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The Influence of Selected Personal and Academic Demographic Characteristics on Retention from Fourth to Fifth Semester of Enrollment Among Traditional-Age Undergraduate Students at a Research Extensive University in the Southern Portion of the United States

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THE INFLUENCE OF SELECTED PERSONAL AND ACADEMIC DEMOGRAPHIC CHARACTERISTICS ON RETENTION FROM FOURTH TO FIFTH SEMESTER OF ENROLLMENT AMONG TRADITIONAL-AGE UNDERGRADUATE STUDENTS AT A RESEARCH EXTENSIVE UNIVERSITY IN THE SOUTHERN PORTION OF THE UNITED STATES

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To my beautiful daughter, Erica: When you left this Earth after 13 years, my sweet girl, I promised you that I would work hard every day to make you proud of me until that glorious day when we wrap our arms around each other again forever. My first born, my daughter-what a blessing and an honor to be your mom. You had an old soul and the biggest and kindest heart of any person I've met to this day. You taught me so much about life, love, and spirituality in the short time you were here.

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ABSTRACT

While many Americans may be questioning the value of a college degree due to rising costs, on virtually every measure of economic well-being and career attainment—from personal earnings to job satisfaction to the share employed full time—young college graduates are outperforming their peers with less education. Yet college dropout rates indicate that up to 32.9% of undergraduates do not complete their degree program, which has a financial impact on both students and the universities and colleges where they enroll (Hanson, 2022).

Historically, students who leave college before completing a baccalaureate degree are no better qualified than those with a high school diploma are. According to Hanson (2022), college dropouts make an average of 32.6% less income than bachelor's degree holders and are 19.6% more likely to be unemployed than any degree holder.

The purpose of this descriptive correlation study is to determine the influence of selected personal and academic demographic characteristics on the retention from the fourth to fifth semester among first time, enrolled, traditional age, undergraduate students at a research-intensive university located in the southern portion of the United States. The research and findings of this study could be critical in setting up interventions and programs to decrease dropout rates and increase persistence to graduation. The data analyzed for this study was archived information extracted and provided by the study institution's Office of the University Registrar. Data collected and analyzed included the demographic and academic variables selected from the review of literature.

Findings of the study revealed two substantively significant factors influence retention from the fourth to fifth semester among first time, enrolled, traditional age, undergraduate students at a research-intensive university in the South: the two most important factors in

retaining students from the fourth to fifth semester is “First Semester GPA” are “First Semester Earned Credits.” Focusing on first-semester GPA and first semester earned credits is especially useful and advantageous because it is the initial academic outcomes that are an early warning sign that a student may not persist. Both also occur early enough in a student’s academic journey to allow for intervention efforts.

CHAPTER I. RATIONALE

Statement of the Problem

With the rising cost of higher education and the soaring amount of student debt in the United States, many Americans are questioning the value of a college education. However, according to the Pew Research Center (2014), on virtually every measure of economic well-being and career attainment—from personal earnings to job satisfaction to the share employed full time—young college graduates are outperforming their peers with less education.

Pew also compared today's young adults with previous generations and found that the disparity in economic outcomes between college graduates and those with a high school diploma or less formal schooling has never been greater in the modern era. Pew Research Center surveyed 2,002 adults and supplemented the results with an analysis of economic data from the U.S. Census Bureau. Results showed that Millennial college graduates ages 25 to 32 who are working full time earn more annually—about $17,500 more—than employed young adults holding only a high school diploma.

According to a report by the Education Data Initiative (Hanson, 2022), college dropout rates indicate that up to 32.9% of undergraduates do not complete their degree program. Among first-time bachelor's degree seekers, 25.7% ultimately drop out. In July 2020, 39 million Americans were college dropouts. Not completing an undergraduate degree has a financial impact. Historically, students who leave college before completing a baccalaureate degree are no better qualified than those with a high school diploma. According to Hanson, college dropouts make an average of 32.6% less income than bachelor's degree holders and are 19.6% more likely to be unemployed than any degree holder.

Many factors influence whether or not a student completes college, such as academic and personal qualities or the availability of resources such as academic assistance programs at a university. Generally, students who persist into their third year of college have a much greater likelihood of completing a bachelor's degree. What influences students to make it into the fourth semester can help them persist and enroll in their third year of college. Are personal characteristics, academic characteristics, or a combination of both likely to have an impact on higher education retention rates? These characteristics may include:

- Gender;
- High school type attended (public or private);
- Race/Ethnicity;
- College major;
- High school grade point average;
- College entrance examination (ACT/SAT) composite scores;
- Credit hours attempted;
- Credit hours earned;
- Semester GPA;
- Cumulative GPA;
- Receipt of scholarship or financial aid.

Purpose of the Study

Therefore, the purpose of this study is to determine the influence of selected personal and academic demographic characteristics on the retention from the fourth to fifth semester among first time, enrolled, traditional age, undergraduate students at a research-intensive university located in the southern portion of the United States.

Objectives

This study will utilize the personal and academic demographic characteristics listed above and be guided by the following objectives:

- To describe incoming first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were retained from the fourth to fifth semester of enrollment;
- To describe incoming, first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were not retained from the fourth to the fifth semester of enrollment;
- To compare incoming undergraduate students at a research-intensive university in the southern portion of the United States by whether or not they were retained from their fourth to fifth semester of enrollment;
- To determine if a model exists that significantly increases the researcher's ability to correctly classify incoming undergraduate students at a research-intensive university in the southern portion of the United States on whether or not they were retained from their fourth to fifth semester of enrollment;
- To determine if a model exists that explains a significant portion of the variance in fourth semester cumulative GPA of undergraduate students at a research-intensive university in the southern portion of the United States on whether or not they were retained from their fourth to fifth semester of enrollment.

CHAPTER II. LITERATURE REVIEW

Importance of Higher Education

Education is an institution that typically is established through a collective social desire to have civil and supportive societies. If one considers the social dynamic found in many countries around the world, there is the suggestion that usually the more education people have, the better off they can be personally and professionally.

In a 2012 weekly radio and Internet address, former President Barack Obama said, “Higher education can't be a luxury — it is an economic imperative that every family in America should be able to afford," During his presidency, Obama set a goal for America to have the highest proportion of college graduates in the world by 2020. Federal and state governments across the United States also realize the importance of education in society.

According to the United Nations, education is a right to which all human beings are entitled. Although the right to primary education enjoys broad recognition in human rights law, the human right to higher education is not as fully developed (Gilchrist, 2018).

The National Center for Education Statistics (NCES) noted that as of the 2016-2017 academic year, there was 4,360 higher education institutions in the U.S., including both colleges and universities. While the most obvious and measurable characteristic of American higher education is its numerical size in terms of students, faculty, and institutions, it is all too often too easy to overlook its other features, such as the democratic diversification of the student bodies, the open door to racial, ethnic, religious, and economic minorities, the widespread opportunities for women, the broadened concept of curriculum, and so forth (Brickman 1972).

The United States experienced a dramatic increase in college enrollment and completion over the past 80 years. In 1950, only 7.7 percent of people in the United States age 25 to 29 had a

bachelor's degree or more, but this number tripled to 22.5 percent in 1980, and further increased to 31.7 percent by 2010 (Snyder, de Brey, and Dillow 2018).

However, a Pew Research Center survey (2015) finds that only half of American adults think colleges and universities are having a positive effect on the way things are going in the country these days (2017). About four-in-ten, (38%), say they are having a negative impact – up from 26% in 2012.

Gallup found a similar shift in views about higher education. Between 2015 and 2018, the share of Americans saying they had a great deal or quite a lot of confidence in higher education dropped from 57% to 48%. This poll found that Americans with positive opinions of higher education, including both Republicans and Democrats, cite their own experiences at college as a reason for their confidence in it. Getting more Americans to pursue higher education, particularly if it leads to an engaging and stable career, is one way to help reverse the downward trend in higher-education confidence. Another factor affecting enrollment and retention of college students is the rising cost of attending college.

According to a study by the University of Michigan Center of Assets, Education, and Inclusion, a $1,000 increase in student debt is associated with a 3% increase in students dropping out of college and debt over a certain amount (about $10,000) may depress graduation rates and harm post-college financial security, especially for those in the bottom 75% of the income distribution. The study also showed that as the student debt threshold level increases so too does the dropout level, particularly for poor and minority students. A higher student loan debt in the first year of college may be associated with lower probabilities of graduating from college among low-income and Black students.

College Degree Benefits

An extensive body of research, including results from Pew Research Center, has argued that obtaining a college diploma is a good deal for graduates on almost any measure – from higher earnings to lower unemployment rates. Research showed that people without a college degree can find their upward mobility in the job market limited by a lack of educational credentials: The survey found that one-third of Americans who lack a four-year college degree report that they have declined to apply for a job they felt they were qualified for, because that job required a bachelor's degree. Based on data from the United States Bureau of Labor Statistics, college graduates earn $1,416 median weekly earnings compared to $789 for high school graduates (U.S. Bureau of Labor Statistics, July 2020).

- The median annual salary of college graduates in the U.S. is $45,000 compared to $30,000 for high school graduates (Wall Street Journal).
- 83% of college graduates are employed vs. 68.8% (U.S. Census Bureau, 2018).
- There is 3.5x lower poverty rate among college graduates vs. high school graduates (Association of Public 7 Land-Grant Universities).
- About 99% of jobs created since the 2008 recession were awarded to candidates with postsecondary degrees. (Georgetown University).

College Dropout Theoretical Models

Literature defines student graduation or student success in terms of retention rates. Hagedorn (2005) defines retention rate as first-time freshmen students who graduate within six years of their original enrollment date. Druzdel and Glymour (1999) define "student retention rate" as the percent of entering freshmen who eventually graduate from the university where they

enrolled as a freshman. Freshmen persistence is usually defined in terms of returning students who re-enroll after their first year for the sophomore semester.

Despite the very extensive literature on dropout from higher education, much remains unknown about the nature of the dropout process. In large measure, the failure of past research to delineate more clearly the multiple characteristics of dropout can be traced to two major shortcomings; namely, inadequate attention given to questions of definition and to the development of theoretical models that seek to explain, not simply to describe, the processes that bring individuals to leave institutions of higher education out from higher education.

In both cases, the failure to define dropout adequately can have significant impact upon questions of policy in higher education (Tinto, 2023). From the institutional perspective, administrators may be unable to identify target populations requiring specific forms of assistance. From the wider perspective of the state, planners may not be able to provide flexible admission and transfer procedures that permit individuals to find a niche in some part of the higher educational system more easily, according to Tinto.

The theoretical model for dropout behavior has its roots in Durkheim's Theory of Suicide. According to Durkheim (1951), suicide is more likely to occur when individuals are insufficiently integrated into the fabric of society. Specifically, the likelihood of suicide in society increases when two types of integration are lacking-namely, insufficient moral (value) integration and insufficient collective affiliation. Durkheim saw this as the outcome of one's holding values being highly divergent from those of the social collectivity or the result of insufficient personal interaction with other members of the collectivity.

If college is viewed as a social system with its own value and social structures, one can treat dropout from that social system in a manner analogous to that of suicide in the wider

society (Spady, 19). Therefore, according to Spady, social conditions affecting dropout from the social system of the college would resemble those resulting in suicide in the wider society; namely, insufficient interactions with others in the col insufficient congruency with the prevailing value patterns of the college collectivity. He presumed that lack of integration into the social system of the college will lead to low commitment to that social system and increase the probability that individuals will decide to leave college and pursue alternative activities.

Since colleges are made up of both social and academic systems, it is important to distinguish between normative and structural integration in the academic domain of the college from that in the social domain of the college. Spady felt it was necessary because of the direct relationship between a person's participation in the academic domain of the college and their future occupational attainment, and because withdrawal from college can arise either from voluntary withdrawal (like suicide) or from forced withdrawal (dismissal), which arises primarily, though not necessarily, from insufficient levels of academic performance (poor grades) and/or from the breaking of established rules concerning proper social and academic behavior (e.g., student strikes, stealing exams, etc.).

Distinguishing between the academic and social domains of the college further suggests that a person may be able to achieve integration in one area without doing so in the other. In other words, a person can be integrated into the social sphere of the college and still drop out because of insufficient integration into the academic domain of the college (e.g., through poor grade performance) or perform adequately in the academic domain and still drop out because of insufficient integration into the social life of the institution (e.g., through voluntary withdrawal).

One critic of Durkheim’s theory was Tinto. He felt the model had one big drawback: its failure to take into account individual psychological characteristics that predispose some

individuals to suicide. Any model of dropout from higher education based solely on Durkheim's theory would fail to pay enough attention to the individual characteristics of a person that would make them more likely to drop out of higher education than their peers.

Durkheim's theory of suicide does not provide a theory of dropout that explains how individuals adopt various forms of dropout behavior. It is more descriptive of the conditions under which various types of dropouts occur. To develop a theoretical model of dropout from college, one which seeks to explain the longitudinal process of interactions that lead differing persons to varying forms of persistence and/or dropout behavior, one must build into the model sets of individual characteristics and dispositions relevant to educational persistence.

Vincent Tinto's Student Integration Model (SIM) of attrition (1975) was based on Durkheim's theory of suicide, and it sought to clarify all of the aspects and processes that might influence an individual's decision to leave college, as well as how these processes interact to produce attrition. The degree to which the individual is integrated into the social and academic aspects of a university, student commitment to their goal of degree attainment and student commitment to the university was the base of the model. Tinto's SIM of attrition served as the conceptual framework for this study.

Tinto suggested that one must include not only background characteristics of individuals such as those measured by social status, high school experiences, community of residence, etc., and individual attributes such as sex, ability, race, and ethnicity, but also expectational and motivational attributes of individuals, such as those measured by career and educational expectations and levels of motivation for academic achievement. The characteristics that Tinto highlights as being important in influencing an individual's goal and institutional commitment are individual attribute variables such as race, sex, and academic ability, as well as precollege

experience, and family background. Precollege experience is defined as social and academic experiences, including school grade point average and academic and social attainments. Family background included variables such as social status, value climates, and expectational climates.

Tinto asserts that while individual characteristics, and the individual's social and academic integration are the most important determinants in whether or not a student persists in higher education, it is the interaction between the students' individual commitment to the goal of college completion and their commitment to the specific educational institution that finally determines whether or not they drop out.

One of Tinto's research goals was to differentiate between different types of leaving behavior, as there are a number of ways in which a student may choose to or be forced to leave college. The different types of leaving behavior Tinto identified included academic failure, voluntary withdrawal, permanent dropout, temporary dropout, and transfer.

Although Tinto's Student Integration Model of persistence has been the dominant model of student attrition, it is not universally accepted and has a number of critics. The most consistent criticism made of Tinto's model is that it is applicable solely to a traditional residential type of students and is not generalizable beyond students who are residents on or near, campus and who enter college directly after leaving high school (Rovai, 2002). There are studies that highlight an inability to successfully apply Tinto's model to non-traditional students including disabled students, ethnic minorities, distance learners, etc. There is also evidence that suggests that academic integration may not be an important predictor of student attrition in non-traditional student groups.

College Dropout Impacts

College dropout rates indicate that up to 32.9% of undergraduates do not complete their degree program (Hanson, 2022), There are a multitude of reasons why college students drop out of college each year including academic struggles, financial difficulties, a strong job market, the rising cost of attending college, family obligations, mental or physical struggles, desire to start a business, etc. COVID-19 and inflation have also increased the number of college dropouts.

According to Hanson, first-time undergraduate freshmen have a 12-month dropout rate of 24.1%, and 39 million Americans were college dropouts in July 2020. The percentage of college dropouts can be even higher among students who are the first in their families to attend college. According to Hanson, up to 89% of low-income first-generation students who are the first in their families to attend college leave without a degree.

Hanson also states that college dropouts make an average of 32.6% less income than bachelor's degree holders and are 19.6% more likely to be unemployed than any degree holder. Historically, students who leave college before completing a baccalaureate degree are no better qualified for the job market than those with a high school diploma. Educational attainment signals to employers that a jobseeker is desirable (Spence 1973).

There is also a financial impact on universities when students drop out prior to completing a degree. There are two primary costs of a drop out: 1) lost tuition revenue, and 2) cost of recruiting a new student to replace the drop out. The Ruffalo Noel Levitz Cost of Recruiting an Undergraduate Student Report (2018) said the median cost to recruit a single undergraduate student is $536 at a public institution and $2,357 at a private institution.

These costs include full-time staff, marketing, recruiting events, travel, website development and maintenance, international recruitment, etc. After summing the dropouts from

bachelor's and associate's programs and distributing those dropouts between out-of-state and in-state students, they estimated a $27.1 billion dollar loss for US institutions every single year. This does not include the cost of establishing higher education intervention programs to reduce the number of college dropouts.

According to the American College Testing (ACT) report on college student retention and graduation rates from 1991 to 2012, the percent student graduation for all institutions within five years in 2012 was approximately 51.9%. The overall student graduation for all institutions decreased from 54.4% to 51.9% from 1991 to 2012. These numbers signify that student graduation rates decreased during this 20-year period.

The percentage of first-year students returning to their second year of college also decreased from 1991 to 2012 (ACT, 2012). This has led to extensive research on undergraduate student retention problems in order to identify individual and institutional factors that lead to completion or non-completion of a degree.

Retention Efforts

Retention is the ability of an institution and student to realize the student's progression to completion, and most studies consider graduation as the ultimate success goal of the student. There are some researchers who consider attrition rate instead, which is the proportion of students who dropped out of their studies before completing the program degree.

The students who are likely to drop out, according to certain factors and signs, are identified as "at risk" students, and research shows that the earlier intervention takes place, the better the chance of the student persisting to graduation. Most freshmen students entering college are not prepared to make a successful shift from high school to college and may be underprepared to face several challenges in college transition, which can be very stressful (Lu,

1994). Universities with high student dropout rates go through loss of fees, tuition, and potential alumni contributors (DeBerrad, Spielman, & Julka, 2004). Students who drop out often leave college with student loan debt and no advantage in the workforce over those with no college.

Astin (1977) developed the theory of student involvement using hundreds of colleges and university data. The student involvement theory defined involvement as "the amount of physical and psychological energy that the student devotes to academic experience." This theory focused on predicting retention using relationships between student demographics like age, race, and gender, etc., and institutional characteristics such as location, size with the level of academic and social involvement (Astin, 1985, 1977).

Bean (1980) developed the student attrition model. The student attrition model stresses the fact that a student's experience at their college plays a key role in their decision to stay or leave. This model is based on the communications of student attitudes and their behaviors that affect their satisfaction in college. The theory concludes that student satisfaction is weighted by factors like campus life, club affiliation, grades, values, parental influence, peer support, rewards, and penalty (Ishitani & DesJardins, 2002)

Federal and state governments across the United States realize the importance of higher education in achieving a better economy and have been offering a variety of programs to improve students' graduation rate. Universities have developed intervention programs to reduce student dropout rates (Siedman, 2005). Regardless of these intensive efforts to improve student graduation; dropout rates are still high across the United States (Yu, DiGangi, Jannasch-Pennell, & Kaprolet, 2010).

What many universities and agencies have discovered is that in many cases the intervention effort comes too late to prevent the student from dropping out of college. It would

be beneficial if universities knew which academic and personal characteristics could predict persistence to graduation, so intervention efforts could be designed earlier around warning signs that a student is becoming unsuccessful in pursuing a degree.

More research studies indicate that early identification of dropout students and intervention programs are key aspects that can lead to student graduation. Braxton, Sullivan, and Johnson (1997) suggested that understanding student data that leads to student dropout is a complicated problem, even though there is plenty of research implying some common variables related to student graduation. The complexity of understanding the factors that affect student graduation at more than 3,600 universities in the United States is due to location, student demographics, and funding differences.

College Persistence Indicators

Three decades of research focused on persistence reveals that the topic is complex in that it represents a blending of individual personal, academic, and background characteristics with higher education institutions, as well as a transition between arguably structured educational experience (high school) to a wide range of settings, climates, and cultures that characterize colleges and universities. There are still early signs of the risk that a student will not complete a degree. These signs or indicators may allow high schools and institutions of higher education to target support to students while they are still in school, as well as examine patterns over time. Tracking these indicators may enable higher education institutions to meet accountability measures to improve degree completion rates (Therriault, Krivoshein, 2014).

There have also been numerous studies supporting academic ability as an exceedingly important variable leading to student graduation. While enrolled in college, indicators related to students' academic behavior and social experience are predictive of whether a student will

persist in college. Traditional demographic variables are often examined when predicting the likelihood of student retention. Age, gender, ethnicity, high school grade point average, and standardized test scores are often found to be significant in studies examining retention (Clark & Cundiff, 2011; Jamelske, 2009; Liu & Liu, 1999; Porter & Swing, 2006; Shivpuri, Schmitt, Oswald, & Kim, 2006). Preparedness, from a perception standpoint, can give additional insight into students' ability to persist when facing the challenges of the high school to college transition phase (Gaertner & McClarty, 2015).

Once a student has transitioned from high school to college, there are many factors that influence whether they will persist to graduation. Although there have been many studies involving students' race, income, precollege preparation, and cumulative grade point average (GPA) as predictors of retention and graduation from four-year colleges and universities (Attewell, Heil, & Reisel, 2011; Mettler, 2011; Reason, 2003), there are very few studies that focus on first-semester GPA.

Academic behaviors center on a student's college academic performance and desire for intellectual development (Terenzini & Pascarella, 1980; Tinto, 1975, 1997). There are a number of ways in which academic behaviors can be captured as relatively simple indicators, but the primary measures in previous research are participation in remedial courses and grade point average (GPA).

The United States experienced a dramatic increase in college enrollment and completion over the past 80 years. In 1950, only 7.7 percent of people in the United States age 25 to 29 had a bachelor's degree or more, but this number tripled to 22.5 percent in 1980, and further increased to 31.7 percent by 2010 (Snyder, de Brey, and Dillow 2018).

Nara, Barlow, and Crisp (2005) suggested a major gap in literature on retaining students past their freshmen year. Although freshmen to sophomore year or sophomore to senior year is an important indicator of student success towards graduation, this year alone does not completely explain student graduation success. It is important to identify associated retention variables to fully understand persistence to graduation and attrition.

Research from the Pew Center provides data on race and gender and its influence on college graduation. According to the Pew Center (2021), there are racial and ethnic differences in college graduation patterns, as well as in the reasons for not completing a degree. Among adults ages 25 and older, 61% of Asian Americans have a bachelor's degree or more education, along with 42% of White adults, 28% of Black adults and 21% of Hispanic adults. The survey they conducted indicated that among adults without a bachelor's degree, Hispanic adults (52%) were more likely than those who are White (39%) or Black (41%) to say a major reason they did not graduate from a four-year college is that they could not afford it. Hispanic and Black adults were more likely than their White counterparts to say needing to work to support their family was a major reason.

In a reversal of trends, the Pew survey indicates that women are now more likely than men to graduate from college. In surveying Americans without a degree, 34% of men said a major reason why they have not received a four-year college degree is that they just did not want to do it. Only one-in-four women said the same. Men were also more likely to say a major reason they did not have a four-year degree is because they did not need more education for the job or career they wanted to pursue.

CHAPTER III. METHODOLOGY

Purpose of the Study

The primary purpose of this study was to determine the influence of selected personal and academic demographic characteristics on the retention from the fourth to fifth semester among first time, enrolled, traditional age, undergraduate students at a research-intensive university located in the southern portion of the United States. The dependent variable of the study is whether or not students were retained from the fourth to fifth semester of enrollment.

Objectives of the Study

To guide this research, the following specific objectives were formulated:

1. The first objective of this study was to describe incoming first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were retained from the fourth to fifth semester on the following selected personal and academic demographic characteristics:
    a. Gender;
    b. High school type attended (public or private);
    c. Race/Ethnicity;
    d. First semester major;
    e. Fourth semester major;
    f. High school grade point average (GPA);
    g. College entrance examination (ACT/SAT) composite scores;
    h. Credit hours student attempted in each of the first four semesters of college enrollment;
    i. Credit hours student earned in each of the first four semesters of college

enrollment;

j. Semester GPA achieved in each of the first four semesters of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

2. The second objective of this study was to describe incoming, first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were not retained from the fourth to the fifth semester on the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

3. The third objective of this study was to compare incoming undergraduate students at a research-intensive university in the southern portion of the United States by whether or not they were retained from their fourth to fifth semester of enrollment on the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

4. The fourth objective of this study was to determine if a model exists that significantly increases the researcher's ability to correctly classify incoming undergraduate students at a research-intensive university in the southern portion of the United States on whether or not they were retained from their fourth to fifth semester of college enrollment from the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

5. The fifth objective of the study was to determine if a model exists that explains a significant portion of the variance in fourth semester cumulative GPA of undergraduate students at a research-intensive university in the southern portion of the United States from the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

Population and Sample

The target population for this study was defined as incoming first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States during the 2014-2015 academic year. The sampling plan for this study consisted of the following steps:

a. The accessible population was defined as all incoming first time, enrolled, traditional age, undergraduate students who were enrolled in one selected research-intensive university in the southern part of the United States in the 2014-2015 academic year. These students were identified following the 14th class-day statistics contained in a database of the study institution's Office of the University Registrar;

b. This accessible population was divided into two groups: those who were retained from the fourth semester to the fifth semester of enrollment and those who were not retained from the fourth semester to the fifth semester of enrollment.

The sample was defined as 100% of the accessible population. This data was obtained from the study institution's Office of the University Registrar.

Instrumentation

After receiving approval to proceed from the Institutional Review Board (IRB) and the dissertation committee, the researcher designed a computerized recording form to be utilized to collect and store data from the Office of the University Registrar. Determining which variables to measure was determined by the review of literature and from the study institution's Office of the University's Registrar. (See Appendix A). This information was downloaded into an SPSS file that serves as the research instrument. The variables that were downloaded included:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

Data Collection

The researcher first applied for Exemption from Institutional Oversight from the IRB because the accessible population and sample did not involve a vulnerable population, and

participants would not be identified. Once approval was received from the IRB and the dissertation advisory committee, the researcher designed a computerized recording form for collection and organization of data. The researcher then contacted the Office of the University Registrar and provided a copy of the Exemption for Institutional Oversight for computer assistance to collect data for the demographic and academic variables selected from the review of literature. The requested data was extracted by the Office of the University Registrar. Once the data was shared with the researcher, the researcher concluded the data collection phase by transferring all collected data to the computerized recording form. In accordance with the Exemption from Institutional Oversight and prior to conducting any analyses, individual identification information was deleted.

Chapter IV. FINDINGS

Purpose of Study

The purpose of this study was to determine the influence of selected personal and academic demographic characteristics on the retention from the fourth to fifth semester among first time, enrolled, traditional age, undergraduate students at a research-intensive university located in the southern portion of the United States. The dependent variable of this study was whether or not the first time enrolled, traditional age undergraduate students were retained from the fourth to fifth semester.

Objectives

The following objectives were developed to guide this study:

1. To describe incoming first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were retained from the fourth to fifth semester on the following selected personal and academic demographic characteristics:
    a. Gender;
    b. High school type attended (public or private);
    c. Race/Ethnicity;
    d. First semester major;
    e. Fourth semester major;
    f. High school grade point average (GPA);
    g. College entrance examination (ACT/SAT) composite scores;
    h. Credit hours student attempted in each of the first four semesters of enrollment;

i. Credit hours student earned in each of the first four semesters of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

2. To describe incoming, first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were not retained from the fourth to the fifth semester on the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

3. To compare incoming undergraduate students at a research-intensive university in the southern portion of the United States by whether or not they were retained from their fourth to fifth semester of enrollment on the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

4. To determine if a model exists that significantly increases the researcher's ability to correctly classify incoming undergraduate students at a research-intensive university in the southern portion of the United States on whether or not they were retained from their fourth to fifth semester of college enrollment from the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

5. To determine if a model exists that explains a significant portion of the variance in fourth semester cumulative GPA of undergraduate students at a research-intensive university in the southern portion of the United States from the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

Objective One Results

The first objective of the study was to describe incoming, first time, enrolled, traditional age, undergraduate students at a research university in the southern part of the United States who were retained from the fourth to fifth semester on the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

There were 3,743 students who met the criteria of this objective. The results for each of these variables are as follows:

Gender

The first variable used to describe these students was gender. Of the 3,743 students included in the study, 2,044 (54.6%) were identified as female and 1,699 (45.4%) were identified as male.

High School Type Attended-Public or Private

The second variable used to describe these students was the type of high school (public or private) attended. Of the 3,743 students included in the study, 2,087 (55.8%) attended public schools and 1,656 (44.2%) attended private school.

Race/Ethnicity

Race/Ethnicity is another variable in which the students were described. Of the 3,743 students included in the study, the majority of students were White (*n*=2,855, 76.3%). The second largest group of students was Black or African American (*n*=358, 9.6%). This data is presented in Table 4.1.

Table 4.1. Race/Ethnicity of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Retained from the Fourth to Fifth Semester

Race/Ethnicity	Frequency	Percent
White	2855	76.3
Black/African American	358	9.6
Hispanic	236	6.3
Asian	175	4.7
Multi-Racial	100	2.7
Race/Ethnicity	Frequency	Percent
Native American or Alaskan Native	7	.2

(table cont'd.)

Race/Ethnicity	Frequency	Percent
Native Hawaiian or Pacific Islander	3	.1
Total	3734	99.9

Note. Information was not available for 9 of the students in the study.

First Semester Major

An additional variable used to describe the students was first semester major (Fall 2014). Of the 3,743 students included in this study, the largest number of students selected Biology as a desired major (*n*=392, 10.5%). The next highest number of students selected Petroleum Engineering as a desired major (*n*=264, 7.1%). A list of the top ten majors for these students is presented in Table 4.2. A complete list is presented in.

Table 4.2. Ten Most Frequently Reported First Semester Majors of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Retained from the Fourth to Fifth Semester

Major	Frequency	Percent
Biology	392	10.5
Petroleum Engineering	264	7.1
Mechanical Engineering	215	5.7
Mass Communication	194	5.2
General Business	183	4.9
Kinesiology	174	4.6
Chemical Engineering	169	4.5
Undecided-Sciences & Engineering	164	4.4
Psychology	110	2.9
Accounting	93	2.5

Fourth Semester Major

Another variable used to describe the students was fourth semester major. Of the 3,743 students included in this study, the largest number of students were Business Administration majors in their fourth semester (*n*=282, 7.5%) and the second largest number of students were Biology majors (*n*=261, 7.0%). Data for the ten most frequently reported fourth semester majors for the students in this study is included in Table 4.3.

These students' majors were further described as STEM or non-STEM majors. Of the 3,743 students in this study, 2,290 or 61.2% selected STEM majors while 1,451 or 38.8% selected non-STEM majors. Two students did not have data regarding STEM or non-STEM classification of their majors.

Table 4.3. Ten Most Frequently Reported Fourth Semester Majors of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Retained from the Fourth to Fifth Semester

Major	Frequency	Percent
Business Administration	282	7.5
Biology	261	7.0
Mechanical Engineering	186	5.0
Kinesiology	180	4.8
Chemical Engineering	158	4.2
Mass Communication	134	3.6
Petroleum Engineering	121	3.2
Pre-Education	119	3.2
Psychology	114	3.0
Accounting	101	2.7

High School Grade Point Average (GPA)

High school grade point average (GPA) is an additional variable used to describe the students in this study. Of those 3,743 students, the largest number of students earned a high school GPA of 3.75-3.99 (*n*=960, 24.4%) and the second highest high school GPA earned was 4.0 (*n*=255, 6.8%). Data for the ten most frequent high school GPAs for this group of students is included in Table 4.4.

Table 4.4. High School GPAs of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Retained from the Fourth to Fifth Semester

GPA Category	Frequency	Percent
4.0 or Higher	255	6.8
3.75-3.99	960	24.4
3.50-3.74	875	23.0
3.25-3.49	854	23.7
3.00-3.24	494	13.4
2.75-2.99	159	4.2

(table cont'd.)

GPA Category	Frequency	Percent
2.74.-2.30	30	.8
2.29-2.49	5	.0
Total	3743	100.0

Note. **Mean=355, SD=0.321, Range from 2.29 to 4.00**

College Entrance Examination (ACT/SAT) Composite Scores

College entrance examination (ACT/SAT) composite scores are a variable used to describe this group of students. Of the 3,743 students included in this study, the largest number of students earned a 24-25 on college entrance examinations (*n*=790, 21.1%) with the second largest number of students earning a score of 26-27 (n=708, 18.9%) on the exam. Data for the top five college entrance examination (ACT/SAT) composite scores is included in Table 4.5.

Table 4.5. College Entrance Examination (ACT/SAT) Composite Scores of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Who Were Retained from the Fourth to Fifth Semester

ACT/SAT Composite Scores	Frequency	Percent
36	3	.1
34-35	57	1.5
32-33	173	4.6
30-31	381	10.2
28-29	590	15.8
26-27	708	18.9
24-25	790	21.1
22-23	648	17.3
20-21	321	8.6
18-29	63	1.7
17 or Less	8	.2
Total	3742	100

Note: Mean 25.85, SD 3.494, Min-Max 16-36.
One subject did not have an ACT/SAT reported.

Credit Hours Student Attempted in Their First Semester of Enrollment

The number of credit hours a student attempted in their first semester of enrollment at the university is another variable utilized to describe the students in this study. Of the 3,743 students in this study, the largest number attempted 15 credit hours in the first semester of enrollment

(*n*=1,182, 31.6%) and the second largest group attempted 12 credit hours in each of their first four semesters of enrollment (*n*= 646, 17.3%). Data on the credit hours students attempted in their first semester of enrollment is included in Table 4.6.

Table 4.6. Credit Hours Attempted in The First Semester of Enrollment for Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Retained from the Fourth to Fifth Semester

Credit Hours	Frequency	Percent
19	2	.1
18	37	1.0
17	192	5.1
16	589	15.7
15	1182	31.6
14	486	13.0
13	424	11.3
12	646	17.3
11	63	1.7
10	55	1.5
9	49	1.3
8	4	.1
7	10	.3
6	4	.1
Total	3743	100.0

Note. $\bar{x}$ = 14.16, SD =1.819, Range (6-19)

Credit Hours Students Earned in Their First Semester of Enrollment

The number of credit hours students earned in their first semester of enrollment is a variable used to describe the students in this study. Of the 3,743 students in the study, the largest number of students earned 15 (*n*=1,068, 28.5%) credit hours. The second largest group of students earned 12 credit hours in each of their first semesters of enrollment (*n*=609, 16.3%). Data on the credit hours students earned in their first semester of enrollment at the university is presented in Table 4.7.

Table 4.7. Credit Hours Earned in the First Semester of Enrollment for Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Who Were Retained from the Fourth to Fifth Semester

Credit Hours	Frequency	Percent
19	2	.1
18	37	1.0
17	183	4,9
16	568	15.2
15	1068	28.5
14	407	10.9
13	382	10.2
12	609	16.3
11	85	2.3
10	98	2.6
9	174	4.6
8	20	.5
7	28	.7
6	57	1.5
5	2	.1
4	6	.2
3	16	.4
0	1	.0
Total	3743	100.0

Note. **Mean=13.67, SD= 2.498, Range (0-19)**

GPA Achieved in Their First Semester of College Enrollment

Another variable utilized to describe the students in this study is semester GPA achieved in each of their first four semesters of college enrollment. Of the 3,743 students in the study, the greatest number of students earned a 3.0-3.24 GPA (*n*=658, 17.6%) with the second largest group earning a 3.25-3.49 GPA (*n*=492, 13.1%). Data on the GPA's achieved in each of the first semester of college enrollment is included in Table 4.8.

Table 4.8. Semester GPA Achieved in the First Semester of College Enrollment for Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Who Were Retained from the Fourth to Fifth Semester

GPA Category	Frequency	Percent
4.0 or higher	438	11.7
3.75-3.99	422	11.3
3.50-3.74	480	12.8
3.25-3.49	492	13.1
3.00-3.24	658	17.6
2.75-2.99	336	9.0
2.50-2.74	311	8.3
2.25-2.49	217	5.8
2.00-2.24	178	4.8
1.75-1.99	70	1.9
Less than 1.75	141	3.8
Total	3743	100.0

Cumulative GPA at the End of the Fourth Semester of College Enrollment

A variable used to describe the students in this study is cumulative GPA at the end of their fourth semester (Spring 2016) of college enrollment. Of the 3,743 students in the study, the largest number of students (n=60, 1.6%) had a 4.00 GPA.

Whether or Not Student Received One of the University's Major Freshman Scholarships

A final variable used to describe the students in this study is whether the student received one of the university's major freshman scholarships. Of the 3,743 students in the study, 2,542 or 67.9% did not receive a scholarship and 1,201 or 32.1% did receive a scholarship.

Objective Two Results

The second objective of this study was to describe incoming, first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were not retained from the fourth to the fifth semester on the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

There were 387 students who met the criteria of this objective. The results for each of these variables are as follows:

Gender

The first variable used to describe these students was gender. Of the 387 students in the study, 226 or 58.4% were identified as female and 161 or 41.6% were identified as male.

High School Type Attended-Public or Private

A second variable used to describe these students was the type of high school, public or private, that they attended. Of the 387 students in the study, 221 or 57.1% attended public high schools and 166 or 42.9% attended private school.

Race/Ethnicity

Race/Ethnicity is another variable on which the students were described. Of the 387 students included in the study, the largest number of students was White (n=273, 70.5%). The second largest group of students was Black or African American (n=52, 13.4%). This data is presented in Table 4.9.

Table 4.9. Race/Ethnicity of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

Race/Ethnicity	Frequency	Percent
White	273	70.5
Black/African American	52	13.4
Hispanic	20	5.2
Asian	29	7.5
Multi-Racial	10	2.6
Native American or Alaskan Native	2	.5
Native Hawaiian or Pacific Islander	1	.3
Total	387	100.0

First Semester Major

An additional variable used to describe the students was first semester major. Of the 387 students included in this study, the largest number of students selected Biology as a desired major (n=40, 10.3%). The next highest number of students selected Nursing as a desired major (n=36, 9.3%). A list of the top five majors for these students is presented in Table 4.10.

These students were further described as STEM or non-STEM majors. Of the 387 students in this study, 253 or 65.4% selected STEM majors while 133 or 34.4% selected non-STEM majors. One student did not have STEM or non-STEM data included in their information.

Table 4.10. Ten Most Frequently Reported First Semester Majors of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

Major	Frequency	Percent
Biology	40	10.3
Pre-Nursing	36	9.3
Undecided-Science & Engineering	26	6.7
Kinesiology	25	6.5
Petroleum Engineering	19	4.9
Mass Communication	17	4.4
Mechanical Engineering	16	4.1
General Business	14	3.6
Chemical Engineering	13	3.4
Psychology	13	3.4

Fourth Semester Major

Another variable used to describe the students was fourth semester major. Of the 387 students included in this study, the largest number of students were Nursing majors in their fourth semester (n=65, 16.8%), the second largest number of students was Business Administration majors (n=35, 9.0%), and the third largest number of students was Human Science & Education majors (*n*=27, 7.0%). Data for the top five majors for the students in this study is included in Table 4.11.

Table 4.11. Ten Most Frequently Reported Fourth Semester Majors of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

Major	Frequency	Percent
Pre-Nursing	65	16.8
Business Administration	35	9.0
Pre-Education	27	7.0
Psychology	14	3.6
Kinesiology	13	3.4
Pre-Engineering	15	3.9
Mechanical Engineering	12	3.1
Pre-Science	9	2.3
Pre-Mass Communication	8	2.1
History	7	1.8

High School Grade Point Average (GPA)

High school grade point average (GPA) is an additional variable used to describe the students in this study. Of those 387 students, the largest number of students earned a high school GPA of 4.00 (*n*=255, 6.8%) and the second highest high school GPA earned was 3.97 (*n*=65, 1.7%). Data for the eight most frequent high school GPAs for this group of students is included in Table 4.12.

Table 4.12. High School GPAs of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

GPA Category	Frequency	Percent
4.00	11	2.8
3.75-3.99	64	16.5
3.50-3.74	91	23.5
3.25-3.49	99	25.6
3.00-3.24	88	22.7
2.75-2.99	29	7.5
2.50-2.74	3	8
<2.50	2	5
Total	387	100.0

Note. N=3.43, SD=.322, Range (2.44-4.00)

College Entrance Examination (ACT/SAT) Composite Scores

College entrance examination (ACT/SAT) composite scores is a variable used to describe this group of students. Of the 387 students included in this study, the largest number of students earned a 22-23 on college entrance examinations (n=89, 23.0%) with the second largest number of students earning a score of 24-25 (n=75, 19.4%) on the exam. Data for the college entrance examination (ACT/SAT) composite scores is included in Table 4.13.

Table 4.13. College Entrance Examination (ACT/SAT) Composite Scores of Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

ACT/SAT Composite Scores	Frequency	Percent
34-35	6	1.6
32-33	13	3.4

(table cont'd.)

ACT/SAT Composite Scores	Frequency	Percent
30-31	29	7.5
28-29	41	10.6
26-27	57	15.2
24-25	75	19.4
22-23	89	23.0
20-21	60	15.5
18-19	13	3.4
17 or less	2	.5

Note. **Mean=24.8, SD=3.651, Range 17-35**

Credit Hours Student Attempted in Their First Semester of Enrollment

The number of credit hours a student attempted in each of the first four semesters of enrollment at the university is another variable utilized to describe the students in this study. Of the 387 students in this study, the largest number attempted 12 credit hours in each of the first four semesters of enrollment (n=116, 30.0%) and the second largest group attempted 15 credit hours in each of their first four semesters of enrollment (n= 95, 24.5%). Data on the credit hours students attempted in their first semesters of enrollment is included in Table 4.14.

Table 4.14. Credit Hours Student Attempted in Their First Semester of Enrollment for Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

Credit Hours	Frequency	Percent
17	12	3.1
16	37	9.6
15	95	24.5
14	33	8.5
13	61	15.8
12	116	30.0
11	5	1.3
10	10	2.6
9	12	3.1
8	1	.3
7	3	.8
6	2	.5
Total	387	100.0

Note. N=387, Mean=13.32, SD=2.28, Range (17-6)

Credit Hours Student Earned in Their First Semester of Enrollment

The number of credit hours students earned in their first semester of enrollment is a variable used to describe the students in this study. Of the 387 students in the study, the largest number of students earned 12 credit hours in each of their first four semesters of enrollment (n=81, 20.9%). The second largest group of students earned 15 credit hours in each of their first four semesters of enrollment (n=54, 14.0%). Data on the credit hours students earned in their first semester of enrollment at the university is presented in Table 4.15.

Table 4.15. Credit Hours Student Earned in Their First Semester of Enrollment for Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

Credit Hours	Frequency	Percent
17	12	3.1
16	32	8.3
15	74	19.1
14	22	5.7
13	50	12.9
12	90	23.3
11	9	2.3
10	19	4.9
9	38	9.8
8	2	.5
7	6	1.6
6	14	3.6
5	1	.3
4	5	1.3
3	11	2.8
1	1	.3
0	1	.3
Total	387	100.0

Note. Mean=12.3, SD=3.317, Range 0-17

GPA Achieved Their First Semester of College Enrollment

Another variable utilized to describe the students in this study is semester GPA achieved in their first semester of college enrollment. Of the 387 students in the study, the greatest number

of students earned a GPA in the 3.00 to 3.24 category (n=76, 19.6%) with the second largest group earning a 2.00 GPA in the 2.75-2.99 category (n=45, 11.6%). Data on the GPA's achieved in each of the first semester of college enrollment is included in Table 4.16.

Table 4.16. GPA Achieved Their First Semester of College Enrollment for Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States Not Retained from the Fourth to Fifth Semester

GPA Category	Frequency	Percent
4.0-higher	15	3.9
3.75-3.99	17	4.4
3.50-3.74	36	9.3
3.25-3.49	24	6.2
3.00-3.24	76	19.6
2.75-2.99	45	11.6
2.50-2.74	41	10.6
2.25-2.49	28	7.2
2.00-2.24	41	10.6
1.75-1.99	13	3.4
Less than 1.75	51	13.2
Total	387	100.0

Note. Mean= 2.67, SD=0.798, Range (0.0-4.0)

Cumulative GPA at the End of the Fourth Semester of College Enrollment

A variable used to describe the students in this study is cumulative GPA at the end of the fourth semester (Spring 2016) of college enrollment. Of the 387 students in the study, the mean GPA was 2.62 (SD=0.729).

Whether or Not Student Received One of the University's Major Freshman Scholarships

A final variable used to describe the students in this study is whether or not the student received one of the university's major freshman scholarships. Of the 387 students in the study, 303 or 78.3% did not receive a scholarship and 84 or 21.7% did receive a scholarship.

Objective Three Results

The third objective of this study was to compare incoming undergraduate students at a research-intensive university in the southern portion of the United States by whether or not they

were retained from their fourth to fifth semester of enrollment on the following selected personal and academic demographic characteristics:

a. Gender;
b. High school type attended (public or private);
c. Race/Ethnicity;
d. First semester major;
e. Fourth semester major;
f. High school grade point average (GPA);
g. College entrance examination (ACT/SAT) composite scores;
h. Credit hours student attempted in their first semester of enrollment;
i. Credit hours student earned in their first semester of enrollment;
j. GPA achieved in their first semester of college enrollment;
k. Whether or not the student received one of the university's major freshman scholarships or financial aid.

Gender

The first variable on which graduates and non-graduates were compared was gender. The statistic used to accomplish this analysis was a Chi-Square Test of Independence. When the variables were tested for independence, the computed Chi-Square value was 2.035 ($df = 1$, $\underline{p} = .154$). Since the alpha level established à priori in this study was $\underline{a} = .05$, this test result indicates that the variables of gender and retention were independent.

High School Type Attended-Public or Private

The second variable on which graduates and non-graduates were compared was the type of high school (public or private) attended. The statistic used to accomplish this analysis was a

Chi-Square Test of Independence. When the variables were tested for independence, the computed Chi-Square value was .259 (df = 1, p = .611). Since the alpha level established à priori in this study was a = .05, this test result indicates that the variables of gender and graduation status were independent.

Race/Ethnicity

Another variable examined for independence from retention status was Race/Ethnicity. The statistic used to accomplish this analysis was a Chi-Square Test of Independence. The initial test showed that three (3), or 21.4% of the cells had expected values of less than five (5). Therefore, the Race categories of American Indian and Native-Hawaiian or Other Pacific Islander, and Multi-Racial were eliminated from this analysis. When the analysis was recomputed without these two categories, the computed Chi-Square was significant ($x^2_{df=4}$=13.227, < .01) indicating that these variables were not independent. The nature of the association between the variables was such that a higher proportion of Hispanic students (n=236, 92.2%) and a lower percentage of Asian students (n=204, 85.8%) were retained into their fifth semester See Table 4.17.

Table 4.17. Examination of the Independence of Race And Retention Status Among Incoming First Time Enrolled Traditional Age Undergraduate Students at a Research University in the Southern Part of the United States

		Asian	African American/Black	Hispanic	Multi-Racial	White	Total
Retained	n	175	358	236	100	2855	3724
	%	85.8%	87.3%	92.2%	90.9%	91.3%	90.7%
Not Retained	n	29	52	20	10	273	384
	%	14.2%	12.7%	7.8%	9.1%	8.7%	9.3%
Total		204	410	256	110	3128	
		100%	100%	100%	100%	100%	

Note. x 2 df =4 =, p < .001

First Semester Major (STEM or Non-STEM)

An additional variable examined for independence from retention status was First Semester Major (STEM or Non-STEM). The statistic used to accomplish this analysis was a Chi-Square Test of Independence. When the variables were tested for independence, the computed Chi-Square value was 3.343 (df = 1, p = .067). Since the alpha level established à priori in this study was a = .05, this test result indicates that the variable of First Semester Major and retention were independent.

Fourth Semester Major (STEM or Non-STEM)

Another variable on which graduates and non-graduates were compared was Fourth Semester Major (STEM or Non-STEM). The statistic used to accomplish this analysis was a Chi-Square Test of Independence. When the variables were tested for independence, the computed Chi-Square value was 3.343 (df = 1, p = .067). Since the alpha level established à priori in this study was a = .05, this test result indicates that the variable of Fourth Semester Major and retention were independent.

High School Grade Point Average (GPA)

An additional variable on which those students who were retained into their fifth semester were compared to those who were not retained was high school grade point average (GPA). Since high school GPA was measured as continuous data, the most appropriate test to accomplish this comparison was the Independent t-test. The results of this comparison showed that those who were retained had a higher high school GPA ($\bar{x}$=3.55, SD 0.321) than those who were not retained ($\bar{x}$=3.43, SD 0.322). (t_{4128} =7.279, p < .001). (See Table 4.18.)

College Entrance Examination (ACT/SAT) Composite Scores

Another variable on which those students who were retained into their fifth semester were compared to those who were not retained was college entrance examination (ACT/SAT) composite scores. Since college entrance examination composite cores were measured as continuous data, the most appropriate test to accomplish this comparison was the Independent t-test. The results of this comparison showed that those who were retained had a higher college entrance exam composite score ($\bar{x}$=25.85) than those who were not retained ($\bar{x}$=24.80). (t_{4128} =5.628, $p < .001$).

Credit Hours Student Attempted in Their First Semester of Enrollment

The next variable on which those students who were retained into their fifth semester were compared to those who were not retained was the number of credit hours the student attempted in their first semesters of enrollment. Since the variable of comparison was measured as continuous data and the number of categories was two (retained and not-retained), the Independent t-test was selected as the most appropriate procedure. Those who were retained had a higher number of hours attempted of 14.16 (SD=1.819) and those who were not retained had mean hours attempted of 13.36 (SD=1.995).

Credit Hours Student Earned in Their First Semester of Enrollment

Another variable on which those students who were retained into their fifth semester were compared with those who were not retained was the number of credit hours the student earned in of their first semester of enrollment. Since the variable of comparison was measured as continuous data and the number of categories was two (retained and not-retained), the Independent t-test was selected as the most appropriate procedure. The mean hours earned were 13.67 (SD=2.498) for students who were retained and for those who were not retained the hours

earned were 12.13 (SD=3.317). The difference was significant ($^{t}df=4128=11.102$, p<.001) composite ACT/SAT score.

Semester GPA Achieved in Their First Semester of College Enrollment

An additional variable on which those students who were retained into their fifth semester were compared to those who were not retained was the composite ACT/SAT score. Those who were retained had a mean score of 25.85 (SD=3.490) and those not retained had a mean score of 24.80 (SD=3.651). The difference was significant ($^{t}df=4128=5.628$, p<.001).

Whether or Not Student Received One of the University's Major Freshman Scholarships

A variable examined for independence from retention status was whether or not the student received one of the university's major freshman scholarships. The statistic used to accomplish this analysis was a Chi-Square Test of Independence. The computed Chi-Square was significant ($x^2_{df=1}=17.635$, $p \leq .01$) indicating that these variables were not independent. The nature of the association between the variables was such that a higher percentage of students who did receive one of the major scholarships (n=1201, 93.5%) were retained into their fifth semester than those who did not (n=2,542, 89.3%). This data is included in Table 4.18.

Table 4.18 Comparison of Selected Academic and Personal Demographic Characteristic by Whether or Not the Student was Retained into Their Fifth Semester of Enrollment at a Research University-Very High Research Activity (RU/VH) in the Southern Portion of the United States.

Variable	Retention Status	Mean	SD	t	df	P
HS GPA	Not Retained	3.43	0.322	7.279	4128	<.001
	Retained	3.55	0.321	7.262		<.001
ACT/SAT Score	Not Retained	24.80	3.651	5.628	4127	<.001
	Retained	25.85	3.49	5.429	462.120	<.001
First Semester Attempted	Not Retained	13.36	1.995	8.113	4128	<.001
	Retained	14.16	1.819	7.528	454.899	<.001
First Semester Earned	Not Retained	12.13	3.317	11.102	4128	<.001
	Retained	13.67	2.498	8.835	432.441	<.001

Objective Four Results

The fourth objective of this study was to determine if a model existed that significantly increased the researcher's ability to correctly classify incoming undergraduate students at a research-intensive university in the southern portion of the United States on whether or not they were retained from their fourth to fifth semester of college enrollment from the following selected personal and academic demographic characteristics:

a. Gender;
b. High school type attended (public or private);
c. Race/Ethnicity;
d. First semester major;
e. Fourth semester major;
f. High school grade point average (GPA);
g. College entrance examination (ACT/SAT) composite scores;
h. Credit hours student attempted in their first semester of enrollment;
i. Credit hours student earned in their first semester of enrollment;
j. GPA achieved in their first semester of college enrollment;
k. Whether or not the student received one of the university's major freshman scholarships or financial aid.

The statistical technique utilized to accomplish this objective was discriminate analysis. All variables had to be measured on a continuous scale of measurement or be coded as dichotomous variables to ensure compatibility with the discriminate analysis. All of the independent variables in the objective met the criteria above, with the exception of the race variable. The categories of African American, Asian, Hispanic, and White were each established

as separate variables to create dichotomous race variables. As an example, all study subjects were classified as Asian or not Asian to create a dichotomous variable. Retention from fourth semester to fifth semester (yes or no) was the dependent variable in the analysis. The independent variables were each entered into the analysis in a stepwise manner.

The first step in the discriminate analysis was to examine the independent variables for the presence of multicollinearity. Hair, et. al's guidelines (2006) for a tolerance value cutoff threshold of .10, which corresponds to a VIF value of 10 was used by the researcher. The tolerance values for the independent variables in this analysis ranged from .641 to .999. Using Hair, et. al.'s (2006) specifications, no excess multicollinearity was present in the variables. This indicated that none of the variables were excessively related in a manner that would interfere with the accuracy of the analysis.

The second step of the discriminate analysis was to compare the two groups (retained versus not retained) on each independent variable. In order to accomplish this, the researcher compared the means of each independent variable for the students who were retained from the fourth semester to the fifth semester to the students who were not retained from the fourth to fifth semester. Nine of the independent variables were found to have a significant difference between the retained and not retained groups. Fall 2014 Semester GPA was significantly different for the students, such that the mean Fall 2014 Semester GPA of the retained students was higher (M=3.131, SD=.672) than the mean Fall 2014 Semester GPA of not retained students (M=2.681, SD=.787). (F=151.530), $p \leq .001$). Fall 2014 Earned Credits was also significantly different for the two groups, with the students who were retained having a higher amount of earned credits (M=13.670, SD=2.497) than the students who were not retained (M=12.166, SD=3.263) (F=119.021, $p \leq .001$). Finally, High School GPA was significantly different for students who

were retained (M=3.551, SD=.321) versus the students not retained (M=3.426, SD=.323), (F=53.054, p≤ .001). See Table 4.19. The means of the remaining ten variables were not significantly different for those retained from the fourth semester to the fifth semester than those not retained.

The third step in this discriminate analysis was to examine the computed standardized canonical discriminate function coefficients. The centroid for the retained student group was .648 and the centroid for the student group not retained was .067. The large difference between these two centroids indicates a more reliable model of prediction than had there been a smaller difference. Thirteen independent variables were entered into the model. Two variables, Fall 2014 Semester GPA and Fall 2014 Earned Credits, entered into a significant discriminate model, producing an overall canonical correlation of .204.

Table 4.19. Comparison of Selected Demographic and Academic Characteristics by Retention Status at a Research University in the Southern Part of the United States

Discriminating Variable	Group Retained (N=3740) M D SD	 Not Retained (N-386) M D SD	f	p
Fall 2014 Sem GPA	3.131 .672	2.681 .787	151.530	<.001
Fall 2014 Earn	13.670 2.497	12.166 3.263	119.021	<.001
HS GPA	3.551 .321	3.43 .323	53.054	<.001
ACT Comp	25.852 3.494	24.810 3.648	30.811	<.001
Major Scholarship	.467 .321	.413 .218	17.463	<.001
Black	.095 .294	.135 .342	6.045	.014

(table cont'd)

Discriminating Variable	Group Retained (N=3740) M D SD	 Not Retained (N-386) M D SD	f	p
Asian	.047 .211	.075 .264	5.984	.014
White	.763 .425	.707 .456	5.892	.015
Hispanic	.063 .243	.049 .217	1.162	.281
Multiracial	.027 .161	.026 .159	.009	.923
Fall 2014 STEM	.612 .487	.655 .476	2.754	.097
School Type Public	.558 .497	.570 .496	.646	.211
School Type Private	.430 .496	.442 .497	.211	.646

The square of a canonical correlation coefficient is the percentage of variance in the dependent variable explained by the significant model. Therefore, 4.2% of the variance in retention status is attributed to students' Fall 2014 Semester GPA and Fall 2014 Earned Credits.

The variable that entered the discriminate model first and had the greatest influence on retention, as evidenced by the highest standardized discriminate function coefficient was Fall 2014 Semester GPA (β=.920). The nature of the influence of Fall 2014 Semester GPA was such that a higher fourth semester GPA increased the likelihood that a student would be retained into the fifth semester.

The variable that entered the model second was Fall 2014 Earned Credits. The standardized discriminate function coefficient of fall 2014 earned credits in this analysis was (β=.815). The nature of the influence of fall 2014 earned credits on retention, with the effects of fall 2014 semester GPA removed, was such that students who earned a higher number of credits in fall 2014 were more likely to be retained.

As part of this research study, within-group structure coefficients were also examined by the researcher. A discriminate score for each student was computed for each variable that entered into the significant model. These discriminate scores were compared for each independent variable to measure the relationship between the two. A significant structure correlation is any coefficient that is half or greater than the magnitude of the highest structure coefficient. In this study, the highest structure coefficient is (Fall 2014 Semester GPA). Therefore, any coefficient higher than .46 would be substantively significant. The structure coefficient of the other independent variables in the significant model, fall 2014 earned credits, did meet the criteria stated above. See Table 4.20.

Table 4.20. Summary Data for Stepwise Multiple Discriminate Analysis for Retention Status at a Research University in the Southern Part of the United States

Independent Variable Centroids	s	Discriminate Function Group	Centroids
Fall 2014 Sem GPA	.920	Retained	.648
Fall 2014 Earned	.815		
HS GPA	.422	Not Retained	.067
ACT Comp	.281		
Major Scholarship	.246		
Asian	-.183		
White	.180		
Black	-.129		
School Type (PU)	-.116		
School Type (PR)	.116		
F2014STEM	-.036		
Hispanic	.005		
Multiracial	.002		

Eigen Value	Rc	Wilk's Lambda	p
.043[a]	.204	.958	<.001

β= standardized discriminate function coefficient
s= within group structure correlation
Rc=canonical correlation coefficient

The final step of the analysis was to examine the correctly classified cases. As shown in Table 4.22, the model correctly classified 70.2% of the cases. To measure the substantive significance of the correctly classified cases in this study, the researcher used the Tau statistic as presented by Barrick and Warmbrod (1998) to measure the substantive significance of the correctly classified cases in this study. According to Barrick and Warmbrod, the model needs to increase the percentage of correctly classified cases with a 25% improvement over chance to be substantively significant.

Chance indicates a 50% likelihood of correct classification into one of the two groups. A 25% increase to chance would add another 12.5%, for a total of a 62.5% cutoff for a significant model.

With this guideline for substantive significance, the discriminate model produced in this study is substantively significant because it correctly classified 70.2% of the cases. This represents an increase of 20.2% over chance by using this model to classify cases. See Table 4.21.

Table 4.21. Retention Status Classification at a Research University in the Southern Part of the United States

Group	Actual Group	Number of Cases	Actual	Predicted
			Retained n %	Not Retained n %
	Retained	3743	2688 71.8%	387 64.5%
	Not Retained	387	1055 28.2%	213 35.5%

Objective Five Results

The fifth objective of this study was to determine if a model existed that explained a significant portion of the variance in fourth semester cumulative GPA of undergraduate students

at a research-intensive university in the southern portion of the United States from the following selected personal and academic demographic characteristics:

a. Gender;
b. High school type attended (public or private);
c. Race/Ethnicity;
d. First semester major;
e. Fourth semester major;
f. High school grade point average (GPA);
g. College entrance examination (ACT/SAT) composite scores;
h. Credit hours student attempted in their first semester of enrollment;
i. Credit hours student earned in their first semester of enrollment;
j. GPA achieved in their first semester of college enrollment;
k. Whether or not the student received one of the university's major freshman scholarships or financial aid.

To accomplish this objective, a multiple regression analysis was performed with "overall GPA , as of Spring 2014," as the dependent variable. Due to the exploratory nature of this study, the other variables were treated as independent variables and stepwise entry of the variables was used. In this regression equation, variables were added that increased the explained variance by one percent or more as long as the overall regression model remained statistically significant.

In conducting the multiple regression analysis, one of the variables, Race, was treated as an independent variable, which was categorical in nature, and had to be prepared as a dichotomous variable in preparation for entry into the analysis. The categories of Black, Asian, Hispanic, and White were each established as separate variables to create dichotomous race

variables. As an example, all study subjects were classified as Asian or not Asian to create a dichotomous variable. It was in this format that the variable "race/ethnicity" was entered into the analysis.

Regression analysis produced a 9-variable model, however, only two of those variables were meaningful. The variable that entered the model first was "First Semester GPA." The variable that entered the model second is "High School GPA." These two variables explained 62.4% of the variance. Tolerance or VIF was examined to test for multi-collinearity, and no cases of excess multi-collinearity were present. See Table 4.22.

Table 4.22. Multiple Regression Analysis of Student Retention from Fourth to Fifth Semester at a Research University in the Southern Part of the United States

Source of Variation	df	MS	F-ratio	p
Regression	2	418.84	3416.93	<.001
Residual	4124	.123		<.001
Total	4126			

Variables in the Equation					
Variables	Multiple R	R^2	R^2 Change	F	
First semester GPA	.765	.585	.585	5809.20	
High School GPA	.790	.039	.624	426.06	

Variables Not in the Equation			
Variables	t	Sig	VIF
Major Scholarship	8.158	<.001	1.143
School Type-Public	5.678	<.001	1.023
School Type-Private	5.678	<.001	1.023
ACT Comp	9.285	<.001	1.178
Gender	7.458	<.001	1.025
Asian	.819	<.001	1.000
Black	6.340	<.001	1.035
Hispanic	.812	.417	1.000

(table cont'd.)

Variables Not in the Equation			
Variables	t	Sig	VIF
Multi-Racial	1.817	.069	1.000
White	5.671	<.001	1.019
Fall 2014 Earned	4.204	<.001	1.561
Fall 2014 STEM	7.717	<.001	1.027

CHAPTER V. CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Purpose

The primary purpose of this study was to determine the influence of selected personal and academic demographic characteristics on the retention from the fourth to fifth semester among first time enrolled, traditional age, undergraduate students at a research-intensive university located in the southern portion of the United States. The dependent variable of the study is whether or not students were retained from the fourth to fifth semester of enrollment.

Objectives

To guide this research, the following specific objectives were formulated:

1. The first objective of this study was to describe incoming first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were retained from the fourth to fifth semester on the following selected personal and academic demographic characteristics:
    a. Gender;
    b. High school type attended (public or private);
    c. Race/Ethnicity;
    d. First semester major;
    e. Fourth semester major;
    f. High school grade point average (GPA);
    g. College entrance examination (ACT/SAT) composite scores;
    h. Credit hours student attempted in each of the first four semesters of college enrollment;

i. Credit hours student earned in each of the first four semesters of college enrollment;

j. Semester GPA achieved in each of the first four semesters of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman scholarships or financial aid.

2. The second objective of this study was to describe incoming, first time, enrolled, traditional age, undergraduate students at a research-intensive university in the southern part of the United States who were not retained from the fourth to the fifth semester on the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Cumulative GPA at the end of the fourth semester of college enrollment;

l. Whether or not the student received one of the university's major freshman

scholarships or financial aid.

3. The third objective of this study was to compare incoming undergraduate students at a research-intensive university in the southern portion of the United States by whether or not they were retained from their fourth to fifth semester of enrollment on the following selected personal and academic demographic characteristics:

    a. Gender;

    b. High school type attended (public or private);

    c. Race/Ethnicity;

    d. First semester major;

    e. Fourth semester major;

    f. High school grade point average (GPA);

    g. College entrance examination (ACT/SAT) composite scores;

    h. Credit hours student attempted in their first semester of enrollment;

    i. Credit hours student earned in their first semester of enrollment;

    j. GPA achieved in their first semester of college enrollment;

    k. Whether or not the student received one of the university's major freshman scholarships or financial aid.

4. The fourth objective of this study was to determine if a model exists that significantly increases the researcher's ability to correctly classify incoming undergraduate students at a research-intensive university in the southern portion of the United States on whether or not they were retained from their fourth to fifth semester of college enrollment from the following selected personal and academic demographic characteristics:

    a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Whether or not the student received one of the university's major freshman scholarships or financial aid.

5. The fifth objective of the study was to determine if a model exists that explains a significant portion of the variance in fourth semester cumulative GPA of undergraduate students at a research-intensive university in the southern portion of the United States from the following selected personal and academic demographic characteristics:

a. Gender;

b. High school type attended (public or private);

c. Race/Ethnicity;

d. First semester major;

e. Fourth semester major;

f. High school grade point average (GPA);

g. College entrance examination (ACT/SAT) composite scores;

h. Credit hours student attempted in their first semester of enrollment;

i. Credit hours student earned in their first semester of enrollment;

j. GPA achieved in their first semester of college enrollment;

k. Whether or not the student received one of the university's major freshman scholarships or financial aid.

Summary

A descriptive correlation research study conducted on first time enrolled, traditional age, undergraduate students at a research-intensive university located in the southern portion of the United States indicates "First Semester GPA" and "Fall 2014 Earned Credits were significantly related to retention from the fourth to fifth semester of college enrollment. The researcher recommends that students whose first-semester GPA is 2.33 or below should be targeted as particularly vulnerable to attrition, and interventions should take place either when a person enters academic probation or earlier in their college experience. The researcher also recommends additional improvements be made in the nature and type of interventions beyond those required by policy.

Findings also indicated that race and retention were not independent of one another when comparing retained and non-retained students. A higher proportion of Hispanic students and a lower percentage of Asian students were retained into the fifth semester. This researcher recommends that a qualitative study be conducted of Hispanic students who were retained from the fourth to fifth semester of college and Asian students who were not retained from the fourth to fifth semester of college enrollment to discuss their persistence to graduation and parental influence.

Findings indicated that "High School GPA" was significant in retaining these students from the fourth to fifth semester of college enrollment, and stability of major is more prevalent

among retained students than non-retained students. This researcher recommends increased interaction between college freshman advisors and high school guidance counselors, more career and college major exploration for high school students, as well as presentations to incoming college freshmen on matching career goals with the correct major.

Conclusions, Implications, and Recommendations

Based on the following findings, the most crucial factor in retaining students from the fourth to fifth semester is "First Semester GPA." It is significantly related to retention and also appeared first in the regression model.

This corroborates with Tinto's (1975) findings that there is a very strong positive relationship with a student's level of academic integration and their performance in college. Tinto's study showed that students with higher levels of academic integration were believed to persist in college and graduate. These findings are also similar to a 2016 study in which first-semester GPA emerged as an essential early predictor of college graduation for underrepresented students (Gershenfeld, Denice Ward, and Zhan, 2016). According to their study, in addition to students on academic probation (GPA below 2.0) being at high risk of not graduating, they found that students with GPAs below 2.33 were also found to be at risk.

Focusing on first-semester GPA is especially useful and advantageous because it is the initial academic outcome that is an early warning sign that a student may not persist to graduation. It also occurs early enough in a student's academic journey to allow for intervention and retention efforts. Some studies also have confirmed the most important time frame for identifying students at risk of attrition is the freshmen year (Astin, 1975; Braxton, Hirschy, & McClendon, 2004).

Understanding the critical role of first-semester GPA can enable a timely and strategic use of resources to address the academic challenges of low-performing students and help in moving them to the next semester and eventually graduation. Many universities are now expanding their use of institutional analytics, while other higher education institutions do not understand the connection between first-semester GPA and graduation. As more universities utilize analytics to track enrollment, academic performance, and graduation rates, this information can be used in the future by researchers to further analyze the precise impact of first-semester GPA on retention and graduation rates.

Based on these findings and conclusion, the researcher recommends that students whose first-semester GPA is 2.33 or below should be targeted as particularly vulnerable to attrition. Additional improvements are needed in the nature and type of interventions beyond those required by policy. Intervention should take place either when a student enters academic probation or earlier in their college experience. Examples of interventions include improved communication among high school counselors and college advisors; summer bridge programs; an early assessment of needs and potential accommodations; required meetings with academic advisors; and access to tutoring, mentoring, and other support services.

Although these findings clearly highlight the importance of first-semester GPA, we do not know the underlying factors that account for students ending up in the at-risk zone of not completing their college degree. This information is critical for identifying and deploying the most promising interventions. Without knowing why students achieve a low first-semester GPA, it is impossible to know which interventions will best help. The researcher recommends that further research be done to identify the factors that cause students to drop out prior to completion of a degree. Additionally, data on the success of intervention and retention programs are not

typically tracked or utilized. Research on how these and other early interventions positively influence first-semester GPA, and hence graduation, is needed.

"Fall 2014 Earned Credits" is significantly related to retention and appeared second in the regression model. Findings indicated that students who earned more hours in the first semester of college were retained at a higher level than those who earned less hours. The standardized discriminate function coefficient of fall 2014 earned credits in this analysis was (β=.815). The nature of the influence of fall 2014 earned credits on retention, with the effects of fall 2014 semester GPA removed, was such that students who earned a higher number of credits in fall 2014 were more likely to be retained.

There is often an assumption by both students and advisors that a lighter academic load during the first year of college will result in greater student success. Academic load is measured in terms of credit load and course difficulty; success is measured in terms of GPA and retention. While the credit loads for which students register are related to academic ability and prior academic success, the difficulty level of courses for which these students register is not. Weaker students are required to take developmental courses, but often do not drop the corresponding number of college-credit courses. Contrary to common assumptions, students who register for more credits tend to earn higher GPAs and have greater retention even after controlling for academic ability, prior academic success, on-campus employment hours, and other background characteristics. Students who register for more difficult courses, however, tend to earn lower GPAs and experience lower retention. Any effect of credit load on retention appears to work through GPA. While much of the effect of course difficulty on retention also works through GPA, course difficulty does have a separate negative effect on it.

Students may be forced to drop classes in which they are performing poorly, thus reducing their number of earned hours at the end of the first semester. Not only is there a psychological impact of failing or dropping classes the first semester, but there is also added pressure to increase the course load for the subsequent semesters to meet scholarship requirements. Many merit-based scholarships and financial aid requires students to earn 24 credit hours by the end of the academic year with a minimum GPA. The academic year is defined as Fall, Spring, Summer, and Intercession.

Earning less than 24 hours during an academic year can lead to the loss of scholarships and financial aid and increase the financial and mental burden for a student and the likelihood that they will drop out prior to obtaining a degree. The researcher recommends that advisors monitor students who complete less than 12 credit hours a semester to remind them of credit hour requirements for TOPS and other scholarships and financial aid.

According to the findings, the researcher concluded that "High School GPA" is significant in the retention of students from the fourth to fifth semester of enrollment. This conclusion is based on the following findings of the study: Results show that students who were retained had a higher high school GPA ($\bar{x}$=3.55) than those who were not retained ($\bar{x}$=3.43). ($t_{4128} = 7.279$, $p < .001$). This finding supports Tinto's (1993) research in which he discussed the main concerns of student departure, which included difficulties in academic studies because of a lack of foundation carried over from high school. In some cases, a student may have attended a high school with less rigorous courses or one that did not adequately prepare them for the transition to college, and results could include a lower GPA in college, an increase in the number of dropped classes, and a greater chance that the student will not persist to graduation.

Research shows that students' high school grade point averages are five times stronger than their ACT scores at predicting college graduation, so this study provides empirical evidence that high school grade point average, after controlling for student backgrounds and college characteristics, is a strong indicator of persistence to graduation. Although the difference in the high school grade point average between retained and non-retained students is not large, it is still an indicator of persistence to graduation. Although data analyzed included whether a student attended a public or private school, information was not available on the rigor of the public and private high schools. Is the public school a magnet school? Does it offer AP classes and advanced math and science classes? Is the private school focused on college prep or athletic programs? Are the teachers in both schools certified? Do they have advanced degrees in the classes they teach? Additional research is needed on the rigor of public and private schools and the relationship between high school GPA and persistence to degree attainment.

There is some recent evidence that courses that are more rigorous do indeed help the odds for student success — especially for disadvantaged youth and those attending disadvantaged schools. Hispanic, Black, and poor students experienced a slightly higher increase in high school graduation rates when they took a rigorous course by 10^{th} grade. The experience of taking rigorous courses in high school can help all students be better prepared for demanding classes at the college level.

Stability of major is more prevalent among retained students than non-retained students. Findings indicated that non-retained students from the fourth to fifth semester of college enrollment were less likely to be in the same major in their fourth semester than students who were retained from the fourth to fifth semester. In correlation with this finding, Tinto (1993)

stated that one of the three main deterrents to obtaining a college degree was the inability of individuals to resolve their educational and occupational goals.

Of the 3,743 students included in this study, the largest number of retained students selected Biology as a desired major (n=392, 10.5%) in their first semester. The next highest number of students selected Petroleum Engineering as a desired major (n=264, 7.1%). Of the 387 students included in this study, the largest number of non-retained students selected Biology as a desired major (n=40, 10.3%). The next highest number of students selected Pre-Nursing as a desired major (n=36, 9.3%).

Of the 3,743 students included in this study, the largest number of students who were retained were Biology majors in their fourth semester (n=261, 7.0%) and the second largest number of students were Business Administration majors (n=282, 7.5%). Of the 387 students included in this study, the largest number of students non-retained were Pre-Nursing majors in their fourth semester (n=65, 16.8%), and the second largest number of students was Business Administration majors (n=35, 9.0%).

There are numerous studies that indicate that choosing the wrong college major or entering college “undeclared” can negatively impact persistence to graduation. The issue is not career placement, as only 27% of graduates get jobs in the areas of their majors, according to a Federal Reserve Bank of New York report (2013). Students who start college "undeclared" or change their majors during school may take courses that do not apply to their final majors. Therefore, they often need an extra one or two years of college courses to graduate. Extra years of unplanned college expenses can either increase student loan debt or lead to dropout related to the extra financial burden.

The researcher recommends that the state's education department implement a requirement for all college-bound students to be given career exploration activities, including personality profiles such as Meyers Briggs and Kuder Preference Test, to assist them in matching career goals with the correct major. The researcher also recommends that state colleges offer presentations to incoming college freshmen on matching career goals with the correct major during orientation and welcome week activities.

If high schools and universities do a better job of career counseling, students are less likely to take classes they have no interest in or aptitude for, and this may reduce the number of classes dropped and increase credit hours earned. The researcher recommends that universities investigate ways to improve enrollment of first semester freshmen and align classes scheduled to the aptitude of the student.

Findings indicate that gender and retention were independent of one another when comparing retained and non-retained students. This result is surprising as statistics indicate that the education gap between men and women, both at two- and four-year colleges, has been steadily increasing for the past four decades. As access to college became increasingly viable for women, female enrollment steadily increased with women now earning more college degrees than men. Additionally, women are earning degrees at higher rates than men. Does this mean that these findings are anomalies or must be confined to this particular study? Is it time to change conventional thinking about the role of gender in retention of students in higher education? Based on these findings, the researcher recommends additional studies on gender and its impact on college retention.

Findings indicated that race and retention were not independent of one another when comparing retained and non-retained students. A higher proportion of Hispanic students and a

lower percentage of Asian students were retained into the fifth semester. The computed Chi-Square for race and retention was significant (x2df=4=13.227, < .01) indicating that these variables were not independent. The nature of the association between the variables was such that a higher proportion of Hispanic students (n=256, 92.2%) and a lower percentage of Asian students (n=204, 85.8%) were retained into their fifth semester.

While it is true that historically Asian students perform better academically, the proportion of Asian students not retained was higher at this particular university. This study was not designed to ascertain why; therefore, the researcher recommends further study of this finding. A future study could identify Asian students who left the university prior to graduation and do a qualitative study to gain insight into the reasons they left without earning a degree.

In American culture and education, Asian Americans have been stereotyped as the "model minority" (Lee, 1994). The model minority stereotype presents Asian American parents as valuing hard work and education. According to Lee, the influence of first-generation Asian American parents on their U.S.-born children's educational and vocational decisions may reflect their harsh experiences as immigrants in the United States. Many of these parents have expected their children to enter highly demanding fields, such as engineering or medicine, so they will have increased opportunities of acquiring a well-paying job and a higher socioeconomic status.

Amy Chua's memoir *Battle Hymn of the Tiger Mother* describes in detail her endeavors to push her two daughters to succeed. According to Chua, tiger mothers are mothers of Chinese (or other ethnic) origin who are highly controlling and authoritarian, denying their children free time, play dates and extracurricular activities in order to drive them to high levels of success at any cost, unlike the softer and more forgiving Western parenting style. There have been several studies that indicate that although tiger parenting exists among Asian-heritage families, it is not

common. Researchers also discovered that tiger parenting is not linked to the best child outcomes — both academically and socioemotionally. Is it possible that the previous generation of Asian American parents put so much pressure on their children to excel academically that now as parents they are putting far less emphasis on their children's academic achievement? A qualitative study may provide some insight into this question.

Is there an explanation for the higher proportion of Hispanic students being retained into the fifth semester in this particular study? Historically, Hispanics have been one of the lowest performing racial groups academically. However, Hispanic enrollment at postsecondary institutions in the United States has seen an increase over the past few decades-partly due to the group's rapid growth as a share of the overall U.S. population. Despite the increase in enrollment, relatively small numbers of Hispanics are enrolled in college or have obtained a bachelor's degree. Financial considerations are a key reason why Americans overall do not complete a four-year degree, and this is particularly true for Hispanics. Yet, they were retained in a higher proportion than Asian students in this study. This study was not designed to answer the question of why Hispanics were retained at a higher proportion.

Hispanic and Black parents are significantly more likely than white parents to say it is essential that their children earn a college degree. Both groups see college education as a requirement to be part of the middle class. Hispanic and Black adults are less likely than white parents to already be in the middle class or higher, which may account in part for the fact that they see college as essential.

With changing demographics in the United States, it is expected that Blacks, Asians, Hispanics, and other racial minorities will make up a majority of the population by the year 2050. This change may require colleges and universities to change recruitment, retention, and

intervention program strategies to retain this new majority of students. This researcher recommends that universities begin to prepare for this change in demographics and begin designing programs and processes to increase retention rates for minority students.

This researcher also recommends that a qualitative study be conducted of Hispanic students who were retained from the fourth to fifth semester to discuss their persistence to graduation and parental influence. Results from this study could be utilized to establish programs and interventions to further increase the number of Hispanic and Black students graduating with a degree.

APPENDIX. INSTITUTIONAL REVIEW BOARD APPROVAL

TO:	Michael F Burnett LSUAG | Dept | Agricultural and Extension Education and Evaluation
FROM:	Michael Keenan Chair, Institutional Review Board
DATE:	15-Mar-2022
RE:	IRBAG-22-0025
TITLE:	New Protocol Created for Michael F Burnett on 11-Mar-2022 3:59 PM Michael F. Burnett
SUBMISSION TYPE:	Initial Application
Review Type:	Exempt
Risk Factor:	Minimal
Review Date:	15-Mar-2022
Status:	Approved
Approval Date:	15-Mar-2022
Approval Expiration Date:	14-Mar-2025
Re-review frequency:	(three years unless otherwise stated)
Number of subjects approved:	
LSU Proposal Number:	

By: Michael Keenan, Chair

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the

individual participants, including notification of new information that might affect consent.

6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc. Approvals will automatically be closed by the IRB on the expiration date unless the PI requests a continuation.**

** All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents.*

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REFERENCES

ACT. (2010). What works in student retention? Private four-year colleges and universities report. http://www.act.org/research/policymakers/pdf/droptables/AllInstitutions.pdf. Accessed 18 February 2011.

ACT. (2013). 2012 retention/completion summary tables. Iowa City, IA: ACT.

Allensworth, E. M., & Clark, K. (2020). High School GPAs and ACT Scores as Predictors of College Completion: Examining Assumptions About Consistency Across High Schools. Educational Researcher, 49(3), 198–211. https://doi.org/10.3102/0013189X20902110.

Astin, A. (1977). Four critical years: Effects on college beliefs, attitudes, and knowledge. San Francisco, CA: Jossey-Bass.

Astin, A. W. (1985). Achieving educational excellence. San Francisco, CA: Jossey-Bass Inc.

Attewell P., Heil S., Reisel L. (2011) Competing explanations of undergraduate noncompletion. American Educational Research Journal 48(3): 536–559.

Bean, J. P. (1982). Student attrition, intentions, and confidence: Interaction effects in a path model. Research in Higher Education, 17(4), 291-320.

Brickman, W. W. (1972). American Higher Education in Historical Perspective. The Annals of the American Academy of Political and Social Science, 404, 31–43. http://www.jstor.org/stable/1038665.

Carnevale, Jayasundera & Gulish, "America's Divided Recovery: College Haves and Have Nots, 2016." Georgetown University. 2016. https://cew.georgetown.edu/wp-content/uploads/Americas-Divided-Recovery-web.pdf.

Chua, A. (2012). *Battle hymn of the tiger mother*. Bloomsbury Publishing PLC.

Clark, M. H., & Cundiff, N. L. (2011). Assessing the Effectiveness of a College Freshman Seminar Using Propensity Score Adjustments. Research in Higher Education, 52(6), 616-639. https://doi.org/10.1007/s11162-010-9208-x.

DeBerrad, M. S., Spielmans, G. I., & Julka, D. C. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. College Student Journal, 38(1), 66-80.

Druzdel, M. J., & Glymour, C. (1999). Causal inferences from databases: Why universities lose students. In C. Glymour & G. F. Cooper (Eds.), Computation, causation, and discovery (pp. 521-539). Menlo Park, CA: AAAI Press.

Durkheim, E. Suicide (1951). Suicide, a study in sociology. London: Routledge.

Gaertner, M. N., & McClarty, K. L. (2015). Performance, Perseverance, and the Full Picture of College Readiness. Educational Measurement: Issues & Practice, 34(2), 20–33. https://doi.org/10.1111/emip.12066.

Gershenfeld, S., Ward Hood, D., & Zhan, M. (2016). The Role of First-Semester GPA in Predicting Graduation Rates of Underrepresented Students. Journal of College Student Retention: Research, Theory & Practice, 17(4), 469–488. https://doi.org/10.1177/1521025115579251.

Gilchrist, Heidi R, Higher Education is a Human Right, 17 WASH. U. GLOBAL STUD. L. REV. 645 (2018), https://openscholarship.wustl.edu/law_globalstudies/vol17/iss3/9.

Hagedorn, L. S. (2005). How to define retention. In A. Seidman (Ed.), College student retention: Formula (pp. 89-106). Westport, CT: Praeger.

Hanson, Melanie. "College Dropout Rates" EducationData.org, June 17, 2022, https://educationdata.org/college-dropout-rates.

Ishitani, T. T., & DesJardins, S. L. (2002). A longitudinal investigation of dropouts from college in the United States. Journal of College Student Retention, 4(2), 173-202.

Jamelske, E. (2009). Measuring the impact of a university first-year experience program on student GPA and retention. Higher Education, 57(3), 373-391.

Liu, E., & Liu, R. (1999). An application of Tinto's model at a commuter campus. Education, 119(3), 537-537.

Mettler S. (2011) Redirecting and expanding support for college students. In: Skocpol T., Jacobs L. (eds) Reaching for a new deal: Ambitious governance, economic meltdown, and polarized politics in Obama's first two years, New York, NY: Russell Sage Foundation.

Porter, S. R., & Swing, R. L. (2006). Understanding how first-year seminars affect persistence. Research in Higher Education, 47(1), 89-109.

Raju, Dheeraj & Schumacker, Randall. (2015). Exploring Student Characteristics of Retention that Lead to Graduation in Higher Education Using Data Mining Models. Journal of College Student Retention Research Theory and Practice. 16.563-591.10.2190/CS.16.4.e.

Reason R. (2003) Student variables that predict retention: Recent research and new developments. NASPA Journal 40(4): 172–191.

Rovai, A (2002) In search of Higher persistence rates in distance education online programs. Internet and Higher Education. Vol .140 pp1-16.

Shivpuri, S., Schmitt, N., Oswald, F. L., & Kim, B. H. (2006). Individual differences in academic growth: Do they exist, and can we predict them? Journal of College Student Development. 47, 69–86.

Snyder, Thomas D., Cristobal de Brey, and Sally A. Dillow. 2018. “Digest of Education Statistics 2016.” National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC.

Spence, Michael. 1973. “Job Market Signaling.” Quarterly Journal of Economics 87(3):355–74. doi:10.2307/1882010.

Therriault, Susan B., Krivoshey, A. 2014. College Persistence Indicators Research Review. American Institutes for Research.

Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. Review of Educational Research, 45(1), 89–125. https://doi.org/10.2307/1170024.

U.S. Bureau of Labor Statistics. “Median weekly earnings by education, second quarter 2020.” July 2020. https://www.bls.gov/opub/ted/2020/median-weekly-earnings-by-education-second-quarter-2020.htm.

VITA

Tammy Millican was born in Baton Rouge, Louisiana, and graduated from Glen Oaks High School in 1985. She earned a Bachelor of Arts degree in mass communication in 2008 from Louisiana State University and a Master of Public Administration in 2012 from Louisiana State University. She is married to Scott, mom to Erica, Joshua, Shaun, Bailey, and Emma, as well as Mimi to Lane, Aubree, Cooper, Luke, Carson, and Camrynn. She serves as Executive Director for LSU Facility & Property Oversight and has more than 25 years of experience in higher education administration in management, strategic planning, communication, grant writing, policy development, and profesional development. She also serves as a part-time coach for the LSU Leadership Development Institute. Tammy volunteers extensively at LSU and in her church and community. She has served as LSU Staff Senate President for three terms and earned the LSU Kiwanis Club Distinguished Service Award in 2023. She is a candidate to receive a Doctor of Philosophy from Louisiana State University in the Summer of 2023 Commencement Ceremony.