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A QUANTITATIVE STUDY
OF THE RELATIONSHIP BETWEEN PELL GRANT AID
AND ASSOCIATED VARIABLES IN A FLORIDA PUBLIC STATE COLLEGE

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the Higher Education & Policy Studies Program
in the College of Education and Human Performance
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ABSTRACT

Using Bean and Metzner's conceptual framework related to non-traditional student attrition, the responsible use of Federal Pell Grants was studied by examining the retention and academic performance of college-credit seeking students in a public college in Florida that predominantly offered two year degree programs. Also analyzed were differences between Pell Grant recipients and non-recipients among various demographic categories. Chi-square tests of independence indicated that statistical significance existed between Pell Grant recipients and non-recipients in retention rates from fall to spring terms, as well as in the demographic variables of academic performance, gender, ethnicity, age group, residency, and credit hours achieved. Only the variable of ethnicity showed a medium practical effect size, with all the other variables indicating a small to no practical effect size.

This dissertation is dedicated to my dear husband, Ron.

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As mentioned by thousands of other doctoral students who have made this journey before me, doctoral programs are never completed without guidance, support, motivation, and commitment not only from the individual student, but from family, friends, co-workers, supervisors, faculty, and advisors. I am fortunate that I had many people in my life to offer the needed support to persist in this academic journey.

To the esteemed faculty at the University of Central Florida, especially to my advisor and committee chair Dr. Cintrón, I thank you for opening my mind to theories, concepts, scholars, and the vastness of the academic culture in America. This learning experience has brought me outside of my administrative practitioner role in higher education with a deeper appreciation for the importance of student success and the role administrators, faculty, and student service professionals play in bringing about academic successes for the good of society.

I have also been fortunate to gain some valuable friendships among my fellow students who shared this journey with me. If it were not for this program of study, I would never have met one of the most special of my colleagues, Gloria Hardee. Together, we studied, coached each other, and mentored each other through the ups and downs of both our educational and professional endeavors, thus forging a friendship that will last well beyond our doctoral studies. Thank you, Gloria for being there when I needed you most, being my friend, proposal defense note-taker, and study partner. I am so proud of what we have accomplished together.

Finally, thanks go to my dear family. My parents are thanked for somehow raising me to have the ambition to pursue my doctoral studies. My three sisters, Debbie, Kathy, and Pam, consistently offered their proud support by cheering me on throughout the last four years. My wonderful sons, Nicholas and Christopher, not only gave me five grandchildren during my academic pursuits but provided support they do not even realize they provided. They are my true heroes. When things seemed insurmountable in my studies, I only had to think of them in their roles of United States Air Force active duty members to keep me motivated to continue my doctoral journey. Additionally, looking at the faces of my dear grandchildren gave me peace and happiness in times of stress and also gave me the inspiration to get through this journey in a timely manner so I could have more time to spend with them, away from the books, the research, the studies, and the thousands of written pages that have consumed my time over the past four years. But the most important person I need to acknowledge is my husband, Ron, to whom this dissertation is dedicated. You have been the ultimate rock that I have leaned upon and relied upon to succeed in this journey. You were always there for me, and I especially thank you for putting up with my emotional ups and downs and getting me back on track each time. I know you had to sacrifice a great deal of “together” time to allow me to pursue this degree. For that, I cannot thank you enough. You have been in my life ever since I was a teenager, and I thank God every day for your love and support. You are truly the best thing that has ever happened to me, and I love you.

TABLE OF CONTENTS

LIST OF FIGURES	x
LIST OF TABLES	xi
LIST OF ACRONYMS/ABBREVIATIONS	xii
CHAPTER 1 INTRODUCTION	1
Background	1
Statement of the Problem.....	3
Significance of the Study	9
Conceptual Framework.....	11
Research Questions	19
Definition of Terms.....	19
Summary	21
CHAPTER 2 REVIEW OF THE LITERATURE	24
Introduction.....	24
History of Community Colleges	24
The Florida College System.....	27
Community College Student Demographics	29
Florida Community College Demographics	33
Fiscal Issues for Community College Students	34
The Pell Grant Program	37
Brief History of the Pell Grant Program	38
Pell Grant Policies.....	40
Pell Grants in the Florida College System.....	42
Current Pell Grant Costs and Benefits	45
Pell Grant Problems	52
Pell Grant Persistence and Retention Studies	58
Retention and Attrition Research in Community Colleges.....	63
Financial Aid Effects	64
Retention and the Community College Student Survey of Engagement..	65
Persistence Factors for Community College Students.....	67
Retention/Attrition and Student Demographics.....	72
Retention/Attrition in the Florida State Colleges.....	78
Student Responsibility for College Fiscal Matters	80
Linking Student Responsibility with Pell Grant Aid	81
Fiscal Responsibility Related to Individual Demographics.....	84
Benefits of a College Education	87
Summary	92

CHAPTER 3 METHODOLOGY	95
Introduction.....	95
Research Approach.....	95
Population and Sample	96
Research Design.....	97
Data Sources	97
Procedures.....	98
Instrument Development and Variables.....	100
Study Variables.....	103
Authorization to Conduct Study/IRB.....	103
Originality.....	104
Summary.....	105
 CHAPTER 4 DATA ANALYSIS AND FINDINGS	 106
Introduction.....	106
Research Question 1	106
Research Question 2	109
Research Question 3	111
Enrollment Status.....	111
Residency.....	114
Educational Goals	116
Age.....	118
Gender.....	121
Ethnicity.....	122
Research Question 4	125
Pell Grant Enrollment	126
Pell Grant Aid	126
Summary.....	127
 CHAPTER 5 DISCUSSION, CONCLUSION, AND RECOMMENDATIONS.....	 129
Introduction.....	129
Discussion.....	130
Research Question 1	130
Research Question 2	132
Research Question 3	134
Research Question 4	139
Significant Findings.....	140
Limitations and Delimitations.....	143
Implications for Policy and Practice.....	146
Implications for Future Research.....	148
Summary.....	151
 APPENDIX A PERMISSION TO USE CONCEPTUAL FRAMEWORK.....	 155

APPENDIX B	PERMISSION TO CONDUCT STUDY	157
APPENDIX C	INSTITUTIONAL REVIEW BOARD APPROVAL.....	159
REFERENCES	161

LIST OF FIGURES

Figure 1. Conceptual Model of Nontraditional Student Attrition.....	16
Figure 2. Modified Conceptual Model.....	18
Figure 3. Valid Pell Grant Applicants: 2004-05 to 2013-14.....	52
Figure 4. Earnings for Florida Graduates and Completers	89

LIST OF TABLES

Table 1 Florida's Public College System: Pell Grant Data for Undergraduates for 2009-10 and 2010-11 Academic Years	43
Table 2 Total Pell Grant Costs and Awards by Student: 2004 to 2012	49
Table 3 Conceptual Framework: Bean and Metzner's Background and Environmental Variables and Modification for College S.	102
Table 4 Chi-Square Analysis for Subsequent Spring Retention and Pell Status (N=25,600).....	108
Table 5 Chi-Square Analysis for Academic Performance and Pell Status (N=105,466)	110
Table 6 Chi-Square Analysis for Demographic Variable: Credit Hours Earned and Pell Status (N=25,600).....	113
Table 7 Chi-Square Analysis for Demographic Variable: Residency and Pell Status (N=25,570).....	115
Table 8 Chi-Square Analysis for Demographic Variable: Educational Goals and Pell Status (N=25,600).....	117
Table 9 Chi-Square Analysis for Demographic Variable: Age and Pell Status (N=25,600).....	120
Table 10 Chi-Square Analysis for Demographic Variable: Gender and Pell Status (N=25,360).....	122
Table 11 Chi-Square Analysis for Demographic Variable: Ethnicity and Pell Status (N=24,533).....	124
Table 12 Results of Pell Enrollment Rate and Average Per-Student Pell Award Comparisons of Targeted College to Other Florida State Colleges (N = 27).....	127

LIST OF ACRONYMS/ABBREVIATIONS

CCSSE--Community College Survey of Student Engagement

FAFSA--Free Application for Federal Student Aid

FCS--Florida College System

IFAP--Information for Financial Aid Professionals

NACUBO--National Association of College and University Business Officers

NEA--National Education Association

NCES--National Center for Education Statistics

R2T4--Return of Title IV Funds

Title IV--Federal Student Aid funds authorized under the Higher Education Act of 1965

VIGNETTE

As Professor Scholefield finishes taking attendance on the first day of the new term, she peruses the classroom of students, wondering how many of the 30 students will successfully complete this Introduction to Accounting Principles class. Based on her past experience, she tends to lose at least five students within the first two weeks of course, and at least one-third by the end of the term. Many of her students are on full Pell Grants, which means they typically receive a significant refund once their tuition and books are paid for so that they can cover other expenses related to attending college. She has learned from her dean that the college is experiencing a large increase in student debt as a result of Pell Grant student attrition, and college administrators are struggling with collecting these debts. The Board of Trustees is also putting pressure on the administration to find ways to reduce the debt write-offs within this population of students. Professor Scholefield can always tell when the Pell refunds are disbursed because that is when she begins to notice more empty seats in the classroom. She wonders whether these students realize their responsibility in accepting the Pell Grant awards and particularly what this means for their future educational pursuits. She has heard that the college aggressively pursues student debtors by blocking them from getting transcripts or re-enrolling; and even uses an outside collection agency to help collect these debts.

As Professor Scholefield dismisses the class on this first day, a female student approaches her and inquires as to whether she marked her present since she arrived in class late. The student tells her that she wants to make sure she is shown on the attendance roster so that she can ensure she receives her Pell refund check; otherwise she will have trouble paying her rent and buying food for her young children. Professor Scholefield cannot help but wonder if this student will still be present in her class at the end of the term.

CHAPTER 1 INTRODUCTION

Background

As stated on the National Center for Education Statistics' website (n. d.), federal grant aid to students results in monetary transfers from the Federal Government directly to the institution where the students are enrolled and does not require students to repay the funds as long as they fulfill their educational endeavors. When students receive federal grants, also known as Pell and Supplemental Educational Opportunity Grants, there is a societal expectation that students as well as society will benefit by their completion of coursework or their degrees (Toby, 2009).

Community college students were the focus of this study because the effect of Pell Grants on these students is often more significant financially than for students in other sectors of higher education. For example, the community college student, on average, has a lower income than a traditional four-year college student. Given the lower tuition rates of community colleges, Pell Grants cover more non-tuition related expenses of students (Baime & Mullin, 2010). Given the increased numbers of community college students receiving federal grants and the seemingly high attrition rate of lower income students, colleges are carrying debts on behalf of students who did not earn their aid by completing at least 60% of the term (National Association of College and University Business Officers [NACUBO], 2011b). The Department of Education policies that govern Pell Grant repayments was summarized in this NACUBO report indicating that, generally, when students fail to complete 60% of a course within a term, they are

considered to have withdrawn. Depending on their current course load, they may be placed into a repayment situation. NACUBO also reported that only 21% of first-time, full-time, degree seeking students who began their education at a community college finished their degree within three years.

When students receive Pell Grants and drop out early in the term, the college must return the grant dollars to the Federal government and seek reimbursement from the student (Information for Financial Aid Professionals, 2011a). This is not always an easy task for college personnel charged with billing and collection duties. Instances where students began coursework, received Pell Grant dollars, and failed to complete the coursework, have resulted in the colleges disbursing these funds being held responsible for collecting the overpayments made to the students. Once the college returns the funds to the Federal government, they typically bill the student who did not successfully complete the required term, thereby requiring each student to become fiscally responsible for returning the funds. Student responsibility, in this sense, means completing coursework for which this federal aid was intended. If a student does not complete the required amount of the term in which they received Pell Grant funds, the college must proceed with collection efforts against students in this category. The task of collecting the funds from students can become difficult if students have moved or are simply unable to return the funds due to financial pressures they may be facing.

Despite the fact some students who receive Pell Grants may not successfully persist in college, the grants have created opportunities in community colleges by removing barriers to attendance for millions of students, making higher education more

broadly available to all Americans (Baime & Mullin, 2011). Adequate finances have been a key barrier to attendance, i.e., procuring the necessary financial aid to pay for college tuition and other educational expenses. According to Baime and Mullin, politicians generally believe the program has been a huge success despite the funding challenges. However, as mentioned, there are student responsibilities, such as satisfactory academic progress, linked to receiving Pell Grants. Students who have already received a bachelor's degree or professional degree are not eligible for Pell Grants unless they are pursuing certain teaching certification programs (Information for Financial Aid Professionals, 2011c). Additionally, as a result of the Higher Education Opportunity Act of 2008, students may only receive Pell Grants for 18 semesters. However, due to budgetary constraints, this has recently changed to limit Pell eligibility to 12 semesters (Bradley, 2013).

Statement of the Problem

With increasing scrutiny from various sectors of society, the value of post-secondary education, in conjunction with the large sums of federal funding for federal student aid programs such as Pell Grants and federal loans, will continue to be questioned. It is important that colleges and universities play a key role to ensure that students persist toward degree or technical certificate completion. According to Baum and McPherson (2012), Pell Grants increased from \$8 billion to \$35 billion over the 2000 to 2011 time period. These figures were echoed in another more recent article that dealt with new federal rules that significantly affected community college students. With the

cost of the Pell Grant program doubling over the four years ending in 2010, a major portion of U.S. Department of Education discretionary funding has been taken up with Pell costs (Bradley, 2013). With the community college sector of higher education mentioned as the fastest growing sector of higher education in this country (Katsinas, Hagedorn, Mensel, & Friedel, 2011), these institutions face challenges in serving lower income and underprepared students, an increasingly difficult population to serve (Fike & Fike, 2008; Schneider & Yin, 2011b). Since the 1970s, the probability of a low income student attending a community college, as opposed to a four-year university, has been quite high (Steinberg, Piraino, & Haveman, 2009). Recent data regarding the number of students served by the Pell Grant program indicated that 9.3 million students received these grants, 3.5 million of whom were enrolled at community colleges (Baime & Mullin, 2011). Despite this rise in students served by Pell Grants, the population of low income students most in need of financial aid has, ironically, been underserved by financial aid (Wilt, 2006). Wilt further indicated that the reasons for this were often related to the bureaucracy inherent in federal aid programs and the skills needed to navigate the bureaucracy. Another reason is the lack of preparedness of these underserved students to navigate the unfamiliar territory of college as they are often the first in their families to attend college. Therefore, as underserved students have clustered in the community college sector, they have continued to have negative educational outcomes (Green, 2006).

A related issue facing Pell recipients deals with the rising cost of tuition.

Kenamer, Katsinas, Hardy, & Roessler (2010) examined this issue and questioned whether federal aid programs could keep up with the escalating trend of tuition rates.

The tuition costs at both public two- and four-year colleges have increased faster than inflation and faster than investments made to the federal aid programs. Not surprising then, is the fact that total dollars spent in grant aid to students, such as Pell Grants and Supplementary Education Opportunity Grants, grew significantly for states with and those without local tax support. According to the data presented by Kennamer et al. (2010), suburban, multi-campus two-year colleges saw the largest increase in Pell Grant expenditures for the five years studied. Overall, between 2000 and 2006, community college Pell Grant expenditures increased 76% (Kennamer et al., 2010).

The Pell Grant program has been the foundation of the United States student aid system and is one of the largest federal programs that has been successful in avoiding suggestions of ineffectiveness (Baime & Mullin, 2011). According to these authors, this means that society generally believes that it is effective and should be handled by the government rather than by a private entity. However, some proposals have been put forth suggesting modifications in the program given the large increases in its costs from 2010 to 2013. Baime and Mullin (2011) highlighted several noteworthy issues relative to Pell Grants:

1. Of Pell Grant recipients in community colleges in 2009-10, 80% had family incomes less than 150% of the poverty level.
2. The maximum Pell Grant of \$5,550 covered only 28.9% of the estimated total educational budgetary need for a student to attend one academic year of college.

3. Only 40% of community college students were full time, and nearly 80% of full-time community college students earned Pell Grants.
4. Only 1.8% of Pell recipients were not employed, whereas 14.9% of non-recipients were not employed.

To highlight the significance of the Pell Grant program to community college students, several studies have been conducted that portray the program's importance. For example, in a study of retention of Hispanic students in a Texas community college, both Pell Grants and other campus financial aid programs were shown to be a significant factor in retention of this population of students (Nora, 1990). Nora reported the regression coefficient for Pell Grants of .613 was larger than all the other variables used in the study. Additionally, Nora reported that the total effects for Pell Grants on the retention of Hispanic students was .774 but campus-based resources were .402.

Yet another more recent example of the effect of financial aid was highlighted in a study conducted in an Oklahoma community college. In this study, the Pell Grants were one source of financial aid that contributed to student persistence, especially when coupled with Oklahoma's state aid program (Mendoza, Mendez, & Malcolm, 2009). Researchers have found that grants are more effective than loans in keeping students in college (Fitzgerald & Delaney, 2002).

It has been a common statistical research technique to correlate Pell Grant recipients with low income students given that Pell Grant percentages are readily available to researchers. This may not always be an appropriate technique. As reported by Romano and Millard (2006), based upon data obtained from the National Center for

Education Statistics, the rate of Pell Grant students enrolling in college credit courses was much lower than expected. Thus, it was concluded that using the Pell Grant rate was not a strong proxy for determining the number of low income students in community colleges. This study's results did not contradict the assumptions regarding low income students in community colleges, but it did indicate that receiving a Pell Grant was not a strong measure of low income students. Romano and Millard (2006) provided several reasons why students indicated they had not applied for Pell Grants while attending a community college, e.g., ineligible due to having a bachelor's degree, part-time attendance, complicated application process, adequate family income that covers the low cost of community college tuition.

Although the importance of Pell Grants can be seen in these examples, conversations with and observations of administrators have revealed many instances where students drop out of their courses soon after receiving federal aid and are immediately placed in a repayment situation with the institution. Because these grant recipients are typically low income students, the debt becomes very burdensome to them and can hamper their future academic pursuits. As a result, those students who are most prone to become financially constrained are also more likely to leave college prior to earning a degree (Singell, 2001). In Florida, the students who have not persisted to degree attainment have been more likely to be black, Pell recipients, enrolled in Associate of Science rather than Associate of Arts programs, and between the ages of 26 and 35 (Florida College System, 2010).

The American Institutes for Research recently released a report related to the attrition problem disclosing certain community college costs with which the general public was not familiar (Schneider & Yin, 2011b). Schneider & Yin (2011b) stated that governments both at the state and federal level appropriate nearly \$4 billion of taxpayer dollars to the community college system on behalf of students who do not return for their second year of college. Thus, although governmental dollars were spent on these students, they did not succeed in obtaining a degree; and society did not reap the benefits that typically come from a more educated citizenry such as increased tax revenues resulting from higher paying jobs.

In this research study, the responsibility of students was explored as measured by their retention in their course of study at a public college in Florida. Retention data were reviewed related to Pell Grant recipients as compared to non-Pell Grant recipients. For Pell Grant students, the attrition related to dropping out of their courses before they have successfully completed the earn-out period of their financial aid may cause them to owe funds to the college. This occurs when a student is determined by the institution to have withdrawn, requiring the institution to calculate the portion of Pell funds, known as the Return of Title IV Funds Calculation (R2T4), that has been deemed unearned by the student (Information for Financial Aid Professionals, 2011a). The institution must return the funds to the federal government no later than 45 days after the student's withdrawal and attempt to collect these unearned funds from the student despite the funds already having been allocated to tuition. This situation is further complicated by the fact that for many students, because community college tuition is much lower than university tuition,

the excess of the Pell Grant award which exceeds tuition has already been placed directly in the hands of the student. In this situation, the institution would be forced to carry the student's debt and recover those funds directly from the student.

Significance of the Study

Public community colleges currently serve over seven million students providing access to higher education for many lower income students (NACUBO, 2011a). Community colleges provide the entry point for students to either obtain the skills for better paying technical jobs or the opportunity to gain transfer credits into a four-year institution (Wilt, 2006). Over the past 20 years, attendance at community colleges has increased 53% with approximately 31% of total Federal Pell Grant aid going to community college students (NACUBO, 2011a). Therefore, the significance of this research was two-fold. It related to studying the attrition problem of Pell Grant recipients in Florida's college system by using data from one of the colleges in the system as well as addressing the increased public urgency for accountability in how federal educational funds were allocated and used. Because the Federal aid programs, such as Pell Grants, utilize billions of dollars, society has required assurance that these dollars are allocated to students in a responsible manner. Additionally, colleges and universities need to remain cognizant of instances where students may not be acting in a responsible or fiscally prudent manner once they receive federal educational funds. In other words, colleges and universities should be prepared to implement necessary student interventions and policies

that will help ameliorate the attrition of Pell Grant recipients such as ensuring proper staff training and adopting preventative practices as necessary (Baime & Mullin, 2012).

Szmigin and O'Loughlin (2010) provided a good example of student fiscal responsibility challenges. Though these authors discussed students and credit marketing in the U. K. and Ireland, several fiscal-responsibility related issues were applicable to students in this country. Specifically mentioned was the fact that college students, though being among the most educated citizens, are relatively inexperienced in financial matters and may be challenged when it comes to making informed decisions relative to borrowing or incurring debt to attend college. Increasing debt loads of college students raises concerns in society over the capability to handle the debts. In this article, the need for individuals to take responsibility for their actions and to consider the impact their actions have upon others was discussed. Relating this concept to Pell Grant aid, a student who receives these funds but is not successful in college can have an impact on society, in that society has paid for this benefit via taxes and has not reaped the benefits of seeing the student become educated. These students have not taken responsibility for their behavior, and this action could have impact on others. The paradox, though, is how much responsibility students should be expected to take in areas of choice such as taking on debt to finance their education. Should the risk be borne by them, or by government (that sets many policies relative to educational financing)? The qualitative research performed within Szmigin and O'Loughlin's study was focused on the role governments should play in providing information, introducing regulations, and protecting consumers.

Policy makers cannot ignore the capabilities of students, even in cases where financial literacy and educational information are provided.

Conceptual Framework

Financial aid influences various components of students' lives. Different types of aid can potentially reduce the stress that students, particularly those from low socio-economic backgrounds, may feel if financial needs outweigh their ability to persist in college (Nora, Barlow, & Crisp, 2006). Fitzgerald & Delaney (2002) stated that unmet financial need is a barrier for the poorest population and is an indirect measure of the inadequacy of funding of the federal aid programs. Unmet need was defined by Fitzgerald and Delaney as the amount of funds students and their families must have in order to afford college after all other financial aid and family contributions are taken into account. Due to unmet need, it is very difficult to totally achieve college access for all students. Fitzgerald and Delaney (2002) further stated that even if students are academically prepared, unmet need tends to deny them the opportunity to attend college. Thus, academic preparedness is a necessary condition, but it is not always sufficient for access to college. Despite this, Fitzgerald and Delaney (2002) stated that financial aid programs have enhanced access; and that although college attendance rates were much higher at the time of the present study than thirty years previously, current policies were working, even though not fully funded.

The study by Nora et al. (2006) was conducted to review the psychological and behavioral effects of financial aid on students. This study was different from others that

had sought to study the capital and psychological benefits of financial aid in that this one used a longitudinal method utilizing a first-time-in college cohort. Three factors the authors highlighted in conjunction with affective learning were (a) financial aid allows students to better integrate into the social life of the college because it reduces their need to seek outside employment, giving them more time to focus on schoolwork, friendships and campus activities; (b) receiving financial aid reduces a student's financial concerns so it leads to increased satisfaction and support for college; and (c) institutional loyalty is enhanced because the student has received support from the college and the student becomes more committed to degree attainment at that particular institution (Nora et al., 2006). Accordingly, a student's social interaction is one of the most important factors in persistence research. Financial aid can impact this factor by allowing a student to not work or limit the hours they must work while attending college. Financial aid can free up students so that they can become more socially integrated within their institutions.

In Spady, Tinto, and Pascarella's student retention models, as studied by Summers (2003), the focus was primarily on social integration which is more applicable to a traditional student. The community college student has been seen as non-traditional, and social integration theories have played a much smaller role for this population. Summers (2003) reported that Bean & Metzner (1985) recognized this aspect and consequently incorporated environmental variables into their model. The interaction between the student and the environment within a community college has been expected to have significant effects on persistence decisions made by students. A key finding in Summer's study (2003) was evidence pointing to certain enrollment and registration

behaviors of community college students and the effect these behaviors have on academic outcomes. An example would be students who register late. In a study conducted in a large urban four-year college, Cabrera (1992) pointed to the indirect effect of student finances on persistence, indicating that finances can influence a student's academic integration and socialization which in turn can have an effect on a student's resolve to persist in college. In other words, financial aid can allow students to focus more on their academics and less on the need to work to pay for college. Furthermore, not having to work while in college gives students the freedom to interact more with peers and engage in campus activities. Corroborating this notion was another study conducted by Singell (2001) in which data from a large public university showed that both need-based aid and merit-based aid improved retention, but merit-based aid tended to have the largest impact on retention and persistence.

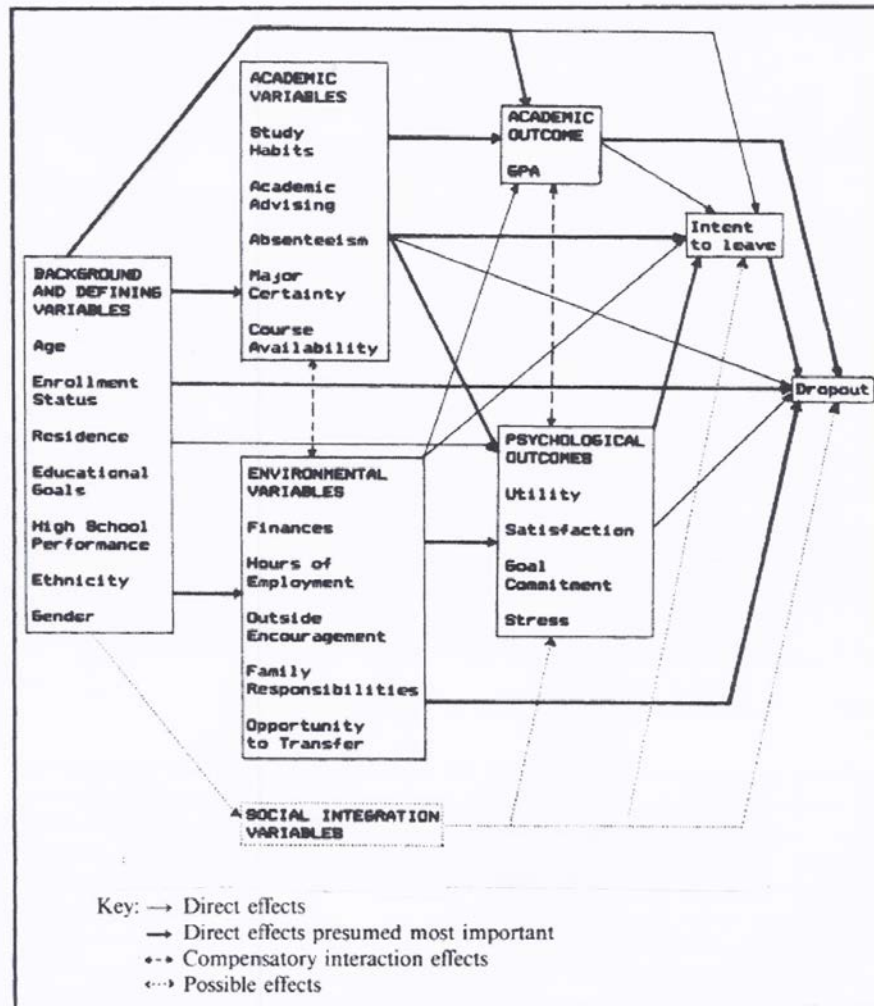
Because the community college student tends to be quite different from a traditional four-year college student, the previously mentioned studies and models may not be applicable to student integration and persistence in the two-year sector. Community college students often are older than traditional students in a university and have goals which may be unrelated to earning a bachelor's degree (Wild & Ebbers, 2002). Using qualitative data coupled with the Tinto theory of student departure, Astin's theory of involvement, and Pascarella's model, academic and social integration were explored by Deil-Amen (2011) through surveys, interviews, and observations of two-year college students. Becoming academically or socially integrated within college occurs in

very different ways. In this study, persistence was most aided when a student experienced on-campus interactions that were primarily academic in nature.

Other more well-known models have focused on the social integration of students that leads to persistence. Also, developmental theories applied to community college students can also provide a framework in that the theories enable an understanding of decisions these students make when faced with persistence issues (Stage, 1989). Receiving federal grant aid does not always produce the intended behavior, so exploring the behaviors that lead to a grant recipient's not being successful in college can be important to understand.

Expanding on economic theoretical perspectives, Chen and DesJardins (2008) incorporated the interaction of financial aid and family income to examine the effects on college student attrition. They found that receiving a Pell Grant narrowed the drop-out gap between low and middle income students. Chen and DesJardins stated that current theoretical models for studying college student drop-out rates ignore parental income levels and the timing of when the student drops out. As a result, policy makers do not have information that may help them identify what types of aid are more effective in addressing the drop-out rate across income levels. Findings about higher drop-out risks for lower income students as well as higher first year drop-out rates were discussed. A negative relationship was found between parental income and the risk of student departure, which can be ameliorated with Pell Grants. In other words, low income students have been more responsive to continuing their education with Pell Grants, than students from higher income families.

Although both cognitive and affective components of psychosocial theories applied to financial aid constructs can provide a framework for the study of student retention and persistence, for this research, Bean & Metzner's (1985) conceptual model of nontraditional student attrition utilized various factors more applicable to the population of community college Pell Grant students, and as such was the model that guided this research study. Permission to reprint herein and use Bean & Metzner's conceptual model for this study is contained in Appendix A. This conceptual model, displayed in Figure 1, uses variables of background, academic, environmental and social integration to help explain a student's academic and psychological outcome which could lead to dropping out of college. The environmental variables contain financial variables including Pell Grant aid.



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Figure 1. Conceptual Model of Nontraditional Student Attrition

Bean and Metzner (1985) stated that non-traditional students such as those who will be studied in this research paper, are much more affected by external environmental

variables and tend to have higher attrition rates than traditional students. In Bean and Metzner's study, non-traditional students were defined using three characteristics: age, commuter (not living on campus), and attending on a part-time basis. Traditional students, therefore, were defined as those between the ages of 18 and 24, full-time, and residing on campus. Although Bean and Metzner defined non-traditional students as having one of the three previously mentioned characteristics described, they are actually defined more by the fact that they have less interaction with socialization agents such as peers and faculty at their institutions. They do not become as socialized in college as do their traditional student counterparts. Therefore, non-traditional students are often more concerned with academic offerings of a college than by the social environment (Bean & Metzner, 1985).

Bean and Metzner's model provides many variables that can affect a non-traditional student's decision and subsequent action regarding dropping out of college, but only portions of the model will be used to guide this study. The components to be used that are applicable to this study are presented in Figure 2.

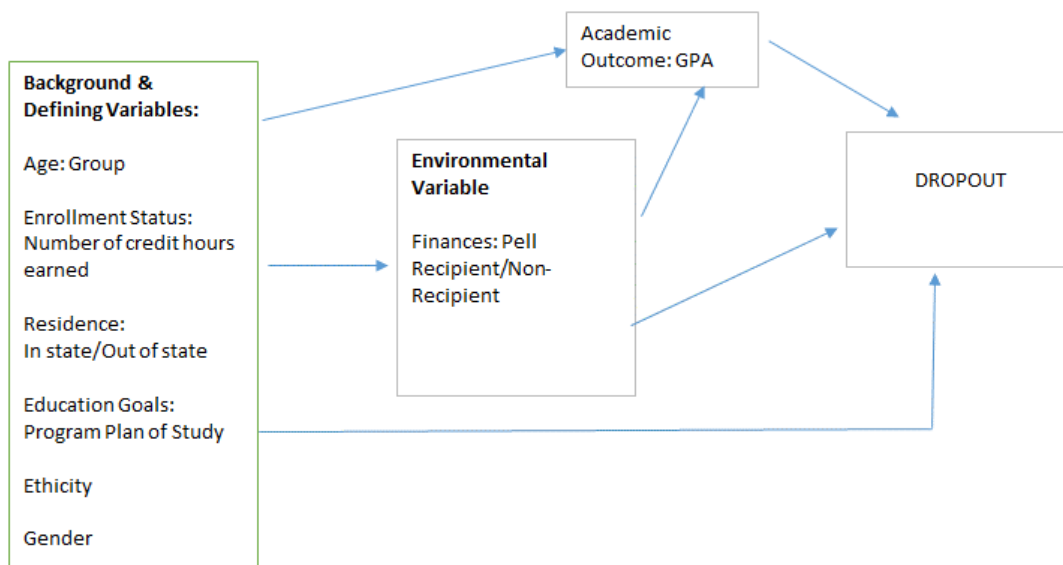


Figure 2. Modified Conceptual Model

Relating Bean and Metzner’s modified conceptual model to the components for this study, the background and defining variables are further defined as follows:

1. Age--the age group in which the student is classified.
2. Enrollment status--the number of college credit hours earned at the time of this study.
3. Residence--whether the student is classified as an in-state or non-resident of the state of Florida.
4. Education goals--the plan of study or program in which the student is enrolled.
5. Ethnicity--racial or ethnic classification as self-reported by the student on the institutional student records database.

6. Gender--as self-reported by the student on the institutional student records database.

Research Questions

In order to gain an understanding of the relationship between student retention and Pell Grant status, it was necessary to answer the following research questions. Using these questions, the researcher sought to measure student responsibility with receipt of Federal Pell Grant aid:

1. What relationship, if any, exists between rates of student retention rates and status of being a Federal Pell Grant recipient?
2. What relationship, if any, exists between student academic performance, defined by earning a C or better for college credit students, and status of being a Federal Pell Grant recipient?
3. What relationships, if any, exist between student demographics and the status of being a Federal Pell Grant recipient?
4. What similarities, if any, exist between the college highlighted in this study and other Florida state colleges in the numbers of Pell Grant students enrolled and the average amount of Pell Grant aid received per student?

Definition of Terms

Allowance for doubtful accounts. A provision made in a company's accounts for debts which may never be paid (Allowance for bad debt, 2007); or an account used to

reduce an account receivable to the amount that is expected to be collected (NYSSCPA). As used in this research paper, it refers to student account balances that are estimated by management to be uncollectible.

Attrition. The failure of a student to finish a course or enroll in the following semester (Summers, 2003).

Expected family contribution. A measure that is determined based on needs analysis of a student's cost to finance post-secondary education. The EFC is subtracted from the student's cost of attendance to arrive at the student's financial need (Information for Financial Aid Professionals, n.d.).

Federal grants. Educational assistance money grants provided to students by federal agencies such as the U.S. Department of Education (National Center for Education Statistics, n.d.).

First generation student. Individuals who are the first in their family to attend college which means neither of their parents ever attended college (Gibson & Slate, 2010).

Florida College System. The 28 locally-governed public colleges in the state of Florida (Florida Department of Education, n.d.). This system was formerly known as the Florida Community College System.

Graduation. As defined by Florida Statutes for public colleges, refers to the awarding of a college degree to a student who successfully completes the specified number of credit hours (FLA.STAT. §1001.02, 2012).

Pell Grants. Federal awards, which do not have to be repaid, given to students as determined by their financial need, costs to attend school, and their status as a full-time or part-time student (U.S. Department of Education, n.d.a).

Persistence. The act of continuing in college with the goal of degree attainment (Nora et al, 2006).

Retention. The process of meeting student needs such that they persist in college and achieve their educational goals (Moxley, Najor-Durack, & Dumbrigue, 2004).

Satisfactory academic progress. A policy within an institution that ensures students are making progress in their education as measured by their GPA or other comparable method. Students must make satisfactory academic progress in order to continue to receive federal aid (*Federal Student Aid Handbook*, 2013).

Student responsibility. For the purpose of this study, a student utilizing educational dollars as intended by the funding agency. For example, students who receive Pell Grants must complete at least 60% of the term in order to actually earn the aid awarded to them.

Underserved students. Low income, first in the family to attend college and students of color (Green, 2006).

Summary

In 2013, the maximum Pell Grant was \$5,500, and the money was paid directly to the college. Once tuition was satisfied, the remaining funds were disbursed directly to students to help offset various living expenses so they can attend school (Genzer, 2011).

This study was conducted to assist in identifying if the Federal Pell Grant recipients attrition problem in the Florida College System was found in one of the colleges in the system and was intended to further the knowledge about existing community college student persistence. Additionally, this research was important in clarifying current media reports regarding abuse of the Federal Pell Grant program in the community college sector of higher education. This knowledge was used to either validate or negate perceptions of Pell Grant attrition problems at the particular college studied, thereby providing the impetus for the college (and others) to formulate appropriate interventions for their Pell Grant students. Thus, students could be better assisted in their educational pursuits; potential abuse of Federal Pell Grant aid could be mitigated; and students would be better able to assume appropriate responsibility when receiving Federal aid dollars. Because financial aid policies are key instruments for governments and institutions to steer accountability and outcomes, the importance of understanding how financial aid effects student attrition is critical to determine whether programs such as the Pell Grant program are achieving the intended outcomes. As reported by Stater (2009), institutions would most likely derive some value from knowing if federal aid programs in some way help students perform better. This would be particularly helpful in gauging the academic skills of low income Pell Grant recipients. This could bolster a more positive public perception of federal aid programs and provide further support for the expansion of such programs to financially needy students.

In a letter posted on the Information for Financial Aid Professionals website, guidance was provided to financial aid professionals to be aware of and take steps

regarding the increased federal student aid fraud occurring in colleges offering online programs (Information for Financial Aid Professionals, 2011d). Institutions are expected to comply with disbursement requirements that ensure federal funds are given only to those students truly eligible to receive the funds. Fraud rings that obtain identifying information from potential students, submit financial aid applications, enroll in on line programs, and participate in the courses only long enough to receive the Federal funds have been on the rise. Institutions are expected to take steps to make sure a student is academically engaged in their program of study. This example highlights one more aspect of student responsibility that, if ignored by policy makers and institutions, puts the Pell Grant program in jeopardy for students truly in need of this type of financial assistance.

Chapter 2 contains a review of the literature. Literature was reviewed related to the history of community colleges and the Pell Grant Program, including information related to the Florida College system. This was followed by a review of literature related to community college students and retention/persistence studies focused on this population. Issues related to retention of students in the online learning environment that are prevalent in the community college sector were also addressed. The chapter was concluded with a discussion of student responsibility associated with Pell Grant aid that linked fiscal responsibility to the receipt of such aid.

CHAPTER 2 REVIEW OF THE LITERATURE

Introduction

This chapter provides a review of the literature related to community college student attrition, retention, and persistence, with a primary focus on the attrition of those students who receive Federal Aid. Topics reviewed are the history of community colleges, community college student demographics, the Pell Grant program, prior research on retention and attrition in community colleges, retention and attrition in Florida's College System, and societal expectations related to the responsibility of students who are awarded Pell Grants.

Pell Grants play a key role in the community college sector, more so than other areas of higher education (Baime & Mullin, 2010). The fundamental objective of this federal program was originally intended to provide the financial resources for economically disadvantaged students to pursue higher education (Alexander, 2002). When community college students receiving Federal Pell Grants fail to persist, society does not get a return on its investment which was made by way of federal taxation to various social programs, e.g., education. In order to reap returns on this investment of tax dollars, a student's persistence in college is an important outcome for society.

History of Community Colleges

Originally known as junior colleges, community colleges date back to the Morrill Act of 1862 which expanded access to higher education for students who had previously

been denied access (Drury, 2003). With the second Morrill Act in 1890, colleges were required to admit students regardless of race or forego access to federal funds. The first junior college was established in 1901, and William Rainey Harper of the University of Chicago was a major force in its establishment (Drury, 2003). He helped lead the charge among university presidents to recognize that the first two years of college did not necessarily belong in the traditional university setting. It was believed that the first two years of college were really an extension of high school and he sought to partition collegiate level work from university or graduate level work (Brubacher & Rudy, 2008). He began referring to the two levels as junior and senior college. Harper's idea was not entirely novel but was based on the German secondary school idea. Nonetheless, Harper was not successful in getting the local high schools in Chicago to take on college-level courses, so the concept of the two-year junior college was born in America. The growth of junior colleges was very slow with only 14 public two-year schools and 32 private schools having emerged by 1914 (Drury, 2003).

Various social and political forces, particularly the need for industrial workers and the national desires for social equality, took hold in the early 20th century and continued to spur the growth of junior colleges (Drury, 2003). More than half of the junior colleges were religiously affiliated during this period. There were some offerings in vocational fields, but most were in the liberal arts field. In the early years of junior colleges, there was a lack of respect from four-year colleges and universities. Successful strategies were developed for vocational training in addition to preparation for four-year college degrees.

The American Association of Junior Colleges (now known as the American Association of Community Colleges) helped the two-year college sector transition into more respected institutions. Many other events, such as issuance of the Carnegie Foundation report in 1932 contributed to this growth, adding legitimacy to junior colleges and the different functions they filled (Drury, 2003). This was followed by the Great Depression where people who could not find work went back to college in order to increase their upward mobility potential. In 1944, Congress passed the GI bill which provided financial assistance to World War II veterans to attend college. Harvard University President James Bryant Conant became a proponent for the community college, supporting education for the masses, but critics suggested his advocacy was only to protect elite institutions. William Rainey Harper was of the impression that some four-year institutions were actually too weak to continue providing four years of education and, as such, they should become junior colleges (Brubacher & Rudy, 2008). Thus, some junior colleges grew out of four-year institutions, some as extensions of high schools, and some were brand new creations.

Tracing the growth of community colleges further into the 20th century, Drury (2003) stated that during the 1960s enrollments at community colleges ballooned much more rapidly than any other sector of higher education. This has been attributed to the baby boom generation after World War II. Also, the tribal institutions on Indian reservations were, in essence, community colleges that provided higher education and vocational training to the Indian populations living on or near these reservations. These

tribal colleges were an important phase in the growth of community colleges (Brubacher & Rudy, 2008).

During the 1970s, transfer students declined, and community colleges became predominantly vocational institutions. This was due to the community college's interest in economic development activities. As stated by Brubacher & Rudy (2008), “. . . the junior college had to beware concentrating on preparation for senior college. Its most pregnant possibility lay in orienting itself to the needs of the great mass of people who would not be going on” (p. 257).

Going into the 1980s, more specialized and customized training programs developed within community colleges. Drury (2003) observed that at the time of his report, there were 1,100 community colleges enrolling more than 10 million students each year in this country. Approximately 47% were minority students.

The Florida College System

The Florida College System originated in 1933 with Palm Beach Junior College being the first Florida public two-year college (Florida Department of Education, 2012). In 1947, St. Petersburg, previously a private college, changed to become the second public two-year college in Florida. In 1957, the Florida legislature authorized the creation of the Division of Community Colleges and funded six more public two-year institutions. Throughout the 1960s and 1970s, the state built additional public colleges and merged 12 black colleges into the Florida College System. At the time of the present study, Florida housed 28 public colleges offering primarily associate transfer degrees,

developmental education, career and technical education, and community education (Floyd, Falconetti, & Hrabak, 2009).

In 1999, the Postsecondary Education Planning Commission recommended the creation of a state college system which would encourage more students to earn four-year degrees, and St. Petersburg College was authorized in 2001 to offer degrees in areas that met certain workforce demands such as nursing, education, and information technology. However, at this time, community colleges were advised to encourage four-year degree completion so by creating partnerships with other institutions.

In order to meet the demands of Florida's need for more baccalaureate degrees, the concept of a state college system re-emerged in 2007 under a study commissioned by the Board of Governors and conducted by the Pappas Consulting Group (Floyd et al., 2009). Florida needed a way to provide a cost-effective path to a four-year degree while keeping the open access mission of the community college at the forefront. Thus, in 2008, Florida enacted a bill that expanded the community college educational mission by allowing nine pilot community colleges in the state to offer certain baccalaureate degrees. In 2008, the Florida College System was officially established, keeping the foundational mission of the colleges to be open-door access for associate level programs, workforce education, and the continued ability to reach out to the underserved populations of the state. Thus, the traditional mission of the former community colleges in Florida remained relatively unchanged despite the new authorization to offer four-year degrees.

Community College Student Demographics

Community college students have generally been categorized as non-traditional because they do not fit the mold of the 18-year-old student who graduates from high school and transitions into a four-year college or university, residing away from home, either on campus or close by. As described in reports from the National Center for Education Statistics (Horn, Nevill, & Griffith, 2006; Provasnik & Planty, 2008), the community college student is more prone to be older, female, minority, and from a low-income family than a student at a four-year institution. According to Flores, Horn, and Crisp (2006), Latino students are more likely to attend a community college rather than a four-year college. In 2003-04, 26% of community college students were 24 years of age or older and financially independent from their parents (Horn et al., 2006). The authors of the 2008 NCES report stated that two-thirds of students enrolling in community colleges immediately after high school do have aspirations of pursuing a bachelor's degree or higher. However, given the large number of community college students in the 24 or older age group, it is apparent that the degree aspirations and achievement evolve quite differently than that of students enrolling immediately after completing high school.

Public two-year colleges serve over seven million students, charge lower tuition than public four-year and private not-for-profit institutions (NACUBO, 2011a). Thus, they provide access to students from lower or moderate income levels. In the past 20 years, community college attendance has increased about 53%, with enrollments rising by nearly one million students. However, as reported by NACUBO (2011a), the bulk of this increase is really in the private, for-profit institutions. Public spending at two-year

colleges averages \$9,184 per student compared with public spending at public research universities which averages \$13,819 per student (Kahlenberg, 2011b). Per Kahlenberg this may be due to the lack of political capital in the two-year sector since few legislators actually attended a community college. Given their open access nature, community colleges have typically been the school of choice for low income students. These are students who, except for the chances given them at the community colleges, may be shut out of higher education. Therefore, the concentration of low-income, underprepared students in the community colleges can bring reduced graduation levels, reduced college success, and lower expectation levels. These students are also not privy to the networks that more affluent students have in the universities. Kahlenberg (2011b) cited a report by Carnevale and Strohl, reporting that though students in the top socio-economic strata made up 70% of the student body at selective four-year institutions, this population only made up 16% in the community college sector.

Another difference noted by Provasnik and Planty (2008) was that the need for remediation was greater among community college students. According to a 2003-04 survey, 29% of community college students had taken remedial coursework during their first year of college (Provasnik & Planty, 2008). In contrast, only 19% of students at public four-year institutions reported taking remedial courses. The primary remedial courses were in mathematics, English, and writing. This indicated a higher population of underprepared students in the community college sector. Because community colleges have open-door policies, meaning there are no selective admissions policies, this adds to the probability of more underprepared students beginning their venture into higher

education at a community college (Fike & Fike, 2008). Therefore, community college admissions policies were anticipated to continue to add to the increased responsibility for educating underprepared students.

Several other demographics related to the community college students mentioned by Fike and Fike (2008) were the tendencies for more part-time students and first generation students to concentrate in this sector of higher education than in four-year institutions. According to Mendoza et al. (2009), there have been higher percentages of African American, Hispanic, and Native Americans in community colleges. They reported that the disproportionate numbers of students shows that the community college is quite often the only opportunity that minority and lower income students have to obtain postsecondary education. Green (2006) commented that community colleges in the United States were serving historically underserved students which she defined as low-income, first in their families to attend college, and students of color. Freeman (2007) defined the underserved population as a subset of nontraditional students with at least one of the following characteristics: on welfare, experienced long-term unemployment or underemployment, physically or mentally challenged, or immigrants or minorities.

Community college students, according to Deil-Amen (2011), are among the most marginalized in higher education. This is due to students' typically lacking academic self-confidence as well as challenging limits on their time to devote to education. "Many two-year students are marginalized in that they are so tenuous in their college student role that seemingly minor setbacks are not interpreted as such and could easily throw them off

course and back into a re-adoption of a non-college student identity” (Deil-Amen, 2011, p. 78).

In 2011, Kahlenberg (2011a) observed that only 10% of community college students eventually earned a bachelor’s degree. Though this is explained, in part, by issues with transfer of credits, at times inadequate financial aid is also to blame. It is not unusual for students in the community college sector to earn more credits than necessary in order to complete their four-year degrees. Some credits earned in the community college do not transfer to the university which means students have to earn more credits than necessary to graduate. This means additional time and money must be spent by students to obtain a bachelor’s degree. Thus, students who begin higher education in a community college are less likely to earn a bachelor’s degree than their counterparts who begin in the four-year sector.

The importance of the role of community colleges was echoed in a study by Porchea, Allen, Robbins, & Phelps (2010) regarding predictors for success of community college students. These authors highlighted the vital role that community colleges play in ensuring a skilled workforce. According to Freeman (2007), the four- year sector of higher education has not traditionally served the underserved population. Rather, the community college has been better suited to address the needs of underserved and underprepared students, because its primary focus has been centered on teaching, including remedial education. Community colleges have tended to offer more flexible class scheduling and convenient locations. They have also developed relationships with their communities and business and industry.

Florida Community College Demographics

The demographics related to the Florida College System mirror the national data. The Florida College System Annual Report (2012) provided a student profile for students in fall of 2011. Using the total unduplicated annual headcount for 2010-11, a total of 903,846 students were reportedly enrolled in fall of 2011, 39% of which were full-time and 61% of which were part-time. The average age of students attending two-year colleges in the state was 26 years old. Of the population, 59% were female and 46% were minorities.

In Florida, associate degree graduates have played a critical role in certain essential services such as healthcare and law enforcement, and employers have indicated high satisfaction levels with the graduates of these institutions (Bilsky, Neuhard, & Locke, 2012). Given the population demographics in Florida, these colleges have gained experience in educating a very unique and diverse group of students which Bilsky et al. (2012) described as non-traditional students. In fact, one of the main reasons the Florida Community College System recently transformed into the Florida College System was to provide opportunities to this underserved population to pursue a four-year degree. Non-traditional students in Florida have often been prevented from pursuing bachelor's degrees from the state's universities and private colleges due to their inability to procure the necessary funding to attend or to meet the time and place requirements (Bilsky et al., 2012).

Based on a report published by the Florida College System, 67% of high school graduates in 2008-2009 enrolled in the Florida College System after graduating from high

school (Florida College System, 2011). This represents a larger percentage of high school students than was enrolled in either the State University System or in independent colleges in Florida. This report also stated that for this same time period, the Florida College System enrolled 39.1% African American and 44.8% Hispanic students compared with the State University System's enrollment of 13.1% African American and 12.3% Hispanic students.

Fiscal Issues for Community College Students

Because access to college has been based on both a student's ability to pay and academic preparation, lower income students entering higher education in the community college sector are often in need of counseling and other types of student services that can ease the bureaucratic burden of navigating the financial aid arena (Wilt, 2006). Low income students often lack the skills needed to understand how to finance their education; thus, the role of knowledgeable counselors is very important. Certain social factors, such as complex life situations outside of college are also related to academic preparedness and are faced by lower income students. Participation in Federal Title IV programs goes beyond academic preparedness in that students might possess the academic skills for higher education, but they may not have the social skills to navigate federal rules for financial aid. They must rely on student services staff to fill this gap in order for them to be successful in college. This is one reason that many lower income students are found in the for-profit sector of higher education--the bureaucracy related to financial aid is easier to navigate (Wilt, 2006).

In reference to the financial earning power of a community college student, the field of study sometimes matters more than the educational level. For example, an associate's degree in engineering or computers is worth more than a bachelor's degree in a liberal arts field (De Vise, 2012). This means that the earnings power of some community college students can outweigh that of students with a four-year degree based on the field of study the student pursues. The same can be true for other vocational fields, such as construction and electronics. In these fields, it may take only months to complete a certificate program through a community college. Freeman (2007) commented on predictions that the economic gap between skilled and unskilled workers was expected to increase and that people with limited education will not only find it more difficult to procure employment, but also if employed they will be unable to provide for their basic needs. They will not be able to be economically self-sufficient. This is where community colleges can fill the gap. Freeman further stated that the economic impact of increased college attendance coupled with completion rates for the underserved populations is estimated to bring a \$230 billion increase to the gross domestic product.

To determine whether community college students have an increase in earnings power as a result of obtaining a two-year degree or certificate, Gillum and Davies (2003) used an economic analysis model in conducting a study in a large western community college. The four objectives of the study were (a) to determine the short-term economic impact of this college on the state and local economy, (b) to determine the impact of a degree or certificate on the student's earning power, (c) to determine state legislators' perceptions of the community college's impact to the state and local economy, and (d) to

compare legislator perceptions with the economic model data. The researchers compared community college completers' wages with those of the entire state workforce, controlling for age and gender and conducted interviews with 12 legislators for this study. Using the quantitative data (wages), community college program and degree completers had a 45% enhancement in their earnings power over a two-year period as compared with the control group of other wage earners in the state having only a 27.4% enhancement. Community college completers also showed income gains of 49.2% as compared to 30.7% for the control group. These researchers concluded that completing a college degree or certificate program at the community college did indeed have a positive effect on student earning power. In regard to the qualitative data derived from legislator interviews, the researchers concluded that both the degree to which community colleges impact state and local economies and an individual student's earning power were based more on belief than on data. Although most of the legislators believed in the benefit of a community college degree or certificate, they had no specific illustrations of the benefit of community college in terms of earning power.

Steinberg et al.'s (2009) research focused on four-year institutions but yielded valuable information for community colleges. Results indicated that states that have abundant community colleges tend to relieve the demand from low-income students on the four-year colleges, that two-year community colleges crowd out the share of low income students attending the four-year schools. Another effect mentioned relative to the two-year sector is the gateway effect. This is defined as the two-year schools giving opportunities for students to use them as a gateway to transfer to a four-year institution.

The gateway, in essence, increases the number of college-aged youth who enroll in post-secondary education.

In reference to college fiscal matters faced by first generation students, financial barriers to higher education can be magnified, as these students do not always have family examples to follow. Therefore, these first generation students may be at a higher risk of dropping out than non-first generation students. Mention was made by Gibson and Slate (2010) of prominent persistence models of Tinto, Astin, Pascarella, and Terenzini which emphasized the importance of a student gaining a sense of identity and mattering for college success. If students are not adequately engaged in their college experience, attrition is a strong possibility. Additionally, with the increase in students coming to two-year colleges who lack strong academic and emotional skills, the rigors of the college environment are often problematic, and, in many cases, lead to high rates of attrition.

The Pell Grant Program

Given the focus of this research on community college Pell Grant students, this section of the literature review is devoted to the Pell Grant program. Addressed are a brief history of the program, policies, Pell Grant's role in the Florida College System, current costs and benefits, problems, persistence and retention issues.

Brief History of the Pell Grant Program

After World War II, the federal government signed into law the Servicemen's Readjustment Act of 1944, also known as the G. I. Bill of Rights (Toby, 2010). This began the transformation of aid from scholarships based on academic merit to financial aid for the purpose of promoting greater access to higher education for all. "Following World War II and the Korean War, the GI bill introduced Americans to the concept that the opportunity to attend college should not be limited by the student's income or social status" (McPherson & Schapiro, 2002, p. 83). The G. I. Bill also demonstrated to academia that higher education needed to serve a much wider segment of society, and Congress subsequently passed the Higher Education Act of 1965 (Gladieux, 2002) to expand access to higher education.

Given this ideal, the long-term goal of the Higher Education Opportunity Act of 1965 was not only to expand access to higher education, but to equalize educational opportunities for students from various socio-economic groups. By basing federal aid on need, unequal opportunities to higher education were mitigated to some extent. The 1972 Higher Education Act reauthorized the 1965 Act. It was at this time that Congress enacted the Basic Educational Opportunity Grant, which was later renamed for its chief sponsor, Senator Clairborne Pell (Gladieux, 2002). Congress established the Pell Grant program to award educational funds to students with demonstrated financial need. Toby (2010, p. 302) referred to federal grants such as the Pell Grants as "gifts from American taxpayers that students do not have to repay." According to Fitzgerald and Delaney

(2002), a fundamental principle of American democracy is that higher education is a primary responsibility of state and local governments.

During the 1990s, policies shifted the focus away from needs-based initiatives by implementing tax credits for higher education benefiting middle class students over lower income students. The implementation of tax credits undermined the federal goal of narrowing the income related gaps in higher education (Gladieux, 2002). McPherson and Schapiro (2002) echoed this sentiment by stating that in the late 1990s the new Federal support of higher education had come in the form of tax credits which favored moderate to high income students. The trend of shifting educational support from grants to loans also shifted support away from lower income students to middle and upper income Americans. Loans benefited those students mostly at public colleges and universities, primarily in the form of unsubsidized loans, and there has been little evidence that loan support is essential to many of these middle and upper income families. McPherson and Schapiro concluded that this redistribution of federal dollars was moving in the wrong direction.

In 1997, with the passing of the Taxpayer Relief Act, benefits to middle and upper income students in the form of tax credits for education illustrated the federal government's two-prong approach to financing higher education in America (Gladieux, 2002). This two-prong approach operated on two different principles: (a) the less income a student's family has, the more educational grant benefits that student is eligible for; and (b) the more family income a student has, the more educational tax benefits are available to that family (Gladieux, 2002). Fitzgerald and Delaney (2002) posited that the

rise in tuition would lead to greater barriers to higher education for lower income students. This has contributed to the increased demand for educational financial aid. “Opportunity should accompany ability and desire for higher education, in whatever socioeconomic strata they are found” (McPherson & Schapiro, 2002, p. 85). In summary, there seemed to be, at the time of the present study, a shift from needs-based aid more toward a merit-based premise that tends to favor the higher income students.

Pell Grant Policies

Pell Grant policies have undergone frequent modifications as the federal government has endeavored to make more equitable and responsible decisions relative to students receiving these grants. Some of the major rules and regulations surrounding Federal Pell Grants can be found in the *Federal Student Aid Handbook*, also known as the *Blue Book*, published by the United States Department of Education. The predominant rules that apply to student eligibility and responsibility with Pell Grant aid that serve to inform this study are related to academic qualifications, satisfactory academic progress, and changes in eligibility status. Generally, students are eligible for a Pell Grant based on their expected family contribution which formulates need and their enrollment status (*Federal Student Aid Handbook*, 2013). The *Blue Book* also gives the regulations surrounding satisfactory academic progress (SAP) which dictates how an institution should handle Pell Grant eligibility if a student is not meeting financial aid SAP. There are two components of SAP. These components are both qualitative and quantitative. The qualitative standard relates to a student’s grade point average, and the quantitative

standard relates to the maximum time of progression through the program of study (*Federal Student Aid Handbook*, 2013). Students can lose their Pell Grant aid in subsequent terms if they do not meet standards of academic progress. Of course, even if students fail to meet satisfactory academic progress requirements, institutions may have an appeal process in place as allowed by Federal financial aid regulations, that would enable students to continue to receive federal aid. Several common reasons stated in the *Blue Book* are injury, illness, the death of a family member, or other special circumstance that may have caused a student's grades to drop, thereby losing federal aid eligibility. It is also necessary for students to keep their enrollment status at the level in which they began the term or it may mean they have not earned all the Pell Grant aid that the school disbursed to them. For example, if a student is awarded Pell Grants as a full-time student, the *Blue Book* (*Federal Student Aid Handbook*, 2013) states that they must be enrolled in at least 12 semester or quarter hours in the academic term.

On July 28, 2011 NACUBO issued a report with a primary focus on explaining two changes related to programs offered in modules and rules related to taking attendance within a course. According to NACUBO, "an aided student is considered to have withdrawn if she fails to attend all the days in the payment period she was scheduled to attend." Regarding the taking of attendance, it is important for an institution to know when a student ceases to attend classes, as attendance records determine whether students fall into a repayment scenario or not. The new rules expand the definition of institutions that are required to take attendance. Because federal regulations indicate that institutions are required to determine if and when a Pell Grant student ceases attendance (*Federal*

Student Aid Handbook, 2013), an institution should have a way to determine that a student is eligible to receive a Pell Grant before they disburse Pell-related refunds. The taking of attendance is a common way to prove the student actually attended class, thus being eligible for Pell Grant aid.

Pell Grants in the Florida College System

All 28 public colleges in the Florida system serve students through Pell Grants. As shown in Table 1, between 23% and 56% of students at Florida colleges received Pell Grants in 2009-10 and 2010-11. Based on these data from the Integrated Postsecondary Education Data System (IPEDS), a publicly accessible database maintained by the National Center for Education Statistics, over \$800 million in Pell aid was disbursed to students in the Florida College System during the 2010-11 year. This was a 27% increase over the 2009-10 academic year.

Table 1

Florida's Public College System: Pell Grant Data for Undergraduates for 2009-10 and 2010-11 Academic Years

College	# Receiving Pell Grants		% Receiving Pell Grants		Total Pell Grant Aid Received	
	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10
Lake Sumter Community College	1,218	1,076	25	23	5,669,034	4,802,356
Northwest Florida State College	2,217	1,796	28	24	8,426,460	6,930,798
Brevard Community College	6,095	5,054	34	28	20,720,874	17,179,025
Pensacola State College	3,828	3,388	33	29	15,050,184	13,392,996
Polk State College	3,726	2,706	35	29	14,356,024	10,492,697
Indian River State College	6,494	4,986	37	29	24,406,851	18,728,155
St. Petersburg College	12,519	8,781	39	30	46,378,841	32,971,130
Florida Keys Community College	476	438	33	31	1,841,061	1,637,924
Florida State College at Jacksonville	10,289	8,853	36	31	40,112,830	34,883,855
Santa Fe College	5,215	4,873	33	32	10,982,218	7,852,801
Edison State College	6,717	5,309	40	33	28,426,573	22,018,438
Gulf Coast State College	2,713	2,170	38	35	9,562,078	7,808,001
Saint Johns River State College	2,591	2,086	39	35	10,025,632	7,772,992
Chipola State College	921	820	42	35	3,521,505	3,363,300
Tallahassee State College	6,225	5,191	42	36	27,013,826	22,030,238
Valencia College	18,275	14,136	44	36	88,580,173	69,582,794
Hillsborough Community College	12,433	9,995	44	37	54,836,835	45,102,221
Broward College	19,255	14,002	48	37	73,576,845	55,141,585
Palm Beach State College	10,225	10,552	35	38	40,045,730	36,531,987
South Florida Community College	1,141	1,134	40	39	4,008,369	4,052,807
Florida Gateway College	1,307	1,254	43	39	4,182,624	3,618,169
Seminole State College of Florida	8,784	6,359	49	39	40,910,811	29,720,930

College	# Receiving Pell Grants		% Receiving Pell Grants		Total Pell Grant Aid Received	
	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10
Pasco-Hernando Community College	5,005	4,115	46	41	18,518,196	15,046,418
Daytona State College	9,473	7,191	51	41	31,706,220	13,419,863
College of Central Florida	4,438	3,453	51	42	16,552,924	12,296,521
Miami Dade College	32,386	25,030	53	42	140,988,918	106,902,750
State College of Florida Manatee-Sarasota	5,047	5,426	44	46	20,226,922	25,666,760
North Florida Community College	786	632	56	51	2,876,423	3,026,753
					803,504,981	631,974,264

Source: Integrated Postsecondary Education Data System (IPEDS)

Current Pell Grant Costs and Benefits

The federal government provides less than 15% of the revenue for colleges; however, federal direct aid coupled with federal funds for research to colleges and universities far outpaces funds from states and other donors (Gladieux et al., 2005). This means the federal government imposes various rules and regulation on higher education institutions and on students who receive federal funds. These rules have a history of having constantly changed based on traditions and on short-term decisions made by those in authority within the government, so both institutions and students face a myriad of challenges when it comes to the financing of a student's college education.

The federal government has helped bring higher educational opportunities to a broader segment of the nation's population and, thus, has helped transform the landscape of higher education from elitist to massification. The passing of the G. I. Bill in 1944 was a key event in that thousands of women and men had the opportunity to attend college who may not have without this legislation. In 1965, with the passing of the Higher Education Act, the federal government helped equalize opportunities for students in the lower socio-economic groups. This Act spurred exceptional growth in federal financial aid with nearly 75% of all aid to students coming from the federal government (Gladieux, 2002; Gladieux et al., 2005). However, as tuition rates increased, federal financial aid did not offset the increases which occurred in the last three decades of the 20th century (Gladieux, 2002). Since the 1970s, the maximum Pell Grant has declined relative to the cost of education, so the purchasing power of the Pell Grant has been

seriously eroded. From 1980 to the early 1990s, growth in Pell Grants and federally guaranteed student loans increased by approximately 33% each year (McPherson & Schapiro, 2002). Since 1990, however, the growth in guaranteed and direct loans has skyrocketed, totaling 116% through 1998. During the same time, Pell Grant expenditures only increased by approximately 20%. This means that the increase in federal aid can be attributed to loans more than grants. Also, McPherson and Schapiro (2002) reported that state and federal governments had decreased grants and loans targeted toward lower income students, and that this trend was expected to continue. Colleges shifted institutional aid toward need- and merit-based awards that tended to benefit the middle and upper income students. Thus, college costs covered by federal and state government funds decreased with the family bearing more of the cost. States began to actually shoulder more of the burden in financing higher education than the federal government. This was evidenced in certain state programs such as the Hope and Lifelong Learning tax credits, which favored higher income taxpayers. Per McPherson & Schapiro (2002), this was highly inefficient because lower income students are much more price-sensitive to college tuition than higher income students. Thus, there has been a weakening in college access to all students.

Despite the popularity and support of federal aid to students, there have been increased alarming media reports that cause public anxiety over the continued funding of such federal aid programs as Pell Grants. With media reports focusing on abuses and costs/benefits of higher education coupled with the rising cost of college tuition, federal policy has undergone extensive changes since the beginning of the 21st century. As early

as 1992, Congress passed a reauthorization law changing the way student need was calculated, mandating the use of the Free Application for Federal Student Aid (FAFSA) to determine eligibility, and also made massive changes to the student loan programs (Gladieux et al., 2005). As a result, at present, student loans outpace other forms of student financing as the primary way to pay for a college education. Another major change in the higher education delivery has been the massive growth in online education. Though students in online education can still use Pell Grants to pay for their education, the federal government and colleges have different challenges in ensuring accountability for students that choose to earn college degrees in this way.

The Federal Pell Grant program for the 2012-13 academic year allows for a maximum annual grant of \$5,550, with the amount dependent upon financial need per the U.S. Department of Education (n.d.b). As Field reported in a 2013 *Chronicle of Higher Education* article about the 2014 federal budget, President Obama was asking Congress for an increase in the maximum annual Pell Grant award from the 2013-14 academic year rate of \$5,645 to \$5,785 for academic year 2014-15. However, in their response, the House and Senate plans differed in that the Senate plan called for scheduled Pell Grant increases, but the House called for a 10-year freeze and tighter eligibility rules.

In order to be eligible for this aid, a student must complete an application (FAFSA). The U.S. Department of Education then determines the student's eligibility based on certain elements such as the student and/or parental income, household size, and the number of family members already attending post-secondary institutions. The Pell Grants provide need-based aid to low income undergraduate students as well as for

certain post-baccalaureate students with the goal of promoting access for all. Table 2 presents the history of Pell Grant costs for the total program and by individual awards to students for the 2004 through 2012 academic years.

Table 2 shows that since 2004, the federal government has increased the Pell Grant spending 171%. In 2004, Pell Grant programs equated to \$13.15 billion and had now grown to \$35.7 billion by 2012. Bradley (2013) stated that the Pell Grant program had doubled in cost for the four years ending in 2010 and was at \$36.5 billion. He further stated that there were 19.4 million students applying for Pell Grants last year as compared to only 9.5 million 10 years ago. The profound growth in the Federal Pell Grant program can be attributed to increases in maximum grant levels, increased college enrollments, which in turn has led to more students being eligible for these grants. Another factor has been a weakened economy leading to increased demands for college attendance (Baime & Mullin, 2011). Additionally, in 2009, the Federal government boosted Pell funding by allocating an additional maximum amount per student of \$2,300 beyond the current per student maximum of \$5,350 (Katsinas, Davis, Friedel, Koh, & Grant, 2013). This additional allocation, known as summer Pell, was implemented to encourage students to continue their education during the summer with the intent of enabling faster degree completion (Chitty, 2012). As a result, this additional summer Pell allocation also contributed to the profound growth in Pell costs.

In regard to the individual awards to student per year, Table 2 reveals that the annual Pell Grant that any one student can qualify for has risen \$1,500 or 37% from 2004 to 2012. Award amounts have been calculated based on the total cost of attendance, with

tuition being just one factor in the formula. Thus, a student in a low tuition institution, such as a community college, may have more excess funds over and above the tuition rate provided they qualify for the maximum award.

Table 2

Total Pell Grant Costs and Awards by Student: 2004 to 2012

Year	Program Costs (in Billions)	Program Award by Student
2004	\$13.15	\$4,050
2005	\$12.70	\$4,050
2006	\$12.82	\$4,050
2007	\$14.70	\$4,310
2008	\$18.32	\$4,731
2009	\$30.01	\$5,350
2010	\$35.69	\$5,550
2011	\$35.73	\$5,550
2012	\$35.70	\$5,550

Source: U.S. Department of Education (n.d.b).

Despite meeting Pell financial eligibility requirements, there are some factors that would preclude a low income student from receiving this federal aid. A student who defaults on federal student loans or fails to meet certain standards of academic progress, meaning their grade point averages have fallen too low, cannot receive federal Pell dollars (Kezar, 2009). Per the Federal Student Aid Handbook (2013), colleges must have Standards of Academic Progress (SAP) policies which are just as strict for students receiving Federal financial aid as those not receiving such aid. The Handbook further stated that students enrolled in programs over more than two academic years must have

GPA standards of at least a grade of C or its equivalent. Additionally students in non-degree seeking programs cannot participate in the Pell Grant program. Kezar (2009) also mentioned that sometimes holding a job while in college can count against one's ability to receive maximum Pell Grant awards.

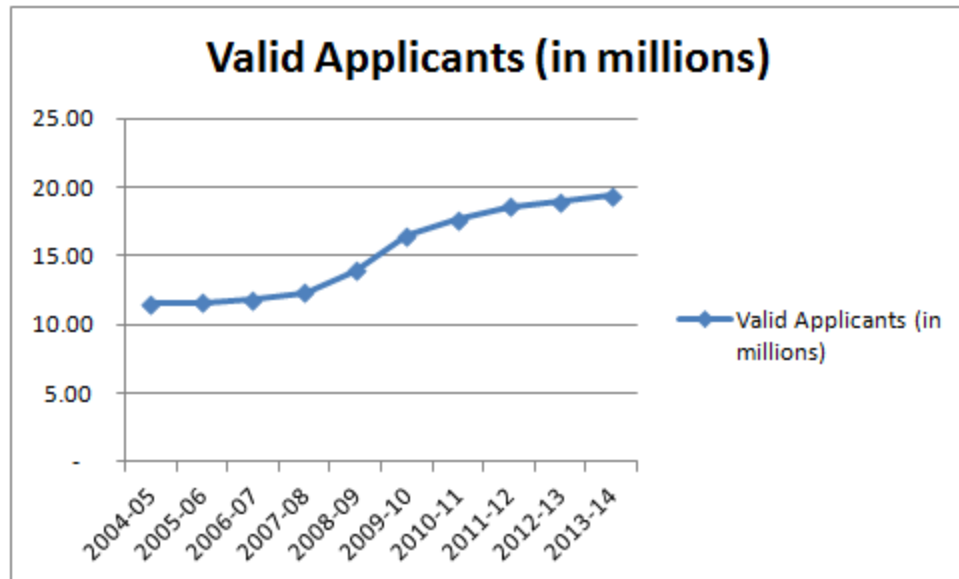
With the dramatic growth of the Pell Grant program, it is useful to compare the success rates of Pell recipients and non-recipients. Success, in this context relates to the responsible use of Pell Grants, which means that students persist in their education as they receive funding in the form of Pell Grant awards. In a statistical analysis report conducted for the National Center for Education Statistics in 2009, Wei and Horn compared Pell Grant recipients and non-recipients, determining that students with Pell Grants took longer to finish a bachelor's degree than those not receiving Pell Grants. Wei and Horn sought to make comparisons of student demographics, enrollment characteristics, and undergraduate risk characteristics based on whether or not students received Pell Grants. Their findings contained the following observations:

1. A higher percentage of Pell Grant recipients graduated from non-doctoral institutions than non-recipients.
2. Pell Grant recipients had a higher rate of transferring from a two-year to a four-year institution.
3. More Pell recipients than non-recipients were from non-English speaking households.
4. Compared with non-recipients, Pell recipients were more apt to be financially independent, have dependents of their own, and be single parents.

5. There was not a statistically significant difference between part-time students who either did or did not received Pell Grants.
6. First generation students with Pell Grants took longer to complete a bachelor's degree than Pell Grant students of college educated parents.

As stated in the November 2009 *Congressional Digest*, the Pell Grant program is the foundation for all federal aid awarded to undergraduate students and is also the largest source of grant aid to low income students (“Proposed Changes,” 2009). A total of 83% of Pell Grant students who were dependent on their parents for financial support had a family income level below \$40,000. For students who were not dependent on parental support, 84% had annual incomes below \$30,000.

Figure 3 presents the number of students deemed to be valid applicants for Pell Grants by the U.S. Department of Education for the years 2004-05 through 2013-14. It reveals a growth trend of 68% over the 10-year period. A valid applicant was defined as an undergraduate student who submits an application for federal aid which contains sufficient information to allow for the calculation of Pell Grant eligibility (U.S. Department of Education, n.d.b).



Source: U.S. Department of Education, (n.d.b.)

Figure 3. Valid Pell Grant Applicants: 2004-05 to 2013-14.

Pell Grant Problems

Based on a study completed by the Education Policy Center at the University of Alabama, Katsinas et al. (2011) reported that higher education had been taking the Pell Grant program for granted over the last 40 years. These researchers based this statement on the fact there has been a general lack of analysis documenting the academic and economic success that the grants bring to students and to the nation as a whole. Katsinas et al. (2011) believed that community colleges should lead the charge in researching successes of the Pell Grant program since they benefit the most from this federal aid program.

The Pell program has continued to receive attention in the media. As stated in an article published by the National Education Association [NEA] (2012), Pell Grants provide “a ticket to the American Dream for 9.4 million college students” (p. 4). This article further stated that at some schools more than 50% of students need the Pell Grant program in order to not only pay tuition, but for other related expenses as they pursue their education. Despite this great need, the Pell Grant program has continued to be a target for legislative budget cuts. As reported by Clark (2012) in a National Association for College and University Business Officers publication, quick legislative responses will be needed to maintain funding at the current level. With the soaring national deficit and the lackluster economic outlook, the Pell Grant program may continue to be vulnerable to further cuts. According to Clark (2012), even though the final federal budget for 2012 resulted in some modifications to the Pell program, such as a reduction of the number of semesters students are eligible for the grants, more reforms may be on the horizon. This landscape does not bode well for community college students since nearly half of undergraduate students are enrolled in this sector of higher education and many of these students come from low income and educationally disadvantaged backgrounds (Handel, 2008).

The most recent changes to the Federal Pell Grant program are affecting community college students quite significantly and are also depressing the enrollment numbers at community colleges (Bradley, 2013). The change that eliminated summer Pell Grants came about because Congress needed a way to address a \$1.3 billion gap in the Pell program. This move was contrary to the Obama administration’s agenda related

to boosting college completions. The primary premise of offering summer Pell Grants has been to help students finish college sooner.

There was no phase-in period for this change which caught many community college students off guard, eliminating their opportunity to attend college during the summer months. In addition to the elimination of summer Pell Grants, the number of semesters one could receive Pell Grants was reduced from 18 semesters to 12, and family income eligibility amounts were also reduced (Bradley, 2013). The semesters that students are allowed to receive Pell Grants are known as lifetime eligibility rules. These rules jeopardize the opportunities for community college students who only attend school on a part-time basis. The clock starts ticking for them when they first enroll. Degree completion in 12 semesters may be difficult for the 65% of community college students working and attending only part-time. Additionally, because a large proportion of community college students must first take remedial courses that do not count toward a degree, they may use a good portion of their Pell aid before they even begin taking college credit courses. Students who change college majors are also at a disadvantage under the lifetime eligibility rules. With the reduction in family annual income, Pell Grants are now only fully funded for students who have family incomes of \$23,000 or less. This is very close to the federal poverty rate for a family of four. The previous family income level was \$32,000 or less. Bradley indicated that these changes to the Pell Grant program were contributing to lower enrollments at many community colleges. In fact in colleges in the South where state aid programs have been limited, this enrollment decline has been even more pronounced.

According to Bidwell (2013), there are some necessary steps that need to occur to help improve American's federal financial aid system. The Bill and Melinda Gates Foundation commissioned a study on the current student aid system in this country (Bidwell, 2013). The ensuing report called for an overhaul of the federal student aid system, requiring more accountability from higher educational institutions that serve a significant number of low and middle income students. Because federal dollars for the Pell program have been regarded as funds with few strings attached, accountability for these federal dollars was viewed as needing to be strengthened.

This proposed increased accountability was of particular interest to all institutions, because bonuses were proposed as incentives to four-year colleges that served a large percentage of Pell students and to community colleges that had strong graduation and transfer rates to four-year schools. Holding institutions accountable for meeting the financial needs of their students through a Pell matching program was also proposed. Many changes to the Pell Grant program suggested in this report were proposed to help prevent the program from "falling over a financial cliff" due to the extremely high cost of the program.

A key goal of the report was to have the Pell Grant program become an entitlement program which would result in somewhat insulating it from budget cuts. Additionally, the report recommended an increase to the maximum allowable Pell Grant over the next 10 years as well as bringing back the year-round Pell program that was eliminated in 2011. Eliminating tuition tax breaks for families who can afford to send

their children to college was proposed so that funds could better be distributed to the Pell program.

Accountability for Pell Grant usage has also been addressed in reports dealing with the fraudulent use of Grant funds. Abuse within the Pell Grant program has reportedly occurred with only a small percentage of students receiving such aid in the community college sector of higher education (Baime & Mullin, 2012). However, given the fact that there have been some fraudulent and deceptive occurrences in federal aid programs, both the media and campus administrators have been attentive to the problem. As stated by Baime and Mullin (2012), community colleges should not tolerate any level of fraud or deception from students on federal aid such as Pell Grants, because it can jeopardize the program for well-meaning students and can also give political reasons for opposition to continued funding of student aid. The lower tuition rates of community colleges make them particularly susceptible to fraud, as cash payments or direct deposits go to the student after tuition is satisfied, and those who intend to commit Pell Grant fraud tend to focus on this sector. The lower the tuition, the higher the amount the student can potentially receive back from the college. Baime and Mullin (2012) also reported that online education was also a fraudulent aid target. In fact, the Department of Education's Office of Inspector General has highlighted the abuse in online education where a knowledgeable "ringleader" works with willing accomplices to gain access to Pell dollars by signing up for online courses. In some cases, it involves stolen identities and fake students.

Given this problem facing community college administrators, the American Association of Community Colleges has offered strategies to combat federal financial aid abuse (Baime & Mullin, 2012). These strategies center around developing campus-wide awareness of the problem. Awareness needs to be among administrators, financial aid officers, faculty, and even students. Because students are the ultimate beneficiaries of Pell Grants, they should be encouraged to help preserve the integrity of the program and speak up if they suspect other students of deceptive use of Pell Grants. Faculty, as well, are very important in that they would be the first to know if a student fails to attend class. This makes the taking of attendance a very important step in the community college classroom. Additionally ensuring there is an adequate amount of coursework required in the first several weeks of class, especially in an online class, helps validate that a student is enrolled for educational purposes.

Institutional financial aid officers, however, have the primary role of stemming any potential aid abuse in that they must train their staff in identifying potential fraud prior to disbursing aid. They also must be astute in best practices for disbursing federal aid at the right time and to the right person. Students most at risk of not adequately persisting in the coursework for which they earned their Pell Grant award should receive counseling. Knowing these risk factors is important for college employees so that they can have the proper controls in place to mitigate Pell Grant fraud. Baime and Mullin (2012) mentioned a few of these risk factors, e.g., students with large financial aid refunds, those who have attended several other colleges, and those with large student loan balances who have never completed a degree. Because Pell Grant aid comes from the

American taxpayer, it deserves to be effectively managed so that it remains a viable program providing educational opportunities for students who may have no other means of attaining a college degree.

Pell Grant Persistence and Retention Studies

Alon (2011) investigated needs-based aid to determine whether grants such as Pell Grants contributed to a student's likelihood to persist and obtain a degree. He studied data from the National Postsecondary Aid Study to determine if this type of financial aid was just as beneficial to the persistence of low income students as for more affluent students. Based on the results, the author found that the persistence of low income students was much more sensitive to the amounts of the grant aid. Even though federal and non-federal college aid are available to low income students, there are still gaps due to other financial pressures that exist for these students. Alon's study was helpful in that it considered the relationship between financial aid and college persistence from the viewpoint of the equal distribution of funds coupled with the ability to narrow economic inequalities. Additionally, Alon studied how conducive the needs-based grants were to the persistence of students in different socio-economic groups. The main question this author was trying to address was whether a redistribution of financial aid funds can help narrow the gap in persistence issues between those students at the top of the income ladder and those at the bottom. Financial aid should help with persistence, but the issues that cause a student to be needs-based eligible for grant aid are the same issues that have a negative effect on graduation such as the number of children in a

family currently in college and the parental income level. Family circumstances affect college persistence. Financial aid programs, such as Pell Grants, do enhance access. Nora et al. (2006) wrote that because college attendance rates were much higher in 2006 than they were 30 years ago, current policies were working, even though not fully funded.

Alon (2011) discussed the results of the National Postsecondary Student Aid Study, a comprehensive national survey, focused on how students pay for post-secondary education. In the study, the dependent variable was first-year persistence at either the first institution attended or any institution so that those who transferred could be differentiated from those who withdrew (Alon, 2011). A secondary variable used in the study was second-year persistence. Evidence given in this study illuminated the effectiveness of grants on persistence more so than loans. The results of this study showed that first year persistence was higher when transfer students were included; however, there were gaps across income levels of students. These gaps accumulate throughout college and become quite large between low income and high income students for college completion. Low income students have been less likely to obtain a bachelor's degree than their high income peers. In looking at the causal influence of financial aid on persistence, there is a clear lack of continuity in the allocation of Pell Grants to students in the bottom two income quartiles. This discontinuity was most apparent for the students in the lower middle income group, though no discontinuity was found in the allocation of merit-based grants. Alon determined that a \$100 increase in needs-based grants significantly increased the probability of persistence by .001. For

students in the bottom income quartile, an additional \$100 in needs-based grants increased the probability of persistence by .002; thus, the possibility that each dollar invested toward educating the lowest income students can yield a higher return for persistence. As a result, this could boost the chances of poorer and potentially less academically prepared students to graduate from college. In order for the U.S. to increase its percentage of college graduates, Alon urged a strategy to improve academic preparedness, access, and persistence. Needs-based aid is an effective tool for students of low income to persist, and a redistribution of financial aid funds can help facilitate the growth in degrees awarded to the most needy students. “To boost degree attainment and achieve equality of educational opportunity, any surge in the budget of the Pell program must be accompanied by stricter means-tested allocations of nonfederal funds” (Alon, 2011 p. 823). Alon concluded that there was a real need to have policies that redistribute grant aid in order to boost degree attainment and bring about more equitable educational opportunities. If needs-based aid were to be diverted from affluent students to low income students, the gap in persistence among these groups of students would be greatly diminished (Alon, 2011).

Given concerns regarding access to higher education and the economic diversity of students in universities, Steinberg et al. (2009) conducted a study to explore and predict Pell Grant prevalence. These authors sought to understand variation patterns relative to the prevalence of low income students in public and private colleges and universities in the United States. Prevalence of low-income students was measured using the ratio of Pell Grant recipients to the unduplicated enrollments, with non-degree and

international students netted out of the denominator. Also identified were factors that could potentially provide insight into the relationship between both institutional and state-specific factors and the patterns of low-income students at these institutions. The analysis in Steinberg's study focused on the extent to which factors such as program offerings, student demographics, and institutional grant offerings were related to the prevalence of low income students in United States colleges and universities. The study used 846 colleges and universities that offered graduate level education.

Steinberg et al. (2009) were able to explain a significant proportion of the variation among public and private institutions in the prevalence of low income students. The factors they found to be statistically significant for Pell Grant recipients were SAT scores, the amount of institutional grant aid, the size of the institution, and the percentage of students ages six to 18 in low income families.

In a study specific to an individual community college, results showed the positive effect of state aid and Pell aid on the underprivileged community college population in Oklahoma (Mendoza et al., 2009). It was found that income, ethnic background, and total financial aid received, could be used as predictors for community college persistence in the state of Oklahoma. It was also found that financial aid, such as Pell Grants, was an indicator of a greater probability of transferring from a community college to a four-year institution.

Based on the findings among the studies highlighted thus far, Pell Grants have often contributed to positive persistence outcomes for college students. Despite the extensive growth in this program though, the funding landscape has changed drastically

from the early 1980s to 2000. Whereas half the revenues of public colleges and universities in the 1980s came from state and local appropriations, one-third was the more realistic revenue expected in the first decade of the 21st century (Steinberg et al., 2009). The effect on colleges and universities, given this change in funding, has affected trends in how students finance their education as well as where they attend college. Because the cost of college attendance has risen significantly during the past 20 years, the effect on low income students has been profound. Additionally, the cost of attending college has shifted financial aid away from needs-based grant and toward merit-based. Federal loans have replaced federal grants as the primary mode of student financial assistance. Thus, the chance that lower income students will choose to enroll at a lower cost two-year school over a four-year school has increased. This means students from higher income backgrounds are more concentrated in the four-year institutions. These trends have had an adverse effect on college opportunities for students from low income families.

Completion rates have significantly differed based on family income, parental education level, and type of institution attended. As reported by the National Association of College and University Business Officers (2011b) in reference to financial aid grants, community college students received an average of \$1,700 in the 2007-08 academic year. About two-thirds of this grant aid was Pell Grant aid. Community college students received about 31% of the total Pell aid distributed in 2007-08. When it comes to degree completion rates, though, only 21% of the first-time, full-time, degree seeking students in

community colleges completed an associate degree or certificate program within three years of entering college in 2005.

Retention and Attrition Research in Community Colleges

As has been shown in the review thus far, retention and attrition have been critical to the success of Pell Grant program. Recipients in community colleges must be retained in order to achieve the goal of eventually finishing their degrees, and research in this area is important to better understanding and dealing with this problem. The retention and degree attainment for students on Pell Grants demonstrates a prudent and responsible use of these federal funds.

Alexander (2002) acknowledged the historical and political reasons behind the creation of federal direct aid programs such as the Pell Grants in a study examining the impact of such aid on community colleges. In this study, Alexander asserted that the policies of these programs have had limited success in improving low-income student access to higher education. A primary reason was that Pell Grants and other federal assistance have only served to incentivize colleges to increase tuition rates, which in turn has led to an inequitable distribution of this aid to lower income students. Two other interesting findings in Alexander's study were that students over the age of 30 were shown to be 6.23% more likely to persist than two-year students between the ages of 22 and 30 years old. Students who were still dependent on parental support were shown to be 9.72% more likely to persist than students who were independent of their parents.

Financial Aid Effects

Pell Grants have been recognized as an essential financial element in the studies reviewed in this paper, but there has been a shift in federal financial aid policies from grants to loans (Cofer & Somers, 2000). Other researchers (Nora et al., 2006) also recognized the significance of students incurring loans in addition to grants as having the potential to cause financial stress which can affect student persistence in college. These researchers expanded on earlier studies to include debt load effects on persistence in two-year institutions.

With the goal of finding out how background, achievement, college experiences, price and debt load influenced within-year persistence at community colleges, Cofer & Somers (2000) revealed that for highly motivated two-year students, the increase in funding through federal loans has positively affected persistence. However, for less motivated students, student loan debt has become a barrier to persistence. Motivation has been defined as aspiring to an advanced degree. In this study, students aiming for an advanced degree were shown to be 7.91% more likely to persist, and those aspiring to other types of college degrees were 9.04% more likely to persist than students with no degree aspirations. Debt was significantly and negatively associated with persistence at the low to middle level of debt but significantly positively associated with persistence for high levels of debt. Students with high debt (defined as over \$7,000) were 15.96% more likely to persist than students with no debt. Students with low debt (under \$3,000) were 4.85% less likely to persist than students with no debt. Moreover, Kezar (2009) found that financial stress caused many low income students to drop out of college, and

financial stress was also mentioned as a problem by Nora et al. (2006). Nora et al. advocated that a student's social interaction is one of the most important factors in persistence research. Financial aid can impact this factor by allowing students to not work, or limit the hours they must work, while attending college. Financial aid can free students so that they can become more socially integrated into their institutions.

Another example of the effect of financial aid on community college students can be found in the Mendoza et al. (2009) study of Oklahoma community colleges. Financial aid effects on persistence of full-time students was the focus of the research, and Pell Grant aid was one type of financial aid source. Citing Dowd & Coury, the Oklahoma researchers noted that community college students were very dependent on financial aid. Financial aid packages were found to interact in different ways to help predict Oklahoma students' persistence. It was found that the state's financial aid program coupled with Federal Pell Grants had a very positive effect on persistence, particularly for African American and Native American students.

Retention and the Community College Student Survey of Engagement

The retention of students has been viewed by college administrators as an indicator of faculty and instructional quality as well as an indicator of student success. A key tool in the measurement of these indicators has been the Community College Survey of Student Engagement (CCSSE). The survey provides information that can help one to better understand the community college student by eliciting feedback from students regarding their engagement within the college and the learning process. According to

McClenney (2007), engagement of students is equated to effective educational practices because it brings about improvement in student retention and learning. The CCSSE was developed in 2001 at the University of Texas, Austin (McClenney, 2007). It is comparable to the National Survey of Student Engagement (NSSE) used by four-year colleges and universities. At the time of this study, the instrument was used in 18 states and state-wide community college systems and was designed to be administered annually.

The Community College Survey of Student Engagement provides a tool that researchers can use to measure various factors related to student attrition and retention in community colleges. Using the CCSSE data of student age and generational status, an analysis was performed in order to determine how engaged students were during their first year of community college (Gibson & Slate, 2010). The study was conducted at community colleges in Texas over a three-year period. Its purpose was to examine and test the relationship between student engagement and certain student demographics. These two areas were investigated to provide recommendations for educational leaders and policymakers that would assist in the consideration of efforts based upon both age and status such as first-generation or non-first-generation college student status. Drop-out rates for first year students were found to be quite high (33%), and reasons for this varied from those found in studies of four-year institutions. Gibson and Slate, therefore, endeavored to explore factors relative to age group and generational status.

The survey revealed that that nearly two-thirds of community college students enrolled on a part-time basis and thus their educational experiences were much different

from those of full-time students. They were less likely to work with other students on projects outside of class, less likely to interact with the faculty, or make class presentations. These findings were interpreted to mean that community college students were frequently multi-taskers with family and work responsibilities and less likely to be engaged in their learning. They must balance multiple priorities. As a result, community colleges have tended to lose a large number of students during their first terms in college.

Analysis of CCSSE data did reveal that non-traditional age students had higher levels of engagement in educationally purposeful activities and quality of educational relationships than their traditional peers, but they were still at risk of attrition due to other commitments and priorities outside the classroom (Gibson & Slate, 2010). In examining institutional attributes as predictors of student success in the two-year college sector, institutions with larger proportions of minority students enrolled showed a negative influence on students' chances of persisting to graduation (Goble, Rosenbaum, & Stephan, 2008).

Persistence Factors for Community College Students

Barbatis (2010) studied factors that contribute to persistence at a large, diverse urban community college in the Southeastern United States. Using a critical theoretical framework to analyze underprepared students participating in learning communities, he concluded that utilizing learning communities contributed to a higher level of student-faculty interaction and, thus, better integrated the student into the college. Additionally, Barbatis believed that learning communities were very consistent with the values of

community colleges, and that using these communities to engage the underprepared student could lead to increased persistence. It has been shown that many Pell Grant recipients in community colleges are underprepared, and the learning community concept could enhance retention strategies for this population of students. According to Goble et al. (2008), some institutional attributes have been found to make a difference in student success in college, but this has not been true relative to community colleges graduation rates. Goble et al. also determined that small colleges benefit mid-achieving students, mid-sized colleges benefit high achievers, but college size had no impact on low achievers. Large colleges had negative results for both mid and high achievers.

Goble et al.'s study (2008) built upon earlier studies relating to institutional attributes such as college size and the effects certain attributes have on student success and graduation rates. The researchers found a positive association between an individual student's completion and the institution's graduation rate, but there was some variance based upon subgroups of students. An association was also found between completion and college size, the proportion of part-time faculty, and minority student proportion. Both diversity of the student body and college attributes were important to degree completion. The result of this study showed that students with high levels of achievement in high school tended to complete their degrees more quickly than students classified as middle or low achievers (Goble et al., 2008).

Regression models were used to examine the variations in degree completion based on institutional attributes. The complete analysis in this study yielded results showing that those students with higher high school achievement had greater odds of

completing a degree and that there was a positive and significant impact of a particular institution's graduation rate upon students' odds of completing their degree. Also larger proportions of minority students enrolled revealed a negative influence on students' likelihood of graduating. Another negative impact on graduation odds was the use of admission tests.

In further investigating high achievers and graduation rates, students attending institutions with larger percentages of part-time faculty were found to have lower odds of finishing their degrees. The institutional variable of overall graduation rates did not, however, have a large impact on the high achieving students. It was reported that middle achievers did better in smaller colleges but that high achievers did better in mid-sized colleges. For low achieving students, the only institutional variable that showed significance in this study was the percentage of minority students.

Being an older student, holding down a job (and sometimes more than one job), or being a single parent are among those challenges faced by a large proportion of community college students. "Ultimately, the success of two-year students is contingent upon how they manage the complex negotiation of their daily lives in and out of college" (Deil-Amen, 2011, p. 85). Becoming academically or socially integrated within college occurs in very different ways. In Deil-Amen's (2011) study, persistence was found to be most aided when a student experienced on-campus interactions that were primarily academic in nature. Interactions with other students, faculty, and college staff combine to create socio-academic integrative moments that were much more valued by the community college student than social interactions outside the classroom. Students who

took part in this qualitative study faced struggles as they attempt to gain academic strategies, overcome self-doubt, and move toward seeing themselves as college students.

Results from the Gibson & Slate study (2010) showed there was a statistically significant difference between the age of the student and the level of engagement. However, when testing for the quality of relationships first-year students had with faculty, staff, and other students, only one year's data showed a statistically significant difference based on the age of the student. Nontraditional aged students had more quality relationships than did traditional age students. In considering differences in engagement by generational status, there was a significant difference depending on whether the student was a first-generation student or not. First-generation students spent less time in engagement activities. There was also a statistically significant difference in the quality of relationships between these two groups. First-generation students had more quality relationships than did non-first generation students. Therefore, Gibson and Slate (2010) concluded that student engagement was related to the two student demographics contained in the study (Gibson & Slate, 2010). However, they concluded that even though non-traditional aged students showed higher levels of engagement, certain external commitments and priorities put them at risk of dropping out of college. In essence, community colleges continue to be very susceptible to high attrition rates.

Student success courses are one way some community colleges have addressed retention issues. Fain (2012) discussed requiring certain students to take a success course to boost community college retention and graduation rates. At Tulsa Community College, about 1,000 incoming students have been required to take a success course, Academic

Strategies. The institution reported that students who have taken the course are 20% more likely to remain at the college than those who have not taken the course. These students also reportedly tended to perform better in other courses taken at the college. At Durham Technical Community College, students taking a success course displayed a 30% higher retention rate. Many community colleges across the nation also require students in need of remediation to take success courses. Fain (2012) wrote that certain community college experts believe all first-time students in community college should be required to take success courses. Public colleges have been hesitant to have mandatory success courses for all students as it imposes additional burdens on students. Also, some students are already college-ready and may not need the course to succeed. For-profit institutions have been more likely than public colleges to make this a requirement. The Center for Community College Student Engagement reported that only 15% of community colleges require a student success course for first-time students.

Navigating the college system also poses an environmental challenge that can hamper persistence. As an example, procedural hurdles in the financial aid area were used by Deil-Amen (2011) to illustrate the vulnerability of the community college student for dropping out. Students who lack college knowledge can get procedurally overwhelmed and remain uninformed about how best to go about gaining the funds needed to persist in their education. With many community college students it is very important they receive personalized help to navigate college procedures, which, in turn, bolsters their identity as college students, making them feel valued, and enhances their likelihood to persist in college. Deil-Amen's observations were consistent with previous

persistence studies in that academic integration was found to be more significant than social integration for community college students. Students in the study related that socio-academic moments during their community college years became precursors to their desire to persist. Additionally, based on results obtained from the Community College Survey of Student Engagement (CCSSEE), there is a need to ensure administrators and educational policy makers do not follow a one-size-fits-all model given the age and generational status differences of students in the community college sector (Gibson & Slate, 2010).

Retention/Attrition and Student Demographics

Traditional theories of student retention have been useful in providing a foundation for higher educational persistence studies. However, much work remains in highlighting race, class, and gender effects on retention and attrition (Rendon, Jalomo, & Nora, 2000). American colleges and universities serve a very diverse student population and increased numbers of minority students have influenced the delivery of higher education in areas such as curriculum, student services, and faculty/staff composition (Rendon et al., 2000). Based upon CCSSE survey results, certain subgroups of students, such as African Americans, Hispanics, and first-generation students, have been identified as at high-risk for attrition, and if they have persisted into their second semester of community college, they have been presumed to be more engaged in their own learning than those that have not persisted (McClenney, 2007). In order to gain a more robust understanding of how financial aid packaging affects minority and lower income

students, Mendoza et al. (2009) pursued the impact of financial aid on persistence as one of the foci of their Oklahoma community college study. Pell Grants were one of three different forms of financial aid considered and was found to be a predictor of persistence for students from their first year to their second year of college.

Baum, Ma, and Payea (2010) investigated gaps in persistence patterns among demographic groups. Though the gap between proportions of white and black high school students who enroll in college has increased, the gap between Hispanic and white students has decreased.

Financial aid has had evident impacts on student risk of dropout among different ethnic/racial student groups (Chen & DesJardins, 2010). For students without any financial aid, minority students have been found to be a higher dropout risk than white students. This is not the case, though if these minority students receive larger amounts of Pell Grants. White students on Pell Grants were found to be higher dropout risks than the minority students on Pell Grants.

In a study concentrating on Hispanic student persistence, it was noted that among this subpopulation Pell Grants were the primary source of aid (Nora, 1990). Neither high school grades nor a student's college academic performance had as much of an effect as that of the financial aid factors. Thus Nora (1990) concluded that Hispanic students in his study were not leaving college due to their academic performance, but rather as a result of financial challenges. According to Nora, students who received higher amounts of financial aid were able to enroll in more courses and were more successful in receiving some type of post-secondary credential. Those who received higher levels of campus aid

usually had higher grade point averages. A primary reason Nora (1990) felt that this study was important was that prior studies tended to sample students from four-year residential institutions, and no one had examined Hispanic community college students using persistence models with financial aid influences. Most of the students in Nora's study lived at home within the community in which the institution was situated.

Chen and DesJardins (2010) considered higher education to be a key element for equality of opportunity across all socio-economic and ethnic groups. They saw higher education as being capable of reducing inequalities in the human race, but recognized the continuing inequalities across racial groups. They noted that there were large differences in persistence to bachelor's degrees among white students, African American and Hispanic students, and that the percentage of African American and Hispanic students that dropped out of college was higher than that of white students. Thus, these researchers acknowledged that there were continuing problems with inequality of educational opportunities in America's higher education system. Financial affordability of college remained a barrier despite the plethora of federal and state financial aid programs at the time of the present study.

There are many studies that have been conducted to explore how financial aid interacts with socio-economic and racial/ethnic group factors to influence persistence or attrition. Chen and DesJardins (2010) were critical of these studies, some of which used socio-economic and racial/ethnic group variables as statistical controls but did not examine the ways that financial aid affected these groups differently. Only a few studies have been conducted that focus on income groups rather than on both socio-economic

and racial/ethnic groups. Chen and DesJardins identified the following four areas where there were gaps in the financial aid research on persistence:

1. The results of studies conducted thus far may not be applicable to 21st century students because the data are over a decade old, and some research pertains to institutions in only one state.
2. The studies do not investigate interaction effects between the types of financial aid given and a student's race/ethnicity.
3. The studies focus on differences between those who receive aid and those who do not. This neglects the aid amount's effects on persistence decisions of various racial/ethnic groups.
4. Existing research does not take into account longitudinal effects of how financial aid interacts with drop-out behaviors among different racial/ethnic groups.

Thus, Chen and DesJardins concentrated on financial aid effects for racial and ethnic groups of students. More specifically, the research questions designed by them were related to how different types of financial aid were distributed to the various groups, whether there were differences in the dropout risks of these groups, whether the types of financial aid differentially affected these risks for students of different racial/ethnic backgrounds, and whether the types and amounts of financial aid temper the relationship between race/ethnicity and dropout risk. Dropout was the dependent variable in this study and encompassed three types of instances: stopout, institutional dropout, and system dropout. A stopout is a student who leaves college but then comes back after

some duration of time. An institutional dropout is a student who transfers to another institution. A system dropout is a student who leaves higher education altogether.

In the Chen and DesJardins study (2010) only undergraduate students at four-year institutions were used, but the researchers stated that one of their main interests was in comparing how racial/ethnic dropout risks varied as a function of the amount of Pell Grant aid received. The four racial/ethnic groups used were white, African American, Hispanic, and Asian. Based on the findings in this study, minority students tended to receive larger Pell Grants and subsidized federal loans than the majority racial group. It was confirmed in this study that dropout risks did vary by race/ethnicity and socio-economic group. African Americans and Hispanics were found to be more likely to drop out in their first year of college than white and Asian students. Also lower income students had higher dropout risks than other income groups. However minority students, especially Asian students, had lower dropout risk than white students when awarded higher levels of Pell Grants. “The results from this research indicate that American society still faces a serious challenge in equalizing educational opportunities for minority and lower income students” (Chen & Desjardins, 2010, p. 201).

Given the attention the media has devoted to highlighting issues related to Pell Grant abuse in online courses, it was also appropriate to review some research on community college student retention in online courses relative to student demographic factors. With the increase in the number of community college students turning toward online courses, a research study aimed to differentiate among students who completed versus students who did not complete online courses was conducted by Aragon and

Johnson (2008). The two research questions pertained to (a) whether there was a significant difference in demographic characteristics, enrollment, academic readiness, and self-directed learning readiness between completers and non-completers of online courses and (b) the self-reported reasons for non-completion. Financial aid eligibility was one of the demographic characteristics used in this study of 305 rural community college students in the Midwest. Students in this study self-reported the reasons that they did not complete an online course.

The results of the study (using chi square and t-test) indicated that age was not a statistically significant factor between completers and non-completers (Aragon & Johnson, 2008). Gender did show a significant association in that females had a higher percentage of completers. There was no significant association based on ethnicity, nor was there found to be an association based on financial aid eligibility. The tests also showed that completers were enrolled in more online courses than non-completers. There was no significant association between placements in developmental courses. Though completers had a higher GPA than non-completers, no significant difference was found between completers and non-completers in self-directed learning scores. When asked why students did not complete their online course, the following five themes emerged: (a) personal time constraints; (b) course design and communication; (c) technology; (d) institutional issues; and (e) student learning preference (Aragon & Johnson, 2008).

Retention/Attrition in the Florida State Colleges

The Florida College System actually encompasses both sectors of higher education. It is comprised of 28 public institutions that primarily offer two-year degrees (Florida Department of Education, 2012a) and a limited number of baccalaureate degrees. As highlighted in the Florida College System *Fact Book*, this system was established to serve citizens in Florida by providing the first two years of a baccalaureate degree and vocational and adult continuing education. In 2001, the system obtained legislative permission to begin offering certain four-year degree programs, thus expanding the mission of the Florida College System. Although many of the Florida two-year public schools have begun to offer baccalaureate degrees, less than 2% of all students served by this system are baccalaureate seeking students (Florida Department of Education, 2012b). Kahlenberg (2011b) referenced Florida as an example of one way to lessen the stratification of low income students in community colleges and higher income students in four-year degree granting institutions. In Florida, the lines between two-year and four-year schools have become increasingly blurred since community colleges have been permitted to offer certain four-year degree programs. This is expected to provide a better learning environment for all students, as higher income students will be studying and learning side-by-side with lower income students.

The Florida College System has had as a goal substantially increasing the number of associate and baccalaureate degree holders in the state (Florida College System, 2010), and consequently the characteristics of students in the Florida system who dropped out before completing a degree were studied. It was reported, in the study, that over 73,000

degree-seeking students left the system prior to degree attainment during the 2007 academic year. By looking at the demographics of these students, high risk students were identified. Factors such as age, ethnicity, Pell recipients, enrollment status and program of study emerged as important factors that led to a higher risk of student attrition in the Florida College System.

Financial variables have also been studied as they relate to student accounts and the impact of student accounts receivable on each college's financial report. Most of the Florida colleges were found to carry a reduction from their student accounts receivable balances that represented management's estimate of the dollar amount of receivables the colleges would be unable to collect (State of Florida Auditor General). This management estimate is known as an allowance for doubtful accounts. It is unknown, based on the information contained on each of the Florida college's annual financial report as shown on the State of Florida Auditor General's website, exactly how much is attributable to Pell Grants that the student did not earn, yet received. However, it is helpful to understand that uncollectible Pell Grant related debts would be included as a reduction to a college's assets. Therefore, Pell Grant-related student attrition could have a negative effect on a college's financial position.

To ascertain the number of Florida College System (FCS) students who receive federal aid, *FYI, Edition 2011-02*, a publication of the Florida College System, used data from the National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS). It indicated that most students in the community colleges in Florida receive some type of financial assistance (Florida Department of Education,

2011). Furthermore, on average, FCS students received \$3,107 in federal grant aid during the 2007-08 academic year. This means that 36.3% of FCS students were receiving federal grant aid.

The American Institutes for Research, in their report of annual loss of state income for students who started college in 2002 but failed to graduate with a bachelor's degree six years later, reported \$132 million for Florida alone (Schneider & Yin, 2011a). This is disturbing given President Obama's goal to increase the number of students who graduate from college once they enroll. Because college graduates usually earn higher incomes that result in higher tax payments to governments, the loss of state and federal income is a problem that needs to be addressed. In addition, students who start college and fail to graduate tend to incur large amounts of debt in the form of student loans or, in the case of Pell Grants, owe funds to the institution or federal government if they drop out of a course after receiving the grant.

Student Responsibility for College Fiscal Matters

In relating student responsibility to the receipt of Pell Grants, a relationship is drawn between receiving federal educational dollars and the commitment of students toward achieving their college educations. At a minimum, students' fiscal responsibility can be equated to finishing the course or courses that were subsidized with Federal monies. According to Toby (2010), the federal government did not initially make grant aid available to all students in order to attend college. Instead, grant aid in the form of scholarships was the norm before World War II, placing educational dollars more in the

hands of students who were the most academically gifted. Because aid in the form of Pell Grants is no longer tied to academic excellence, Toby (2010) suggested that mediocre students have an incentive to apply to unselective colleges, knowing that they may receive some form of aid. Thus, 21st century students do not have the academic or financial obstacles that once existed in the American higher education system. Additionally, federal policy relative to federal financial aid has segmented student markets (Slaughter & Rhoades, 2005). The shift in federal legislation, in which loans become the predominant way to fund a college degree in the 21st century, makes students consumers, implying that students are able to make informed choices regarding higher education. This, in turn, causes different types of aid to be allocated to different types of students. As a result, and based upon The Committee on Economic Development and The Carnegie Foundation's push for free-market federal financial aid, students have numerous choices in spending their Federal Pell Grant dollars. Students may choose colleges based not so much upon the cost of tuition at a college, but on where they can obtain the largest amount of federal aid (Slaughter & Rhoades, 2005).

Linking Student Responsibility with Pell Grant Aid

Linking student responsibility, including fiscal prudence, with Pell Grant aid can be illustrated in instances where students have changed their enrollment status. For example, if students are awarded Pell dollars based on full-time enrollment status, but after receiving the grant, drop out of courses causing them to become enrolled part-time, the institution may have to recalculate the Pell award. The federal rules for situations

such as this are codified in the *Federal Student Aid Handbook*. This handbook further states that up through the 60% point of each academic term, the student has not yet entirely earned their Pell Grant. Therefore, a student who withdraws too early in the term may be liable for a Pell overpayment. These overpayments are created whenever students receive Pell funds for which they are ineligible.

Although the question remains as to whether higher education is more of a public or private good, when a government invests in a student's higher education, the public good aspect comes into play. The public good aspect is complex because it is not entirely discernible how well higher education is serving the public good (Nyborg, 2003). Because people are willing to pay for higher education, the private good aspect is that individuals should bear some of the cost of their education as it will provide economic benefits directly to them, presumably in the form of a better job and a better standard of living. College graduates earn far more money than college dropouts, and this equates to higher levels of income tax payments to federal and state governments (Schneider & Yin, 2011a). However, due to the decrease in federal grants and more reliance on loans, it is indicative of a shift in the argument of who benefits the most from higher education, the student, or society (Nora et al., 2006). It is not uncommon to see that increases in other debt such as credit card debt will accompany increases in student debt to attend college. Credit cards are ways students find alternative methods of financing education. This dilemma is compounded for students who drop out of college since they end up owing not only the federal government for student loans, but credit card companies too.

Another aspect of student fiscal responsibility was explained by Kezar (2009) in which Pell Grants were described as a detriment to the financial literacy of students. This is due to the lack of empowerment students may feel when they receive financial aid such as a Pell Grant because they have really done nothing to earn those funds. Kezar stated that when students pay for a portion of their education, they gain a sense of empowerment over their finances. Kezar further posited that there was a lack of financial literacy in current college students, particularly students from low income families. This predicament, then translates into economic effects to a society. A financially illiterate society is a contributing factor to economic crises, and, according to Kezar, educators need to have some responsibility to contribute to a student's financial foundational knowledge. In addition low-income students have fewer opportunities to participate in higher education, and when they do they are less likely to graduate from college than their higher income counterparts. With the cost of higher education rising, low income students face an \$8,000 gap between what financial aid will pay and the annual cost of tuition (Kezar, 2009). This gap brings about financial stress and a higher probability for low income students to drop out of college. Evidence provided relative to the effects of college on students shows positive effects on occupational status, job satisfaction, job performance, and earnings potential (Pascarella & Terenzini, 2005). Thus, this research is concerned with students' responsibilities with respect to education financed with Pell Grants funds.

Fiscal Responsibility Related to Individual Demographics

Although not pertaining directly to the use of Pell Grants, credit card debt has been used in certain studies relative to student fiscal responsibility or financial knowledge. Some of these studies have used demographics such as gender, age, or financial background as variables, as in the case of a 2011 study conducted by Seyedian & Yi concerned with college student financial literacy due to the increasing number of students who rely on credit card debt to finance their educations. In their examination of whether finance courses positively affected student financial literacy, the researchers used multiple regression in analyzing student course evaluations. Pre- and post-tests were used with students who volunteered for the study to determine whether college students were knowledgeable about finances and whether improvements were found after they had completed finance courses. Also, demographics such as gender coupled with job experiences, financial backgrounds, and motivational level were examined to determine if these factors had any bearing on the improvement of financial literacy. Seyedian & Yi (2011) reviewed literature about the limited knowledge that students tend to have regarding credit card interest rates and credit limits. This limited financial knowledge was highlighted in order to support the claim that students do not always make sound financial decisions. Seyedian & Yi mentioned opposing views from other researchers who claimed that students overall do tend to handle their credit card debt responsibly but noted that there are some students who are more at risk, i.e., female, black, Hispanic, and older students. One of the findings relative to student demographics in this study showed that male students outperformed female students on the finance pre-

test, but females significantly improved over males in the post-test phase. Also it was found that students who actively participated in class had improvements in their financial learning.

Another study that mentioned student credit card debt as a financial stressor for students was described by Joo, Durband, & Grable (2008). They examined evidence related to the effect of financial stress on both college drop-out rates and reduction of course load by a student. The characteristics of college students who either drop out or reduce their course load can provide information relative to at-risk students that educators and other stakeholders can use to address this issue. Gaining a better understanding of which students are most apt to drop out has implications for not only the student, but for society as well. “Allowing someone to drop out of college is to allow someone to enter life in a precarious financial position” (Joo et al., 2008, p. 300). Because a significant majority of students work in order to help pay for college costs, a balancing act must take place between school, work, and family life. It is taking longer for students to graduate, and evidence from Joo et al.’s study makes a connection between student financial problems and decreased academic performance. Joo et al. attributed some financial stress to students’ reliance on credit card debt to fund their education.

The method used in Joo et al.’s study was a web-based survey which included 540 students at a large public university. The survey instrument used prior research to develop questions pertaining to student demographics, financial wellness, financial education, academics, credit card issues, and self-esteem. The dependent variables in the study were reduced course loads and dropping out for a semester for financial reasons. In

other words, the researchers were seeking to learn if there were any interruptions in academics related to a student's financial issues. The findings from this study showed that there was a relationship between financial stress and academic performance. Although there was a limitation in this study relative to socio-economic status of the participants, generally the financially stressed students tended to be older, had more siblings, were married, worked, and did not live on campus. These are some of the same variables that also appeared in Bean & Metzner's conceptual model of non-traditional students, the model that guided the present study of Florida community college students.

Robb and Woodyard, in their 2011 study, reported that financial satisfaction was determined by income, education, ethnicity, and age. They saw financial stressors such as financial knowledge, attitudes, and behaviors, as also contributing to one's financial satisfaction. In their literature review, they reported that minority students were more apt to display risky financial behaviors. Women, more than men, were more likely to say they adhered to sound financial behavior, even though women scored lower on financial knowledge measures.

Robb and Woodyard (2011) also sought to analyze to what degree financial knowledge was associated with sound financial behaviors. They posited that the knowledgeable consumer would show more responsible financial behaviors as measured by composite scores on a financial capability survey. Using a simple correlation of the measurements, the strongest correlation was between financial knowledge and financial behaviors, which were deemed to be best practices. Multiple regression was used to further analyze the demographic variables against best practice financial behavior. The

factors that were found to have the most impact on financial behavior were not objective. Rather, they were subjective as in the factor related to financial confidence. Income had the most impact, followed by financial satisfaction and confidence, then education. Thus, the findings in this study suggested that objective knowledge of financial matters may not be the most important aspect when assessing whether or not people make good financial decisions. In fact, people who reported they had a fair amount of financial knowledge actually had very little, as reported by Courchane in 2005 and mentioned and supported by Robb and Woodyard. These researchers admitted that their inability to explain the causal relationships between knowledge and behavior remained a very large gap in the literature on this financial topic and that the lack of data in this area was a limitation of their study.

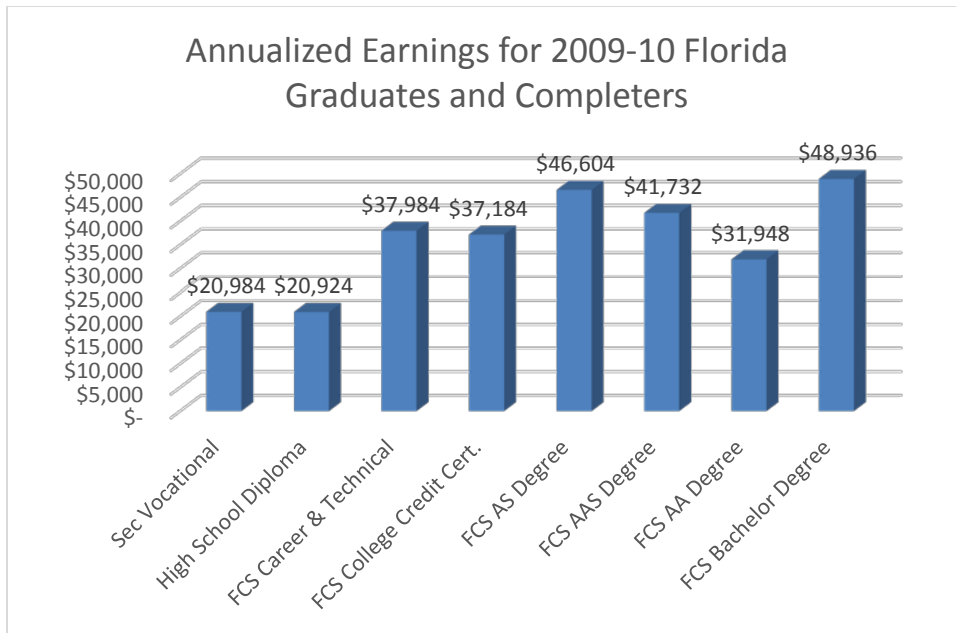
Benefits of a College Education

In a report completed by the College Board Advocacy and Policy Center, data were presented that documented both the benefits to an individual and to society from investing in higher education (Baum et al., 2010). A primary goal of this report was to present data that highlighted the critical role that higher education plays in society and in the economy. There are serious benefits that a society would forgo if higher education was limited, and unequal access to higher education has been a cause for urgent concern. Benefits highlighted in this report for individuals include higher earnings and higher likelihood of employment. For government and society, higher education provides benefits such as increased tax revenues and less reliance on social support programs. The

fact that college graduates have lower incidents of incarceration or reliance on food stamp programs saves money for state and federal governments. Additionally, those with college educations are more likely to have health insurance and pension benefits, decreasing the reliance for these services from taxpayer dollars.

As an example of higher earnings potentials in Florida, Figure 4 shows the difference in students with and without college degrees. The annualized earnings for Florida students range from \$20,924 for those with a high school diploma up to \$48,936 for those with a bachelor's degree earned at one of the Florida public colleges. It is also noteworthy that students with an AS degree in Florida come very close to the earnings potential of those with a bachelor's degree. The difference between Florida students with only a high school or secondary vocational diploma and those with any type of Florida College System degree is over \$11,000 annually.

The results from the Florida College System relative to enhanced student earning power were indicative of the value of a two-year degree or certificate. In a 2003 study conducted in a large western state community college, evidence corroborated this value using G. J. Ryan's impact analysis model (Gillum & Davies, 2003). Gillum & Davies viewed Ryan's model as an accepted model for quantifying the impact a community college has on state and local economies. In any case, the data derived from this western community college indicated degree or program completion provides a significant benefit to a person's earning power.



Source: Florida College System 2012 Annual Report, using Florida Education and Training Placement Information

Figure 4. Earnings for Florida Graduates and Completers

A college education can also enhance better and healthier lifestyles, creating positive generational effects on the children of these educated people (Baum et al., 2010). College educated parents participate in more educational related activities with their children, such as reading to them. Baum et al. also noted that frequencies related to smoking, obesity, voting, and volunteering could be attributed to participation in and completion of higher education. These were all benefits to both the individual and to society. Though some people may argue that the cost of higher education exceeds the benefit, the data in the College Board report stated that after 11 years of working, the higher earnings of a college graduate compensate for the four years out of the labor force

while attending college as well as for the average tuition payments at a four-year public institution (Baum et al., 2010). Thus, for the typical student, the investment in a four-year degree pays off very well over one's lifetime. Additionally the non-financial benefits of knowledge, self-awareness, and a broadened horizon can positively affect individuals over their lifetime even though it is difficult to quantify these benefits. Evidence overwhelmingly points to life improvements and societal benefits as a result of college attendance.

Additionally, in a review of evidence of the benefits of attending a community college, a strong positive earnings gain and enhanced economic benefits have been found (Belfield & Bailey, 2011). There is strong evidence in these authors' review that gives credence to the value of a community college education as compared to a high school diploma though earnings gains may vary by gender, race, and age.

Despite the increased economic outlook for students after college, financial literacy of students while in college can be problematic. Muir (2005) described financial literacy in terms of managing budgets, managing checking and savings accounts, handling debt, and careful use of credit cards. The lower income, first generation college student population that has typically been well served by Pell Grants, frequently lack financial literacy (Muir, 2005). These students are more dependent on grants and loans to pay for educational and living expenses and, therefore, it is important for them to understand the fiscal responsibility of accepting Pell Grant awards. Pell Grants do not typically have to be repaid. However, students must understand that in order to truly earn that aid, they must attend a certain percentage of the term. Muir (2005) advocated for

early financial literacy training beginning in the freshman year of college so that students understand all the fiscal and economic pressures they may encounter both while in college and afterwards.

In regard to financial satisfaction, a study conducted by Joo & Grable (2004) highlighted factors such as financial behaviors, financial stressors, income, financial knowledge, solvency, risk tolerance and education, all of which are related to how satisfied individuals are with their financial status. Financial satisfaction in Joo & Grable's study was defined as being satisfied with one's current financial situation and being content with both the material and non-material financial situation that one is in. In relating financial satisfaction to students on Pell Grants, Joo & Grable (2004) commented that low income leads to increased levels of financial stress, and that students may make educational decisions based on their financial satisfaction. Because Pell Grant students tend to be from the lower income sectors of the population, not having adequate finances can lead to stressors that affect educational persistence. The results of this study indicated that education, financial knowledge, risk tolerance, solvency, financial behaviors, and financial stress levels had a direct effect on financial satisfaction. When it came to educational factors, it was found that people with more than a high school education but less than a college degree were less satisfied with their financial situations. Educational level also had a bearing on financial behaviors. Participants who had higher than a high school education had higher financial behavior scores. Also, those with a college degree had higher levels of risk tolerance and had a higher level of financial

satisfaction. Financial education in this study appeared to be a key factor to improving financial satisfaction.

Despite the evidence showing the economic benefits of a college education, the Federal government amended the provisions of the Higher Education Acts pertaining to Federal financial aid. This was the result of concern for escalating student debt in certain programs of study that may not necessarily lead to gainful employment opportunities for students. These new Department of Education regulations were known as the Program Integrity, Gainful Employment regulations. Though the impetus for these regulations came about, primarily, due to the fast-growing sector of for-profit institutions, the regulations also apply to the public community college sector. As of 2011, all public and private institutions were required to have measures in place to ensure that their postsecondary programs lead to gainful employment in certain recognized occupations if the programs are to remain eligible for Federal financial aid such as Pell Grants (Federal Register, 2011, June 13).

Summary

In the first decade of the 21st century, community colleges have experienced the largest enrollment surges since the mid-1960s and early 1970s (Kennamer et al., 2010). Enrollment grew at all types of community colleges whether rural, urban, or suburban. Focusing on Florida's 28 colleges in this research provided a cross-section of small, medium, and large colleges in urban, rural, and suburban settings. According to a 2010 report from the Florida College System, one of the top goals of the system is to expand

the number of Florida citizens with associate or baccalaureate degrees (Florida College System, 2010). It is interesting to note in this report that Florida ranks first in the Southern region and second in the nation for associate degrees awarded. But as reported, the National Center for Education Statistics shows that 42% of students who enroll in a public two-year college leave at some point before obtaining a degree. The very nature of the community college leads to the susceptibility of high attrition rates (Gibson & Slate, 2010). Students in the community college sector bring a range of experiences, backgrounds, and challenges that are important for educational leaders and policymakers to consider as they differentiate needs and issues of two-year and four-year college sectors.

Although many people enroll in college and never complete their degrees, high school graduates from low to moderate income families are less likely to enroll, and even less likely to finish a degree program than students from high income families. This issue has caused some to conclude that those who are not academically prepared or financially able should not pursue higher education. But those who stand to benefit the most, such as first-generation college or low income students, may lack the information needed to make the best choices about higher education.

Chapter 3 presents the methods and procedures used to conduct the study. Chapter 4 explores the responsible use of Federal Pell Grants by examining the retention and academic performance of students, by academic terms, in a Florida public college organized by first looking at credit students receiving Pell Grants and those not receiving Pell Grants. Secondly, specific student demographics were analyzed in order to

determine any significant difference between Pell recipients and non-recipients in the Florida college of interest in this study. Finally, Pell Grant recipient data at the Florida college of interest was compared to that of other colleges within the Florida College System.

CHAPTER 3 METHODOLOGY

Introduction

Because the current study sought to determine the prudent, responsible use of Pell Grant awards in one of the Florida College System institutions, attrition of this population of students needed to be analyzed. The research questions posed were used to build measurements to determine the presence of any differences in the attrition (or non-retention) rates and academic performance of Pell Grant students as compared to non-Pell Grant students in this particular Central Florida-based college, which shall hereafter be referred to as College S in this study. The literature presented in Chapter 2 highlighted various demographic differences related to the persistence of community college students. Certain demographics have also been considered as they relate to the separate populations of Pell Grant and non-Pell Grant students at College S.

Research Approach

The following four research questions were addressed in the study:

1. What relationship, if any, exists between rates of student retention rates and status of being a Federal Pell Grant recipient?
2. What relationship, if any, exists between student academic performance, defined by earning a C or better for college credit students and status of being a Federal Pell Grant recipient?

3. What relationships, if any, exist between student demographics and the status of being a Federal Pell Grant recipient?
4. What similarities, if any, exist between the college highlighted in this study and other Florida state colleges in the numbers of Pell Grant students enrolled and the average amount of Pell Grant aid received per student?

Population and Sample

In total, the population was comprised of the students at the 28 institutions that made up the Florida College System. As reported by the *Florida College System Factbook* (Florida Department of Education, 2012), the annual headcount for students during the 2010-11 academic year was 903,846. The colleges are geographically located such that Florida citizens are within commuting distance of all 181 sites covered by the 28 colleges. Per the *Factbook*, the largest college in the 2010-11 academic year was Miami Dade College, which served 146,526 students (Florida Department of Education, 2012). The smallest college was North Florida Community College which served 2,515 students. These figures help demonstrate the wide gap in the actual sizes of each of Florida's public colleges.

The sample data for this research study were obtained from the Institutional Research Department at College S. Various public databases were also used to obtain data for Research Question 4, as it required comparison to trends of the other 27 colleges in the Florida College System. College S served approximately 32,500 students during

the 2010-11 academic year (Florida Department of Education, 2012), so it can be categorized as one of the mid-sized public colleges in Florida.

The targeted Florida public college students were comprised of those who received Pell Grants. However, in order to obtain comparative data pertinent to answering the research questions, equivalent data regarding non-Pell Grant recipients were also collected.

Research Design

Based on the research questions to be investigated, a quantitative design was selected. Quantitative research seeks to establish relationships between variables as well as causes for the relationships (Fraenkel & Wallen, 2009). Because this research study was focused on examining responsible Pell Grant usage through pre-collected statistical data from various sources, certain generalizations were potentially able to be established based on the findings from the analyses of the data. Thus, a quantitative design was the appropriate design for this study. Information related to Pell Grant recipients obtained from the college, coupled with publicly available website information, provided data that were analyzed for trends and patterns through the use of statistical software.

Data Sources

Two separate public sources were used to provide data for the study. The National Center for Education Statistics, the primary entity in the U.S. for collecting, analyzing, and reporting educational data provided the data points for percentages

relative to numbers of Pell Grant students and average amount of Pell Grant aid per student. Additionally, the Florida Department of Education, the state government agency with oversight over school districts, community and state colleges, universities, and independent higher education institutions in the state of Florida served as the source for the data points of comparative size, i.e., student enrollment, of each college.

In order to sufficiently delve into the Pell recipient data at College S, it was also necessary to procure institution-specific student data. As a result, the researcher requested selected data elements from the Office of Institutional Research at College S. These elements included (a) total full-time college credit student headcount and enrollments, (b) fall to spring re-enrollment and pass rates, (c) residency/non-residency enrollments and head counts, (d) number of credit hours completed, and (e) student demographics such as age, gender, and ethnicity. These elements were separated by Pell Grant and non-Pell Grant recipient status.

Procedures

Research Questions 1 and 2 were analyzed through chi-square tests of independence using the data obtained directly from College S. Because the variables contained in these research questions (Pell Grant recipient status, next-term retention, and the passing of courses with a C or better) were binary, appropriate statistical tests that could be used to assess the data were limited. Research Question 1 utilized the variables of Pell Grant recipient status and next-term retention, and Research Question 2 utilized the variables of Pell Grant recipient status and passing courses with a grade of C or

better. The chi-square test of independence enabled the determination of the presence of a statistically significant relationship as well as the calculation of the effect size of this relationship. Both of these metrics were provided.

Research Question 3 addressed student demographics related to both the background variables and the environmental variable as depicted in the modified conceptual model based on Bean and Metzner's (1985) Conceptual Model of Nontraditional Student Attrition. Variables included enrollment status, residency, educational goals, age group, ethnicity, gender, and Pell Grant status. Using the demographic variables from College S, multiple chi-square tests of independence were performed to assess demographic differences between Pell recipients and non-recipients. Using multiple chi-square tests of independence did not account for the relationships that occurred when all of the demographic variables were jointly considered. Rather, the individual relationships of each demographic variable were tested against Pell recipient status.

Finally, Research Question 4 was addressed using a comparison to the standard normal distribution. The population mean and standard deviation were calculated for (a) the percentage of Pell Grant students enrolled and (b) the average amount of Pell Grant aid per student. The percentage of students at each institution receiving Pell Grant aid was used in lieu of the actual number of students so as to avoid a distribution that was biased from the wide variance in the size of the Florida colleges contained in the data set. The single point values of College S's percentage of students on Pell Grants and the average amount of Pell aid received, respectively, were tested against the population

mean and standard deviation to form a standardized z -score. This z -score was then compared to the standard normal distribution (one-sample Z -test), and the presence of any significant differences were determined.

Instrument Development and Variables

Environmental variables such as finances are some of the most important variables for non-traditional students regarding attrition (Bean & Metzner, 1985). This is due to the fact that these variables can have significant influence on a student's decision to leave college, but the college has very little control over a non-traditional student's external environment. Therefore, both environmental and background variables, as highlighted in Bean and Metzner's (1985) non-traditional student attrition model, were requested from the college in this study. Within the population, which was significantly represented by non-traditional students, environmental variables were expected to have direct effects on student attrition. Because this study utilized portions of Bean and Metzner's model, the assorted variables reflected decisions that can either indirectly or directly affect whether a student intends to drop out or does actually drop out of college. Table 3 contains (a) a listing of the Bean and Metzner variables, (b) descriptions of the variables, and (c) the modifications to the variables prior to their use in the study of College S.

Bean and Metzner's background variables that were determined to be appropriate for the proposed study were (a) educational goals, (b) enrollment status, (c) age, (d) ethnicity, (e) gender, and (f) residence. Educational goals were the proposed plan of

study for the program in which a student was enrolled. Enrollment status was the student's cumulative credit hours completed. Age was categorized as the age group of the student: under 25, 25-34, 35-44, and 45 and over. Ethnicity and gender were obtained from college records, and residence was the student's classification as an in-state or out-of-state resident.

Most of the environmental factors listed in Bean and Metzner's model would not only pose challenges to collect, but they would also not be particularly relevant to the Pell Grant issues in this study. Therefore the only environmental factor relative to student finances that was used in the study was whether or not the student was receiving Pell Grant aid.

Table 3

Conceptual Framework: Bean and Metzner's Background and Environmental Variables and Modification for College S.

Bean & Metzner's Variables	Description	Variables Modified for College S.
Background Variables		
Age	May affect attrition for older students	Age group
Educational goals	Highest level of education students seek	Student program of study
Enrollment status	Number of credits a student undertakes	Cumulative credit hours earned
Ethnicity	May have a negative influence on GPA due to sub-standard secondary education	Ethnic classification, college records
Gender	May have an indirect effect due to family responsibility differences between males and females	Gender classification, college records
High School Performance	High school GPA may have an indirect effect on students' college grades	Not used
Residence	Whether student lives on or off campus distinguishes a non-traditional student	Student classification as in-state or out-of-state residency
Environmental Variables		
Finances	Significant in attrition studies for lower income, non-traditional students	Pell Grant status
Hours of employment	The more hours worked, the less time for schoolwork	Not used
Outside encouragement	Support from family, friends, employers important for non-traditional students	Not used
Family responsibilities	Pressures and stressors from a student's family	Not used
Opportunity to transfer	Leaving one college for another can add to attrition rates	Not used

Study Variables

For Research Questions 1, 2, and 3, Pell Grant status served as the binary independent variable. In Research Question 1, the additional binary independent variable, student retention, was represented by the re-enrollments of students from one term to the next. Likewise, for Research Question 2, student course pass status served as the binary independent variable. Finally, in Research Question 3, enrollment status (cumulative credit hours earned), residency (in-state or out-of-state), educational goals (the degree program of the student), age, gender, and ethnicity all served as independent categorical variables.

Research Question 4 utilized population-level data from all institutions in the Florida College System, including the continuous variables of percentage of enrolled students receiving Pell Grants and average amount of Pell Grants received. Population means and standard deviations were calculated for these data and used in conjunction with point estimates for these variables from College S.

Authorization to Conduct Study/IRB

Appendix B contains permission from College S to utilize data provided by the Institutional Effectiveness Department of the college. Because College S preferred to remain anonymous, the College name has been redacted from the letter contained in Appendix B. College S's Institutional Review Board is chaired by the Associate Vice President of Institutional Effectiveness; thus the appropriate permission was procured for this study. Additionally, this research was deemed by the University of Central Florida

Institutional Review Board (IRB) as not involving human subjects research and did not require IRB approval to conduct the study. Appendix C contains the University of Central Florida's determination letter regarding the study request submitted by the researcher prior to conducting the statistical analyses contained in Chapter 4. The submitted IRB form stated the purpose of this study as endeavoring to gain an understanding of whether the Pell Grant recipient attrition problem prevalent in recent media reports was a problem in the Florida College System, specifically at the college used in this study. Because many low-income students in community colleges rely on Pell Grants to obtain postsecondary education, this researcher obtained authorization to study an individual, predominantly two-year college in Florida that was willing to participate in this research project.

Originality

As required by the Higher Education and Policy Studies Program in the College of Education and Human Performance at the University of Central Florida, students must submit proposal and dissertation manuscripts to Turnitin.com to ensure an appropriate originality score of no more than 10%. Originality scores that exceed 10% warrant an explanation. The initial submission of the proposal manuscript returned a score of 36%. The removal of the researcher's prior submissions further reduced the originality score to 10%. Additionally, generic, common terms and phrases, direct quotations, cited publications, acronyms, and other student papers that the researcher did not have access

to returned a score of less than 1%. The document was, therefore, approved by the researcher's dissertation committee as original work.

Summary

Because the purpose of this study was to address the responsible use of Pell Grant awards by students as measured by maintained enrollment in college, the retention data between academic terms from a sample of this population of students were analyzed. The research questions posed sought to build measurements to determine the presence of differences in the attrition (or non-retention) rates of Pell Grant students as opposed to non-Pell Grant students in a particular central Florida-based college. By comparing both the Pell Grant student enrollment rates and amounts of Pell-based aid utilized at the selected college to these metrics of other colleges in the Florida System, it was possible to ascertain whether College S served Pell students in a typical fashion as compared to the rest of the Florida College System. Additionally, the various statistical tests that were used in this study contributed to better understanding certain perceptions relative to the success of students who were pursuing their educations using Federal Pell Grant aid as compared to those students who were not on this type of financial aid. The results of the statistical analyses are presented in Chapter 4, and a summary and discussion of the findings is found in Chapter 5.

CHAPTER 4 DATA ANALYSIS AND FINDINGS

Introduction

The data used in this study were derived from one of the public colleges in Florida and has been subdivided by cohort groups of students that were either Pell Grant recipients or not for each category as it related to the first three research questions. The analyses for these first three questions were conducted with a combined dataset of four academic years' worth of student enrollment data, 2009 through 2012. For the fourth research question, publicly available data relative to two Pell Grant metrics, percentage of Pell Grant students per institution and average amount of Pell Grant aid per student per institution, was used. Two years' worth of Pell Grant institutional metrics were used, 2009-10 and 2010-11.

Research Question 1

What relationship, if any, exists between rates of student retention rates and status of being a Federal Pell Grant recipient?

This research question sought to address the relationship between the two dichotomous variables of retention rates, also known as the re-enrollment rates from fall to spring term, and whether the students were Pell Grant recipients or not. In order to mitigate the possibility of an individual academic year anomaly, four fall to spring semesters' worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 4. The chi-square test for independence, $\chi^2(1) = 80.17, p < .001$, indicated that there was a statistically significant relationship between student retention from fall to spring term and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were fewer Pell Grant recipients than expected who did not re-enroll in the subsequent term (standardized residual = -5.2). Likewise, there were more Pell Grant recipients than expected who did re-enroll in the subsequent term (standardized residual = 2.7). There were more non-Pell Grant recipients than expected who did not re-enroll in the subsequent term (standardized residual = 6.0). Likewise, there were fewer non-Pell Grant recipients than expected who did re-enroll in the subsequent term (standardized residual = -3.2). Thus the data indicated that there was a greater percentage of Pell Grant recipients retained (80.0%) as compared to the non-Pell Grant recipients (75.3%) after the fall semester at College S.

Table 4

Chi-Square Analysis for Subsequent Spring Retention and Pell Status (N=25,600)

	Retention	Non-Pell	Pell
Not retained			
Count		2,689	2,938
% of Column		24.7	20.0
Std. Residual		6.0	-5.2
Retained			
Count		8,210	11,763
% of Column		75.3	80.0
Std. Residual		-3.2	2.7

Note. $\chi^2 = 80.17$, $df = 1$, $p < .001$, $\Phi = .06$.

The chi-square test of independence may have indicated a statistically significant relationship between retention rates and Pell Grant status due to the large population size. It was important, therefore, to also calculate a measure of effect size, otherwise known as practical significance. The phi coefficient was calculated with these data and indicated that there was no practical effect size, $\Phi = .06$. Thus, even though the relationship between retention rates and Pell Grant status was statistically significant, the relationship did not hold a large degree of strength.

Research Question 2

What relationship, if any, exists between student academic performance, defined by earning a C or better for college credit students, and status of being a Federal Pell Grant recipient?

This research question sought to address the relationship between the two dichotomous variables of academic performance for students grouped as passing their courses with a grade of C or better and those who did not perform satisfactorily, and whether the students were Pell Grant recipients or not. As in Research Question 1, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters' worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 5. The chi-square test for independence, $\chi^2(1) = 197.19, p < .001$, indicated that there was a statistically significant relationship between student pass rates in the fall term and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were more Pell Grant recipients than expected who did not pass their courses with a C or better (standardized residual = 7.9). Likewise, there were fewer Pell Grant recipients than expected who did have satisfactory academic performance for the fall term (standardized residual = -4.7). For the non-Pell Grant recipients, there were fewer students than expected who did not pass their courses with a C or better (standardized residual = -9.2). Likewise, there were more non-Pell Grant recipients than expected who did have satisfactory academic performance (standardized residual = 5.6). Thus, the data indicated that there was a smaller percentage of Pell Grant recipients who

passed their courses with a C or better (72.8%) as compared to the non-Pell Grant recipients (76.6%) after the fall semester at College S.

Table 5

Chi-Square Analysis for Academic Performance and Pell Status (N=105,466)

Academic Performance	Non-Pell	Pell
Unsatisfactory		
Count	10,595	16,353
% of Column	23.4	27.2
Std. Residual	-9.2	7.9
Satisfactory		
Count	34,724	43,794
% of Column	76.6	72.8
Std. Residual	5.6	-4.7

Note. $\chi^2 = 197.19$, $df = 1$, $p < .001$, $\Phi = -.04$.

The chi-square test of independence may have indicated a statistically significant relationship between academic performance and Pell Grant status due to the large population size. It was important, therefore, to calculate a measure of effect size, otherwise known as practical significance. The phi coefficient was calculated with these data and indicated that there was no practical effect size, $\Phi = -.04$. Thus, even though the relationship between academic performance and Pell Grant status was statistically significant, the relationship did not hold a large degree of strength.

Research Question 3

What relationships, if any, exist between student demographics and the status of being a Federal Pell Grant recipient?

This research question sought to address the relationship between the various categorical variables of enrollment status, residency, educational goals, age, ethnicity, and gender, and whether the students were Pell Grant recipients or not. As in the first two research questions, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters' worth of data were combined into one dataset for each demographic variable. Individual chi-square tests were run for each demographic variable. The results are presented in the following sections.

Enrollment Status

The first demographic variable related to Research Question 3 sought to address the relationship between the categorical variable of enrollment status, defined as the number of credit hours earned, and the dichotomous variable describing whether the students were or were not Pell Grant recipients. As in the prior research questions, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters' worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 6. The chi-square test for independence, $\chi^2(4) = 84.06, p < .001$, indicated that there was a statistically significant relationship between credit hours earned and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were

more Pell Grant recipients than expected with zero accumulated credit hours in College S (standardized residual = 3.46) as well as more Pell Grant recipients than expected with 15 to 29 accumulated credit hours (standardized residual = 3.2). However, there were fewer Pell Grant recipients than expected with over 60 accumulated credit hours at College S (standardized residual = -3.1). In the categories of 1-14 credit hours, and 30-59 credit hours, the standardized residuals indicated the observed and expected values of Pell Grant recipients were not statistically significantly different. For the non-Pell Grant recipients, there were fewer students than expected with zero credit hours (standardized residual = -3.9) and also fewer than expected non-Pell Grant recipients in the 15-29 credit hour range (standardized residual = -3.8). However in the over 60 credit hours category, there were more non-Pell Grant recipients than expected (standardized residual = 3.6). Just as in the Pell Grant recipient group, the observed and expected values were not statistically significantly different from the non-Pell Grant recipients in the 1-14 and 30-59 credit hours categories. Thus, the data indicated that there was a slightly greater percentage of Pell Grant recipients in the 29 or fewer cumulative credit hours category (3.4%, 28.1%, and 17.5% respectively) as compared to the non-Pell Grant recipients (2.2%, 27%, and 15%, respectively). However, in the larger credit hour categories, the opposite was indicated with a slightly greater percentage of non-Pell Grant recipients at the 30-59 hours category (34.9%) and at the 60 hours and over category (20.9%); whereas for the Pell Grant recipients, there was a smaller percentage at the 30-59 credit hours category (32.8%) and the 60 hours and over category (18.2%) at College S.

Table 6

Chi-Square Analysis for Demographic Variable: Credit Hours Earned and Pell Status (N=25,600)

Credit Hours Earned	Non-Pell	Pell
Zero Hours		
Count	245	493
% of Column	2.2	3.4
Std. Residual	-3.9	3.4
1-14 Hours		
Count	2,946	4,128
% of Column	27.0	28.1
Std. Residual	-1.2	1.0
15-29 Hours		
Count	1,632	2,575
% of Column	15.0	17.5
Std. Residual	-3.8	3.2
30-59 Hours		
Count	3,802	4,826
% of Column	34.9	32.8
Std. Residual	2.1	-1.8
60+ Hours		
Count	2,274	2,679
% of Column	20.9	18.2
Std. Residual	3.6	-3.1

Note. $\chi^2 = 84.06$, $df = 4$, $p < .001$, $v = .06$.

The chi-square test of independence may have indicated a statistically significant relationship between the number of credit hours earned and Pell Grant status due to the large population size. It was important, therefore, to also calculate a measure of effect

size, otherwise known as practical significance. Cramer's v was calculated with these data, indicating that there was no practical effect size, $v = .06$. Thus, even though the relationship between cumulative credit hours earned and Pell Grant status was statistically significant, the relationship did not hold a large degree of strength.

Residency

The second demographic variable related to Research Question 3 sought to address the relationship between the two dichotomous variables of residency and whether the students were or were not Pell Grant recipients. Residency was defined in this study as whether the student was or was not classified as a Florida resident. As in the prior research questions, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters' worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 7. The chi-square test for independence, $\chi^2(1) = 253.23, p < .001$, indicated that there was a statistically significant relationship between residency and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were fewer Pell Grant recipients than expected in the non-resident category (standardized residual = -10.2). However, in the resident category, the observed and expected values were not statistically significantly different (standardized residual = 2.0). Likewise, there were more non-Pell Grant recipients classified as non-residents (standardized residual = 11.8), with no statistically significant difference between the observed and expected values for resident non-Pell Grant recipients (standardized residual = -2.3). Thus, the

data indicated that there was a smaller percentage of Pell Grant recipients categorized as non-Florida residents (2.0%) as compared to non-Pell Grant recipients (5.8%) at College S. In contrast for resident students, there was a greater percentage of Pell Grant recipients (98.0%) as compared to non-Pell Grant recipients (94.2%) at College S.

Table 7

Chi-Square Analysis for Demographic Variable: Residency and Pell Status (N=25,570)

	Residency	Non-Pell	Pell
Non-resident			
Count		633	301
% of Column		5.8	2.0
Std. Residual		11.8	-10.2
Resident			
Count		10,236	14,400
% of Column		94.2	98.0
Std. Residual		-2.3	2.0

Note. $\chi^2 = 253.23$, $df = 1$, $p < .001$, $\Phi = .1$

The chi-square test of independence may have indicated a statistically significant relationship between retention rates and Pell Grant status due to the large population size. It was important, therefore, to calculate a measure of effect size, otherwise known as practical significance. The phi coefficient was calculated using these data and indicated that there was a small practical effect size, $\Phi = .10$. Thus, though the relationship between residency rates and Pell Grant status was statistically significant, the relationship held only a small degree of strength.

Educational Goals

The third demographic variable related to Research Question 3 sought to address the relationship between the categorical variable of educational goals and the dichotomous variable describing whether the students were or were not Pell Grant recipients. Educational goals in this study related to the program of study in which the student was enrolled. The four categories used were (a) Upper Division (Baccalaureate level), (b) Associate of Arts, (c) Associate, Career Programs, and (d) Other Plans. As in the prior research questions, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters' worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 8. The chi-square test for independence, $\chi^2(3) = 223.32, p < .001$, indicated that there was a statistically significant relationship between student program plan and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were more non-Pell Grant recipients than expected in the Associate of Arts programs (standardized residual = 2.7), and there were more non-Pell Grant recipients than expected in the Other Plans category (standardized residual = 8.8). However, there were fewer non-Pell Grant recipients than expected in the Associate, Career Programs (standardized residual = -6.3). Though there were more Pell Grant recipients than expected in the Associate, Career Programs (standardized residual = 5.4), there were fewer Pell Grant recipients than expected in the Other Plans (standardized residual = -7.5). However, the observed values for the Pell Grant recipients in the Upper Division Baccalaureate and Associate of Arts programs were expected.

Table 8

Chi-Square Analysis for Demographic Variable: Educational Goals and Pell Status (N=25,600)

Educational Goals (Program Plan)	Non-Pell	Pell
Upper Division		
Count	145	140
% of Column	1.3	1.0
Std. Residual	2.2	-1.9
Associate of Arts		
Count	8,113	10,378
% of Column	74.4	70.6
Std. Residual	2.7	-2.3
Associate-Career		
Count	2,502	4,164
% of Column	23.0	28.3
Std. Residual	-6.3	5.4
Other Plans		
Count	139	19
% of Column	1.3	.1
Std. Residual	8.8	-7.5

Note. $\chi^2=223.32$, $df=3$, $p < .001$, $v = .09$

The observed values for the non-Pell Grant recipients in the Upper Division Baccalaureate Programs were also as expected. Thus, the data indicated that there was a greater percentage of non-Pell Grant recipients (74.4%) in the Associate of Arts programs than Pell Grant recipients (70.6%). For the Associate Career programs, however, there was a greater percentage of Pell Grant recipients (28.3%) than non-Pell Grant recipients

(23%). For the Upper Division Baccalaureate programs there was a slightly greater percentage of non-Pell Grant recipients (1.3%) than Pell Grant recipients (1%).

Likewise, in the Other Plans, there was a greater percentage of non-Pell Grant recipients (1.3%) than Pell Grant recipients (.1%) at College S.

The chi-square test of independence may have indicated a statistically significant relationship between educational goals (program of study) and Pell Grant status due to the large population size. It was important, therefore, to also calculate a measure of effect size, otherwise known as practical significance. Cramer's v was calculated using these data and indicated that there was a small practical effect size, $v = .09$. Thus, though the relationship between program plan of study and Pell Grant status was statistically significant, the relationship only held a small degree of strength.

Age

The fourth demographic variable related to Research Question 3 sought to address the relationship between the categorical variable of age group and the dichotomous variable describing whether the students were or were not Pell Grant recipients. For this study, the students' ages were categorized into four groups: (a) under 25, (b) 25-34, (c) 35-44, and (d) 45 and over. As in the prior research questions, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters' worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 9. The chi-square test for independence, $\chi^2(3) = 1,205.39$, $p < .001$, indicated that there was a statistically

significant relationship between student age group and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were fewer Pell Grant recipients than expected in the under 25 age group (standardized residual = -11.9) and more Pell Grant recipients than expected in the other three age groups. The standardized residual in the 25-34 age group was calculated as 14.7; in the 35-44 age group, the standardized residual was calculated as 10.8; and in the 45 and over age group, the standardized residual was calculated as 6.1. Likewise, there were more non-Pell Grant recipients than expected in the under 25 age group (standardized residual = 13.9). Also, there were fewer non-Pell Grant recipients than expected in the other three age groups. For these non-Pell Grant students, the standardized residual in the 25-34 age group was calculated as -17.1. In the 35-44 age group, the standardized residual was calculated as -12.6; and in the 45 and over age group, the standardized residual was calculated as -7.0. Thus, the data indicated that there was a greater percentage of non-Pell Grant recipients in the under 25 age group (83.4%) as compared to Pell Grant recipients (63.8%). In the 25-34 age group, there was a greater percentage of Pell Grant recipients (23.2%) as compared to the non-Pell Grant recipients (11.0%). In the 35-44 age group, there was also a higher percentage of Pell Grant recipients (8.7%) as compared to non-Pell Grant recipients (3.4%). Likewise, the data indicated a higher percentage of Pell Grant recipients in the 45 and over age group (4.3%) as compared to non-Pell Grant recipients (2.2%) at College S.

Table 9

Chi-Square Analysis for Demographic Variable: Age and Pell Status (N=25,600)

Age Group	Non-Pell	Pell
Under 25		
Count	9,086	9,372
% of Column	83.4	63.8
Std. Residual	13.9	-11.9
Age 25-34		
Count	1,205	3,405
% of Column	11.0	23.2
Std. Residual	-17.1	14.7
Age 35-44		
Count	370	1,284
% of Column	3.4	8.7
Std. Residual	-12.6	10.8
Age 45 and over		
Count	238	640
% of Column	2.2	4.3
Std. Residual	-7.0	6.1

Note. $\chi^2 = 1,205.39$, $df = 3$, $p < .001$, $v = .22$

The chi-square test of independence may have indicated a statistically significant relationship between age group and Pell Grant status due to the large population size. It was, therefore, important to also calculate a measure of effect size, otherwise known as practical significance. Cramer's v was calculated using these data and indicated that there was a small to medium practical effect size, $v = .22$. Thus, while the relationship

between age group and Pell Grant status was statistically significant, the relationship only held a small to medium degree of strength.

Gender

The fifth demographic variable related to Research Question 3 sought to address the relationship between the dichotomous variables of gender and whether the students were or were not Pell Grant recipients. As in the prior research questions, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters' worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 10. The chi-square test for independence, $\chi^2(1) = 281.86, p < .001$, indicated that there was a statistically significant relationship between gender and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were more female Pell Grant recipients than expected (standardized residual = 7.3). However, there were fewer male Pell Grant recipients than expected (standardized residual = -8.2). Likewise, there were fewer female non-Pell Grant recipients than expected (standardized residual = -8.5) and more male non-Pell Grant recipients than expected (standardized residual = 9.5). Thus, the data indicated that there was a greater percentage of female Pell Grant students (60.4%) than male (39.6%) at College S. For non-Pell Grant recipients, the percentage of males (50.2%) was only slightly higher than the percentage of females (50%) at College S.

Table 10

Chi-Square Analysis for Demographic Variable: Gender and Pell Status (N=25,360)

	Gender	Non-Pell	Pell
Female			
Count		5,366	8,804
% of Column		49.8	60.4
Std. Residual		-8.5	7.3
Male			
Count		5,412	5,778
% of Column		50.2	39.6
Std. Residual		9.5	-8.2

Note. $\chi^2 = 281.86$, $df = 1$, $p < .001$, $\Phi = .11$

The chi-square test of independence may have indicated a statistically significant relationship between gender and Pell Grant status due to the large population size. It was, therefore, important to also calculate a measure of effect size, otherwise known as practical significance. The phi coefficient was calculated with these data and indicated that there was a small practical effect size, $\Phi = .11$. Thus, though the relationship between gender and Pell Grant status was statistically significant, the relationship only held a small degree of strength.

Ethnicity

The final demographic variable related to Research Question 3 sought to address the relationship between the categorical variable of ethnicity and the dichotomous variable describing whether the students were Pell Grant recipients or not. The data for

College S were categorized into four ethnic/racial groups: (a) Caucasian, (b) Hispanic, (c) Black, and (d) Asian. College S data included a category of ethnicity known as “other;” however, this demographic was not included in the study as it would not necessarily lead to meaningful conclusions about a specific ethnic or racial group. As in all the prior research questions, in order to mitigate the possibility of an individual academic year anomaly, four fall semesters’ worth of data were combined into one dataset.

The results of the statistical test performed are shown in Table 11. The chi-square test for independence, $\chi^2(3) = 1,791.65, p < .001$, indicated that there was a statistically significant relationship between ethnicity and whether or not the student was a Pell Grant recipient. Based upon the calculation of the standardized residuals, there were fewer Caucasian Pell Grant recipients than expected (standardized residual = -16.4). There were also fewer Asian Pell Grant recipients than expected (standardized residual = -3.2). There were more Hispanic Pell Grant recipients than expected (standardized residual = 10.4), and there were more Black Pell Grant recipients than expected (standardized residual = 19.4). For the non-Pell Grant recipients, there were more Caucasian students (standardized residual = 19.0) and Asian students (standardized residual = 3.8) than were expected. However, there were fewer non-Pell Grant recipients than expected among the Hispanic students (standardized residual = -12.1) and the Black students (standardized residual = -22.5) at College S. Thus, the data indicated that there was a larger percentage of non-Pell Grant students who were Caucasian students (70.9%) than Caucasian Pell Grant students (46.5%). The same was indicated for the Asian students, although the percentages were much closer between Pell and non-Pell Grant students. Asian non-Pell

Grant students made up a higher percentage of the total (4.4%) than Asian Pell Grant students (3.1%).

Table 11

Chi-Square Analysis for Demographic Variable: Ethnicity and Pell Status (N=24,533)

Ethnic/Racial Group	Non-Pell	Pell
Caucasian		
Count	7,407	6,540
% of Column	70.9	46.5
Std. Residual	19.0	-16.4
Hispanic		
Count	1,739	3,710
% of Column	16.6	26.3
Std. Residual	-12.1	10.4
Black		
Count	848	3,387
% of Column	8.1	24.1
Std. Residual	-22.5	19.4
Asian		
Count	458	444
% of Column	4.4	3.1
Std. Residual	3.8	-3.2

Note. $\chi^2 = 1,791.65$, $df = 3$, $p < .001$, $v = .27$

The data indicated that both Hispanic and Black students on Pell Grants made up higher percentages than non-Pell Grant students in these two ethnic/racial groups.

Hispanic Pell Grant students comprised a larger percentage of the total (26.3%) than Hispanic non-Pell Grant students (16.6%). Black Pell Grant students comprised a higher percentage of the total as well (24.1%) as opposed to comprising only 8.1% of the non-Pell Grant student population at College S.

The chi-square test of independence may have indicated a statistically significant relationship between ethnicity and Pell Grant status due to the large population size. It was important, therefore, to also calculate a measure of effect size, otherwise known as practical significance. Cramer's v was calculated using these data and indicated that there was a medium practical effect size, $v = .27$. This effect size was the largest among the demographic variables used in this study. Thus, the statistically significant relationship between ethnicity and Pell Grant status held a medium degree of strength.

Research Question 4

What similarities, if any, exist between the college highlighted in this study and other Florida state colleges in the numbers of Pell Grant students enrolled and the average amount of Pell Grant aid received per student?

This research question was addressed with comparisons of the two Pell Grant metrics for College S to the metric for the other 27 Florida state public colleges. In each case, the population mean and standard deviation were calculated to obtain the metric from all of the Florida colleges other than College S. A z -score was then calculated for comparison to the standard normal distribution. Finally, because the hypothesis did not

call for a specific direction, a two-tailed p -value was derived from the z -score to determine statistical significance.

Pell Grant Enrollment

The Pell Grant enrollment metric was calculated for each college by calculating an average of the 2009-10 and 2010-11 academic years' total percentages of enrolled students who received Pell Grant aid. By using two years' of percentages, the potential for a single-year anomaly was diminished. Additionally, the potential for a very small or very large school outlier in terms of overall population was mitigated. Thus, this variable could then be interpreted in terms of a two-year average percentage of students receiving Pell Grant aid.

For the population of the other 27 colleges, the metric had a mean (μ) of 37.74 and a standard deviation (σ) of 6.65. College S had a value of 44.00. The z -score was calculated as 0.94, for a two-tailed p -value of .35. This value exceeded the study's alpha (α) of .05. Thus, there was no evidence deeming College S's percentage of students receiving Pell Grant aid as different from that of the other Florida public state colleges to a statistically significant extent.

Pell Grant Aid

The Pell Grant aid metric was calculated for each college by taking the average of the 2009-10 and 2010-11 academic years' per-student Pell Grant aid received. By using two years' worth of percentages, this mitigated the potential for a single year anomaly.

Additionally, the potential for a very small or very large school outlier in terms of overall population was mitigated. Thus, this variable could then be interpreted in terms of a two-year average amount of Pell Grant aid received by students.

For the population of the other 27 colleges, the metric had a mean (μ) of 3,807.57 and a standard deviation (σ) of 594.06. College S had a value of 4,666.00. The z -score was calculated as 1.44, for a two-tailed p -value of .15. This value exceeded the study's alpha (α) of .05, so there was no evidence deeming College S's average per-student Pell Grant aid as different from that of the other Florida public state colleges to a statistically significant extent. The results for both tests are presented in Table 12.

Table 12

Results of Pell Enrollment Rate and Average Per-Student Pell Award Comparisons of Targeted College to Other Florida State Colleges (N = 27)

Metric	μ	σ	x	z	p
Pell Enrollment Rate	37.74	6.65	44	0.94	.35
Per-Student Pell Aid	3,807.57	594.06	4,666	1.44	.15

Summary

Two of the research questions posed in this study sought to determine the prudent, responsible use of Pell Grant awards in one of the Florida College System institutions, whether there were relationships between retention and academic performance, and whether or not the student was a Pell Grant recipient. Based upon the statistical test used

(chi-square test of independence) for re-enrollments from fall to spring term, Pell Grant recipients were retained in greater numbers than students not on Pell Grants. However, Pell Grant students in this study did not perform academically as well as the non-Pell Grant students at College S.

The demographic variables tested between Pell Grant recipients and non-Pell Grant recipients were comprised of selected components from Bean and Metzner's (1985) non-traditional student attrition model. Although all of these demographic variables (enrollment status, residency, educational goals, age, gender, and ethnicity) were found to have a statistically significant relationship between Pell and non-Pell recipients, only the ethnicity variable displayed a medium strength in that relationship. All the others had small to no relationship strength.

The final research question in this study was analyzed in order to ensure the college in this study was not significantly different in numbers of Pell Grant students and average amount of Pell Grant aid per student. Based upon the statistical tests conducted, College S was not statistically significantly different from the other colleges in the Florida College System for these metrics.

CHAPTER 5 DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

Introduction

This chapter provides a conclusion to this study. It has been organized to summarize and discuss the significant findings for each of the four research questions that guided the study. Also addressed are limitations and delimitations of the study and implications for practice, policies, and future research.

As has been noted previously in the study, attendance at community colleges increased by 53% since the last decade of the 20th century. At the time of the study, approximately 31% of total Federal Pell Grant aid was being awarded to community college students (NACUBO, 2011a). Thus, the primary purpose of this research was to study the attrition problem and academic success of Pell Grant recipients as compared to non-Pell Grant recipients in one of the public colleges in Florida that predominantly served students in their first two years of postsecondary education. A secondary purpose of the study was to address the increased public urgency for accountability for the use of Federal Pell Grants. Colleges and universities need to remain cognizant of the possibility that students may not always be acting in a responsible or fiscally prudent manner once they receive Pell Grants. Therefore, this study sought to compare Pell Grant recipient data with non-Pell Grant recipient data to ascertain any significant relationships in retention, academic performance, and student demographics.

Discussion

With increasing scrutiny from various sectors of society, the value of post-secondary education, in conjunction with the large sums of federal funding for federal student aid programs such as Pell Grants, will continue to be questioned. Because Pell Grants have been awarded to students in need by the federal government using taxpayer dollars, society should expect a certain level of responsible usage of these funds by the students, i.e., successful completion of the courses of study for which they were awarded Pell Grants. Responsible usage in this study was defined in terms of retention and academic performance. Thus, the research questions posed in this study and the statistical tests performed provided insight into one Florida public state college's student population in revealing any significant differences in Pell versus non-Pell students in the areas of retention and academic performance.

Research Question 1

What relationship, if any, exists between rates of student retention rates and status of being a Federal Pell Grant recipient?

This research question sought to address the relationship between retention rates, also known as the re-enrollment rates from fall to spring term, and whether the students were or were not Pell Grant recipients. Using four combined academic years of data, the statistical results indicated that Pell Grant students at this institution were retained between the fall and spring terms more so than students not receiving Pell Grants. For the academic years from 2009 through 2012, 80% of the Pell Grant students were

retained as opposed to only 75.3% of non-Pell Grant recipients. Therefore, Pell Grant students at the college in this study did have a higher percentage of re-enrollments in subsequent terms.

The data in this current study relative to retention and re-enrollment rates corroborated the findings in the literature indicating that Pell Grants can have a positive effect on student retention rates (Alon, 2011; Mendoza et al., 2009). Researchers have also shown that receiving Pell Grants narrows the drop-out rate between low and middle income students (Chen & DesJardins, 2008). Both retention and narrowing the drop-out rates between low and middle-to-high income students is important in that Pell Grants may enable students with very little monetary means to obtain a post-secondary education. Thus, retention is necessary for college degree attainment. Equality in educational opportunity was mentioned in the literature as a cornerstone of the Pell Grant program (Alexander, 2002). As demonstrated by Baum et al. (2010), higher education plays a critical role not only to the student in terms of earnings potential but to governments in terms of less public reliance on social programs.

It is, however, important to note that though the relationship between retention rates and Pell Grant status in the current study was statistically significant, the relationship did not hold a large degree of strength. Thus, although the data did suggest a relationship between receiving Pell Grants and the likelihood of student retention, the conclusions reached were not overwhelmingly strong. Because students' decisions to continue from one term to the next can vary widely, the Pell Grant variable did not appear to be a very strong predictor of retention in the data contained in this research

study. Though it appeared that the Pell Grant variable was a factor that could contribute to persistence, it did not appear to be a strong factor in this case. However, in terms of responsible use of Pell Grant dollars by students, it is reassuring to know that those with Pell Grants at College S were retained at significantly higher rates when compared to the students who did not receive Pell Grants, thereby helping to bolster the notion of responsible use of Pell Grant dollars.

Because the study completed using College S data failed to show strength in the relationship between retention and Pell Grant status, other factors coupled with Pell Grant receipt should be explored further, particularly at College S. The literature is quite rich in distinguishing additional factors that strengthen the potential for retention and degree attainment, e.g., academic integration, faculty involvement, and other affordability factors. Thus, though this study corroborated findings of other researchers that Pell Grants are related to increased retention among college students, other factors could potentially show stronger statistical significance.

Research Question 2

What relationship, if any, exists between student academic performance, defined by earning a C or better for college credit students and status of being a Federal Pell Grant recipient?

This research question sought to address the relationship between academic performance for students, defined as whether or not students passed their courses with a grade of C or better, and whether or not the students were Pell Grant recipients. Using

four combined fall semesters' worth of data (2009-2012), the statistical results indicated that Pell Grant students at the study institution were not as academically successful as the students not receiving Pell Grants. For the academic years from 2009 through 2012, 72.8% of the Pell Grant students passed their courses with a grade of C or better as compared to 76.6% of non-Pell Grant students. Thus, at the college in this study, students not receiving Pell Grants had better pass rates than the Pell Grant students. However, it is important to note that the relationship between academic success (pass rates) and Pell Grant status did not hold a large degree of strength, despite the presence of a statistically significant relationship.

Certain studies relative to academic success have suggested reasons why lower income students may not be as academically successful as their middle or higher income counterparts. As highlighted in Stater's (2009) study, needs-based aid such as Pell Grants has both positive and significant effects on student GPAs, but merit-based aid has a larger effect primarily due to the GPA requirements for receiving such merit-based aid. Additionally, with America's community college sector increasingly serving an underserved population of lower income students with substandard high school educations, remedial coursework sometimes becomes the norm (Green, 2006). This, in turn, can misalign the Pell Grant students with those not eligible for Pell Grants which are typically the higher income or merit-based aid students. This is not to suggest that students should be required to be stellar in order to receive Pell Grants. Rather, they should bear some responsibility for endeavoring to successfully pass their courses which were funded with taxpayer dollars in the form of federal aid. For example, being diligent

in coursework assigned, keeping up with homework and reading assignments, seeking tutoring or extra help when struggling with the coursework, and setting aside adequate time to study for exams, are all strategies a student should undertake for college success.

Research Question 3

What relationships, if any, exist between student demographics and the status of being a Federal Pell Grant recipient?

This research question sought to address the relationship between various demographic categorical variables of enrollment status, residency, educational goals, age, ethnicity, and gender, and whether or not students were Pell Grant recipients. Four combined fall semesters' worth of data (2009-2012) were used to create each demographic variable. All six demographic variables contained in this study showed a statistically significant relationship with Pell Grant status, but only one variable (ethnicity) had a medium strength in the relationship. Three other variables had a small relationship strength (residency, age and gender). However, there was no strength in the relationship between the degree program of the student nor in the number of credit hours earned and whether or not the student was a Pell Grant recipient.

When testing the relationship between enrollment status and Pell Grant status, there was a higher proportion in the lesser credit hours accumulated category among Pell Grant students. This indicated that as more credit hours were earned by the college students at the institution in the study, the proportion of Pell Grant recipients declined once the students reached 30 or more credit hours. Given that Pell Grants have

restrictions on the number of semester hours for which they are awarded in college, this finding was not surprising.

For the residency demographic variable, 67.8% of the non-Pell Grant students were non-Florida residents as compared to the 32.2% non-Florida Pell Grant students. Likewise, the reverse trend held true for Florida residents, as the percentage of Pell Grant recipients (58.5%) was higher than that of resident non-Pell Grant students (41.5%). The analysis performed with the residency demographic indicated a statistically significant relationship, albeit one with a small degree of strength, between residency status and Pell Grant status.

The demographic variable related to educational goals, defined in this study as the program of study in which the student was enrolled, showed statistical significance but lacked strength in the relationship. There was a higher percentage of Pell Grant students as compared to non-Pell Grant students in both the Associate of Arts and Career Programs but a lower percentage of Pell Grant students in the Upper Division (baccalaureate) and Other Programs. For the Associate of Arts programs, 56.1% of the students were Pell Grant recipients. For the Career programs, 62.5% of the students were Pell Grant recipients. On the other hand, 49% were Pell Grant recipients in the Upper Division baccalaureate programs, and only 12% of the students were Pell Grant recipients in the Other programs. The Other programs category was comprised primarily of students who were either non-degree seeking or had not yet chosen a program of study at College S.

The demographic variable related to students' age was categorized into groups: (a) under 25, (b) 25-34, (c) 35-44, and (d) 45 and over. Age group and Pell Grant status showed a statistically significant relationship, but the relationship had only a small to medium level of strength. All of the age groups indicated much higher percentages of Pell Grant recipients than non-recipients with the exception of the under 25 age group. For this age group, Pell Grant and non-Pell Grant students were almost evenly divided; a total of 50.8% of the students were Pell Grant recipients. All of the other age groups had a much higher percentage of Pell Grant recipients. For the 25-34 age group, 73.9% of the students were Pell Grant students; for the 35-44 age group, 77.6% were Pell Grant students; and for the 45 and over age group, 72.9% were Pell Grant students. Because students over the age of 24 can declare themselves as independent, they are deemed to be no longer reliant on parental support to finance their education (Chen & DesJardins, 2010). Thus, it was not surprising to find that all the older age groups in this study had much higher percentages of Pell Grant students than the under 25 age group.

As mentioned in Chapter 2, 26% of community college students were over the age of 24 as of 2004 (Horn et al., 2006). For College S, the data maintained consistency with this metric, in that nearly 28% of the students were over the age of 24. With a large percentage of older students also employed, independent, and with family responsibilities, Pell Grants can play a key role in affording these non-traditional students with opportunities for higher education. However, it is important to note that older students often have goals that may be unrelated to degree attainment (Wild & Ebbers, 2002) despite Pell Grant availability. Therefore, reviewing the relationship between age

group and Pell Grant status could highlight areas that may need attention in helping these non-traditional students meet their educational goals.

The demographic variables related to the relationship between gender and whether or not the students were Pell Grant recipients showed a statistically significant relationship. However, this relationship had a small level of strength. The combined four years' worth of data at College S showed that the percentage of students with Pell Grants was higher among female students (62.1%) than among male students (51.6%).

The demographics related to gender at College S were aligned with community college demographics in that there tends to be a higher percentage of female students in this sector of higher education. Knowing that a higher percentage of female students than male students have been Pell Grant recipients may be useful information for financial aid professionals at College S. The higher percentage of females at College S was also consistent with the demographics reported by the entire Florida College System (Florida College System Annual Report, 2012).

College S, over the four-year period of this study, had 55.9% of the students categorized as female. The statistical tests performed relative to gender in the present study did not test for Pell Grant status linked with persistence differences between genders, but Aragon & Johnson (2008) used chi-square and *t*-tests to conclude that females in their study did have a higher percentage of college completers. With the Florida College system reporting Pell recipient status as an important risk factor of student attrition (Florida College System, 2010), being cognizant of the gender makeup

of a college's Pell Grant population could be seen as valuable information for retention initiatives.

The final demographic variable contained in this study was ethnicity. The data for College S were categorized into four ethnic/racial groups: (a) Caucasian, (b) Hispanic, (c) Black, and (d) Asian. College S data also included a category of ethnicity known as "other." However, this demographic was not included in the study as it would not lead to meaningful conclusions about a specific ethnic or racial group. Ethnicity was the only demographic variable that not only showed a statistically significant relationship with Pell Grant status but also had a medium level of strength in the relationship. Both Black and Hispanic students at College S had significantly higher percentages of Pell Grant recipients than non-Pell Grant recipients. A total of 80% of the Black students and 68.1% of the Hispanic students at College S were Pell Grant recipients. In contrast, there were slightly higher percentages of non-Pell than Pell Grant recipients among Caucasian (53.1%) and Asian students (50.8%). Over the four years of data collected and used in this study, Caucasian students equated to 56.8% of the total student count. Hispanic students equated to 22.2% of the student count. Black students equated to 17.3% of the count, and Asian students equated to 3.7% of the total student count.

The importance of determining Pell recipients by race or ethnicity was highlighted in various studies referenced in the literature review conducted for this study. The study conducted by Mendoza et al. (2009) showed that Pell Grants had a very positive effect on persistence for African American and Native American students. For Hispanic students in a Texas community college study, Pell Grants were noted as a

significant factor in retention (Nora, 1990). Additionally, Caucasian Pell Grant recipients were found to be at higher dropout risk than minority Pell Grant recipients (Chen & DesJardins, 2010).

Research Question 4

What similarities, if any, exist between the college highlighted in this study and other Florida state colleges in the numbers of Pell Grant students enrolled and the average amount of Pell Grant aid received per student?

The final research question in this study was addressed through comparisons of the two Pell Grant metrics, number of Pell Grant students and the average amount of Pell Grant aid per student. Comparisons between these metrics at College S and the other 27 colleges in the Florida public college system demonstrated that the percentage of students at College S receiving Pell Grant aid and the average amount of Pell Grant aid per student were not statistically significantly different from that of the other Florida state colleges. College S, using the 2010 and 2011 academic years' average percentage of Pell Grant student data, showed that 44% of the students were Pell Grant recipients. The mean score (μ) for the other 27 colleges was 37.8% with a standard deviation (σ) of 6.65. The average amount of Pell Grant aid per student at College S, using the same two-year average percentage of Pell Grant student data, was calculated to be \$4,666 per student. The average mean (μ) of Pell Grant aid per student for the other 27 Florida colleges was \$3,807.57 with a standard deviation (σ) of 594.06.

Although neither the percentage of Pell Grant recipients nor the average amount of Pell Grant aid per student at College S was statistically significantly different from that of the other 27 colleges in the Florida College system, both scores were higher than the average score. In fact, both metrics for College S were among the highest in the dataset. This was not expected by the researcher because the location of this college was not in an economically depressed area of the state.

Significant Findings

Three findings from this study that warrant mention for their significance were related to (a) the retention of Pell Grant students, (b) the academic success of Pell Grant students, and (c) the demographic variable related to the categorization by ethnic/racial group of the Pell Grant students. The findings in this study relative to retention and re-enrollment rates corroborated prior researchers' observations that Pell Grants can have a positive effect on student retention rates. Additionally, Pell Grants can allow students to focus more on their education and possibly not have to work so that they can become more academically integrated into the college environment. Academic integration has been shown to enhance the persistence probability and to narrow the drop-out risks between socio-economic groups (Cabrera, 1992; Chen & DesJardins, 2008). However, the statistical tests performed using data from College S did not show strength in the relationship between Pell Grant status and re-enrollment from fall to spring terms. Even though there was statistical significance, the results could be due to chance or some other factor or factors.

The finding in this study related to the academic success of the students, also known as the pass rate of the students with a grade of C or better, showed that students not receiving Pell Grants had better pass rates than the Pell Grant students at College S. Even though the relationship between academic success (pass rates) and Pell Grant status was not very strong, this finding could be of concern to society. Though a college education benefits individuals by enhancing better lifestyles, society benefits as well by higher tax revenues to governments and less reliance on governmental programs from college-educated persons (Baum et al., 2010). Academic success is necessary not only to earn a college degree but also to enhance the earning power of students. Gillum & Davies' (2003) study indicated that community college completers showed income gains that were over 18% higher than individuals who had no college degree.

The significance of the finding related to the relationship between ethnicity and Pell Grant status was that it was the only relationship identified in this study that had a medium effect size. All of the others (enrollment status, residency, educational goals, age, and gender), when tested against Pell Grant status, showed little to no effect size even though all showed statistical significance. This means there was not a great amount of strength in the relationship in any of the demographic variables tested (with the exception of one) and whether or not the student was a Pell Grant recipient. The ethnic/racial groups of Black and Hispanic students had the highest percentages of Pell Grant recipients at College S. In their study, Mendoza et al. (2009) concluded that Pell Grants had positive effects on Black student persistence. For Hispanic students, Nora (1990) stated that Pell Grants were also a significant factor in persistence. In contrast,

Chen & DesJardins' 2010 study found that Caucasian Pell Grant students' risk for attrition was higher than that of minority college students. Additionally, Green (2006) used the term "underserved" students to identify those students who were low income, first generation college students, and students of color. These underserved students have not typically been as successful as white or higher income students despite their aspirations to attend college and their ever-increasing numbers in community colleges (Green, 2006). The Florida College System reported in June 2011 that though the percentage of African American and Hispanic students enrolling in Florida colleges immediately following high school increased, the proportion of these same minorities decreased in the State University System.

Because the ethnic/racial demographic factor's relationship with Pell Grant status in this study indicated not only statistical significance, but one with the highest level of strength, it is a relationship that warrants attention. Federal aid in the form of Pell Grants tends to cover more financial need, because community college tuition is lower than in other sectors of higher education. Therefore, Pell Grant aid in excess of tuition can be a crucial need for the lower income students to help cover non-tuition related expenses. Chen and DesJardins (2010) observed that a student's decision to drop out of college may vary by race and ethnicity and that cultural factors may play an important role in such decisions. Additionally cultural factors may provide interaction effects in regard to how students view financial aid and persistence decisions. Thus, the importance of knowing and understanding the racial and ethnic demographics, coupled with awareness of cultural differences among Pell Grant students, can contribute to opportunities to better address

the educational fiscal needs of the diverse ethnic population within an institution of higher education, thereby equalizing educational opportunities for students.

Limitations and Delimitations

Several limitations and delimitations bear mentioning as they impacted this study. Limitations are related to areas outside the control of the researcher, and delimitations are related to choices made in the study. A primary limitation in this study was that data were gathered from only one of the 28 Florida Colleges. Thus, the results cannot be generalized to the other Florida Colleges.

Additionally, the research analyses for Research Questions 1, 2, and 3 were conducted using chi-square tests of independence rather than logistical regression modeling. This means that only relationships were discovered. No predictors of retention, academic performance, or demographics could be ascertained. Using a regression model could provide the college in this study a way to better predict student academic success.

Finally, there was a limitation on the variables examined in the study. Some variables contained in the conceptual model, e.g., high school grade point average, could not be obtained for use in this study. Thus, this research did not address certain variables that could have a strong relationship to Pell Grant status, retention, and academic performance. When it comes to high school achievement, those students with high achievement levels tend to complete their college degrees more quickly than students who were lower achievers in high school (Goble et al., 2008). Therefore, high school

GPA, had it been included in the dataset of this study, may have been a factor that would show some level of relationship with Pell Grant student success.

The delimitations in this study revolved around reasons Pell Grant students may have for not persisting or performing at a level required to continue to receive this aid, various components not used yet mentioned in the conceptual framework, and the population of online Pell Grant students. In reference to the delimitation surrounding reasons for non-persistence, because a quantitative rather than qualitative methodology was chosen, the voices of the students were not captured. This made it impossible to explain their reasons for students either failing to complete their educational pursuits despite the availability of Pell Grants or their reasons for not succeeding in their coursework, thus preventing them from continuing their education with Pell Grant aid. Various challenges faced by Pell Grant students such as work or family responsibilities were noted in the literature review. Without conducting a qualitative analysis, however, individual reasons could not be obtained.

In reference to the delimitation of the unused variables contained in the conceptual model guiding this study, certain variables were not available to include when looking for relationships between Pell Grant status and variables such as high school GPA, hours of employment, or family responsibilities. These variables, though mentioned as limitations, could also be considered delimitations, because some were not collected by College S. They could have some relationship with a student's decision to persist in college or to succeed academically.

In consideration of the theoretical model used to guide this study, the Bean and Metzner model was a good choice in that it was developed to study non-traditional students. Non-traditional students typify those individuals who are found in the two-year college sector, such as part-time students, older students, and students who live off-campus. The weakness in using this model, however, is that a significant part of the model, such as psychological outcomes and social integration variables, were not taken into consideration in this study. These factors could affect a student's decision to drop out of college more so than the variables that were chosen to be used in this study. For example, family responsibilities, study habits, outside encouragement, stress, or satisfaction could, in some cases, have more importance in students' decisions to continue their college education. The use of the Bean and Metzner model provided more variables than could be obtained for this study and created a delimitation in the research.

A final delimitation was in the area of online education. Because this area has been mentioned in recent articles related to Pell Grant fraud, it has become an issue that should be of concern to financial aid professionals. Responsible use of Pell Grant dollars in online education is of concern for society and does warrant attention. Though the data related to online Pell Grant student retention and academic performance were available from College S, it was determined that the area of online education would warrant a different type of analysis and did not correlate with the conceptual framework that guided the study.

Implications for Policy and Practice

There are several implications for practice and policies which can be considered based on the findings in this study. These concern financial aid interventions as they relate to the potential impact on retention rates in the two-year sector of higher education and the ability to reduce societal concerns and criticisms of government spending and accountability in the Federal Pell Grant program.

When financial aid professionals and college administrators have data that suggest gaps in persistence or academic success between the Pell Grant students as opposed to the non-Pell Grant students, resources can be specifically targeted to the Pell Grant students to ensure the gap is not excessive. Additional financial aid counseling and advising may be warranted because lower income students, such as Pell Grant students, are often in need of counseling in order to navigate the complexities of Federal financial aid programs (Wilt, 2006). In the case of the study conducted with data from College S, the Pell Grant students had higher retention rates, yet lower academic success rates than the non-Pell Grant students, so financial aid counseling in the form of educating current students is suggested. Students should have an awareness as to the importance of strong academic study skills and the direct effect these skills have on their ability to continue to receive Pell Grants, thereby avoiding the potential denial of awards due to Standards of Academic Progress restrictions.

Successful Pell Grant student persistence is key to the success of the Pell Grant program. Because a major portion of U.S. Department of Education funding is comprised of Pell Grant costs (Bradley, 2013), understanding how Pell Grant aid affects

student success can play a large part in ensuring this program is achieving the intended outcomes. A college education is a benefit to society in many ways, and both institutions and society value programs that help student performance and success in achieving that goal. Knowing that Pell Grants increase the probability of re-enrollment and the potential for degree completion for the community college student population can, in turn, lead to a more positive public perception of federal educational aid programs. In the case of College S, knowing the likelihood of Pell Grant student persistence provides information that can be used in comparisons with other Florida colleges. It also provides the impetus for further support or even expansion of federal educational programs to financially needy students.

Student debt is also a concern for higher educational institutions, the government, and society in general. Thus, the implications related to institutional practice regarding how students finance their educations, especially those on Pell Grants, are worth noting. Although Pell Grants are not supposed to result in any student debt, there are instances where students end up in repayment situations if they have not completed the required amount of coursework funded through these grants. The Return of Title IV calculation that institutions must perform is described in the Federal Student Aid Handbook. College policies, procedures, and practices relative to potential Pell Grant debt should be both communicated and understood not only by students but by faculty and staff as well. The potential for students to fall in a Pell repayment situation can catch many students off guard, especially when they do not fully understand that the aid disbursed early in the term is not fully earned until they have successfully completed at least 60% of the term;

thus, the importance of understanding the Pell Grant student demographics. Institutions need to be cognizant of the relationship between Pell Grant status and demographics, i.e., enrollment status, residency, educational goals, age group, gender, and ethnicity. They need to recognize that certain metrics can be beneficial in the design of appropriate intervention strategies for students at risk of losing their Pell Grant eligibility.

While the results contained in this current study do not necessarily point to strong conclusions for policy changes, with public and legislative scrutiny on the responsible use of Pell Grant dollars, it may be time for federal regulations to tighten up areas where Pell abuse could be strongest. An area that stands out is the disbursing of Pell Grant refunds prior to the actual earn out period. While the intent is for students to be able to use the refunds for other educational expenses, there is some potential for irresponsibility since there is no accountability on how these funds were really used. A suggestion, therefore would be to disburse the amount of Pell funds that are needed to cover tuition and textbooks, with any remaining amount held until the earn out period has been completed.

Implications for Future Research

Given the growth and cost of the Pell Grant program, future research focusing on areas relative to persistence to degree completion for students utilizing federal grants is suggested. The current study showed the strongest relationship among the variables tested to be that of ethnicity and Pell Grant status. Thus, further research should be conducted to determine if there is a relationship between ethnicity and retention in the

community college sector, particularly in the Florida College System. As mentioned in the literature review, financial aid has impacts on risk of dropout among different ethnic/racial student groups (Chen & DesJardins, 2010). As the ethnicity variable had the highest effect size in this study, and given the differences in persistence patterns between Caucasian, African American and Hispanic students mentioned in the literature, future studies at College S or at other Florida institutions are warranted.

To better understand students' perspectives as to why students find themselves in repayment situations while on Pell Grants, a qualitative analysis would be advisable. Unless they know the true reasons why Pell Grant students withdraw or fail to finish their courses of study, colleges lack valuable information that could possibly help mitigate this problem. Students may not always understand the ramifications of their decisions to drop-out, and worse, they may not fully realize the fiscal dilemma in which they will place themselves due to the need for colleges to follow federal regulations for seeking reimbursement for over-awarded Pell Grant aid. It may be challenging to elicit this type of feedback from students who accept Pell Grant aid but fail to fully earn the aid by successfully finishing or passing their courses. However, obtaining this information directly from students could help institutions design more timely and helpful intervention strategies for their Pell Grant students.

The literature on retention is rich in information advocating for academic engagement as a key factor in retention. Designing a study to ascertain whether Pell Grant students are more academically engaged than non-Pell Grant students would add to the literature supporting continued expansion of these grants to students in need. Future

research in this area would be especially helpful to community colleges where academic engagement and academic integration occur differently than in the traditional four year college environment. Coupling the Pell Grant factor with academic engagement in community college studies could also provide relevant information to further validate or reduce some of the negative perceptions of Pell Grant attrition.

Correlating Pell Grant variables to uncollectible accounts in the Florida College system would also be advisable for future research. Uncollectible student accounts have an effect on a college's financial report. Thus, knowing what percentage of student uncollectible accounts are attributable to Pell Grants that students were either over awarded or failed to fully earn, would provide comparisons that would be useful to college administrators. Significantly higher college debt data of one institution in comparison with its counterparts could be used to investigate differences in financial aid collection practices. Although the Florida data related to the estimated amounts of uncollectible accounts receivable are available from audited financial statements, how much is attributable to Pell Grants that the student did not earn, yet received, is unknown. Therefore, future research in this area could provide useful information, especially given that Pell Grant-related student attrition could have a negative effect on a college's financial position.

Finally, replicating this study by using the same statistical analyses with data from the other 27 colleges in the Florida system would provide useful information for legislators and could ensure that College S is not statistically significantly different from the other Florida state colleges. Future research could also compare the data against

Florida universities or even against public colleges and universities in other states.

Though data collection for comparisons to other institutions may pose a challenge, the potential value of this information for comparative purposes and for Pell Grant accountability research cannot be ignored.

Summary

Community college students were the focus of this study because the effect of Pell Grants on these students is often more significant financially than for students in other sectors of higher education. Given the increased numbers of community college students receiving federal grants and the seemingly high attrition rate of lower income students, this study was conducted to explore student responsibility with Pell Grant aid by testing for relationships between retention, academic performance, and student demographics against Pell Grant status. Although all statistical tests performed showed statistically significant relationships, likely due to the large population size, most of the relationships were not very strong.

With increasing scrutiny from various sectors of society, the value of post-secondary education will continue to be explored and questioned. With community colleges mentioned in the literature as the fastest growing sector of higher education in this country, and given the large population of lower income students in this sector, using Pell Grant status as a key component of the study added to the knowledge base particularly for the relatively large public college used in this study. There was also a strong element of interest in performing this research study to somehow ascertain that

Pell Grant students in the two-year college sector did bear some responsibility to be serious and prudent in their educational endeavors, given the fact they were using taxpayer dollars to fund these educational pursuits. It is acknowledged that costs of the Pell Grant program which represents a major portion of U.S. Department of Education discretionary funding (Bradley, 2013) have been escalating.

Students who are the most apt to become financially constrained are also the students who tend to drop out of college prior to earning a degree (Singell, 2001). This is particularly concerning since governments both at the state and federal level spend billions of taxpayer dollars on community college students who do not return for their second year of college (Schneider & Yi (2011b). When students fail to succeed in obtaining a degree, it can be surmised that society did not reap the benefits that typically come from a more educated citizenry.

Therefore, the significance of this research was related to both studying the attrition problem of Pell Grant recipients and addressing the increased public urgency for accountability in how federal educational funds were allocated and used. There is a need to ensure that the public trust is not violated by growth in Pell Grant fraud or the decline in the responsible use of Pell Grant dollars. The outcome of this study relative to student retention and academic performance indicated that though Pell Grant students at College S had higher retention rates between terms, they did not necessarily perform as well academically as non-Pell students. Thus, since College S was found to be similar in both the average amounts of Pell Grant dollars and numbers of Pell Grant students to other

colleges in the Florida College System, this study could indicate a need to focus resources, interventions, or further studies into ways to reduce these Pell Grant issues.

CLOSING VIGNETTE

As fall term comes to a close, Professor Scholefield's Introduction to Accounting Principles class has gone from 30 students at the beginning of the term to 22 students who showed up to take the final exam. Based on her past experience, she tends to lose at least five students within the first two weeks of the course and at least one-third by the end of the term. This term, it is a bit more encouraging that she had only a 25% attrition rate rather than the typical 30%. Many of the students at her institution are on full Pell Grants and do not always realize the Pell Grant money that they perceive as "free," does come with certain requirements. Therefore, this term Professor Scholefield volunteered to become part of a new committee instituted by the Student Affairs and the Academic Affairs Vice Presidents. The committee worked closely with various Student Services departments to come up with strategies to help mitigate the attrition issue of Pell Grant students at her institution. She knows that the students on full Pell Grants typically receive a significant refund once their tuition and books are paid for, so it is very important they persist through their coursework so they do not incur debt back to the college. Knowing the important role faculty can play in student success, Professor Scholefield endeavored to become part of the solution to the Pell Grant student attrition issue. Two important steps the committee implemented this term were to communicate to the Financial Aid Office all students who stopped attending class prior to the initial Pell disbursement and beyond; and develop metrics to target the at-risk students. Though this did not prevent some early attrition of a few students in Professor Scholefield's class, she does have something to be proud of. As the last student comes forward to turn in her exam, Professor Scholefield smiles and realizes that this is the same student who came to her on the first day of class to inquire as to whether she marked her present since she had arrived in class late that first day.

APPENDIX A
PERMISSION TO USE CONCEPTUAL FRAMEWORK

RE: Seeking permission to use a figure from article

Binur, Michelle [Michelle.Binur@sagepub.com] on behalf of permissions (US)
[permissions@sagepub.com]
Sent: Friday, June 07, 2013 3:38 PM
To: lynnpowers@knights.ucf.edu

Dear Lynn,

Thank you for your request. Please consider this e-mail as permission to reprint the material as detailed below in

your upcoming dissertation. Please note that this permission does not cover any 3rd party material that may be found within the work. We do ask that you credit the original source. Please contact us for any further usage.

Good luck with your
dissertation.
Michelle Binur

From: Lynn Powers
[mailto:lynnpowers@knights.ucf.edu]
Sent: Saturday, June 01, 2013 11:20 AM
To: pubs
Subject: Seeking permission to use a figure from article

Hello,

I am a doctoral student at the University of Central Florida and in my dissertation work I am seeking permission from you to use a figure from a Review of Educational Research article.

The article citation is:

Bean, J., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research, 55*(4), 485-540.

The figure I am seeking permission to use is on page 491 and is entitled A Conceptual Model of Nontraditional Student Attrition.

Thanking you in advance for this consideration,

Lynn M. Powers

EdD Student, University of Central Florida

APPENDIX B
PERMISSION TO CONDUCT STUDY

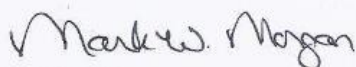
Dear Mrs. Powers:

As Associate Vice President of Institutional Effectiveness at [redacted], I also serve as Chair of the College's Institutional Review Board, reviewing research requests and data reviews. I am aware of your request to use data comparing Pell vs. non-Pell students and various demographic details to support your dissertation and doctoral requirements at the University of Central Florida. I am pleased to support and provide you with requested data and analyses.

Consistent with FERPA and IRB standards, any data provided and used by you will not have personally identifiable information and my department will eliminate information and sample sizes allowing personal identification.

The College and I are happy to support you in your endeavors.

Sincerely,



Dr. Mark W. Morgan
Associate Vice President, Institutional Effectiveness

APPENDIX C
INSTITUTIONAL REVIEW BOARD APPROVAL



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

From : **UCF Institutional Review Board #1
FWA0000351, IRB0001138**
To : **Lynn M. Powers**
Date : **July 31, 2013**

Dear Researcher:

On 7/31/2013 the IRB determined that the following proposed activity is not human research as defined by DHHS regulations at 45 CFR 46 or FDA regulations at 21 CFR 50/56:

Type of Review: Not Human Research Determination
Project Title: Student Responsibility With Federal Pell Grant Aid in a
Florida Public State College
Investigator: Lynn M. Powers
IRB ID: SBE-13-09493
Funding Agency:
Grant Title:
Research ID: N/A

University of Central Florida IRB review and approval is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are to be made and there are questions about whether these activities are research involving human subjects, please contact the IRB office to discuss the proposed changes.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 07/31/2013 10:22:13 AM EDT

IRB Coordinator

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