PREDICTING STUDENT RETENTION USING SCHOLARSHIP AND GRANT AID

by

William J Dixon

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APPROVED BY:

Dr. Gary Kuhne, Committee Chair

Dr. Brian Yates, Committee Member

Dr. William Kennan, Committee Member

ABSTRACT

Since the beginning, the field of higher education has represented the possibility of a better

future for many. For some, education represents a way to better oneself and to prepare for a

future career. This is the one of the strongest drivers of going to college, that it will open doors

to a better future. The number of students attending colleges and universities has increased over

the decades but so too has the expense of going to college. The dissertation report presented here

attempts to look at the retention rates of colleges and universities and how forms of financial gift

aid may impact the retention rate of college students. Participants for this study included all

public and private colleges and universities who award at least a bachelor's degree and receive

federal financial aid. These schools are required to submit information to the National Center for

Educational Statistics and an archival database was used to pull financial aid and student

enrollment information for each of these schools. Using a correlational predictive design, these

data were examined to see if student retention rates can be predicted by the average amount of

federal, state, and institutional grant and gift aid awarded per new incoming student and if one

form of aid is more predictive than the others.

Keywords: student retention, financial aid, student success, budget reductions

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List of Abbreviations

First time in college (FTIC)

Institutional (Inst)

Integrated Postsecondary Education Data System (IPEDS)

National Center for Education Statistics (NCES)

Variance-inflation Factor (VIF)

CHAPTER ONE: INTRODUCTION

Background

The past decade has seen the higher education landscape change radically. Colleges and universities that were once thought of as immune from the economic ups and downs of the nation are facing budget cuts and declining student retention rates. Declining retention rates have become a focal point for many colleges and universities as they wrestle with making difficult decisions. Combine this with the Great Recession that occurred in the late 2000s and the need for future enrollment forecasting becomes even more important.

When the recession first began, many schools saw an increase in the number of students entering their institution (Barr & Turner, 2013). The budget cuts they had experienced were somewhat offset by this enrollment increase. As time continued, however, the situation changed and schools were forced into a new reality. This reality involved getting less help from the state and federal government in terms of funding and seeing their retention rates drop (Heck, Lam, & Thomas, 2012).

This drop in retention was due to a number of reasons. First, as the job market improved, the students who had enrolled because they could not find a job began to leave (Barr & Turner, 2013). Reduced budgets were already in place at many colleges, and losing students placed even more strain on an already taxed system. Second, a number of studies have concluded that reduced support from the government has led to a decline in retention rates (Hoffshire, Ralston, & Lacho, 2013; Doyle, 2012).

It has become clear to many institutions that in order to continue to offer the level of services they have offered in the past, and in some instances survive, they have to place a higher importance on student enrollment and retention (Talbert, 2012). Schools cannot hope to make

long-term plans involving what programs to offer without first determining what their enrollment will be (Webster & Showers, 2011).

The focus on enrollment at institutions has made the field of student retention one of the fastest growing fields in the college system. Theories abound as to why students leave college; however, one of the most cited theories comes from Tinto (1988). Tinto's (1988) student departure theory states that a student decides to leave the college setting for a number of reasons. Tinto categorized these reasons into two large categories, academic and social. Academic reasons include academic ability, preparedness, school setting, and being able to pay; whereas, social factors include fitting into the environment and feeling part of the school setting (Tinto, 1988).

It is impossible to create retention policies that will help all students because the reason to leave is extremely personal. What schools must do is to help the largest number of students possible using the information at hand. Tinto's theory is not perfect but it has been found to be applicable to a large number of students and continues to influence the field today (Tinto, 1988). In addition to Tinto, other theorists have concluded that there are many reasons a student may decide to leave college (Yoshino, 1958). As cited in Yoshino (1958) the college student mortality theory proposed by McNeely echoes Tinto in that a student's decision to leave is complicated and personal.

In order to predict future enrollments, it has become necessary for institutions to not only place emphasis on retention but also what factors influence it. These factors range from personal situations, academic preparedness, social integration, fitting into the culture, and financial ability. In reality, institutions can only impact a few of these factors (Butler, 2011; Tinto, 1988). It should not come as a surprise that financial ability, or the ability to pay for college, is closely

related to student retention. In order to influence this area, schools must look into their financial aid packages and the types of aid they offer their students.

Financial aid to students comes largely from two different sources, gift aid and student loans. Multiple research articles have noted the importance of financial aid packaging in terms of retention. Pugh and Johnson (2011) found that financial gift aid in the form of grants and scholarships had a positive impact on retention. Pugh's and Johnson's research also indicated that students' loans were negatively correlated with retention. These findings were echoed by Jones et al. (2014) who found that students with high loan amounts drop out or transfer to other schools at a much higher rate than those students receiving larger gift aid amounts.

This leads many to question how effective financial aid is in terms of student retention. Research has pointed out that the amount of gift aid is positively correlated with retention but how effective is a question that must be resolved (Pugh & Johnson, 2011; Jones et al., 2014; Hoffshire et al., 2013). Federal, state, and institutional gift aid are all available to students but awarded on different criteria (National Center for Education Statistics [NCES], 2015; Tennessee Government, 2015). These criteria include financial need and merit, suggesting that those who receive the aid may represent different categories in terms of finances and academic readiness. In order to truly say that gift aid is beneficial to all, the different levels of aid must be examined.

The theory behind giving financial aid to students is simple, make college affordable and provide a path towards an education to students who otherwise could not attend. The importance of a college education cannot be overstated and the federal and state government have both set aside money to help students attend college with the hope of creating a more educated and productive workforce (United States Senate, 1965; Tennessee Government, 2015; Virginia

Department of Education, 2010). Making college more affordable not only makes education a possibility for those who could not otherwise go, but it also helps keep those students enrolled.

Student retention theories point to a student's entering characteristics as to one reason students decide not to continue college (Tinto, 1988). Among these characteristics are the student's and student's family's financial situation. Providing financial aid seems to be a logical way to improve student retention and ultimate success but research needs to be conducted to identify if certain types of financial aid are more predictive than others.

Problem Statement

Research into student retention has taken on a new importance in higher education (Talbert, 2012). Budget cuts coupled with decreasing retention rates has led to many schools having to make difficult decisions. Very few colleges and universities want to raise tuition; however, in the current educational environment, many have no choice. When state and federal funds are reduced, schools must make up the downfall (Heck et al., 2012). In order to make up for budget deficits, schools have to either raise tuition to keep current programs or cut programs altogether (Kalsbeek & Hossler, 2010). Neither circumstance is ideal.

Research has repeatedly shown that raising tuition leads to lower retention rates especially when students' loans are required to make up the difference (Hoffshire et al., 2013). There are numerous research papers addressing the impact of the great recession on schools and retention rates (Barr & Turner, 2013; Doyle, 2012; Hoffshire et al., 2013). In addition to the work of Hoffshire et al. (2013), Pugh and Johnson (2011) also confirmed that as tuition and student debt goes up, student retention goes down.

The problem that remains in the field of enrollment management and student retention is that there has been limited work regarding how the different types of gift aid affect student

retention. Research to this point has shown that the total amount of aid and the total amount of

gift aid are positively related to student retention; however, there are many different forms of gift

aid (Barr & Turner, 2013; Hoffshire et al, 2013; Pugh & Johnson, 2011). Gift aid from the

federal government is generally for low income students in the form of Pell grants and

supplemental education opportunity grants (NCES, 2015). State gift aid can be awarded to low

income students but also those who qualify based on merit. Finally, institutional gift aid is

awarded based on need and merit. The problem is that there has been limited research into how

different types of gift aid impact student retention and if receiving one is more predictive of

retention than the others.

Purpose Statement

The purpose of this study was to determine if student retention rates can be predicted

based on the average amount of grant and scholarship aid awarded to students. This study used

an archival dataset obtained from NCES and used a correlational predictive design. The study

included all 4-year degree granting institutions located within the United States who receive Title

IV federal financial aid. The outcome variable in this study was new student retention rate and is

defined as the percentage of first-time, full-time degree seeking undergraduate students who

began in one fall term and re-enrolled the next fall term (NCES, 2015). The predictor variables

used were the average amount of federal grant and scholarship aid awarded, the average amount

of state grant and scholarship aid awarded, and the average amount of institutional grant and

scholarship aid awarded per first-time, full-time undergraduate student.

Significance of the Study

The current research is important for a number of reasons. Higher education is facing a

situation that it has not seen for quite some time. The college system was long thought of as

being insulated from the larger economic situation; however, this has not proved to be the case in recent years. As the great recession continued and got worse, money that was set aside for higher education was reduced (Barr & Turner, 2013; Braunstein, Lesser, & Pascatrice, 2006). This reduction of state and federal money led to many colleges having to make decisions related to student aid packaging and program offerings (Heck et al., 2012). In order to balance their budgets, a renewed focus has been put on student retention (Butler, 2011).

Institutions run the risk of cutting programs and financial aid in ways that will negatively impact student retention. Research shows the not only does the amount of financial aid affect retention but also that the type is important (Pugh & Johnson, 2011). It is tempting to raise tuition in order to make up for recent budget cuts; however, this course of action is not the most productive and may lead to further difficulties. Raising tuition and placing more financial burden on the students has been shown to reduce retention rates (DesJardins & McCall, 2010). The alternative, which is counterintuitive, is that more money needs to be put into retention efforts. Keeping students and being able to predict future enrollment trends will not only help increase school budgets but will allow for long-term planning (Barr & Turner, 2013).

Chen (2012) stated that in order to fully understand retention more research needs to be conducted on how different forms of financial aid impact retention. The current financial situation schools are finding themselves in does not appear to be going away soon and may get worse. It is imperative for schools to make decisions based on current research and not make them based on personal beliefs. When asked about why students leave the school system, one is likely to receive many different answers, all of which are correct. What educators must do is use the research at hand and target areas that impact the greatest number of students.

Research Questions

The research question in this study is:

RQ1: How accurately can new student retention be predicted from a linear combination of financial aid types for college students?

Null Hypothesis(es)

The null hypotheses for this study are:

H_01: There will be no significant predictive relationship between the outcome variable (new student retention) and the linear combination of predicator variables (average amount of federal scholarship and grant aid, average amount of state scholarship and grant aid, and average amount of institutional scholarship and grant aid) awarded to college students.

H_02: There will be no significant predictive relationship between the outcome variable (new student retention) and the predictor variable average amount of federal scholarship and grant aid awarded to college students.

H_03: There will be no significant predictive relationship between the outcome variable (new student retention) and the predictor variable average amount of state scholarship and grant aid awarded to college students.

H_04: There will be no significant predictive relationship between the outcome variable (new student retention) and the predictor variable average amount of institutional scholarship and grant aid awarded to college students.

Definitions

1. *New Student Retention* – New student retention is the percentage of first-time, full-time degree seeking undergraduates who enroll during a fall semester and are still enrolled the next fall semester (NCES, 2015).

2. *Loan Aid* – Loan aid is aid that the student takes that must be paid back after graduation. Common forms include Stafford Loans and Plus Loans.

3. *Gift Aid* – Gift aid is financial aid that does not have to be paid back by the student. Common forms include Pell grants, merit scholarships and athletic scholarships.

4. *Federal Scholarship and Grant Aid* - Scholarship and grants awarded to students provided by the federal government. Examples of aid in this category include Pell grants and federal supplemental educational opportunity grants (NCES, 2015).

5. *State Scholarship and Grant Aid* – Scholarship and grants awarded to students provided by the state government. Scholarship and grant programs vary by state (NCES, 2015).

6. *Institutional Scholarship and Grant Aid* – Scholarship and grants awarded to students provided by the institution. These scholarships and grants vary by institution but include athletic scholarships along with scholarships and grants that are merit and non-merit based (NCES, 2015).

7. *Integrated, Postsecondary Education Data System (IPEDS)* – Federally mandated reporting that covers a number of areas including student enrollment, financial aid, graduation rates, and finance.

CHAPTER TWO: LITERATURE REVIEW

Introduction

The American dream has its roots in a secure future and the ability to provide for oneself and family. This idea is shared by millions and one would be hard pressed to find a large percentage of the population who does not believe a secure future for their family is of the utmost importance. In order to achieve this dream, there are many different roads one can take; one of these roads is getting a college education. This may not immediately lead the person to where they want to go, but it certainly opens the door for many students.

The importance of a college education has been debated for decades. Some feel that getting a college education should be a goal for everyone leaving high school. Others feel that the college setting is not appropriate for every high school graduate and may harm them in the long run. This second camp weighs the cost of the degree and how much the person can expect to earn over their lifetime.

There is little argument that jobs requiring a degree typically pay more than those that do not (NCES, 2015). In a study published by the NCES (2015), students earning a bachelor's degree can expect to earn twice that of those without a high school diploma. According to the article, a person's educational attainment is strongly related to their future earnings, a finding that should not surprise many in this day and age.

Indeed, there is a push nationally to offer higher education to a larger portion of the public. This has in turn led to several states pushing to increase the number of degrees awarded to their residents. The states of Virginia and Tennessee are examples of such a push.

Virginia began an initiative to award an additional 100,000 degrees to its residents by the year 2025 (Virginia Department of Education, 2010). This initiative had the support of the state

legislatures, and financial resources were put behind the effort. In Tennessee, the Drive to 55 initiative was started in which the state began pushing for 55% of the residents to have a college degree or certificate by the year 2025 (Tennessee Government, 2015). A set number of degrees to award was not established; however, financial resources were set aside for this initiative. Both of these initiatives show that states are beginning to focus on the importance of an educated workforce. This focus is not restricted to the state level, however.

Politicians and public leaders at the federal level often campaign on the notion of a free community college education and increasing educational opportunities for all people. For many, this is a perfectly reasonable expectation, but it has placed a large burden on the traditional 4-year and community college system. If the importance of education was as clear-cut as many make it out to be, higher education would be mandatory for all high school graduates and school budgets would not be cut; however, that is not the case. Budget cuts have occurred at the federal and state levels and higher education is finding itself in an unfamiliar setting.

The world of higher education has long been thought of as a privileged group, often referred to as the "Ivory Tower." When the economic downturn occurred in 2009, higher education first seemed to be insulated from the effects. Enrollment remained steady or increased in many schools; instead of an economic hardship, the great recession brought students to college (Barr & Turner, 2013). Those who could not find jobs or wanted to better their chances in the future turned to the college system in order to better themselves and find work at a later date. What occurred during this time period has turned out to be a frightening situation for colleges and universities.

As the economy has gotten better, students have begun leaving the college setting (Barr & Turner, 2013). On top of this, the great recession caused state and federal governments to

reduce the level of funding provided to institutions (Rutherford & Rabovsky, 2014; Menifield, 2012). What could have been a great opportunity for enrollment growth developed into institutions trying to find ways to balance their budgets and, in some cases, to survive. These cuts have not only occurred at 4-year schools but also at the community college and technical school level. This has led to schools competing for the same student. In an environment that has already seen cuts in school funding, losing any incoming students can be detrimental to a college. Turn on the news or read the current educational journals and it is not uncommon to hear of a college closing its doors.

In order for colleges and universities to manage their budgets, it has become even more imperative that they focus on their existing student body and find ways in which to not only increase new enrollment but also retain current students (Rutherford & Rabovsky, 2014; Kalsbeek & Hossler, 2010). Retention of new students is a popular metric used in order to evaluate how well a school is doing and to compare them to one another. While this is the popular use of the metric, a more practical use is to use retention in order to predict what an institution's enrollment will be in future years (Webster & Showers, 2011).

In order to predict future enrollment numbers, administrations must identify areas that impact retention at their college. Research has shown that retention can be influenced by a number of factors including student academic credentials and their ability to pay for college (Butler, 2011; O'Keeffe, 2013). It is the latter that on which this dissertation is focused. In order to predict what a school's retention rate may be, they must look at the student's ability to pay for college and in extension the financial aid they have been awarded (DesJardins & McCall, 2010). Identifying strategies that impact new student retention not only helps the college predict their future enrollment but also to make long-term goals that impact student learning.

In the field of student retention, one does not have to look hard to see that enrollment management is a blossoming field of study. Degrees are now offered in this area; however, one thing that is fundamental to all of the programs is student retention. Research in this field has been conducted for years; student retention in and of itself is not new (Talbert, 2012). What is driving the newfound focus on this area is the great recession and lack of funding.

Theories abound about why students leave the college setting. Ask five different college administrators and you are likely to receive five different answers to why students leave college. Answers may range from academic preparedness, personal situations, financial situations, and a host of others. What makes predicting student retention so difficult is that each answer is potentially correct.

Colleges are facing a new era of doing more with less resources and it is imperative that they adapt in order to stay current and, in some instances, remain a college at all. In order to remain competitive, schools must embrace what research indicates are the best practices concerning student enrollment and retention. Failure to do so not only hurts the students who are currently enrolled but also those who may enroll at a future date.

Theoretical Framework

No one theory has been universally accepted as explaining student retention. Retention is an evolving area of research; as such, articles are being published identifying factors related to retention on a regular basis. In order to understand the theoretical framework of student retention, one must first understand where it originates. Student retention theories can trace themselves back to the work done by Durkheim's theory of suicide.

Durkheim's theory involved two main concepts. First, suicide increases when the person does not have a sufficient moral consciousness. Second, the person has insufficient collective

affiliation or support (Andres & Carpenter, 1997). This theory did not specifically target student retention or attrition, but it is hypothesized that the process is related. Students who leave the academic setting often do not feel they are a part of the community or that they lack a support system to help them get through school. These two things have repeatedly been shown to influence a student's decision to leave school, and it is important to realize that a student may leave the educational setting for reasons identified to have an impact on other areas of their life.

Spady's sociological model of student dropout in higher education is based in part on Durkheim's theory of suicide (Andres & Carpenter, 1997). According to Spady's theory, there are five variables related to student dropout: academic potential, normative congruence, grade performance, intellectual development, and friend support (Demetriou & Schmitz-Sciborski, 2011). Durkheim theorized that suicide was due in part a result of difficulties in integrating into one's social surroundings. Spady extended this logic to say that a student's decision to leave the educational setting was related to how well they integrated into that setting. The decision to leave school is a complex one but according to Spady the student's family background along with their integration into the educational setting are major players in their decision (Andres & Carpenter, 1997).

Durkheim and Spady both helped lay the foundation of what would become today's leading student retention theories. In fact, one of the most widely cited theories of retention is Tinto's student departure theory which is an expansion on Spady's model. This theory shares many of the same thoughts as Spady, such as placing importance on the student's academic performance, social integration, and intellectual development; however, Tinto's theory states that a student's decision to leave college includes a number of factors not looked at by Spady (Tinto, 1988). These factors include the student's prior schooling, their abilities before entering college,

their intentions, their overall goals, institutional commitment, and interactions with faculty and staff. Chief among these is the student's integration into the college (Tinto, 1988). Colleges play a role in making students part of the campus; looking out for the student and helping them succeed are both ways to influence their decision to stay. One of the ways to help students not only fit in but also feel comfortable in the college setting is to make the experience financially possible. It is not difficult to imagine that the ability to pay for college is directly related to a student's decision to stay or leave the college setting.

Tinto identifies many areas that impact a student's decision to leave college, but in the end it truly is the student's decision. This does not mean that colleges and universities cannot impact the student's decision; in fact, the student's experience with the college could be a deciding factor. Colleges do not have control over a student's home life or the health or wellbeing of their parents or siblings. In fact, they have very little control over many of the factors that may lead to a student's decisions to leave (Butler, 2011). This makes impacting areas that are under a college's control even more important. Having programs to involve the student at the college and feel part of a community are important. Also important is the student's experience with offices on campus and their financial situation. As noted previously, research has shown that financial aid and the types of aid all play an important role in student retention (Braunstein et al., 2006; Pugh & Johnson, 2011).

Tinto's theory has been tested many times in the professional literature and has been shown to be applicable to many colleges and universities. The student departure theory has proven useful in the academic setting; however, more research is being conducted at present in terms of commuting and professional students (Dowd, 2014). When the student departure theory was first conceived, the college setting was comprised mostly of traditional students. As the

education system has evolved, it has been filled with students who no longer live on campus or are coming for professional certifications. Dowd (2014) made the argument that these groups of students may not fit into Tinto's theory of student departure and that more research needs to be conducted. Federal retention and graduation rates often do not factor in this group of students because they may not fit the general definition of first-time undergraduate students; however, understanding this group is paramount in order to determine what is going on at institutions across the country. In an article titled, "Rethinking College Student Retention" (Dowd, 2014), the author noted that although powerful Tinto's theory does not fully fit the college environment today and urges colleges with commuter and non-traditional students to consider factors that impact them specifically. This group may leave the college setting for reasons that are different than those of traditional students and this must be taken into account when examining retention strategies (Dowd, 2014).

Tinto is not the only theorist to have come up with a model or student retention, nor will he be the last. One theorist that is often cited in research literature is McNeely and the student mortality theory (Yoshina, 1958). Much like Tinto, McNeely believed that the decision to leave college is complicated. Students may have a number of reasons for not staying in a college setting, including academic difficulties and financial hardships (Yoshino, 1958). By identifying the areas that most commonly cause students to leave college, colleges are in a better position to increase retention and graduation rates and tailor programs to address these areas.

Literature

Higher education is itself a complicated topic. First, one must decide if the cost of an education will open up doors in the future or if it may saddle the student with debt. It is a very real possibility that going to college could put the student under financial hardship, especially if

they cannot afford the education. In order to determine the impact of higher education an in depth review of the literature available on the topic needs to be conducted in order to gain an understanding of the current financial aid system.

The financial aid system that is currently in place in higher education is a relatively recent development. Student loans, grants, and scholarships from the federal and state government were created fifty years ago, a relatively short time period considering how long colleges and universities have existed, and have opened the door for many to get an education that would not have previously been eligible. This in turn has created a system that not only allows students to go to college but also creates a huge amount of debt being placed on students and those who issue the aid.

The passage of the 1965 Higher Education Act laid the groundwork for the financial aid system seen today but also put taxpayer dollars towards funding higher education in the form of grants and loans (United States Senate, 1965). While this was a monumental change for the education system in the United States, it also led to an increased focus on student outcomes and outcome measures.

Two of the programs eventually created from the 1965 Higher Education Act were the Pell grant and the Stafford loan program. Each of these forms of financial aid is common in the higher education environment and each has been correlated to student retention and overall graduation rates. These two programs are the largest sources of federal aid available; as such, they are the most scrutinized. The theory behind providing these forms of financial aid is clear, to give students who would not have otherwise been able to afford to go to college an opportunity to attend; however, the success of each program is under question.

Schudde and Scott-Clayton (2014) indicated that in 2012-2013 over $32 billion was awarded to students from the Pell grant program. This is a huge number and is the single largest source of need-based aid available to students. According to Schudde and Scott-Clayton, 45% of all students entering college for the first time do not go on to their second year, indicating a 55% retention rate. This is alarming and brings into question how the Pell grant is awarded. An argument is often made that these are students who would not be able to go to college normally and while not perfect, the program is still beneficial to a large number of students.

A recent article written by Scott-Clayton (2015) outlines the complexity of financial aid programs and examines their effectiveness. As noted above, the issue is complex but making college affordable has an impact on student enrollment. In many areas, it seems that the amount of financial aid available is not keeping up with the increases in college tuition. This has resulted in a gap of enrollment between high and low income families being greater than that in the 1960s (Scott-Clayton, 2015).

In perhaps an ironic twist, after the federal government stepped in with financial aid for lower income students, a corresponding increase in tuition across the country occurred. William Bennet, the former secretary of education under President Reagan, hypothesized that colleges and universities were increasing tuition for the simple reason that more money was being made available (Fuller, 2014). This finding has never been positively confirmed; however, there is a strong correlation between college tuition increases and financial aid being made available.

This finding is important for a number of reasons. As mentioned previously, with the addition of federal aid, colleges and universities came under more scrutiny in terms of licensing and federal reporting. In most states, this was followed up by state reporting which closely mirrored that of the federal government. Since federal and state moneys were being made

available to colleges and universities, it was only logical to have some type of oversight of the money.

Jones et al. (2014) showed that schools may take a novel approach and work with state legislatures in order to not raise tuition in exchange for increased appropriations. This, however, depends on the state and the value the legislation places on education. Research has shown that not all states place the same value on higher education; as such, appropriations vary widely across the US (Doyle, 2012).

It is a fact that colleges and universities are under more scrutiny today than at any time in history. Colleges are ranked, and these rankings are posted online and on news outlets for the world to see. Performance funding for colleges and universities is on the horizon and one of the leading indicators is student retention rates. Now is the time for colleges to take a hard look at the programs they offer and how they help students afford an education. Financial aid packaging comes in many forms; however, the one fundamental goal is the same, making sure students can afford to go to college.

The issue of financial aid is not dependent on the college and university alone but also the political environment they find themselves. State aid is a large source of financial aid, and as such is subject to the financial health the state is in. Legislators may support higher education and therefore put money into financial aid programs or legislators may not support education as much as many would like. All states have a percentage of their budgets allocated to education, but the percentages can vary widely.

This fact is highlighted in the article by Doyle (2012) which states that there is a difference at the state level in education areas and that education is not treated the same throughout the country. Doyle stated that variations in college funding and aid pose the question

of, "what are the goals of state policy makers?" (p. 618). Interactions between policymakers and college administrators take place routinely with neither getting what they want. The result is an education system that highlights the most important feelings of legislators and administrators but may miss out on many of the smaller details important to colleges and the overall retention and graduation efforts (Doyle, 2012).

Financial aid is a topic of discussion not only at the state and federal level but also at home. Research is beginning to show that financial aid and how it is used is perceived differently by the general public and administrators. Research by Shireman, Baum, and Steele (2012) found that a large portion of the public believed that a student should be held responsible for their education and those who do not graduate should have to repay their scholarships and grants. This is in direct opposition to how scholarships are currently awarded, as gift aid. If the system of financial aid changes and gift aid is no longer a gift but strings are attached there is no way to predict what consequences this will have on the college going population. For now, this way of thinking has not manifested itself into school policy but one wonders if it is only a matter of time. With reduced resources and a smaller pool of money to award, it would not be surprising if the system currently in place is changed into a system that is more punitive and has consequences.

In addition to grants and scholarships, students have been taking on larger debts in order to attend college. Historically, only students who could afford to go to college were the ones enrolled; however, the changes in the financial aid system opened the door to students who had never been exposed previously. Indeed, many of these students were lower income and in many cases first generation students, meaning their parents had never attended college. This represents

a major shift in the college population and highlights the fact that a college education and degree was a national priority.

According to NCES (2015), having a college degree significantly increased the earning potential of graduates. This should not come as a surprise as one of the reasons to go to college is to prepare one for a future career. Having a college degree puts a person in a better position when applying for a job when there are a number of other applications. At its core, the mission of financial aid is to let students afford a degree and improve their chances of obtaining a job (Scott-Clayton, 2015).

Degree completion is one of the topics highlighted in the field of enrollment management along with retention rates. A great amount of literature has been published concerning student enrollment and retention in the past five years. In fact, the great recession has led to in increased interest in the field. It was stated earlier that during the great recession the number of college students enrolling into college increased. Barr and Turner (2013) found that not only did the number of students increase during this time period but that there were a number of reasons for the increase. These reasons included getting an education to be more competitive in the workplace, being required for promotion, and in some cases access to financial aid (Barr & Turner, 2013). Barr's and Turner's research showed that there is a link between the unemployment rate and the number of students entering the college setting. As unemployment rates increase so does the number of students entering attending college (Barr & Turner, 2013). These students are predominately not the traditional students, those who just graduated from high school, but are more likely to be older and those unable to find employment (Barr & Turner, 2013).

Once the economy improves and more jobs become available, the number of students attending and being retained in the college setting tends to decline (Barr & Turner, 2013). This decline leads to a number of issues for colleges, especially given the fact that the schools saw huge cuts to their funding at the state level during the great recession. As the economy gets better and budget cuts remain in place, colleges must focus on how to stabilize their finances.

The long-term impact of the great recession is still being debated; however, there is no consensus on what the impact will be (Barr & Turner, 2013). First, there has already been a decrease in student retention rates as the economy improves and students leave for employment. Second, students who enrolled as a result of not finding a job may or may not continue in school and complete their degree. Barr and Turner (2013) indicated that this group of students may not have enrolled in school for the same reason as traditional students and as more opportunities open up, they may leave.

Now is not the time for federal and state agencies to cut funding for higher education. The need for financial assistance has been growing over the past decades. High paying jobs are scarcer than in previous years and have led to an increase in applicants for the same position. A quality college education does not guarantee a job but allows a student to rise to the top of job pools and to stand out in a crowded field.

The ultimate goal of financial aid is to make college affordable and help the student graduate. In order to do this, one must look at how financial aid affects retention rates. In fact, the ability of colleges to predict retention rates has become a field of study of its own. Webster and Showers (2011) found that institutions have placed more emphasis and resources into student retention. In fact, Webster and Showers stated that, "Educational institutions are intensifying efforts to discourage student departure and preserve their established student base"

(p. 296). This sentiment was echoed by Rutherford and Rabovsky (2014) and Kalsbeek and Hossler (2010) and both show that the recent recession has placed more emphasis on student retention.

It is not only imperative that students who start college finish the process but also that the college does everything within its power to make this a reality. It is a college's responsibility to accept students who can succeed and to nurture them throughout the education process. There are those who believe that it is not the job of educators to ensure student success; however, this is in direct competition to why most professionals enter the education setting. Ensuring a student's success and putting into place mechanisms to foster this will not only prepare the student for the future but also increase the retention and graduation rate of the institutions.

Since earning a degree has been repeatedly tied to greater future earnings, it would be easy to say that everyone should go to college. This statement, however, is flawed for a number of reasons; one of the most serious is that going to college can also put the student at a disadvantage, especially those who do not graduate.

What is not mentioned in many research articles is that nationally, roughly half of those who choose to attend college do not complete a degree. This group is likely to have loans, and without a degree will be less likely to pay them back. In fact, one of the leading predictors of loan default is taking out loans without graduating (Jones et al., 2014).

This line of thought is supported by research conducted by Valentine (2015). Valentine showed that while the benefits of graduating from college were substantial, those benefits were severely reduced if one did not graduate (Valentine, 2015). According to this article, institutions would better serve their students by identifying why students do not successfully graduate college and implementing programs to target these causes.

As noted previously, not graduating puts the student at risk of further financial difficulty. In these cases, the future financial benefits of going to college are replaced by the debt incurred while attending college. In order to better prepare students and help them successfully navigate the college experience, the field of enrollment management has come to the forefront of education. It is tempting to suggest that increasing financial aid would fix these problems; however, there are other issues to consider.

Take for instance an article written by Castleman and Long (2013) that examined the effect of need-based grants on college access and persistence. Within this article, it is noted that while awarding aid to those who want to go to college may be beneficial it is possible that awarding aid may have the opposite effect than is wanted. This article outlined that students who may not have wanted to go to college could be lured into going because of the aid package they receive. According to Castleman and Long (2013), students could go to college without fully understanding the financial impact it would have on them in the long run. While the receipt of a Pell grant makes college more affordable, students without financial resources will still have to make up the difference to attend college. The difference in many cases is made up with student loans, loans that will have to be paid back regardless of the student's success in college.

Success in college takes many forms with graduation being the ultimate indicator. In order to increase these rates, colleges must implement programs and checks for student retention. When colleges and schools look at their retention rates, many of them conclude that they need to be higher and that they are not doing their best. This may or may not be true; in some cases, schools are doing as well or better than can be expected whereas others may be underperforming (Butler, 2011). The only way to truly tell how a school is doing is to compare it to other schools of similar size and student makeup, a practice called benchmarking.

Administrators, and much of the public, are familiar with benchmarking. The *US News and World Reports, Princeton Review*, and most recently the White House all produce literature on how well schools are doing. This is troubling for a number of reasons and schools are rightfully concerned with these rankings. In the cases mentioned above, first-year student retention, defined as the percentage of first-time, full-time, degree seeking undergraduates that persist from one fall term to another, is used as a benchmark tool (Duniway, 2012).

When students make a decision on what school to attend, many use these benchmarks as a guide. In order to remain competitive, colleges and schools must know how they compare to other schools. Retention and graduation rates represent a large proportion of the rankings with retention making up 22.5% and graduation rates making up 7.5% of the total score (US News and World Reports, 2016). In order to remain competitive, schools must not only increase their rates but also understand how they affect the school on a national level; this necessitates understanding enrollment trends and how to influence them.

Influencing enrollment trends is institutional specific but research does indicate certain areas that seem to be influential. DeNicco, Harrington, and Fogg (2015) conducted research examining what factors impacted student retention in a public state college system. DeNicco et al. focused their research on areas most commonly cited in retention research, including demographics, high school characteristics, placement test scores, freshman year performance, and remedial coursework. This research was conducted on the community college system which will cause some to question whether or not the results can be carried on to 4-year colleges and universities; however, the results reinforce what other research in the field has identified. DeNicco et al. (2015) found that all of these factors were somewhat correlated with college retention with freshman year performance being the strongest.

Predicting student retention is incredibly complicated; however, administrators are under increasing pressure to do just this. DeNicco et al.'s (2015) research showed that although there were some areas under a school's control that affect retention rates, it was a student's level of preparedness that was the most correlated with retention. This means that a student's performance in high school and on achievement tests was highly correlated with student retention, and neither of these items are in the college's control. According to DeNicco et al. (2015), administrators should take this into consideration when placing students in remediation courses that do not necessarily improve retention. The college's resources could be better used elsewhere, such as helping the student progress in courses which count towards a degree, remediation generally does not, and looking more critically at the student's academic record when applying to college.

DeNicco et al's (2015) findings are in line with research conducted by Duniway (2012) that found that managing enrollment is critical to the school's success. This includes admitting students with appropriate academic credentials as well as making school affordable. Studies in the area of enrollment management consistently show that financial aid is an important factor in deciding to attend college. According to Duniway (2012), "Financial aid also plays an increasingly critical role in attracting new students and ensuring that students are able to continue on to degree completion" (p. 31). In the current educational environment, financial aid is playing a larger role than ever at colleges.

Once again, research shows that not only the amount but also the type of financial aid is important in student success, and as a result understanding student retention and how aid packages affect the student going population is paramount. Duniway's (2012) research indicated that keeping an education affordable is one of the key ways institutions can impact student

retention. This is also highlighted in research conducted by Jones et. al. (2013) which states that, "the most powerful way for institutions to address the impact of financial pressures on college completion would be to reduce those pressures, whether through expanded financial aid or by reigning in the rising cost of tuition" (p. 348).

Expanding financial aid in the areas which have shown to be the most effective is the key in using aid as a tool for student success. Creating packages that rely on student loans and debt will not increase student retention and therefore must be avoided if possible. Instead, packages focused on grants and scholarships and forms of aid that do not have to be paid back should be increased. Research has shown a clear correlation between debt and retention, with the amount of increased debt leading to a decrease in retention (Jones 2013).

It would be irresponsible to conclude that increasing financial aid programs would increase the retention rates of every school. There are a number of factors that impact a student's decision whether or not to continue in higher education, financial aid is one of these. Instead, one must look at the complete work available in terms of financial aid and student success and determine if the programs are working. The bulk of research on student retention has shown that the amount of aid a student receives is a predictor of student success. There are studies that point out that the financial aid does not always have a correlation to student retention and ultimate success (Scott-Clayton, 2015). When reading the available research, one must factor in the size of the sample and the setting used. Financial aid has been shown to be predictive in most cases; however, 4-year and community colleges attract different types of students and have different fee structures. Administrators should determine if the research available is representative of their student body and make decisions on its usefulness.

It is evident that the budget cuts experienced as a result of the depression have severely limited many institutions and made increasing student retention an urgency. Along with Barr and Turner (2013), Heck et al. (2012) identified that the amount of money being allocated towards higher education has decreased dramatically. Heck et al. (2012), using a longitudinal data study, examined how graduation and retention rates have been influenced over the years by the political environment and state spending. The findings support the notion that the amount of money allocated from the state government had an impact on both retention and graduation rates. A higher amount of state spending was correlated with higher rates; whereas, budget decreases were related to a decrease in retention and graduation rates (Heck et al., 2012).

The present level of funding is proving to have dire consequences for colleges and universities. Cuts in overall budgets have forced many to reduce or completely eliminate programs designed to help students (O'Keeffe, 2013). Programs that focus on student retention and making the student feel at home in the college setting are often the ones first targeted by administrators during budget cuts (O'Keeffe, 2013). The programs that are needed the most in terms of balancing the budget, those that focus on attracting and retaining students, are cut for other functions. Furthermore, cuts in overall budgets have led to an increase of student debt, with students having to pay a larger portion of their college tuitions (Pugh & Johnson, 2011).

Budget cuts seem to be the new norm for colleges and schools and doing more with less is the motto for many administrators. This new way of thinking has led many to accept the new reality that things will not be returning to the way they were, at least no time soon. In order to make long-term decisions, administration must be able to know what their future budgets will look like. It is not possible to keep the current programs and level of service if an unexpected budget cut happens and this has placed a focus on retention.

Retention has been an issue for colleges ever since they first opened their doors. There has always been importance placed on retention but with the new budget cuts and the political environment retention has come to the forefront (Talbert, 2012). Talbert's research showed that retention can be influenced in a number of ways but it is up to colleges to be proactive in terms of retention. Some of the areas identified are establishing tracking systems to alert staff to when students are having trouble and guides to help students navigate the college system (Talbert, 2012). These guides play a vital role in the education system and help the student not only find courses needed to graduate but also navigate the sometimes complicated financial aid process. Talbert (2012) suggested that one of the most important steps in retention is directing students to and increasing the number of scholarships available to them.

Programs aimed at retention efforts and program of study have both come under fire in the latest budget cuts. Butler (2011) showed that students leave the college setting for number of reasons. Some of these reasons are beyond the control of the college but others, like program offerings, are well within their control (Butler, 2011). Many times, incoming students have an idea of what they want to major in. When budget cuts force these programs to be cut, the student may opt to attend elsewhere (Butler, 2011). Disappointment and not meeting student expectations are two of the reasons students do not continue in college (Butler, 2011).

Butler (2011) is not the only researcher to show that budget cuts have decreased what colleges and universities can offer their students. Research by O'Keeffe (2013) showed that the current budget cuts have impacted the programs offered by colleges. O'Keeffe's research focused on schools in the United States and Australia and attempted to identify programs that are necessary and have an impact on retention. The research indicated that mental health issues, personal issues, and a sense of belonging are all related to students deciding to drop out

(O'Keeffe, 2013). According to O'Keeffe (2013), the understaffing of offices related to these issues has a direct impact on retention and increasing staff size could potentially increase student retention rates. In a time where budgets are short and schools are looking to cut costs, it is important to realize that spending money to retain students may be cost effective. As O'Keeffe (2013) pointed out, a person with a $40,000 salary more than pays for themselves by helping retain three students, who on average bring in $17,000 in tuition and fees.

It is the programs mentioned above that have the potential to help students stay in school and offset some of the budget shortfalls being faced. Hoffshire et al. (2013) showed that programs designed to improve student retention were effective and should not be on the cutting block. The first-year experience is a course offered at many if not most colleges and universities. Its goal is to help students make the transition from high school to college (Hoffshire et al., 2013). This transition is extremely important, and it is easy for a student to feel isolated or feel they do not fit into the college setting. It is programs like these that have shown promise; however, they are also those on the chopping block when it comes to budget cuts. Integrating students into the college culture is one of the few areas colleges can make an impact on their students. Tinto (1988) identified this as one of the key areas that impacts a student's decision to remain enrolled at the college. Having a student feel part of the college and having stake in it leads to higher retention. When programs that students expect are not offered, or promised but not come to fruition, they become disenfranchised and more likely to leave.

Langham and Fifolt (2014) found that as budget cuts continue colleges are being forced to find ways to be more economical. Langham's and Fifolt's research found that programs were being consolidated in order to make more financial sense. As stated in the article, "Diminishing financial support from state governments and external pressures from regional accrediting

organizations have compelled university administrators to make difficult decisions about academic structure in order to balance declining resources" (p. 13). According to Langham and Fifolt, institutions are making decisions on cutting offices or merging them with others in order to save money. This sounds like a good plan; however, research showed that merging offices did not have the intended consequence. In Langham's and Fifolt's study (2014), three offices were merged together to better improve efficiency and student retention, neither of these outcomes were found as a result. There was not impact on student retention after the merge and salaries increased slightly.

It is during this restructuring when programs may become absorbed under another or cut altogether. The reality that schools are living with is that there is simply not enough money left to continue offering all of the programs previously offered. They must be restructured and made more streamlined. This does not always bode well for the programs in question and has the potential to impact student retention.

Program and staffing cuts are only two of the issues colleges are facing because of reduced budgets. Cuts in financial aid are also a reality at many institutions. Instead of offering institutional grants and state aid, schools have to rely more heavily on the student to pay for college. In many cases, the difference is made up through student loans. This leads to a number of issues related to retention.

Beaver (2014) stated in an article titled, "The Case Against College Revisited," that close to 70% of all college students will take out a student loan during their college career. This fact is important for a number of reasons. First, only one half of college students graduate from college (Beaver, 2014). This leads to a large number of students with college loan debt and no degree. Second, research has shown that the amount of student loans is positively correlated with

retention rates, being that the higher the loan amount the greater the likelihood of dropping out is. While this is not a perfect correlation, it nevertheless indicates that the ability to pay for college is important in the student's decision to stay or leave.

When Dynarski and Scott-Clayton (2013) reviewed what lessons have been learned from years of giving financial aid, a theme similar to that mentioned above was found. The strings attached to the financial aid program did prove to be somewhat correlated to student retention and success. Dynarski and Scott-Clayton (2013) found that for those who had already decided to attend college, receiving scholarship or grant aid that had a form of academic achievement attached to it was positively correlated with staying. While this is different from the notion of paying back the aid if you do not continue, it does lend support that certain forms of aid and student achievement expectations could prove valuable in decision-making.

There are two forms of financial aid that students commonly receive. As noted above, grant and scholarships are one form and referred to as gift aid. As the name implies, this aid does not have to be repaid by the student. The other form of aid is student loans which must be paid back by the student. Research shows that the type of aid that a student receives is related to student retention. What research has shown so far is that the total amount of aid a student receives has a positive impact on retention (Webster & Showers, 2011). The more aid a student receives, the more likely they are to continue at the school. This lends support to the notion that the ability to pay for school is one of the driving decisions in leaving. Webster and Showers (2011) showed that the total dollar amount received was related to retention; however, other research has taken this even farther.

Not only does the amount of financial aid impact retention but the type of aid is also related to retention. Pugh and Johnson (2011) conducted research that looked at the different

types of aid awarded to students and found that gift aid was positively correlated to retention whereas student loans were negatively correlated to retention.

One does not have to look hard to find proof that being able to afford college affects retention and graduation rates. The United States has set up a system in which students are eligible for financial aid under certain conditions; however, other parts of the world do not have a system in place or are in the fledgling stage. Research conducted by Melguizo, Torres, and Jamie (2011) in Columbia shows that having access to financial aid is directly related to college success. In this study Melguizo et al. (2011) found that over the past decade dropout rates declined as the amount of financial aid was increased or was made available.

In the United States, it is often quoted that more financial aid would increase retention rates; however, it is difficult to prove this without a control group that does not receive aid. Other countries, however, provide a window into how financial aid works and what is its impact on the student. Melguizo et al. also found that not only did financial aid in and of itself increase retention but students who received institutional aid showed the most improvement. Those receiving institutional aid had a 25% lower dropout rate (Melguizo et al., 2011). Melguizo et al.'s findings are consistent with other work that has been done in the field and supports the notion that increasing financial aid would improve student retention.

Melguizo's findings were further supported by Jones et al. (2014) who found that the type of financial aid was correlated with student retention and dropout rates. According to Jones (2014), students who received loans and less gift aid were more likely to seek out other colleges or leave the college setting altogether.

Using dates from the National Student Clearinghouse, Jones et al. (2014) was able to track students who left the college setting. Many schools report these students as college

dropouts; however, a large portion of this population attended school elsewhere (Jones et al., 2014). Findings indicate that students with higher gift aid totals, scholarships and grants, were more likely to stay at their first college and to graduate. Those students with higher student loans and therefore debt chose to attend another school or drop out at a much higher rate (Jones et al., 2014).

According to Jones's (2014) study, roughly four out of ten students who attend college fail to graduate from the school they first attend. This finding has many consequences for colleges and universities. In order to improve retention rates at their college, administrators must find ways to make their college more affordable. This is difficult and sometimes impossible given the current financial situation many institutions find themselves in. Increasing financial aid, specifically gift aid, is perhaps one the most important things colleges can do that impacts retention. Increasing gift aid not only improves retention but will also offset some of the financial burden placed on the students.

DesJardins and McCall (2010) also found that not only did the amount of financial aid have an impact on student retention but also that the types and timing of the aid seemed to be important. DesJardins and McCall (2010) found that a large percentage of students who enter the college system take at least one semester off during their academic career, not including summer terms. It is during this time frame when retention is the most vulnerable and the student has to make a conscience decision about whether or not to return to college. According to the study, 71% of students have an enrollment pattern that is non-continuous and of the 71%, 53% do not continue (DesJardins and McCall, 2010). The risk of dropping out of college increases with each non-continuous enrollment episode.

Not surprisingly, the students' GPA was shown to have a strong correlation on the students' decision to drop out; however, the amount of financial aid awarded and the type was also found to be correlated. In the study, it was shown that loans, merit aid, grant aid, and work/study aid all lowered the risk of a student dropping out by 22.7%, 35.2%, 32.9%, and 24.7% respectively (DesJardins and McCall, 2010). Like Pugh's and Johnson's (2011) research, DesJardins and McCall (2010) found that gift aid, merit and grant based, was strongly correlated with student retention; in fact, it was the strongest predictor of retention among the financial aid categories. According to the DesJardins and McCall (2010) study, for each $1,000 increase in grant aid the risk of stopping college was lowered by 32.9%. Somewhat surprising, loan aid was also positively correlated to student retention giving credence to the notion that the amount of aid was more important than the type awarded in predicting student retention (DesJardins and McCall, 2010). Though this finding is in contrast to other findings, it does support the notion that student retention can be impacted, and improved, through financial aid packaging. This research was conducted at one institution and according to the researchers, does not necessarily represent all higher education institutions (DesJardins and McCall, 2010). This fact may help explain why student loan debt was found to be a predictor of student retention; whereas, other research has not shown the same correlation.

While federal Pell grants have remained stable during the great recession, a number of other items have now affected student retention. An argument can be made that the amount of Pell aid has remained the same and therefore increases to student debt are the fault of colleges and universities raising tuition. This has had an impact; however, it is misleading to say that Pell grants have remained unchanged during the great recession.

The amount of money allocated to the Pell program was protected during the recession; however, as the number of students entering the system increased so too did the demand for Pell grants (Anonymous, 2013). It stands to reason that even though the total amount of Pell remained the same, less money was available to each student who qualified.

In the article, "Time to Rethink Student Financial Aid?" (Anonymous, 2013), it is noted that there have been changes to the Pell program. These changes include reducing the number of semesters a student can collect Pell, and there is talk of reducing the maximum amount a student can receive in future years (Anonymous, 2013). Research shows that a majority of students do not remain continuously enrolled in college and take time off at some point in their career (DesJardins and McCall, 2010). If the length of time a student can receive Pell is reduced, along with the amount offered, a decrease in student retention at most colleges and universities could be seen unless the difference is absorbed by the college itself.

In order to determine how the institution should respond to the cost of higher education, they must also look at the return on investment for the student. It has been shown repeatedly that financial aid and being able to afford college have a significant impact on not only retention but also ultimately graduating. In the article, "College Degree for Everyone" (Strohush & Wanner, 2015), a somewhat surprising trend was found. This research article found that some students would be better off not getting a college degree (Strohush & Wanner, 2015). The authors factored income potential as well as how much loan debt students would accrue while enrolled and determined that in some cases, a significant portion of them, that getting a degree would hurt them in the long run (Strohush & Wanner, 2015). This runs counter to the notion that many educators have that receiving a degree opens up doors and better opportunities. Selecting an appropriate major along with the proper school is important for the student's long-term success.

Examining the literature conducted up to this point shows that there is a clear trend, making college more affordable has a positive correlation on student retention. As colleges make plans on how to fill the holes in their budgets, they must take into account how those plans will affect their current student body. Raising tuition is very tempting, but in order to do this they must first make sure they are not creating an undue burden on their students.

Research by DesJardins and McCall (2010) clearly points to the fact that if students feel there is a better, more affordable option available to them they will take it. This does not hold true in all cases; however, it is a large enough population to take note of. Jones et al. (2014) also made note that college affordability is key in keeping students enrolled and eventually graduating. This can be done in a number of ways; not raising tuition and increasing financial aid are ways this can be done. Colleges may not have the option of not raising tuition. In these cases, they must weigh the pros of cons of a tuition raise. While on the surface it may seem that increasing tuition will increase revenue, it may do the opposite if students decide to leave.

It is obvious that the topic of financial aid and making college affordable is not going away and may become an even bigger area of study than it is today. Schools must find ways to not only stabilize their student populations but also how to keep them until they graduate. There are no silver bullets to this problem, and the area of enrollment management has taken on a life of its own. Cost, transferability, online colleges, and financial aid all play into a student's decision to stay or leave a college and the administration must take a careful look at how they are handling each of these areas.

Research has shown a clear link between the types of financial aid offered by the school and the retention rates of the students (Webster & Showers, 2011). Raising tuition and packaging more loans is not an effective enrollment management strategy and should be looked

at very carefully (Melguizo et al., 2011). Gift aid in the form of grants and scholarships have been shown to have a positive correlation to student retention; however, this has its limitations. There are many different types of gift aid and only a small subset have been examined (Jones, Radcliffe, Lorenz, & Soria, 2014).

One of the underlying assumptions of higher education is that by going to college one will improve not only their chances of obtaining a job but also improving themselves. This belief is so strong that the national, state, and local governments are willing to spend millions of dollars in order to allow its citizens an opportunity to find a better life through education. Affordability is one of the key factors in determining if a student goes to college and ultimately if they decide to stay and eventually graduate. This is not the only key factor; however, it is one that impacts every citizen of this country. Many do not understand that their tax dollars are being directed towards the American education system; as such, they have a direct stake in the outcomes of the students taking part of the system.

Conclusion

In conclusion, over the past 50 years the landscape of higher education has changed drastically. In 1965, the federal government passed the Higher Education Act, an act that has had a dramatic impact on colleges and universities (United States Senate, 1965). This act enabled students who could not previously afford to go to college the opportunity to continue their education. It is in the national interest to have a population of highly educated and talented people; however, this vision has come under attack recently.

The great recession of the late 2000s has changed the college going behavior of students and has forced colleges and schools to focus not only their budgets but also on student retention

(Barr & Turner, 2013). It is not a stretch of the imagination to conclude that in order to stay viable many institutions must change in order to meet the new demands they find themselves in.

What educators have seen over the past decade are dramatic cuts in budgets coupled with decreasing retention rates (Barr & Turner, 2013; Doyle, 2012). As the economy faltered, money from the state and federal government to higher education dried up. These cuts seem to be more permanent than temporary and schools now have to deal with a new reality, doing more with less. This has led to institutions placing more energy on retention of students.

Retention has become important for a number of reasons. First, without knowing what future enrollment will look like it is impossible to make long-term decisions based on budgets. Accurate retention and having knowledge of what to expect allows administrators to make plans based on expected revenues. Second, understanding the forces that impact retention help in deciding not only what programs to maintain but also what to invest more money into.

In order to keep current students, colleges and universities must meet certain student needs and expectations. Offering a world class education is not enough in many cases and quality students will leave if they do not feel part of the university. Tinto's (1988) student departure theory illustrates that not only do students leave because of academic reason but also because they do not feel integrated into the institution. An effective retention plan is one that takes into account the students' abilities along with making them feel part of the college, something that is extremely difficult to do.

Along with offering programs that target student integration, research has consistently shown that the amount of student aid awarded to students is related to student retention (DesJardins & McCall, 2010; Heck et al., 2012; Jones et al., 2014). Students who on average receive more financial aid tend to be retained at higher rates than their counterparts. Research

also has shown that not only does the amount of aid affect retention but the type also plays an important role.

The average amount of scholarships and grant aid a student receives is positively correlated with student retention (Dynarski & Scott-Clayton, 2013). Along with this, the amount of student debt incurred has also been shown to impact student retention (Jones et al., 2014). In order to make budgets work, many schools have adopted the philosophy of passing more of the cost of education on to their students. While this may make sense from a fiscal standpoint, research has shown that it is possibly causing these schools to reduce the number of students staying at the college.

There is no magic bullet to the problem of budget cuts. Shifting the cost from the institution to the student has an unintended consequence, driving students from the college. In order to truly understand student retention, all of the facets of the issue needs to be examined. It appears that in order increase retention and stabilize the budgets schools should be adding more money towards financial aid.

This sounds counterintuitive; however, research has shown that this may be the best course of action. If colleges can increase the amount of aid to students without passing on more of the cost of education to their students, they stand a better chance of keeping their current students. This in turn will help stabilize their future enrollment and make planning easier. As stated above, there is not an easy fix to the budget crisis facing many colleges and universities. The best that can be expected is to use the resources available in the most effective manner possible. In order to do this, colleges need to keep an eye on current research and follow the trends that emerge. Keeping college affordable is a big factor in a student's decision to stay or go.

CHAPTER THREE: METHODS

Design

This study was conducted using archival data obtained from the National Center for Educational Statistics (NCES) and used a correlational predictive design. This study was concerned with predicting one variable based on others; causal comparative studies were ruled out. This research did not attempt to manipulate any variables; as such, experimental designs were ruled out. According to the Gall et al. (2007) text, a predictive design is appropriate when one is attempting to predict the outcome of one variable based on multiple predictor variables.

Similar research has been conducted using a similar research design. Menifield (2012) and Talbert (2012) both looked at predicting retention rates given certain predicator variables. In both cases, a predictive design was used. It should also be noted that much of the research conducted up to this point on understanding student retention rates has used either correlational or predictive designs.

In order to determine what variables may predict retention rates, the current research expanded upon previously conducted research. Research has shown that there is a strong correlation between financial aid types and student retention rates. Research is limited, however, in determining if the type of financial aid has an impact on student retention. Federal, state, and institutional aid not only come from different sources of money but they are also awarded on different criteria (DesJardins & McCall, 2010; Heck et al., 2012; Menifield, 2012). Receiving federal grants and scholarships, many of which are dependent upon financial status, may be a better or worse predictor of retention rates than receiving state grants and scholarship. The current research hoped to shed more light on this topic. Rutherford and Rabovsky (2014) showed that performance funding had an impact on student retention rates. This type of funding

is normally state sponsored and lends credibility to the notion that state aid may be predictive of student retention. Pugh and Johnson (2011) also used financial aid as a predictor of student retention, finding that the amount of gift aid was positively correlated with student retention. Although the comparison of the types of gift aid is limited in research, the use of financial aid as a predictor of student retention has been well documented.

New student retention rate was used as the criterion variable in the current research and has taken on a new importance in the education community. The predictor variables used in the current research are the average amount of federal scholarship and grant aid, the average amount of state scholarship and grant aid, and the average amount of institutional scholarship and grant aid awarded to full-time, first-time undergraduate students.

Research Question(s)

RQ1: How accurately can new student retention be predicted from a linear combination of Financial Aid types for college students?

Null Hypothesis(es)

$H_0$1: There will be no significant predictive relationship between the outcome variable (new student retention) and the linear combination of predicator variables (average amount of federal scholarship and grant aid, average amount of state scholarship and grant aid, and average amount of institutional scholarship and grant aid) awarded to college students.

$H_0$2: There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of federal scholarship and grant aid awarded to college students.

H₀3: There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of state scholarship and grant aid awarded to college students.

H₀4: There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of institutional scholarship and grant aid awarded to college students.

<div align="center">

Participants and Setting

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An archival database was obtained from the NCES. This database contained all public and private schools who were awarded Title IV financial aid. Schools receiving this type of aid are required by federal law to fill out annual Integrated Postsecondary Education Data System (IPEDS) reports which populate the database. The population consisted of 706 public and 2,472 private institutions who award a 4-year degree and above. The study used all institutions who reported retention rates, federal financial aid, state financial aid, and institutional aid; if one of these variables was null, the school was not used. According to Gall et al. (2007), a sample size of 111 is required for medium effect size at the .7 level and an alpha of .05 for correlational studies that have three predictor variables; this study had far more than the number of schools required (p. 145). This was computed using the base of 66 records needed for correlational studies and adding 15 cases per predictor variable (Gall et al., 2007).

Information from fall 2013 and academic year 2013-2014 was used in this study. NCES allows users to create datasets for various years; however, fall 2013 and academic year 2013-2014 are the most recent information available. A physical setting for this study was not available as it used archival data. Data was analyzed on a PC computer running Windows 7.

<div align="center">

Instrumentation

</div>

As noted above, all schools receiving Title IV financial aid are required to fill out IPEDS surveys. This requirement is outlined in the Education Reform Act of 2002. Instrumentation for this study included the financial aid and fall student enrollment surveys created by NCES. Failure to comply with the required reporting can result in fines to the college and suspension of federal financial aid (Education Sciences Reform Act, 2002).

Institutions who are required to fill out the IPEDS surveys must designate one person on their campus who coordinates the survey submissions. This coordinator, or key holder as they are defined by the NCES, can assign certain surveys to corresponding departments on a college campus. Financial aid offices are responsible for the financial aid survey and, as such, take the lead in filling out this survey. The purpose of this instrument is to collect financial aid information awarded to various groups of students on a college campus. These groups include first-time, full-time undergraduate students, transfer students, and continuing students. The survey contains seven parts, A through G, with part C page 2 questions one through four used in this research (see Appendix A for financial aid survey questions). These questions asked for the total amount of federal, state, and institutional scholarship and grant information awarded to first-time, full-time students.

At most institutions, the information for the enrollment survey is handled by the Registrar's Office and the Office of Institutional Research. The Registrar is responsible for all student records at their school and ensuring they are accurate. The Office of Institutional Research is responsible for what is often called the census snapshot of student information. This snapshot is normally taken within two weeks of the start of the fall semester and is asked for on federal reports and external surveys. Using a standard census file and date ensures that information across schools is comparable to one another. The purpose of the enrollment survey

is to get an accurate representation of a college's fall enrollment numbers. This survey contains six separate sections, A through F. The current research used section E, questions 1 through 5, to obtain the retention rate of first-time, full-time undergraduate students and the total student cohort figure (see Appendix B for fall enrollment survey questions). Information entered into the financial aid and enrollment surveys are compared with the previous year's information and large discrepancies, usually 10%, are flagged as possible errors. Items flagged require an official explanation that helps to ensure data validity (NCES, 2015).

The information in IPEDS has been used in a number of research articles up to this point. It is widely regarded as one of the most complete datasets concerning higher education in the United States. In 2011, Webster and Showers conducted research using IPEDS in order to predict student retention rates. Butler (2011) also used IPEDS datasets in order to look at the retention rates across schools and what factors were related to them. Information from IPEDS is publicly available; as such, permission to use the instrument was not obtained.

Procedures

Archival data for this research was obtained from the IPEDS Data Center, located at http://nces.ed.gov/ipeds/datacenter/. A custom data group was generated and final release data was used. A comparison group consisting of public and private 4-year and above degree granting institutions was used for this study. Only schools within the continental United States were used. Variables such as institution size, geographical location, and calendar type used were available but were not used in this study. Each of these variables could be used in future research.

After generating the comparison group, three datasets were generated and exported as .csv files to make management of the data easier. The first dataset consisted of the fall 2013

first-time, full-time new student cohort. The next file generated contained the first-time, full-time, new freshmen retention rate listed on the 2013 IPEDS survey. Finally, a file was generated using the 2013-2014 financial aid data consisting of the total amount of scholarship and grant awarded to first-time, full-time, new freshmen broken down by source.

Once all three datasets were downloaded they were merged into one dataset using the UNITID field in each file. After the data merge, the resulting dataset was imported into SPSS 24 for analysis. Variables for the average federal, state, and institutional scholarship and grant award were computed using the transform function by taking the previously downloaded aid information and dividing the total by the 2013 first-time, full-time student cohort (Green & Salkind, 2014). In all, the data file will contain 3,178 schools. The data analysis used on this information is outlined in the next section.

It should be noted that not all schools who receive Title IV funds had new student data reported. There were cases where schools had 0 first-time, full-time students to report and, as such, did not have a retention rate or student cohort. This situation was extremely rare, and only schools with all three pieces of information were used. This eliminated the possibility of including a null amount or a zero-dollar figure when in fact no information was present.

Data Analysis

This research used multiple regression as its main statistical method. Gall et al. (2007) identified multiple regression as an appropriate test when a single criterion variable is used and there are multiple predictor variables. This type of test has been used by other studies when trying to predict the retention rates of students (Pugh & Johnson, 2011; Rutherford & Rabovsky, 2014). Various other statistical tests were considered, however, were not chosen.

Assumption testing included looking for outliers using box and whisker plots; extreme outliers were removed from the study. In order to look for linearity, outliers and bivariate normal distributions scatterplots were used. A variance-inflation factor (VIF) was performed to look for multicollinearity of the predictor variables as outlined by Warner (2013). The sample size used in this study was larger than 50 and a Kolmogorov-Smirnov test for normality was run as a result. An alpha level of $p < .05$ was used in all cases to identify statistical significance. Once the multiple regression had been run in SPSS, the output included the effect size, also called eta square (Gall et al., 2007).

Multiple regression was used to identify if a combination of predictor variables significantly predicts student retention. This identified if significance was present and also identified if each of the predictor variables were significant in predicting student retention. Linear regression was conducted on each predictor variable that was shown to be significant.

CHAPTER FOUR: FINDINGS

Research Question(s)

RQ1: How accurately can new student retention be predicted from a linear combination of Financial Aid types for college students?

Hypothesis(es)

$H_0$1: There will be no significant predictive relationship between the outcome variable (new student retention) and the linear combination of predicator variables (average amount of federal scholarship and grant aid, average amount of state scholarship and grant aid, and average amount of institutional scholarship and grant aid) awarded to college students.

$H_0$2: There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of federal scholarship and grant aid awarded to college students.

$H_0$3: There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of state scholarship and grant aid awarded to college students.

$H_0$4: There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of institutional scholarship and grant aid awarded to college students.

Descriptive Statistics

As noted in the procedures discussion above, only schools that have complete information were used in this study. After excluding schools who did not provide all four pieces of information required (retention rate, federal grant and scholarship aid, state grant and scholarship aid, and institutional grant and scholarship aid), 2,305 schools were used in the

analysis. Table 1 shows the number of cases, mean, and standard deviation for each of the variables used in this study.

Table 1

Descriptive Statistics of Outcome and Predictor Variables

	N	M	SD
Retention Rate 2013	2305	70.03	19.04
Federal per FTIC	2305	2363.31	1812.42
State Per FTIC	2305	1002.29	1097.98
Inst Per FTIC	2305	6704.49	7172.40

Note. FTIC = First time in college; Inst = Institutional

A multiple regression analysis was conducted in order to determine if the predictor variables identified were significantly correlated to the outcome variable of retention rate. Results from the multiple regression analysis are shown in Tables 1 and 2 and indicated that the linear combination of predictor variables were significantly related to retention rates, $R^2 = .20$, adjusted $R^2 = .20$, $F(3, 2301) = 193.38$, $p < .01$. The multiple correlational coefficient was .449, indicating that roughly 20% of the variance in retention rates can be accounted for by the linear combination of predictor variables. Table 4 summarizes the bivariate and partial correlations of the predictors with retention rate. The multiple regression findings allow us to reject the null hypothesis of, "There will be no significant predictive relationship between the outcome variable (new student retention) and the linear combination of predicator variables (average amount of federal scholarship and grant aid, average amount of state scholarship and grant aid, and average amount of institutional scholarship and grant aid) awarded to college students."

Table 2

Model Summary[b] of All Predictor Variables and Retention Rate

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.449[a]	.201	.200	17.030

Note. Inst = Institutional; FTIC = First time in college.
[a] Predictors: (Constant), Inst Per FTIC, State Per FTIC, Federal per FTIC. [b] Dependent variable: Retention rate 2013.

Table 3

ANOVA[a] of All Predictor Variables and Retention Rate

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	168260.602	3	56086.867	193.384	.000[b]
	Residual	667353.826	2301	290.028		
	Total	835614.428	2304			

Note. Inst = Institutional; FTIC = First time in college.
[a] Dependent variable: Retention rate 2013. [b] Predictors: (Constant), Inst Per FTIC, State Per FTIC, Federal per FTIC

When conducting a multiple regression, several assumptions must be considered. One of the most important tests to run during multiple regression is the test of multicollinearity. As shown in Table 3, tolerance levels and VIF scores are within normal ranges and do not show a major concern.

In order to make sure the information is normally distributed a histogram was produced from the multiple regression data. Figure 1 shows that the regression standardized residual is closely aligned with the normal bell curve. The curve is slightly skewed to the right but the shape suggests a normal distribution.
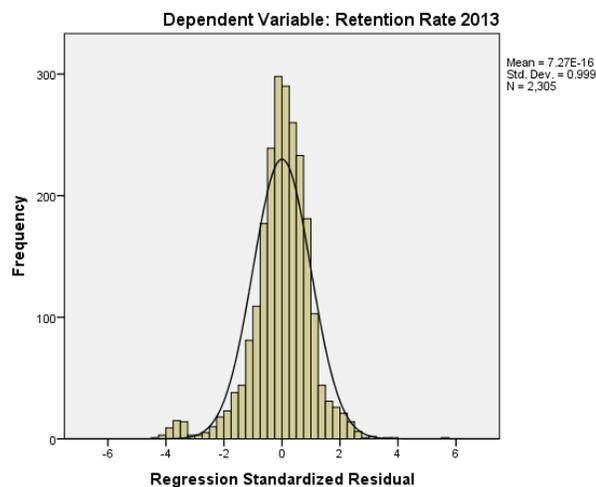
Figure 1. Retention rate 2013 histogram.

In order to identify outliers, a scatterplot was used. Figure 2 shows the standardized residuals plotted along with student retention rate. Notice that most of the scores center around 0 and radiate out from there. There appear to be several outliers however these will have minimal impact on the results because of the large sample size.
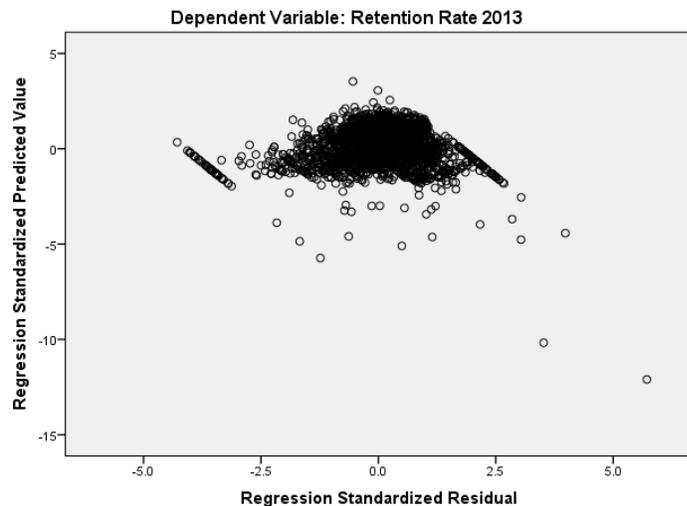

Figure 2. Scatterplot of retention rate 2013.

Results

Null Hypothesis One

The first null hypotheses posed in this research is, "There will be no significant predictive relationship between the outcome variable (new student retention) and the linear combination of

predicator variables (average amount of federal scholarship and grant aid, average amount of

state scholarship and grant aid, and average amount of institutional scholarship and grant aid)

awarded to college students." As indicated in Tables 1 and 2, there is a significant relationship

between the predictor variables in the study and the outcome variable of fall 2013 retention rate,

$R^2 = .20$, adjusted $R^2 = .20$, F(3, 2301) = 193.38, p < .01. Figure 1 shows that the results follow

a bell curve; as such, a normal distribution can be assumed. In this case, the null hypothesis can

be rejected; there is a significant predictive relationship.

Null Hypothesis Two

The second null hypothesis of this study is, "There will be no significant predictive

relationship between the outcome variable new student retention and the predictor variable

average amount of federal scholarship and grant aid awarded to college students." Table 4

indicates that this predictor variable is significantly related to the outcome variable. Federal

scholarship and grant aid awarded correlation was B = -.277 and was significant at the p < .000

level.

Linear regression was utilized on the predictor variable average amount of federal

scholarship and grant aid awarded to college students and the outcome variable new student

retention. Results from this regression are presented in Tables 5 and 6 and indicate that the

predictor variable is significantly related to student retention, $R^2 = .127$, adjusted $R^2 = .127$, F(1,

2303) = 335.05, p < .01.

Table 4

Coefficients[a] of All Predictor Variables and Retention Rate

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	70.812	0.809		87.518	.000					
	Federal per FTIC	-0.003	0	-0.277	-14.135	.000	-0.36	-0.283	-0.26	0.906	1.1
	State per FTIC	0.001	0	0.081	4.332	.000	0.111	0.09	0.081	0.984	1.02
	Inst per FTIC	0.001	0	0.263	13.332	.000	0.357	0.268	0.248	0.893	1.12

[a] Dependent variable: Retention rate 2013.

Table 5

Model Summary of Federal Aid per First time in College and Retention Rate

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.356[a]	.127	.127	17.798

Note. FTIC = First time in college.
[a] Predictors: (Constant), Federal per FTIC.

Table 6

ANOVA[a] of Federal Aid per First time in College and Retention Rate

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	106129.353	1	106129.353	335.053	.000[b]
	Residual	729485.074	2303	316.754		
	Total	835614.428	2304			

Note. FTIC = First time in college.
[a] Dependent variable: Retention rate 2013. [b] Predictors: (Constant), Federal per FTIC.

Figure 3 contains a scatterplot of the 2013 retention rate and average federal aid award to first time in college students. The scatterplot does show some outliers; however, the dataset is large enough that these should not impact the model. Looking at this graph, one can see that there is a cigar shaped distribution that decreases from left to right. This chart depicts that as the federal aid award increases a school's retention rate decreases. Based on the multiple and linear regression findings, we should reject the null hypothesis.
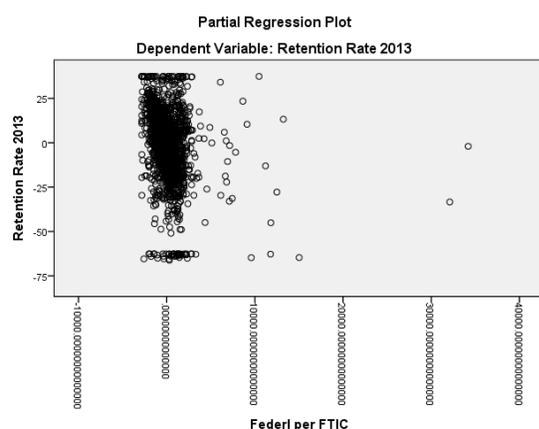

Figure 3. Federal aid per first time in college by retention scatterplot.

Null Hypothesis Three

The third null hypothesis of this study is, "There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of state scholarship and grant aid awarded to college students." The predictor variable of state scholarship and grant aid awarded was shown to be significantly correlated to student retention, B = .08, p < .000.

Linear regression was conducted on the predictor variable average amount of state scholarship and grant aid awarded to college students and the outcome variable new student retention. Results from this regression are presented in Tables 7 and 8 and indicate that the predictor variable is significantly related to student retention, $R^2 = .012$, adjusted $R^2 = .012$, $F(1, 2303) = 28.73$, $p < .01$.

Table 7

Model Summary of State Aid per First Time in College and Retention Rate

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.111[a]	.012	.012	18.931

Note. FTIC = First time in college.
a Predictors: (Constant), State per FTIC.

Table 8

ANOVA[a] of State Aid per First Time in College and Retention Rate

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10295.171	1	10295.171	28.728	.000[b]
	Residual	825319.257	2303	358.367		
	Total	835614.428	2304			

Note. FTIC = First time in college.
[a] Dependent variable: Retention rate 2013. [b] Predictors: (Constant), State per FTIC.

Figure 4 shows a scatterplot of 2013 retention rates and the average state grant and scholarship awarded to first-time, full-time, undergraduate students. It is difficult to see because of the number of cases reported; however, there is a positive correlation between the two variables. This correlation is not as strong as the ones for federal aid or institutional aid; however, it is significant and an important piece of information that can be used to predict student retention rates. Based on the results of the multiple regression analysis we must reject the null hypothesis.
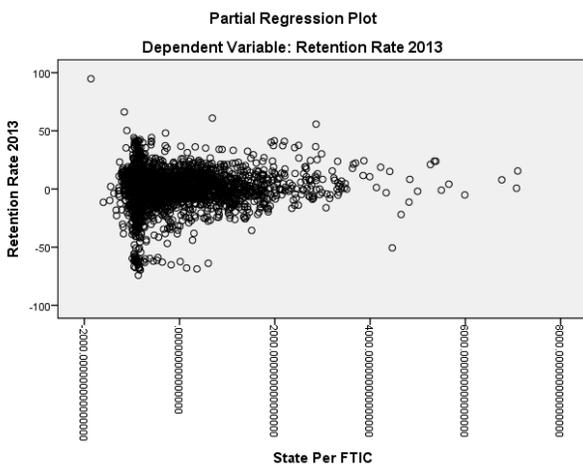
Partial Regression Plot
Dependent Variable: Retention Rate 2013

Figure 4. State aid per first time in college by retention scatterplot.

Null Hypothesis Four

The final null hypothesis of this study is that, "There will be no significant predictive relationship between the outcome variable new student retention and the predictor variable average amount of institutional scholarship and grant aid awarded to college students." Once again, the multiple regression model showed that the predictor variable of institutional aid was significantly correlated with the outcome variable of student retention, B = .26, p < .000.

Linear regression was run on the predictor variable average amount of institutional scholarship and grant aid awarded to college students and the outcome variable new student retention. Results from this regression are presented in Tables 9 and 10 and indicate that the predictor variable is significantly related to student retention, R^2 = .013, adjusted R^2 = .13, F(1, 2303) = 335.55, p < .01.

Table 9

Model Summary of Institutional Aid per First Time in College and Retention Rate

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.357[a]	.127	.127	17.796

Note. Inst = Institutional; FTIC = First time in college.
[a] Predictors: (Constant), Inst per FTIC.

Table 10

ANOVA[a] of Institutional Aid per First Time in College and Retention Rate

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	106266.197	1	106266.197	335.548	.000[b]
	Residual	729348.231	2303	316.695		
	Total	835614.428	2304			

Note. Inst = Institutional; FTIC = First time in college.
[a] Dependent variable: Retention rate 2013. [b] Predictors: (Constant), Inst per FTIC.

Figure 5 is a scatterplot of 2013 retention rates and institutional aid. There are some outliers present in this dataset; however, they do not pose a significant issue because of the large sample size. The chart shows a positive correlation between institutional aid and 2013 retention rates. It should be noted that the average institutional award is the strongest positive predictor of student retention rate, meaning that as the average institutional grant and scholarship award increases so, too, does the college retention rate. Based on the results of the multiple regression model this null hypothesis is rejected.
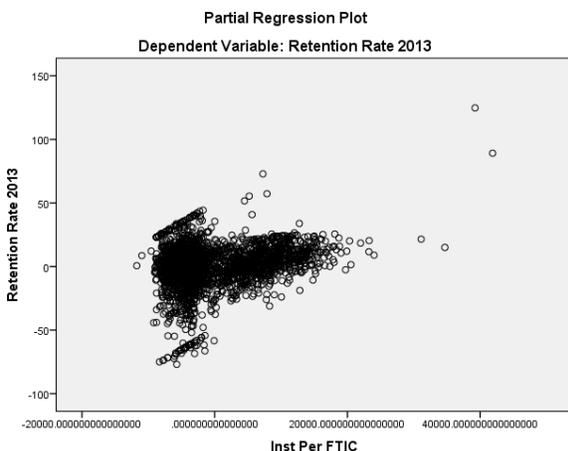
Figure 5. Institutional aid per first time in college by retention scatterplot.

Results from the current study support what prior research has shown, that different forms of financial aid and the amount of financial aid total have a predictive relationship with new student retention. Each null hypothesis in the current study was rejected indicating that the type of financial aid awarded to students was significant when predicting retention. It is interesting to note that the total amount of federal financial aid awarded to students was negatively correlated to student retention. This may be explained by the fact that federal financial aid is usually awarded to those with the highest amount of need. Perhaps, the amount of federal aid was not enough to cover the students' expenses or this group was not as prepared as their counterparts. Both of these questions need further investigation.

The overall amount of federal aid, state aid, and institutional aid were positively correlated to student retention at the $p < .01$, with higher average award amounts tied to higher retention rates. The overall model accounted for 20% of the variance in new student retention. This indicates that student financial aid is predictive of new student retention but does not explain all of the variance in retention.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion

Over the past decade, a greater importance on college finances has emerged in response to great recession of the late 2000s. Although the economy has made improvements since this time, the importance of student retention and being able to predict budgets remain a focus at many schools. The federal government has invested heavily into the higher education system along with state governments and the institutions themselves all with the hope of making college accessible to the masses.

The importance and emphasis on going to college has never been greater. Governments and citizens are demanding to know how their tax dollars are spent and what they are getting in return. This study, along with others created up to this point, indicates that financial aid money has a significant impact on student retention. Although there was a significant relationship found between the predictor variables and the outcome variable of retention rates, one must be careful in interpreting the results.

In the current study, the R^2 value is low for the combination of predictor variables and each individual predictor. In fact, the maximum R^2 value observed is .20, a number that indicates that the model only accounts for 20% of the variability in retention rates between schools. While statistically significant this R^2 value is too low to be meaningful and should not be used to make changes to current practices. This may be a result of the many factors and warrants further research. Having said this, this study still indicates that retention rates are impacted by the types of financial aid awarded to students and remains important.

The results obtained in the current study and outlined in this paper are important for a number of reasons. First, the results confirm that there is a positive correlation between the

predictor variables of financial aid types and student retention rates. This is the driving research question presented in this paper and supports what several other researchers have found to date.

Up to this point, other research has consistently shown that the amount and type of financial aid awarded was correlated with student retention. The findings of the current study gives further support to this notion. Overall, the combination of financial aid predictor variables were positively correlated to overall retention. According to research by Pugh and Johnson (2011) and Jones et al. (2014), the amount of gift aid a student received was correlated with their retention with higher rates correlated with a higher probability.

When one looks at the source of the gift aid, the correlations are still present. Federal gift aid, awarded primarily to students with financial need, was also found to be correlated with student retention. This correlation was negative in nature making it important to note the student population receiving this type of aid. The main drivers of federal financial aid are the Pell grant and Supplemental Education Opportunity grant, both are awarded based on student need. In many instances, students that receive this aid are those who would not be able to attend college otherwise (Schudde & Scott-Clayton, 2014). The research by Schudde and Scott-Clayton suggested that the negative correlation between federal aid and retention rates may be explained by the background of the students.

State aid was also found to be positively correlated to student retention. This supports previous research that has found similar correlations. Heck et al. (2012) concluded that the amount of state aid awarded to students had an impact on retention, with higher average amounts tied to higher retention rates. In addition to Heck et al. (2012), Doyle (2012) found that state aid was important for college attendance but that it was also being cut in a number of states. This is concerning on a number of levels. State aid was found to be positively correlated with retention

and cutting this form of aid will have a negative impact on students at many colleges. Research has shown that higher amounts of student debt are related to lower retention rates making the use of loans to replace state aid problematic for colleges (Jones et al., 2014).

Finally, the current study found that institutional aid was positively correlated with student retention. This predictor was one of the strongest positive correlations found in this study, second to the combined predictor group, and can be partially explained by the population receiving the aid. First, institutional aid is not limited to students with need like much of the aid at the federal and state level. These students may be receiving aid for a number of reasons including academic excellence, financial need, or athletic participation. While each of these areas represent a different subgroup of students, what is obvious is that there is a positive impact on student retention. Again, this echoes other research up to this point showing that not only does the amount of aid matter but also the type when it comes to student retention.

Conclusions

In conclusion, the multiple regression study contained here proves that grant and scholarship aid has a significant impact on student retention regardless of the source of that data. This is not to say that the correlation is positive in each situation; however, each predictor variable and the combination of all the variables proved statistically significant. As noted previously, this study resulted in a low R^2 making the generalization of the results difficult. Even though the study showed significance, it also did not explain a great deal of the variance between retention rates and student grant and scholarship aid.

Federal financial aid awarded as grant and scholarships had a negative impact on student retention. This may occur for a number of reasons; however, the most commonly cited is that these are the students who would not normally attend an institution of higher education. Federal

aid was created as a means to allow low income students and those without the financial means to enter college. It is not surprising that those schools who have the highest average federal aid amounts have lower retention rates; they are serving a different student body, one with more need.

According to several authors the amount of state and institutional aid should be related to student retention and overall outcomes (Menifield, 2012; Barr & Turner, 2013; Castleman & Long, 2013). The findings of this study point to the fact that the biggest bang for the buck in terms of student retention would occur if colleges could award more state aid to their students followed by putting more of their own money towards financial aid. This may sound counterintuitive; however, in order to stabilize retention rates and future budget projections, colleges should be open to the idea that financial aid and not new programs may be the best use of limited resource.

<div style="text-align:center">**Implications**</div>

The current study has several implications for future research and policy development; however, the most important implication is that retention rates are impacted by grant and scholarship aid made available to students. If a college or university wants to raise its retention profile, they should examine how they currently package financial aid to their students. The percentage of students receiving particular types of aid will impact retention rates in a positive or negative manner.

An incoming class of new students who are heavily reliant on federal financial aid will have a lower retention rate than a class eligible for state and institutional aid. Understanding the incoming characteristics of the student body and what type of financial struggles they have will help administration predict retention rates. This will not only help in rankings publications but

also in predicting what the future budget of the school will be.

In many instances, colleges and universities have been forced to reduce the amount of institutional financial aid available to students. This sounds like a reasonable strategy but may compound the issue of the college. As the amount of institutional aid is decreased, so too will the school's new freshmen retention rate, further decreasing the school's budget the following year.

Research has already shown that states have cut their budgets as well and these cuts have impacted who goes to college and the college overall retention rate. The current research supports this finding and adds to the body of literature that identifies how financial aid, and its cuts, impact student outcomes.

Limitations

Although compelling, the current study does contain some limitations. First, the data contained in this study is self-reported data. This data is required for all Title IV institutions awarding federal aid; however, it also contains information on schools who are not Title IV eligible. This group represents the bottom of the award scales and many, if not all, indicated they awarded $0 in financial aid. Schools who left this amount null on their reports were not included in the study because they did not have complete data for the study.

Another possible limitation of this study is the type of state and institutional aid awarded by schools. Aid can be awarded based on merit, need, or being a student athlete. These types of financial aid are included in the average amounts awarded to first-time college students in the current study; however, differences in how the aid was awarded may have an impact on student retention.

Perhaps the largest limitation of this study is the amount of variance in retention rate

explained by student aid types. The average amount of grant and scholarship aid awarded to students is significantly correlated to retention rates but only explains roughly 20% of the variance in retention rates, indicated by an R^2 value of .20. This means that 80% of the difference in retention rates of colleges and schools cannot be explained by financial aid. Given this R^2 value, using this research to change current practices is not appropriate.

Recommendations for Future Research

Research into how financial aid impacts student retention is a hot topic and will remain one for the foreseeable future. As noted above, this study includes all schools who reported their fall 2013 new student retention rates and the total amount of grant and scholarship aid awarded by federal, state, and institutional sources. The multiple regression model proved to be significant and explained roughly 20% of the difference in retention between schools. In simple terms, the source of grant and scholarship aid can be used to predict a school's retention rate; however, it is far from perfect.

The current study identifies a number of areas that warrant future research. First, federal gift aid was found to have a negative correlation on student retention. This finding, however, was not broken out by the different forms of federal gift aid available. There could be different correlations based on the different forms available from the federal government. Another area needing further research is how students are paying for tuition increases. Federal gift aid has not kept pace with increasing tuition, in many cases remaining stagnant. This creates an interesting question as to how students are making up this gap and what source of aid is stepping in.

The current study used information from all schools that award Title IV aid. It would be interesting to see if the location of the school has an impact. Previous work has shown that the importance placed on an education varies by state, with some states making it a financial priority

and others cutting the education budget. Future research could examine those states that cut their budgets and if a corresponding decrease in student retention occurred at colleges and schools in those sates.

The current study used all colleges and universities in the US who granted 4-year degrees and above. Separating schools by private and public or for-profit and not-for-profit may be the next logical step in examining how student aid impacts student retention. There is a growing national sentiment that for-profit-schools are inherently different than not-for-profit schools. In fact, some of the largest for-profits are finding it difficult to receive federal aid at all. It would be interesting to examine how aid at all levels, federal, state, and institutional, impacts schools with different business models.

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APPENDIX A: Financial Aid Survey Questions

IPEDS Survey Material: View Forms   Page 1 of 1

Section 1: Part C, Page 2
Part C, Page 2 - Enter Information about Group 2
Part C includes financial aid information about Group 2. Group 2 students are all full-time, first-time degree/certificate-seeking undergraduate students enrolled in Fall 2013.
For this part, report:

For These Students	The Following Type(s) of Aid	Awarded in This Period
• Full-time, first-time degree/certificate-seeking undergraduate students enrolled in Fall 2013	• Grant or scholarship aid from the federal government • Grant or scholarship aid from state/local government • Grant or scholarship aid from the institution • Loans to students from the federal government and from other sources, including private or other loans • Do not include grant or scholarship aid from private or other sources • Do not include PLUS loans or loans made to anyone other than the student	• Any time during academic year 2013-14 • For program reporters, this is the aid year period from July 1, 2013 through June 30, 2014.

In the fields below, report the number of Group 2 students and the total amount of aid awarded to these students for each type of aid. Enter unduplicated student counts within a category (e.g., Pell grants). However, a student can appear in more than one aid category.

Information from Part A: Fall 2013
Group 2
Full-time, first-time degree/certificate-seeking undergraduates
(This number is carried forward from Part A, Line 02)
Group 2a
Of those in Group 2, those who were awarded any Federal Work Study, loans to students, or grant or scholarship aid from the federal government, state/local government, the institution, or other sources known to the institution
(This number is carried forward from Part A, Line 02a)
Group 2b
Of those in Group 2, those who were awarded any loans to students or grant or scholarship aid from the federal government, state/local government, or the institution
(This number is carried forward from Part A, Line 02b)
Group 3
Of those in Group 2, those who were awarded grant or scholarship aid from the federal government, state/local government, or the institution

Aid Type	Fall 2013 Number of Group 2 students who were awarded aid	Percentage of Group 2 students who were awarded aid	Total amount of aid awarded to Group 2 students	Average amount of aid awarded to Group 2 students	YOUR PRIOR YEAR DATA Fall 2012 Average amount of aid awarded to Group 2 students
01 Grants or scholarships from the federal government, state/local government, or the institution					
02 Federal grants					
02a Pell grants					
02b Other federal grants					
03 State/local government grants or scholarships (grants/scholarships/waivers)					
04 Institutional grants or scholarships (scholarships/fellowships)					
05 Loans to students					
05a Federal loans					
05b Other loans (including private loans)					

https://surveys.nces.ed.gov/IPEDS/VisForms.aspx?survey=7&form=16&index=5&ri=0&sh...   5/3/2015

APPENDIX B: Fall Enrollment Survey Questions

Part E – First-time Bachelor's Cohort Retention Rates (Full-time)
Retention Rates
Full-time, First-time Bachelor's Cohort from Fall 2013

Academic reporters determine the cohort and retention as of the institution's official fall reporting date or as of October 15. Program reporters determine the cohort with enrollment any time between August 1 and October 31, 2013 and retention based on August 1, 2014.

The retention rate is calculated by the system after clicking "Save" on the screen. Exclusions are subtracted from the original cohort and the resulting adjusted cohort is used for calculating the retention rate.

Retention Data Reporting Reminders:

- Include only **full-time, first-time bachelor's** students in this cohort.
- Determine the full-time cohort using Fall 2013 status (e.g. if a student was full-time in Fall 2013, report them in the full-time cohort regardless of their Fall 2014 status).
- If there are no students to report in the cohort, enter zero. Do not leave the field blank.
- Report in the exclusions box (line E2) the number of students from the cohort who left the institution for any of the following reasons: died or were totally and permanently disabled; to serve in the armed forces (including those called to active duty); to serve with a foreign aid service of the Federal Government (e.g. Peace Corps); or to serve on official church missions.

Prior year data (Fall 2012 cohort)

FULL-TIME, FIRST-TIME BACHELOR'S COHORT RETENTION:

E1	Full-time, first-time Fall 2013 bachelor's cohort	
E2	Exclusions from the Fall 2013 cohort	
E3	**Adjusted** Fall 2013 cohort (line E1- line E2)	
E4	Students from Fall 2013 cohort **still enrolled** as of Fall 2014	
E5	Full-time, first-time Fall 2013 bachelor's cohort retention rate (line E4 / line E3)	% %