans in the nation. As explained in Chapter 3, the research reported here was an exploratory study of Nevada's high student loan default rates. As an exploratory study, this research primarily used a quantitative perspective, attempting to measure the degree of association between rates of institutional student factors and rates of institutional default. The exploratory study investigated NSHE institutions between 1995 and 2005.

The exploratory study relied chiefly on secondary data from the Department of Institutional Research at the Nevada System of Higher Education (NSHE), NSHE Departments of Financial Aid, and the Division of Default Prevention and Management at the United States Department of Education. Regression analysis was used to measure the relationship between age,
ethnicity, gender, residency, graduation rate, and degree major and loan default rates at each of the six Nevada public higher education institutions. Two regression models were used, a bivariate model in the form of simple linear regression and a multivariate model in the form of multiple linear regression.

Summary of the Results

Throughout the entire study, the overall objective was to determine the relationship between the independent variables and the dependent variable. In general, simple linear regression analysis described associations existing between each independent variables and default. Residency resulted as being significant and positively related with default rates. Age was found to be significant and negatively related with default rates. Rates for social science majors, although not statistically significant ($r^2 = .40, p .05$), was negatively related with default rates. Rates for science majors, also not statistically significant ($r^2 = .47, p .05$), were found to be positively related with default rates. Ethnicity, gender, graduation, and rates for technical majors resulted in having no significant relationships with default rates.

Another objective of the study was to describe the relationships between each independent variable and dependent variable, specifically on an individual institutional basis. Simple linear regression established associations existing between dependent and independent variables by institution. Ethnicity and residency resulted as having a significant and positive relationship with default rates at UNLV while age and gender were found to have a significant and
negative relationship with default rates at UNLV. At UNR, ethnicity resulted in having a significant and positive relationship with default rates. Age, rates for technology majors and gender were found to be significant and negatively related with default rates at UNR. At GBC, residency was found to be significant and negatively related with default rates.

A final objective of this study was to measure how the dependent variable (default rate) was affected simultaneously by the independent variables. Multiple regression analysis provided a means of analyzing how the rate of default was impacted simultaneously by rates of age, ethnicity, gender, residency, graduation rate and degree major. More specifically, multiple linear regression analysis (MLR) was able to produce several findings among the Nevada System of Higher Education, both institutionally and regionally.

Graduation rates at GBC were found to be significant and positively related with default rates as were rates for science degree majors among NSHE four-year public institutions. Variables that were significant and negatively related with default rates included age at UNLV; ethnicity at UNR; ethnicity at CSN and TMCC; and age at WNC.

There were no significant relations between independent variables and default rates for any of the four two-year public NSHE institutions. However, age at northern NSHE institutions and rates for science majors at southern NSHE institutions resulted in being both significant and negatively related with default rates state-wide.
Summarized here are general findings of the present study:

1. First, simple linear regression analysis found age, residency, and rates for social science majors to have associations with default rates.

2. Also, simple linear regression analysis found age and residency to have strong associations with default rates, on an institutional basis.

3. Next, multiple linear regression analysis found age, ethnicity, and graduation rates to have strong associations with default rates, on an institutional basis.

4. Finally, multiple linear regression analysis found age, social science and rates for science majors to have strong associations with default rates, both on an institutional basis and regionally.

Discussion of the Results

On the basis of this study alone, it is difficult to have a holistic understanding about the factors associated with default rates among Nevada public institutions of higher education because as a few variables were associated with default, other common variables known to affect default displayed no associations. As noted above, two common independent variables strongly associated with default rates were age and residency. Research by Herr and Burt (2005) also found age and residency to have strong relationships with default rates. Another common element found to have a strong association with default rates in this study was ethnicity. Likewise, research by Flint (1997) found ethnicity to be associated with default rates. Because of previously reported
research, finding existing relationships between factors (e.g. age, residency and ethnicity) and default rates was expected. However, findings in this study differed from those of previous studies.

Relationship of the Current Study to Prior Research

Previous research on factors associated with student loan default found relationships between some demographic variables and default rates. For example, Steiner and Teszler (2003) found that age was positively related with default rates and Volkwein and Cabrera (1998) found that ethnicity was positively related with default rates. However, in the current study age was negatively related with default rates, meaning as the age rates increased, default rates decreased. Also, in the current study, ethnicity was found to be negatively related to default rates, meaning White students defaulted at a higher rate compared to minority students. Both of these findings were significant but at variance with the findings of others such as Steiner, Teszler, Volkwein and Cabrera who looked at these issues. This is an area that requires additional research.

While previous studies produced wide-ranging results, there were common patterns and trends associated with student factors and default rates. For example, previous research and this study found residency to have a positive relationship with default rates. As rates of state residents increased, default rates also increased. Another example of a common pattern found in previous research and in the present study was the relationship between gender and default rates. Research on gender and default found that being female
decreased a borrower's chance of default by 36 percent (Woo, 2002). This study found gender to negatively related with default, meaning as the rate of female students increased, the rate of default decreased in Nevada.

The present study yielded some uncommon patterns and trends between student factors and default rates. For example, social science major rates, although not statistically significant ($r^2=.40, p .05$), was negatively related with default rates. Rates for science majors, also not statistically significant ($r^2=.47, p .05$), were found to be positively related with default rates. Rates for technology majors; however, were significant ($r^2=.50, p<.05$) and positively related with default rates. These findings presented interesting trends that differed from the literature.

Implications of the Study

Cresswell's (2008) theory of sociological positivism, a belief in a logically ordered, objective reality would have predicted that some findings in this study would have differed from those found in previous literature. The data examined in this study solely centers on the logically ordered, objective reality of Nevada; therefore, previous findings in previous research may not coincide. Babbie (2004) indicates serious scientific inquiry should not search for ultimate causes from some outside source but must be confined to the study of the relationships that exist between facts which are directly accessible to observation. This study sought to understand the relationship between student factors and default rates observed at several institutions. However, the quality of the observations (data)
will be discussed later in the limitations section.

Explanation of Unanticipated Findings

The fact that graduation rates did not quantify measures statistically significant with default rates may have resulted from the uniqueness of Nevada students. By and large, NSHE graduation data collected for the years of 1995-2005 did not have any influence on Nevada default rates. This is an area especially requiring additional research.

Graduation rates have been universally accepted as a factor to decrease the likelihood of default. Woo (2002), Steiner and Teszler (2003), Knapp and Seaks (1992), Volkwein, Szelest, Cabrera, and Napeirski-Prancl (1998), and Volkwein and Cabrera (1998), all found graduation rates to decreased a student’s propensity to default. In this study the one and only instance where graduation rates showed an association with default rates was at Great Basin College. GBC graduation rates were significant and positively related with default rates ($r^2=.93$, $p<.05$). However, the association found is counterintuitive because the finding suggests that successfully graduating from GBC increases the probability of defaulting. How does the successful completion of educational programs, which may lead to better employment opportunities, decrease the chances of student loan repayment?

Recommendations

While a single exploratory study cannot provide a firm foundation to
decipher the default dilemma, this study would suggest that the following factors affect student loan default rates in Nevada:

- Nevada residents
- White students
- Traditionally-aged students

As the findings imply, age played a role in affecting default rates in Nevada. Higher education administrators in Nevada must recognize that in-state students who enter Nevada institutions of Higher Education directly from high school are more at risk to default on student loans compared to older students. A targeted research-based financial literacy curriculum may contribute to addressing default among younger students in the Nevada System of Higher Education. Because default in Nevada is complex, a financial literacy curriculum cannot be a “one size fits all” program; rather, a targeted-based curriculum would need to be institution specific. This curriculum would be required and intended specifically for all traditionally-aged students entering Nevada public institutions of higher education.

Taught by trained financial aid administrators, this program would provide younger students with information on budgeting, credit, financial planning, paying for an education and financial aid programs (including scholarships, grants and loans). Moreover, a detailed training on student borrowing could include rights and responsibilities on student loans. Furthermore, preparation could consist of topics such as forbearance, deferment, repayment options and the negative consequences caused by default.
Implications

The implications of this study's findings are important for students, individual institutions of higher education and systems of higher education. From 1995 to 2005, 7,000 students in Nevada defaulted on their loans. The state of Nevada has failed these 7,000 students by ignoring a persistent problem and providing no solutions. As detailed in Chapter 2, the consequences of default upon both students and institutions are severe. Considering the repercussions, the future is bleak for Nevada's class of debtors and culture of defaulters.

Given the gravity of the default dilemma in Nevada, the absence of research is disturbing. Prior to this study, financial aid professionals and higher education administrators in Nevada simply speculated about why Nevada students defaulted. Summarized are some of the speculations of why Nevada students default:

- High population of single mothers
- Students struggling with gambling or substance abuse
- No family support to assist with loan repayment
- High transient population
- Low graduation rates
- Higher loan burdens

While these speculations have emerged over the past ten years, Nevada's poor track record of repaying student loans is a mystery because none of the assumptions mentioned above have been supported by research. Even with U.S. Department of Education intervention, Nevada high default rates continue. With
no results with which to compare, this study provides a new insight into default in Nevada.

Recommendations for Further Research

Additional research seems to be needed on the findings, unanticipated findings, and non-findings. First, as noted in the findings, there appears to be an anomaly between age and default rates in Nevada. What is it about younger students in Nevada that make them more susceptible to default? Also, as uncovered in the findings, a variance may exist between ethnicity and default rates. Why do White students in Nevada default at a higher rate compared to students of color? Next, results of the study surprisingly found no significant association between graduation rates and default rates. Why are graduation rates in Nevada a non-issue in relation to default rates? Finally, as noted in the findings, Nevada degree majors seem to have an inverse impact on default rates compared to findings in previous research. Why do social science majors in Nevada have a lesser chance of defaulting compared to science majors? Because there are no previous studies, further research into these questions may provide new insight into default in Nevada.

Limitations

According to Babbie (2004) exploratory studies are quite valuable in social scientific research, especially when a researcher is breaking new ground; they almost always yield new insights into the topic under research. While this study
proved to be valuable and provided insight into the default dilemma in Nevada, this exploratory study approach had its limitations. "The chief shortcoming of exploratory studies is that they seldom provide satisfactory answers to research questions, though they can hint at the answers and can suggest which research methods could provide definitive answers" (Babbie, 2004, pg. 89). Any ideal objective for any research study would be to solve the problem it is investigating. The present study was limited in only being able to point the way toward an answer.

As mentioned, the present study obtained secondary data from the Department of Institutional Research at the Nevada System of Higher Education. This department serves as a data collecting point for all campuses within the Nevada system. It is possible that had specific data been directly collected from the individual campuses, the results would have been different. There is a need to examine how data is collected in Nevada, specifically on variables that are significant and related with default rates. Default data on individual students is not collected by Nevada and this limits the advancement of a deeper understanding to default in Nevada. Furthermore, neither the Nevada System of Higher Education nor any of the institutions track individual borrowers who fail to repay their loans.

Summary and Conclusion

In summary, the present study alluded to a default dilemma in the state of Nevada. Supported by data reported by the United States Department of
Education, the study began with two attention grabbing headlines affirming Nevada’s student loan default crisis: “State of Nevada leads U.S. in loan defaults” and “Student Loans, Default rate high in Nevada” (Patton, 1997; Mower, 2007). Nevada’s default dilemma has intrinsic importance, affecting Nevada institutions of higher education, and more importantly, Nevada’s higher education students. Prior to this study, no published research had focused on Nevada student loan default. This study attempted to analyze the problem by contributing research, not toward a solution, but by providing meaningful and valuable results.

Beyond being the worst of the worst in terms of student loan defaults, Nevada’s system of higher education was selected for this study for several reasons. For one, little to nothing was known about the cause or causes of default in Nevada. Moreover, the quantity and quality of collected default data by Nevada was limited. The negative consequences of high default rates upon Nevada students and institutions of higher education alone prompted a desire for exploration. Babbie (2004) indicated studies exploratory in nature were appropriate for investigating persistent phenomena. The default phenomena in Nevada caught the attention of the United States Department of Education. An intervention by the U.S. Department of Education resulted in visits to Nevada to initiate default aversion and prevention strategies. Government intervention failed, however, Nevada’s cohort default rates continued to rise. Without any clues to solve the default dilemma in Nevada, it was the intention of this study to advance knowledge in the field of default in Nevada.

In conclusion, the present study focused on two questions regarding
relationships between age, gender, ethnicity, residency, graduation rates, degree
major, and default rates; and to what extent those relationships differed among
the institutions. This study represents the only comprehensive research
conducted to date. This study measured default rates by utilizing a quantitative
method among six institutions of higher education in Nevada. From those six
institutions, six student characteristics or factors were examined. Several of the
factors studied reached acceptable levels of statistical significance in relation to
default rates.

Important to note, no study has proven a direct cause-and-effect
relationship between student factors and default rates. Despite the fact that
studies have not proven a cause and effect relationship between college success
and default, findings suggest that anything that can improve college persistence
and completion would probably decrease student loan defaults (Steiner &
Teszler, 2005).

The findings in this study suggest students in Nevada might be different;
however, Nevada cannot confirm this because research on default in Nevada is
limited. Whereas non-traditionally aged students in Nevada have lower default
rates, this is not the case nationally. And whereas the presence of White
students on Nevada campuses tends to increase default rates, this is certainly
not the case outside the state. Moreover, while Nevada graduation rates do not
have any effect on default rates, graduation rates are universally known to
dramatically decrease default rates. Perhaps Nevada students are different but
more focused research is needed.
This exploratory study has broken new ground with default research in Nevada. The findings in this study have made it clear that the issue of default in Nevada is complex. Whereas previous research found numerous factors that influence default rates, this study concluded that at least several factors affect student loan default in the Nevada System of Higher Education.

The state of Nevada has a problem and there is a need to understand it. Because Nevada has turned a blind eye to the student loan default dilemma, default has become a part of Nevada’s past and present. Will the culture of default remain in Nevada’s future?
APPENDIX A

STUDENT LOAN DEFAULT RATES: NEVADA VS. NATIONAL AVERAGE

Student Loan Default Rates: Nevada vs. National Average
FY 1995-2005
APPENDIX B

STUDENT LOAN DEFAULT RATES: NEVADA VS. NATIONAL AVERAGE
FOUR-YEAR COLLEGES 2004-2006

Student Loan Default Rates: Nevada vs. National Average
Four-Year Colleges
FY 2004-2006

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APPENDIX C

STUDENT LOAN DEFAULT RATES: NEVADA VS. NATIONAL AVERAGE

TWO-YEAR COLLEGES 2004-2006

Student Loan Default Rates: Nevada vs. National Average
Two-Year Colleges
FY 2004-2006

FY 2004
Nevada Public Two-Year Colleges
8.1%

FY 2005
Nevada Public Two-Year Colleges
7.9%

FY 2006
Nevada Public Two-Year Colleges
8.4%

National Public Two-Year Colleges
12.2%

11.1%

9.4%

0.0% 2.0% 4.0% 6.0% 8.0% 10.0% 12.0% 14.0%
APPENDIX D

STUDENT LOAN DEFAULT RATES: NEVADA RANKED NATIONALLY
1995-2005

Student Loan Default Rates: Nevada Ranked Nationally
FY 1995-2005

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DATA COLLECTED BY INSTITUTION

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DATE: April 9, 2008

TO: Dr. Robert Ackerman, 0803-2687

FROM: Office for the Protection of Research Subjects

RE: Notification of IRB Action by Dr. J. Michael Stitt, Chair
Protocol Title: Factors Affecting Student Loan Default: Nevada System of Higher Education
OPRS# 0803-2687

This memorandum is notification that the project referenced above has been reviewed by the UNLV Social/Behavioral Institutional Review Board (IRB) as indicated in Federal regulatory statutes 45CFR46.

The protocol has been reviewed and deemed exempt from IRB review. It is not in need of further review or approval by the IRB.

Any changes to the exempt protocol may cause this project to require a different level of IRB review. Should any changes need to be made, please submit a Modification Form.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at OPRSHumanSubjects@unlv.edu or call 895-2794.
BIBLIOGRAPHY


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University of Nevada, Las Vegas

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St. Mary's University

Dissertation Title: Factors Affecting Student Loan Default:
Nevada System of Higher Education

Dissertation Examination Committee:
Chairperson, Dr. Robert Ackerman, Ed.D.
Committee Member, Dr. Gerald Kops, J.D., Ph.D.
Committee Member, Dr. Cecilia Maldonado, Ph.D.
Graduate Faculty Representative, Dr. Christopher Stream, Ph.D.