Louisiana State University
LSU Digital Commons

LSU Doctoral Dissertations | Graduate School

2003

Self-efficacy, motivation, and outcome expectation correlates of college students' intention certainty

Carol Couvillion Landry
Louisiana State University and Agricultural and Mechanical College, ccouvi2@lsu.edu

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_dissertations

 Part of the Education Commons

Recommended Citation
Landry, Carol Couvillion, "Self-efficacy, motivation, and outcome expectation correlates of college students' intention certainty" (2003). *LSU Doctoral Dissertations*. 1254.
https://digitalcommons.lsu.edu/gradschool_dissertations/1254

This Dissertation is brought to you for free and open access by the Graduate School at LSU Digital Commons. It has been accepted for inclusion in LSU Doctoral Dissertations by an authorized graduate school editor of LSU Digital Commons. For more information, please contactgradetd@lsu.edu.

SELF-EFFICACY, MOTIVATION, AND OUTCOME EXPECTATION CORRELATES OF COLLEGE STUDENTS' INTENTION CERTAINTY

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Educational Leadership, Research, and Counseling

by
Carol Couvillion Landry
B.S., University of Southwestern Louisiana, 1992
M.A., Louisiana State University, 1995
May 2003

© Copyright 2003
Carol Couvillion Landry
All rights reserved

ACKNOWLEDGEMENTS

For most doctoral students, the dissertation stage is generally the longest and hardest; mine was no exception. Finally, I have the chance to thank those people who provided encouragement, support, patience, and understanding as I tacked this endeavor. Though impossible to mention everyone, there have been numerous friends, family members, and professional colleagues who provided support along the way.

First, I owe a tremendous amount of gratitude to my husband, Steve. At the first mention of my desire to pursue the doctoral degree, he was immediately supportive and encouraging. His support has never wavered. I truly believe we tackled this together, just as we have so many other obstacles. Most importantly, he has always been there to remind me of my capabilities when I felt discouraged. He has been patient, kind, and understanding when the need to work on this document superceded the need to spend time together. He is truly a source of joy and inspiration in my life. I would like to also thank my sweet "miracle baby" Andrew. Without knowing it, you have encouraged me to finish this degree as well. I hope one day you will understand that hard work, determination, and courage can result in fulfillment of your dreams.

To my family and friends, thank you so much for always encouraging me and for expressing your pride in me. You have no idea how much it means to me that others believe in my ability to accomplish my goals. There were many times when your pride in me kept me afloat. Specifically, I would like to mention the following family members and friends who helped me (either directly or indirectly) along the way: my parents, Russell & Carolyn Couvillion, my siblings, Kurt & Adam Couvillion, my in-laws, Roy and Flo Landry and all of Steve's brothers and sisters, and my wonderful array of friends: Christine McGill, Catherine Breaux, Cheryl Fruge', Jenny Michel, and

Claire Bienvenu. Special thanks go to Claire for sharing her research with me and for being a wonderful role model for me throughout this process. In many ways, I felt like I was following in Claire's footsteps, which felt like both an intimidation and a relief.

As I think back to how I became interested in graduate school, I consider one person to be extremely important. I can not thank Doug Blair enough for providing that initial push and giving me the space and support I needed to begin the program. Not many bosses can be credited for being so understanding. As bosses go, I feel like I have been pretty lucky. I would also like to thank Brian Frederick, my current boss, for also encouraging me and being incredibly gracious and understanding as I finished the dissertation process. I truly do not know if I could have completed this program without the help and encouragement of these two individuals.

Special thanks go out to the committee members who gave their time and support to see me through this process: Dr. Gary Gintner, Dr. Becky Ropers-Hilman, Dr. Terry Geske, Dr. Frederick Weil, and Dr. Chad Ellett. Also, among the LSU faculty, I would like to thank Dr. Barbara Furhman, who served as my advisor for the first two years I was at LSU and Dr. Kevin Kinser, who served as a faculty member and spent many hours helping me with my literature review early on in the process.

I would also like to thank Evelyn Bullard from UL Lafayette who helped me throughout the process by providing all of the data analyses. Evelyn has been a joy to work with and always provided quick and accurate reports for me. As my deadline for completion quickly approached, Evelyn put my needs above her own. She is truly a delightful person and I can not thank her enough. Dr. Jim Flaitz also deserves special thanks. Dr. Flaitz was gracious enough to "talk me through" some of the data analyses when I needed to sit with someone to make sense of all the output in front of me. Also,

Dr. Theresa Wozencraft and Dr. Irv Esters from UL Lafayette have been very encouraging and supportive.

Finally, I owe a tremendous amount of gratitude to Dr. Chad Ellett. It was during my research course, taught by Dr. Ellett, that I first became interested in the study of self-efficacy and its' application in the higher education setting. Numerous conversations with him during that semester convinced me that he would become my dissertation chair and I have never regretted that decision. Our faculty-student relationship was complicated by his move to another state early in the dissertation stage. Though communicating from a distance was complicated, we managed to get it done. There were times when I doubted we could finish the process, but Dr. Ellett remained steadfast in his support and encouragement. I realize he was under no obligation to help me finish my degree. There were many times when he had the opportunity to refer me to another professor who could help me complete this work, but he did not. He is truly an educator and his hard work and talent should be acknowledged.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This study explored relationships between Self-Efficacy, Motivation, and Outcome Expectations and Intention Certainty. Intention Certainty is a new variable created for this study and comprised of existing conceptions of intention and decision certainty. The purpose of this study was fourfold. This study attempted to expand our understanding of the college retention dropout issue by exploring relationships between psychologically rich variables. Second, this study provided information considered useful for framing future research on retention from a different perspective that focuses on characteristics of individuals who stay, rather than those who leave higher education with the consideration of psychological constructs. Further, this research expanded the Tinto model to examine psychological variables believed to influence intention to remain enrolled as opposed to demographic variables associated with student dropouts. Finally, because the sample was extended to include all subsets of the student population, broader practical applications were obtained resulting in greater generalizability of the results.

The study sample consisted of 441 undergraduate students attending the University of Louisiana at Lafayette during the summer 2001 session. Four measures were used for data collection: College Student Self-Efficacy Scale (CSSES), Student Motivation Scale (SMS), Student Outcome Expectation Scale (SOES), and the Student Intention Certainty Scale (SICS). All measures were created specifically for this study. Major findings include: a) the measures developed specifically for the study are of reasonable quality, b) the hypothesized relationships between the independent variables and dependent variable were corroborated contrary to findings from prior research, c) there is little relationship between the presage variables and the psychological variables

studied, d) positive outcome expectations and, to a lesser degree, students' self-efficacy beliefs, make the strongest contribution to students' intentions to remain enrolled in college and to persist in obtaining a college degree, and e) importantly, the psychological variables utilized in the study appear to be more powerful predictors of college student's intentions to remain enrolled than previously studied demographic and presage variables.

CHAPTER 1: INTRODUCTION

Overview

Questions about the nature of human intention have been the focus of researchers for decades (Ajzen, 1980, Ajzen & Madden, 1986, Fishbein & Ajzen, 1975). In the higher education arena, the interest in intention to persist to degree attainment has been driven partly by practical considerations of student recruitment and maintaining enrollment, and partly by the need to develop and test theories about student persistence (Bers & Smith, 1991, Bean, 1982). One of the most popular approaches to studying student persistence has been grounded in the concepts of academic and social integration which suggests that students' decisions to stay or leave institutions are affected by the levels of connection they have with the institution both academically and socially (Tinto, 1993). Research on retention of students attempts to discover and pin-point characteristics of persisters and non-persisters typically referring only to demographic and presage variables. For example, one study suggests that full-time attendance at college is the most prevalent characteristic of students who persist (Brawer, 1996). Other variables found to influence students' decisions to leave college before completing their programs or degrees include: full-time employment, ethnic minority status other than Asian, low grade-point average, financial concerns, and female gender (Bonham & Luckie, 1993).

By far, the greatest amount of research of student retention theory centers on the notion of academic and social integration into the university community. One of the most widely accepted theories was introduced in the 1970's by Vincent Tinto. Tinto (1993) proposes that the extent to which the student becomes academically and socially integrated into the formal and informal academic and social systems of an institution

determines whether or not a student will stay enrolled. Tinto's theory of college student departure states that students enter college with various individual characteristics which include family and community background characteristics (e.g., parental educational level, social status), individual attributes (e.g., ability, race, and gender), skills (e.g. intellectual and social), financial resources, dispositions (e.g. motivations, intellectual, and political preferences), and precollege experiences with school (e.g., students' high school record of academic achievement). Students' initial commitments to the institution and to the goal of college graduation as well as the departure decision are directly influenced by each student entry characteristic.

It appears that a major limitation of Tinto's study is that it is centered upon variables that do not appear to be founded in the psychology of human behavior (e.g. social-cognitive theory). Studying psychological variables in the retention context allows for the use of existing theories (and the attendant research base), which are founded in psychology, to provide rich variables that can help develop subsequent theory in the study of retention. Throughout this document, the phrase "theory-rich" is used and refers to variables that are grounded in the larger theory base of social psychology (e.g., social-cognitive theory).

Throughout the years, Tinto's model has been very useful to higher education researchers, however, its' explanatory power is quite limited. This research acknowledges the tremendous contribution of Tinto's work in the higher education setting and is not a critique of his work. This is a self contained study that adds only a small contribution to the vast knowledge base related to retention in higher education. The model utilized in this study (p.25) includes certain elements of Tinto's model

(presage and demographic variables) but focuses more on psychosocial variables, which are believed to impact human behavior.

An alternative approach to studying student persistence is one that focuses not only on students experiences while in a particular institution but their *intentions* to remain at their current institution and to persist until graduation. This approach argues that students may develop and enter an institution with intentions about persistence that then guide their behavior. Also of interest in this study is the degree of decision certainty a student may have about the intention to remain enrolled. Also, research indicates that very few studies focus on students who stay rather than leave higher education. One theory that does focus on students who stay is Astin's Involvement Theory (1984), which purports that "the effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement" (p.298).

Though Astin's theory examines students who remain in higher education, his theory is more concerned with the behavioral mechanisms or processes that facilitate student development such as student-faculty interaction, athletic involvement, involvement in student government, etc. This study focuses on students who intend to remain enrolled in college by examining psychosocial variables, which are believed to have an impact on behavior.

Intentions are indicators of how hard people are willing to try and how much effort they are willing to put forth to perform a behavior (Ajzen, 1991). Research on intention indicates that the stronger a person's intention, the harder a person is expected to try, and hence the greater the likelihood the behavior will actually be performed. Self-efficacy beliefs, according to Bandura (1997), influence the courses of action

people choose to pursue, how much effort they are likely to put forth and how long they will persevere in the face of adversity. Therefore, it is assumed that students with high levels of self-efficacy will also have stronger intentions to complete the bachelors' degree.

Bandura also states that people motivate themselves and use forethought to guide their actions. Thus, motivation is concerned with selection, activation, and direction of behavior toward a goal. Individuals who are motivated to attain some goal are more likely to believe in their capabilities to attain that goal. Motivational effects do not derive from the goals themselves, but from the fact that people tend to respond evaluatively to their own behavior. Heightened self-efficacy sustains motivation and improves skills development (Schunk, 1991).

Outcome expectations are also likely to influence behavior. Outcome expectancy is a persons' estimate that a certain behavior will produce a resulting outcome. Outcome expectation is thus a belief about the consequences of a behavior. Individuals with positive outcome expectations are likely to have strong self-efficacy beliefs. According to Betz and Hackett (1986), there are many activities that, if done well, guarantee valuable outcomes, but persons who doubt their ability to succeed will not likely pursue these behaviors. Self-efficacy is often confused with outcome expectations when, in fact, they are two different constructs. Outcome expectancy is a person's estimate that a certain behavior will produce a resulting outcome. Self-efficacy is the individuals' conviction that he or she can execute the behavior needed to produce the desired outcome (Bandura, 1997). Outcome expectation is thus a belief about the consequences of a behavior. An efficacy expectation, on the other hand, is a belief concerning the performance of a behavior (Hackett & Betz, 1981).

Thus, self-efficacy, motivation, and outcome expectations are all believed to influence or impact intention, which leads to performance of some behavior. Of interest in this study is the intention to remain enrolled in college and complete the bachelors' degree. As indicated earlier, the stronger a persons' intention to perform a behavior, the greater the likelihood of the performance of that behavior.

Despite the quantity of research on intention, several questions about student intention to persist remain unanswered. What is the nature of intention to remain enrolled? What part does decision certainty play in student intentions? What are the influences of self-efficacy, outcome expectations, and motivation on intention to remain enrolled? How can intention to remain enrolled be measured?

This chapter provides an overview of a study designed to examine relationships between self-efficacy, motivation, outcome expectations and intentions to remain enrolled in college. Independent and dependent variables are defined conceptually and operationally. Research questions address the empirical structure of the measures and the reliability of measurement. A conceptual framework is provided that represents linkages among variables proposed for the study. A statement of the research problem, the purpose of the study, and the importance of the study follow.

This chapter begins with an overview of the retention problem in higher education.

Retention in Higher Education

The retention of students in higher education remains a serious issue faced by college administrators. Colleges and universities have spent years developing many intervention programs and services to help students become integrated academically and socially into the college setting (Seidman, 1996). The inability to retain students poses

tremendous problems for both colleges and universities and for students. Problems such as loss of revenue, lost opportunity, blocked access to certain careers, and lowered self-esteem are some of the problems associated with the student dropout problem in higher education (Congos & Schoeps, 1997).

Statistics on the national retention problem are alarming. Current United States retention figures show that about 60% of high school graduates attend college. Only about 50% of those students earn bachelor's degrees (Seidman, A., 1999). In 1996, the American College Testing (ACT) reported that 29 percent of freshmen who enrolled in public colleges in the fall semester 1994 did not return as sophomores in the fall semester of 1995. The ACT report also found that the proportion of students who graduated within five years has declined over the previous 13 years and that the biggest decline was at public institutions (Burd, 1997).

The American dream of obtaining a college degree is alive and well. In spite of the fact that only about half of an entering freshman class obtain a degree, enrollments are at an all time high (Allen, 1999). According to data from the National Center for Educational Statistics, between 1987 and 1997 the percentage of high school completers going directly to college increased from 57 to 67 percent. The increase in numbers reflects the accessibility of higher education and the value placed on a college education compared with other pursuits. Institutions are increasing efforts to recruit and market students. But the research shows that once students get to college, the majority of them are not staying. The headline in the July 11, 1996 edition of USA Today reports: *College Dropout Rate Hits All-time High.* This article reviews the American College Testing report that states the dropout rate for first time college students is at an all-time high while the percentage of students graduating within five years is at an all-time low.

Since student retention has such a profound financial effect on a university (Congos & Schoeps, 1997), research on the subject is massive. Best practices, retention theories, repercussions for universities, and needed programs and services have consumed the retention literature. In today's world of budget cuts, competition for students, shrinking resources, and demand for university accountability, this problem is too important to ignore. Retention is the primary indicator that a university is successful in maintaining its holding power for students.

The implications of student retention go far beyond those for the institution. According to Pascarella and Terenzini (1991), "social mobility, as defined by changes in occupational status and income, is inextricably linked to postsecondary education in modern American society" (p. 369). Formal schooling is posited as having a direct effect on status attainment, independent of a person's social origin or income level. In the economics and higher education literature, there are numerous theories that may explain why this may be the case. For example, the Screening or Credentialism Hypothesis states that people earn higher wages as a result of having a degree rather than having the skills needed to do the job since persons selected for educational programs possess the kinds of attributes sought by employers (Cohn & Geske, 1990).

Moreover, the completion of a bachelor's degree is central to the determination of both occupational status and income (Pascarella & Terenzini, 1991). According to the United States Census Bureau (1999) educational attainment is one of the most important influences on economic well-being. Greater socio-economic success for individuals and the country is correlated with higher levels of education. The U. S. Census Bureau also reports that earnings for the population 18 years and over were higher at each progressively higher level of education. This relationship holds true

across each subgroup defined by sex, race, and ethnic group. Furthermore, information from this source reveals that the average monthly income for individuals with a bachelor's degree is $2,625, thus $31,500 per year compared with individuals who earned a high school diploma making only $20,000 per year.

The above factors have contributed to the demand for institutional accountability and retention of students in higher education. Due to current circumstances, retention programs and research are needed to identify students at risk for dropping out. An alternative way of identifying these students, which has not been sufficiently addressed in the higher education literature, is to study intention to remain enrolled. In this study, the dependent variable, which will be called intention certainty, is conceptually based on the constructs of intention and decision certainty. Students who have high levels of intention to remain enrolled in college are more likely to persist to graduation. Of interest is the degree of certainty a student feels (or contentment and commitment) with their decision to persist to graduation. Intention is used in this study because little research on retention of students in higher education focuses on characteristics of students who stay rather than leave college. Self-efficacy is believed to be an important factor contributing to high levels of intention to remain enrolled in college and high degrees of decision certainty. Thus, this study examines the relationship between self-efficacy, motivation, outcome expectations, and intention certainty.

The next two sections provides a definition and explanation of intention followed by decision certainty.

Intention

In order to investigate intention to remain enrolled as a primary factor in retaining students, it is necessary to provide an overview of the theoretical foundation of

intention. Intention refers to "the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior" (Warshaw & Davis, 1985, p.214). According to Fishbein & Ajzen (1975), intention is defined as "a person's location on a subjective probability dimension involving a relation between himself and some action" (p. 288). In the intention literature, two major theories prevail, the theory of reasoned action and the theory of planned behavior. According to the theory of reasoned action (Fishbein & Ajzen, 1975), the antecedent of any behavior is the *intention* to perform that behavior. Intentions are assumed to capture the motivational factors that influence a behavior and are indicators of how hard people are willing to try and how much effort they are willing to put forth to perform the behavior (Ajzen, 1991). The stronger a person's intention, the more the person is expected to try, and hence the greater the likelihood the behavior will actually be performed. The constructs employed by the theory of reasoned action are motivational in nature (Ajzen & Madden, 1986).

Two conceptually independent determinants of intention are specified in the theory of reasoned action. One is a personal factor termed *attitude toward the behavior*. This refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior in question. The second predictor of intention is *subjective norm*. Subjective norm is a social factor and refers to the perceived social pressure to perform or not to perform the behavior.

Fishbein and Ajzen are clear in their requirement that the theory of reasoned action applies only to volitional behaviors (Bagozzi, 1992, Gordon, 1989). A behavior is said to be under volitional control if the person can decide at will to perform it or not to perform it (Ajzen & Madden, 1984). To explain behaviors not completely under

volitional control, Ajzen (1991) and Schifter and Ajzen (1985) introduced the theory of planned behavior.

The theory of planned behavior extends the Fishbein and Ajzen theory of reasoned action by including the concept of behavioral control (Ajzen & Madden, 1986). According to Ajzen and Madden, many factors can interfere with control over intended behavior, some internal to the individual (skills, abilities, knowledge, and planning) and some external (time, opportunity, and dependence on others). According to Ajzen & Madden (1986), "to ensure accurate prediction of behavior over which individuals have only limited control, we must assess not only intention but also obtain some estimate of the extent to which the individual is capable of exercising control over the behavior in question" (p. 456). Unfortunately, it is very difficult to secure an adequate measure of actual control in advance of observing the behavior. However, it is possible to measure *perceived behavioral control*, "the person's belief as to how easy or difficult performance of the behavior is likely to be" (Ajzen & Madden, 1986, p. 457). According to the theory of planned behavior, the more resources and opportunities individuals *think* they possess, and the fewer obstacles or impediments they anticipate, the greater their perceived control over the behavior. The proposed relationship between perceived behavioral control and behavior is based on two rationales. First, holding intention constant, the likelihood that a behavior will be carried out increases with greater perceived behavioral control. Second, perceptions of behavioral control must reflect actual control in the situation with some degree of accuracy (Ajzen & Madden, 1986).

As mentioned earlier, intention certainty is a new variable, which is conceptually based on the theories of intention and decision certainty. Intention refers to

the degree to which a person has consciously formulated plans to perform or not perform some behavior. The theoretical basis for decision certainty is addressed next.

Decision Certainty

Decision certainty is a fairly new concept in the higher education literature. Conceptually, decision certainty is defined as the current degree of commitment to, and contentment with, a choice (e.g., academic major selection, decision to remain enrolled in college) after a decision is made (Bienvenu, 2000). Decidedness alone is not necessarily a good outcome if the decision was reached in haste or for reasons in conflict with the student's personal characteristics (Betz, 1988). For example, students may reach the decision to remain in college through coercion (from parents, teachers, etc.), rationalization, avoiding responsibility to get a job, or lack of goals. The decisional process often involves stress or anxiety and as a result of these emotional states (e.g., doubts, worries, anxieties, outside influences, internal desires) students will seek to reduce the anxiety by making a decision. According to Bienvenu (2000), "for an individual to arrive at decision certainty, it is assumed that realistic considerations of career options and personal characteristics and self-appraisal have all occurred. As a result, the level of commitment to and contentment with the decision would be expected to increase" (p. 66).

Commitment and Contentment

According to Bienvenu (2000), once a decision is made, the degree of satisfaction, freedom from doubt, and other negative feelings reflect the level of contentment with the decision. The level of post-decision stability of the choice and the degree of dedication an individual exerts in fulfilling that choice, reflect the level of commitment to the decision. Central to most psychological formulations of the decision

making process is the concept of commitment (Janis & Mann, 1977). Bienvenu (2000) also states that, "the dynamics of commitment extend beyond the act of making a decision to post-decisional stability. The component of contentment with the decision is also central to reducing negative consequences, conflict, and discomfort associated with poor quality decision making" (p.67).

As mentioned earlier, self-efficacy is believed to be an important factor contributing to high levels of intention to remain enrolled and high degrees of decision certainty. This study examines the relationship between self-efficacy, motivation, outcome expectations, and intention certainty. The nature of self-efficacy is described in the following section.

Self-Efficacy

Bandura (1997) uses the term self-efficacy to refer to "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p.3). According to Bandura (1997), self-efficacy beliefs constitute the key factor of human agency. Bandura states that efficacy beliefs

> influence the courses of action people choose to pursue, how much effort they put forth in given endeavors, how long they will persevere in the face of obstacles and failures, their resilience to adversity, whether their thought patterns are self-hindering or self-aiding, how much stress and depression they experience in coping with environmental demands, and the level of accomplishments they realize (Bandura, 1997, p.3).

Self-efficacy beliefs can influence an individual to become committed to successfully execute the behaviors necessary to produce desired outcomes. Self-efficacy theory states that the level and strength of self-efficacy will determine 1) whether or not a behavior will be initiated, 2) how much effort will result, and 3) how long the effort will be sustained in the face of obstacles. According to Bandura (1993), humans make life decisions based on our perceived self-efficacy by undertaking

activities and choosing situations we deem to be within our capabilities for success. Additionally, activities associated with failure are avoided. When humans have a strong sense of perceived self-efficacy, they put forth a greater effort to accomplish a task despite the obstacles they encounter than those who have a weak sense of self-efficacy. It is believed that students who have a higher degree of self-efficacy will have a higher intention to remain enrolled in college and will be more likely to persist in the face of external obstacles.

Though self-efficacy is an important influence on behavior, it is not the only influence. Behavior is a function of many variables. In achievement settings, such as higher education, other important variables include skills, outcome expectations, and the perceived value of outcomes (Schunk, 1991). When the necessary skills are lacking, self-efficacy will not produce competent performances. According to Bandura (1997), once efficacy beliefs are formed, they are not stable. They can vary in strength because the individual is constantly evaluating new information. However, once efficacy beliefs have been established over long periods of time and based on a large amount of information, they are unlikely to be changed.

Because self-efficacy beliefs are specific in nature, it is impossible to discuss "general" or "global" self-efficacy. For example, students may have strong self-efficacy beliefs about their abilities to thrive in social situations, but weak efficacy beliefs about their abilities to succeed academically. For this reason, self-efficacy will be discussed in terms of College Student Self-Efficacy. This term is intended to capture several components of self-efficacy believed to be integral to college students. College student self-efficacy is comprised of self-efficacy for self-regulated learning, self-

efficacy for academic achievement, self-efficacy for financial attitudes and difficulties, and self-efficacy for career decision-making.

Self-Efficacy for Self-Regulated Learning

Compared with a typical self-efficacy measure that concerns one's perceived capabilities to perform in a specific content domain, self-efficacy for self-regulated learning taps students' confidence in utilizing a variety of self-regulatory strategies in the academic environment without the constraint of particular subject matters (Bong, 1999). For example, instead of assessing for self-efficacy in specific subjects such as math, English, or history, students are asked to assess their self-efficacy beliefs regarding learning in general, such as the ability to concentrate during lectures and to study under the influence of distractions. Self-efficacy for self-regulated learning has been found to relate indirectly to academic performance through its direct positive link to specific self-efficacy beliefs (Zimmerman, Bandura, & Martinez-Pons, 1992).

Self-Efficacy for Academic Achievement

Perceived academic self-efficacy is defined as "personal judgements of one's capabilities to organize and execute courses of action to attain designated types of educational performances" (Zimmerman, 1995, p. 203). Bandura (1977) developed scales to measure perceived academic self-efficacy to assess its level, generality, and strength across activities and contexts. In terms of academic functioning, self-efficacy *level* refers to variations across different levels of tasks, such as increasingly difficult math problems. Self-efficacy *generality* refers to the transfer of self-efficacy beliefs across activities, such as different academic subject matters. Finally, self-efficacy *strength* in academics is measured by degrees of certainty that one can perform given tasks (Zimmerman, 1995).

According to Bandura (1997), performance successes generally strengthen efficacy beliefs and repeated performance failures weaken them, particularly if the failures occur early in the course of events and do not reflect lack of effort or adverse external circumstances. A small performance success that persuades individuals they have what it takes to succeed will often enable them to achieve higher accomplishments and to succeed at new activities or in new settings (Bandura, 1997; Williams & Zane, 1989). But performance alone does not provide sufficient information to judge one's level of capability, because many factors that have little to do with ability can affect performance. According to Bandura (1997), "perceived self-efficacy is often a better predictor under variable conditions than past performance, because efficacy judgements encompass more information than just the executed action" (p.81).

Research in academic settings verifies that perceived self-efficacy beliefs contribute independently to intellectual performance (Bandura, 1997). In research with children, Collins (1982), selected children who judged themselves to be of high and low self-efficacy at each of three levels of mathematical ability. These children were then given mathematical problems to solve. Children who had stronger self-efficacy beliefs were quicker to discard faulty strategies, solved more problems, chose to rework problems they missed, and did so more accurately than children of equal ability who doubted their self-efficacy. In higher education settings, Pajares (1996) reports that mathematics self-efficacy of college undergraduates was a better predictor of their mathematics interest and majors than either their prior math achievement or math outcome expectations. According to Zimmerman, Bandura, and Martinez-Pons (1992), academic self-efficacy influenced achievement directly as well as indirectly by raising students' grade goals. Pintrich & Garcia (1991) found that students who believe they

are capable of performing academic tasks use more cognitive and metacognitive strategies and persist longer than those who do not.

Self-Efficacy for Financial Attitudes and Difficulties

According to researchers of student persistence, the role of finances is a very important component in the persistence process. Finances not only impact a students withdrawal decision directly, but extend indirectly through other variables including academic factors, socialization processes, and psychological outcomes such as perceptions of fitting in at an institution, satisfaction with the institution, perceived utility of the education obtained at that institution, commitment to the goal of completing college, and intent to persist (Cabrera, Nora, & Castaneda, 1992). Cabrera, Castaneda, Nora, & Hengstler (1992) found a direct effect of satisfaction with financial support (finance attitudes) on student satisfaction with course loads, college academic performance (GPA), and persistence. Utilizing the Tinto (1993) student integration model, Cabrera, Stampen, and Hansen (1990) argue that financial factors, while exerting a direct effect on persistence, can affect a student's academic and social integration with the university and his or her commitments to college completion.

Self-Efficacy for Career Decision-Making

Career decision-making self-efficacy identifies the extent to which students have self-efficacy about their abilities to engage in educational and occupational information-gathering, goal planning, and decision-making (Taylor & Betz, 1983). The career development literature suggests a relationship between declaration of a major and academic success (Foote, 1980).

Career decision-making is not simply a matter of choosing a major. It involves problem solving and confidence in the ability to make decisions. According to Bandura

(1997), "people who lack confidence in their judgement have difficulty making decisions and sticking with them even if they have been taught the strategies for doing so" (p. 427). In other words, people are unlikely to invest much effort in exploring career options unless they are confident in their abilities to make good decisions.

In this study, the above elements of self-efficacy comprise the variable, College Student Self-Efficacy. Self-efficacy is believed to be an important factor influencing intention to remain enrolled in college and the degree of commitment to and contentment with the decision to obtain the bachelors' degree. Of interest in this study is the level of motivation a student has to complete the degree. Motivation is concerned with selection, activation, and direction of behavior toward a goal. Individuals who are motivated to attain some goal are more likely to believe in their ability to attain that goal. The section that follows provides an overview of the student motivation construct.

Motivation

Motivation is primarily concerned with how behavior is activated and maintained (Bandura, 1977). Many theories of motivation exist throughout the literature. Some of the more prominent theories are further described in chapter 2. In this study, the conceptual basis of motivation is derived from a social cognitive perspective with Bandura's work as the framework. In cognitive motivation, people are motivated and guide their actions through the exercise of forethought. They form beliefs about what they can do, anticipate likely positive and negative outcomes, set goals for themselves, and plan future courses of action to attain those goals or avoid aversive ones. According to Bandura, motivation is sometimes acquired through avoiding aversive external stimuli, such as hunger, thirst, and pain. A great deal of

human motivation, however, is initiated and sustained over long periods in the absence of external stimulation. The capacity to represent future consequences in thought provides one cognitively based source of motivation. Many of the things we do are designed to gain benefits and avert future difficulties. A second cognitively based source of motivation operates through goal setting and self-regulating reinforcement, which are intervening influences.

Goal setting is hypothesized to be an important cognitive process which affects motivation (Schunk, 1991). According to Bandura (1977),

> When individuals commit themselves to explicit goals, perceived negative discrepancies between what they do and what they seek to achieve create dissatisfactions that serve as motivational inducements for change (p.161).

The motivational effects do not derive from the goals themselves, but from the fact that people tend to respond evaluatively to their own behavior. Providing students with feedback on goal progress also raises self-efficacy (Bandura & Cervone, 1983). Heightened self-efficacy sustains motivation and improves skill development (Schunk, 1991).

Research has investigated the notion that students' self-efficacy beliefs about their capabilities to process academic material can influence motivation and learning (Schunk, 1991). When students believe they will have difficulty comprehending material, they are apt to hold a low self-efficacy for learning. Students who feel capable of handling and processing the information should feel efficacious. In turn, a higher sense of efficacy leads students to perform those activities that they believe will result in learning, thus increasing motivation.

While self-efficacy and motivation are important variables known to influence human behavior, outcome expectations are important in that individuals will be more

likely to behave in a way that produces desired outcomes. The theoretical basis and definition of outcome expectations is addressed next.

Outcome Expectations

Self-efficacy is often confused with outcome expectations when, in fact, they are two different constructs. An outcome expectancy is a person's estimate that a certain behavior will produce a resulting outcome. Self-efficacy is the individual's conviction that he or she can execute the behavior needed to produce the desired outcome (Bandura, 1997). An outcome expectation is thus a belief about the consequences of a behavior. An efficacy expectation, on the other hand, is a belief concerning the performance of a behavior (Hackett & Betz, 1981). Expectancy-value theories stress the notion that behavior is a joint function of people's expectations of obtaining a particular outcome as a function of performing a behavior and the extent that they value those outcomes. These theories assume that people make judgements of the likelihood of attaining various goals in a given situation (Schunk, 1991). For example, students confident in their math skills expect high marks on math exams and expect the quality of their work to reap the benefits. The opposite is also true of those students who doubt their ability on a math exam. These students envision a low grade before they begin the math exam (Pajares, 1996).

Although perceived control over outcomes is important, it does not guarantee that students will be motivated to succeed or learn. For example, students might believe that they will graduate from college and get a good job if they work hard (positive outcome expectation), but they may seriously doubt their capabilities to learn the material on an exam (low self-efficacy). Self-efficacy and outcome expectancy are related, but are separable in situations where outcomes are poorly linked with

performance quality (e.g., all students will receive good grades and graduate from college, regardless of performance). Low self-efficacy expectations may prevent a person from attempting to perform a task even if he or she is certain that the performance of that task would lead to a desired outcome. Successful performance of a given behavior is the most powerful source of strong self-efficacy expectations (Hackett & Betz, 1981; Bandura, 1997).

Bandura (1997) argued that because the outcomes people expect are largely dependent on their judgements of what they can accomplish, it is unlikely that outcome expectations will make much of an independent contribution to predictions of behavior when self-efficacy perceptions are controlled. According to Bandura (1997), "In most social, intellectual, and physical pursuits, those who judge themselves highly efficacious will expect favorable outcomes, whereas those who expect poor performances of themselves will conjure up negative outcomes" (p.24).

The role of college student self-efficacy, motivation, and outcome expectations are all expected to contribute to intention certainty. A discussion of the theoretical constructs that guide this research and a conceptual model follows.

Theoretical Constructs

An extensive review of the literature shows that no study had yet been completed to examine relationships between college student self-efficacy, motivation, outcome expectations and intention certainty. The theoretical framework of each of these constructs and the relationship between each of these constructs is presented briefly in this section along with a conceptual model illustrating relationships among the variables. Each variable is also reviewed extensively in Chapter 2. Figure 1 shows the conceptual framework used to guide this study.

Conceptual Framework of the Study

A conceptual framework was developed in order to better depict relationships among the variables utilized in this study. Included in the framework are constructs believed to impact students' intentions to remain enrolled in college and to persist in attaining a degree. The constructs of college student self-efficacy, motivation, outcome expectations and decision certainty are believed to contribute to students' intentions to remain enrolled in college. Likewise, and consistent with Bandura's (1993) discussion on reciprocal triadic causation, intention is also expected to influence self-efficacy, motivation, and outcome expectations. Thus, the model depicted in figure 1 is reciprocal. In this study, intention refers to "the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior" (Warshaw & Davis, 1985, p. 214). Self-efficacy refers to "the belief in one's capability to organize and execute courses of action required to produce given attainments" (Bandura, 1997). Decision certainty refers to a "personal/psychological state of affairs encompassing both cognitive and affective elements of personal contentment with choices made and commitment to courses of action to pursue goals emanating from choices made" (Bienvenu, 2000, p. 31.). In this study, decision certainty and intention are considered the components of intention certainty. These variables are shown in figure 1 which depicts presage (family educational background, SES) and demographic (sex, age, grade point average) variables, intention, and behavior and likewise illustrates the reciprocal relationship between the variables.

Conceptual Framework of the Study (Figure 1)

The figure depicts student presage variables and demographic characteristics as inputs in the intention formation process (e.g. age, gender, ethnicity, grade point

average, family educational background). These variables are similar to the individual characteristics identified by Tinto (1993) in his theory of college student departure. Tinto's theory states that students enter college with various individual characteristics which include family and community background characteristics (e.g., parental educational level, social status), individual attributes (e.g., ability, race, and gender), skills (e.g. intellectual and social), financial resources, dispositions (e.g. motivations, intellectual, and political preferences), and precollege experiences with school (e.g., students' high school record of academic achievement). Students' initial commitments to the institution and to the goal of college graduation as well as the departure decision are associated with each student entry characteristic.

Initial commitment to the institution and commitment to the goal of graduation affect the student's degree of integration into the academic and social systems of the college or university. Each attribute affects departure indirectly through its effect on the formulation of intentions and commitments regarding degree attainment. Commitments include the degree to which students are committed to attaining their goals (goal commitment) as well as to the institution into which they enter (institutional commitment) (Tinto, 1993). *Linkages between these input variables and levels of intention certainty, are believed to be mediated by the personal variables of college student self-efficacy, motivation, and outcome expectations.*

It is also important to remember the role played by the environment within this system. According to Bandura (1997), the relationship between persons, behavior, and the environment all operate as interacting determinants that influence one another bidirectionally. Their influence will vary for different activities and under different circumstances. In his model, the environment represents a broad network of

sociostructural influences that both provide restraint and resources for personal development and everyday functioning. In figure 1, the model assumes that the variables shown are "interactively embedded" in the external environment. Bandura's (1997) model of triadic reciprocal causation is further explained in Chapter 2.

All variables in this study are considered to be dynamic processes. College student self-efficacy, motivation and outcome expectations are considered to be dynamic processes because they can be changed as sources of information are filtered through current perceptions, personal knowledge, and the individual's interaction with and reaction to situations and tasks.

Rationale for Utilizing Psychological Variables to Study Retention

As the model in Figure 1 illustrates, college student self-efficacy, motivation, and outcome expectations are expected to contribute to intention certainty, which leads to actual behavior (completion of the degree). Likewise, intention certainty was expected to influence self-efficacy, motivation, and outcome expectations since the model is reciprocal. Several factors justified choosing the variables in this study. First, a review of the literature showed that presage and demographic variables (e.g., race, gender, ability, etc.) have been commonly linked to persistence in college without consideration for psychological constructs. Secondly, exploring psychological constructs such as intention, decision certainty, college student self-efficacy, and outcome expectations will add considerably to the development of an expanded theory base in which to study retention. And finally, this study focuses on characteristics of students who choose to stay as opposed to those who choose to leave higher education, a phenomenon that has not been extensively explored in the retention literature using psychological variables. Research on retention of students in higher education has historically focused on why

students leave college and has typically focused on the contribution of demographic and presage variables (i.e. financial aid, full-time employment, high school grade-point average, etc). This study attempts to examine psychological variables to understand why students persist through college by examining their intention certainty, thus adding to the vast amount of research on retention in higher education.

In this research, intentions (specifically intention to remain enrolled in college) are being used *as a proxy measure of actual college student retention*. The link between intentions to remain enrolled in college and college student retention is backed by intention theory. As mentioned earlier, intentions are indicators of how hard people are willing to try and how much effort they are willing to put forth to perform a behavior (Ajzen, 1991). By applying intention theory to college student retention we can infer that students who have stronger intentions to remain enrolled in college are *more likely* to complete the actions necessary to attain the bachelors' degree. Thus, this research does not directly study college student retention or college student dropouts and is only interested it the covariation among students in the variables being studied with those who are still in attendance.

Intention certainty along with college student self-efficacy, motivation, and outcome expectations are the constructs utilized in this research. The conceptual framework (Figure 1, p. 25) organizes input (demographic and presage variables), mediating variables (psychosocial variables), and outcome (intention certainty) variables of the study. The theoretical discussion provides the rationale for the selection of these variables and the construction of the model. Within this framework, the next section will discuss the problem, purpose, and importance/significance of the study.

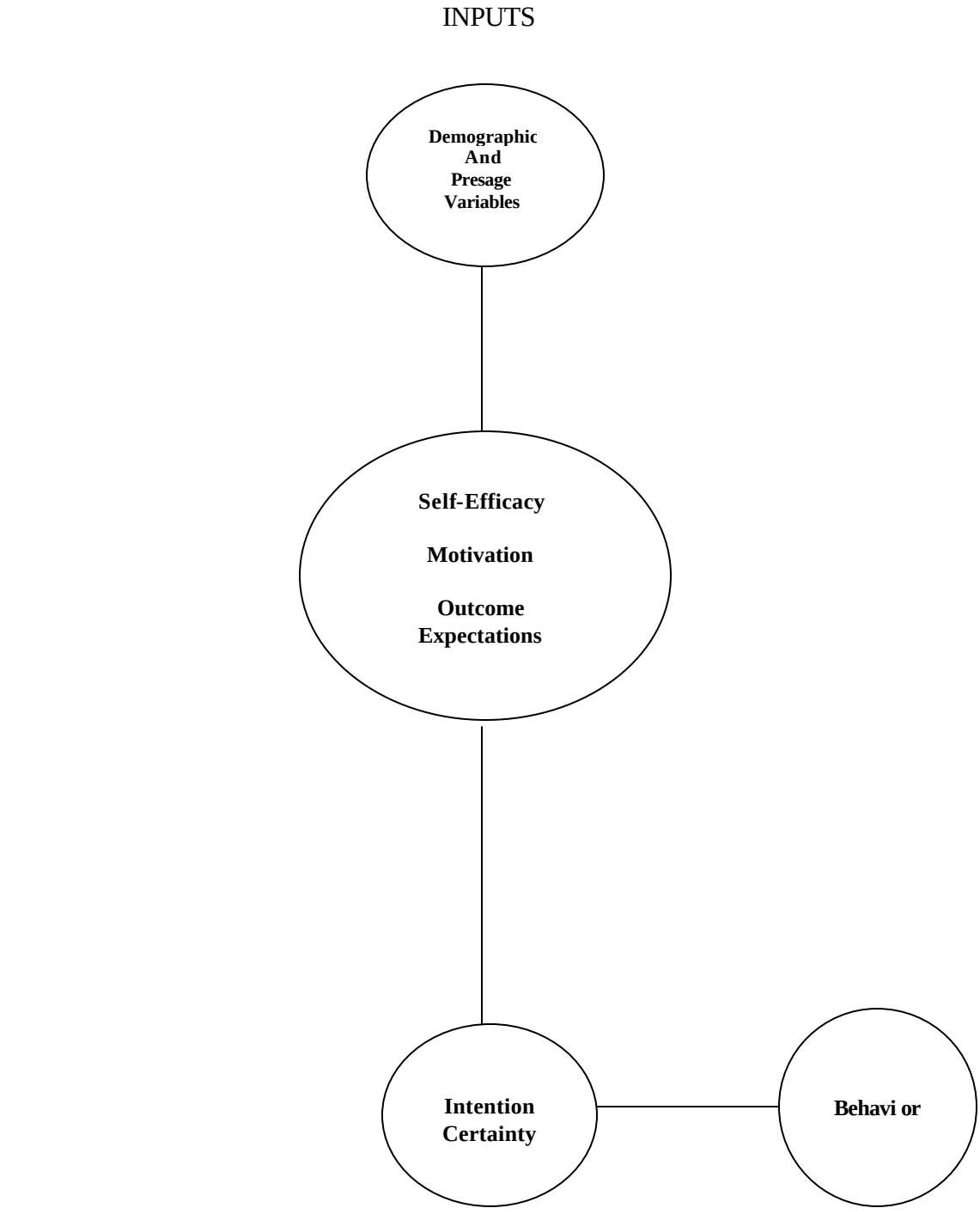

Figure 1: Conceptual Framework of the Study

Statement of the Problem

The problem to be addressed in this study is fivefold. First, previous research has typically focused on presage and demographic variables rather than theory-rich psychosocial variables in attempting to explain why students are leaving college. This research will examine the constructs of college student self-efficacy, motivation, and outcome expectations, all of which are theory-based and extensively researched. These variables are being studied within the framework of intention certainty, which is conceptually based on theories of human intention (Fishbein & Ajzen, 1975) and decision certainty (Bienvenu, 2000).

Second, retention research has historically focused on why students' choose to leave higher education. This study will examine psychological variables associated with student intention to remain enrolled.

Third, an extensive amount of research exists on intention, but very little in the academic realm, particularly in higher education. This research will add to the extensive body of literature on intention.

Fourth, the literature reveals that no research has been conducted to determine the relationship between college student self-efficacy, motivation, outcome expectations, and intention certainty.

Finally, the design of past research is of concern in this study. Much of the research on retention in higher education tends to focus on particular subgroups (e.g., minorities, women, freshmen) rather than on the entire student body. There are also few studies in the literature focused on students who intend to stay enrolled to degree completion and few studies that examine the relationship between the psychological variables in this study. This research will address these concerns.

General Purpose of the Study

The purpose of this study was fourfold. The first purpose was to expand our understanding of the college retention dropout issue by exploring relationships between psychologically rich variables. A second purpose was to provide information considered useful for framing future research on retention from a different perspective that focuses on characteristics of individuals who stay, rather than those who leave higher education with the consideration of psychological constructs. Further, this research expanded the Tinto model to examine psychological variables believed to influence intention to remain enrolled as opposed to demographic variables associated with student dropouts. Finally, because the sample was extended to include all subsets of the student population, broader practical applications were obtained resulting in greater generalizability of the results.

Study Variables

The dependent variable in this study was intention certainty, which is conceptually based on theories of intention (Fishbein & Ajzen, 1975) and decision certainty (Beinvenu, 2000). The independent variables were college student self-efficacy, motivation and outcome expectations. Formal definitions of each variable in this study are provided below. For each variable, a conceptual definition is provided followed by an operational definition.

Dependent Variable

Intention Certainty

Conceptual Definition- Intention certainty is the degree to which a person has consciously formulated plans to perform or not perform some behavior and the level of commitment to and contentment with the decision after it has been made.

Intention certainty is a new variable, which is derived from existing conceptions of intention and decision certainty.

Operational Definition- Intention certainty was operationally defined in this study by the Student Intention Certainty Scale (SICS). As intention certainty is a new construct, the measure was specifically designed for this study with the exception of contentment and commitment items, which were adapted from Bienvenu (2000). Items on the SICS measure students' levels of intention to remain enrolled in college and their degree of contentment and commitment with the decision to complete the degree.

Independent Variables

College Student Self-Efficacy

Conceptual Definition- Self-efficacy refers to the "belief in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3). In this study, college student self-efficacy was considered multifaceted and was comprised of the following facets: self-efficacy for self-regulated learning, self-efficacy for academic achievement, self-efficacy for financial attitudes/difficulties, and self-efficacy for career decision-making.

Operational Definition- College student self-efficacy was operationally defined by scores on the College Student Self-Efficacy Scale (CSSES). Items on the CSSES were adapted from existing measures. Items selected for this scale were intended to measure self-efficacy for self-regulated learning, self-efficacy for academic achievement, self-efficacy for overcoming financial difficulties, and self-efficacy for career decision making.

Motivation

Conceptual Definition- According to Bandura (1997), motivation is a system of self-regulatory mechanisms that include selection, activation, and sustained direction of behavior toward certain goals. Motivation is primarily concerned with how behavior is activated and maintained (Bandura, 1977).

Operational Definition- Motivation was operationally defined by the Student Motivation Scale (SMS), which was specifically designed for this study. Items on this measure evaluated students' levels of motivation in the face of obstacles and barriers to the completion of the bachelors' degree.

Outcome Expectations

Conceptual Definition- An outcome expectancy is a person's estimate that a certain behavior will produce a resulting outcome (Bandura, 1997). An outcome expectation is thus a belief about the consequences of a behavior that accrue to the individual.

Operational Definition- Outcome Expectations was operationally defined by the Student Outcome Expectations Scale (SOES). Items on this scale were adapted from the Career Decision-Making Outcome Expectancies and Exploratory Intentions scale (Betz & Voyten, 1997). Items on this measure assess students' perceptions of the extent to which remaining enrolled in higher education and persisting to attain a college degree will have positive, personal, cognitive, affective, and psychosocial consequences.

Research Hypotheses and Questions

Hypotheses and Rationales

From the previous discussion, the following hypotheses were formulated:

Hypothesis 1: College Student Self-Efficacy and Intention certainty

There is a statistically significant, positive relationship between students' strengths of self-efficacy beliefs about their capabilities to persist to graduation and their strengths of intention certainty.

Rationale for Hypothesis 1- According to Bandura (1997), "A high sense of personal efficacy in a responsive environment that rewards valued accomplishments fosters aspirations, productive engagement in activities, and a sense of fulfillment. These are the conditions that enable people to exercise substantial control over their lives through self-development" (p.21). There are many activities that, if done well, guarantee outcomes that are valuable, but they are not pursued by people who doubt their ability to succeed (Betz & Hackett, 1986). It seems logical that intent to remain enrolled and commitment to and contentment with the decision to remain enrolled in college could be best predicted by persons with high self-efficacy beliefs about their abilities to succeed.

Intentions are assumed to capture the motivational factors that influence behavior. Intentions are assumed to indicate how hard people are willing to try and how much effort they are planning to exert to execute a given behavior. As a general rule, the stronger the intention to perform a behavior, the greater the likelihood the behavior will be performed (Ajzen, 1991). Students with strong self-efficacy beliefs about their abilities to succeed will more likely form strong intentions to remain in college and complete the degree therefore resulting in the performance of that behavior (degree completion). According to Ajzen & Madden (1986), "to ensure accurate prediction of behavior over which individuals have only limited control, we must assess not only intention but also obtain some estimate of the extent to which the individual is capable

of exercising control over the behavior in question" (p. 456). Self-efficacy is the belief is ones' ability to exercise control over the behavior.

Hypothesis 2: Motivation and Intention Certainty

There is a statistically significant, positive relationship between students' strengths of motivation and their strengths of intention certainty.

Rationale for Hypothesis 2- According to Bandura (1997), people motivate themselves and use forethought to guide their actions. They form beliefs about what they can do, anticipate likely positive and negative outcomes of the different pursuits they choose, and set goals for themselves. They also plan courses of action designed to realize valued futures and avoid aversive ones. Motivation encompasses a system of self-regulatory processes that involves selection, activation, and sustained behavior toward goals. Intention refers to "the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior" (Warshaw & Davis, 1985, p.214). Intentions are assumed to capture the motivational factors that influence a behavior and are indicators of how hard people are willing to try and how much effort they are willing to put forth to perform the behavior (Ajzen, 1991). The stronger a person's intention, the more the person is expected to try, and hence the greater the likelihood the behavior will actually be performed. Therefore, it seems likely that students' who are strong in motivation and persistence will also have a strong intention to remain enrolled in college. Likewise, persons who have a strong intention to remain enrolled in college are also strongly motivated. These students' would also likely be contented with and committed to the decision to remain enrolled in college to degree completion.

Hypothesis 3: Outcome Expectations and Intention Certainty

There is a statistically significant, positive relationship between students' positive outcome expectations and their strengths of intention certainty.

Rationale for Hypothesis 3- An outcome expectancy is a person's estimate that a certain behavior will produce a resulting outcome (Bandura, 1997). An outcome expectation is thus a belief about the consequences of a behavior. According to Bandura (1997), "the outcomes people anticipate depend largely on their judgements of how well they will be able to perform in given situations" (p.21). If a students' expectation is that he or she will succeed in college and persist to degree attainment and he or she values the outcome (degree attainment) this student is more likely to have a high intention to remain in college. According to Ajzen & Madden (1986) intentions are indicators of how hard people are willing to try and how much effort they are willing to put forth to perform the behavior. It seems likely that students' will put forth effort into activities they value.

Research Questions and Rationale

In addition to the primary research hypotheses, the following research questions were addressed by this study:

- What is the empirical structure of the various measures designed to assess elements of self-efficacy theory, (a) college student self-efficacy beliefs, (b) motivation, and (d) outcome expectations?
- What is the empirical structure of the measure designed to assess intention certainty?
- Is there a relationship between demographic characteristics of students and any of the study measures or results?

- Do student groups differ on any of the study measures when classified by selected demographic characteristics?

The rationale for including these research questions is to ensure the measurement quality of the study, to address the empirical structure of the measures, and to assess variation in intention certainty collectively accounted for by the independent variables. Despite numerous studies assessing the role of some of these factors on intention and on retention of students, no studies exist that have examined these factors as predictors of intention certainty.

In addition to the questions listed above, additional supplemental research questions were addressed in this study as they emerged from the results of the primary data analysis.

Assumptions

The first assumption of this study was that students who chose to participate in the data collection responded to the questions honestly. Secondly, this study was developed and theoretically based on psychological and educational literature and it is assumed that the results will be generalizeable to both the traditional and non-traditional aged college students. The final assumption of this study is that the sample chosen and the manner in which it was chosen is generalizeable to the university's total student population and to other similar universities as well.

Limitations

Since this study only utilized students from one university, the findings may be limited to a student population that is similar to a Carnegie Foundation, Doctoral/ Research University- Intensive with a population of approximately 15,000 students. Data collected for this study were collected during the summer semester. Therefore, the

results may only be generalizeable to students participating during the summer semester. The study may also be somewhat limited by the use of only self-report measures.

Chapter Summary

Chapter 1 provided an introduction of the variables, conceptual model, and rationale for the study. A statement of the problem, purpose of the study, and significance of the study were also outlined followed by conceptual and operational definitions of the study variables. Research hypotheses and questions were also included along with a rationale. Chapter 2 reviews the literature and research related to intention certainty, self-efficacy, academic self-efficacy, efficacy motivation and persistence, and efficacy outcome expectations.

CHAPTER 2: REVIEW OF RELATED LITERATURE AND RESEARCH

Introduction

This chapter reviews the literature pertinent to intention certainty and the variables introduced and defined in the Introduction. Included in this chapter are a review of the literature on a) intention, b) decision certainty, c) self-efficacy; d) motivation, e) outcome expectations; and f) retention theory; specifically the theory of Vincent Tinto.

The dependent variable in this study is intention certainty, which is derived from conceptions of intention and decision certainty. In this study, students' intentions to remain enrolled in college and their degree of certainty with the decision to remain enrolled will be examined. What is the conceptual basis of intention? What does the literature say about the theoretical foundation of intention?

Intention

According to Fishbein & Ajzen (1975), intention is defined as "a person's location on a subjective probability dimension involving a relation between himself and some action" (p. 288). A behavioral intention refers to a person's subjective probability that he will perform some behavior. In contrast, Warshaw and Davis (1985) define intention as "the degree to which a person has formulated conscious plans to perform or not perform some specified future direction" (p. 214). Warshaw and Davis also assert that research on intention, particularly that of Fishbein and Ajzen, confuse the terms behavioral intention and behavioral expectation when in fact they are two separate and distinct constructs. Warshaw and Davis define behavioral expectation as "the individual's estimation of the likelihood that he or she actually will perform some specified future behavior" (p. 215). They define intention as "the degree to which a

person has formulated conscious plans to perform or not perform some specified behavior" (p.214). According to Warshaw and Davis, intention involves making a behavioral commitment to perform or not perform an action whereas expectation is one's estimated likelihood of performing the action even if a commitment has not been made. In their study, Warshaw and Davis argue that expectation should more accurately predict future behavior than intention alone, however, Gordon (1989) criticizes this study by noting that the researchers used self-reports as the criterion measure.

Fishbein & Ajzen's Theory of Reasoned Action

Much of the research on intention has been conducted within the framework of the "theory of reasoned action" (Fishbein & Ajzen, 1975, Ajzen & Fishbein, 1980). According to the theory, the antecedent of any behavior is the *intention* to perform that behavior. The stronger a person's intention, the more the person is expected to try, and hence the greater the likelihood the behavior will actually be performed. The constructs employed by the theory of reasoned action are motivational in nature (Ajzen & Madden, 1986). Two conceptually independent determinants of intention are specified in Fishbein and Ajzen's theory. One is a personal factor termed *attitude toward the behavior*. This refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior in question. The second predictor of intention is *subjective norm*. Subjective norm is a social factor and refers to the perceived social pressure to perform or not to perform the behavior.

There has been much support in the literature for the theory of reasoned action (Ajzen & Fisbein, 1980; Ajzen, Timko, & White, 1982; Bentler & Speckart, 1979; Fredricks & Drossett, 1983; Manstead, Proffitt, & Smart, 1983; Smetana & Adler,

1980), but in spite of the success of the theory, problems necessitated a need for revision. These problems have to do with the transition from verbal responses to actual behavior (Ajzen & Madden, 1986). According to Fishbein & Ajzen (1975), a strong association between intention and behavior is dependent on three conditions. First, the measure of intention must correspond to the specific behavioral criterion. For example, to predict a specific behavior, such as attending psychology class on a regular basis, we must assess equally specific intention, i.e., intentions to regularly attend psychology class at the specific times, date, and location of the class. Fishbein & Ajzen call this condition *correspondence in levels of specificity* and purport that the lower the correspondence between the intention's and the behavior's level of specificity, the poorer the prediction will be.

A second requirement is that the intention must not have changed between the time it was assessed and the time the behavior occurred, a requirement that Fishbein & Ajzen (1975) call *stability of the intention*. According to Fishbein & Ajzen, "the longer the time interval between measurement of intention and observation of behavior, the greater the probability that the individual may obtain new information or that certain events will occur which will change his intention" (p.370). Also, the greater the number of intervening steps the person must undergo, the lower the intention-behavior correlation will be. The greater the number of intervening steps, the more likely a person is to acquire new information, which may produce a change in the individual's intention. The degree to which carrying out the intention is dependent on other people or events is also likely to lower the intention-behavior correlation.

The third major factor identified to influence the magnitude of the relationship between intention and behavior is *volitional control*. A behavior is said to be under

volitional control if the person can decide at will to perform it or not perform it (Ajzen & Madden, 1984). Conversely, the more a behavior is contingent on other people or conditions, the less the behavior is under volitional control. Once the person realizes that that he or she is unable to perform the behavior (due to outside circumstances) he or she may change their intention to perform that behavior (Fishbein & Ajzen, 1975). With this in mind, volitional behavior is an action that a person is able and intends to perform without interference from any other factors (Bagozzi, 1992).

Fishbein and Ajzen are clear in their requirement that the theory of reasoned action applies only to volitional behaviors (Bagozzi, 1992, Gordon, 1989). To explain behaviors not completely under volitional control, Ajzen (1991) and Schifter and Ajzen (1985) introduced the theory of planned behavior.

The Theory of Planned Behavior

The theory of planned behavior extends the Fishbein and Ajzen theory of reasoned action by including the concept of behavioral control (Ajzen & Madden, 1986). Many factors can interfere with control over intended behavior, some internal to the individual (skills, abilities, knowledge, and planning) and some external (time, opportunity, and dependence on others). According to Ajzen & Madden (1986), "to ensure accurate prediction of behavior over which individuals have only limited control, we must assess not only intention but also obtain some estimate of the extent to which the individual is capable of exercising control over the behavior in questions" (p. 456). Unfortunately, it is very difficult to secure an adequate measure of actual control in advance of observing the behavior. However, it is possible to measure *perceived behavioral control*, "the person's belief as to how easy or difficult performance of the behavior is likely to be" (Ajzen & Madden, 1986, p. 457). According to the theory of

planned behavior, the more resources and opportunities individuals *think* they possess, and the fewer obstacles or impediments they anticipate, the greater their perceived control over the behavior. The proposed relationship between perceived behavioral control and behavior is based on two rationales. First, holding intention constant, the likelihood that a behavior will be carried out increases with greater perceived behavioral control. Second, perceptions of behavioral control must reflect actual control in the situation with some degree of accuracy (Ajzen & Madden, 1986).

A large body of research supports the theory of planned behavior, some of which includes studies of class attendance by college students (Ajzen & Madden, 1986), weight loss and voting (Netemeyer, Burton, & Johnson, 1991), and condom use (Abraham, Sheeran, Norman, Conner, De Vries, and Otten, 1999).

In sum, the theory of planned behavior complements the theory of reasoned action. The theory of reasoned action applies only to behaviors totally under volitional control whereas the theory of planned behavior addresses behaviors under partial volitional control. Perceived behavioral control is thought to take into account external obstacles or personal deficiencies that might prohibit the performance of a behavior (Bagozzi, 1992).

In this study the dependent variable is intention certainty, which is defined as the degree to which a person has consciously formulated plans to perform or not perform some behavior and the level of commitment to and contentment with the decision after it has been made. Intention certainty is a new variable, which is derived from conceptions of intention and decision certainty. What is decision certainty? What are the components of decision certainty? These questions are addressed next.

Decision Certainty

Conceptually, decision certainty is defined as the current degree of commitment to, and contentment with, a choice (deciding to obtain a bachelors' degree) after a decision is made (Bienvenu, 2000). This definition is different from previous ones that discuss decision making in the context of decidedness versus undecidedness. Decidedness alone is not necessarily a good outcome if the decision was reached in haste or for reasons in conflict with the student's personal characteristics (Betz, 1988). For example, students may make decisions to remain in college through procrastination, rationalization, or denying responsibility for making the choice. The decisional process often involves stress or anxiety and as a result of these emotional states (doubts, worries, anxiety, outside influences, internal desire) students will seek to reduce the anxiety by making a decision. According to Bienvenu (2000), "for an individual to arrive at decision certainty, it is assumed that realistic considerations of career options and personal characteristics and self- appraisal have all occurred. As a result, the level of commitment to and contentment with the decision would be expected to increase" (p. 66).

Commitment and Contentment

According to Bienvenu (2000), the degree of satisfaction, freedom from doubt, and other negative feelings once the decision is made reflects the level of contentment with the decision. The level of post-decision stability of the choice and degree of dedication an individual exerts in fulfilling that choice reflects the level of commitment to the decision. Central to most psychological formulations of the decision making process is the concept of commitment (Janis & Mann, 1977). Bienvenu (2000) also states that, "the dynamics of commitment extend beyond the act of making a decision to

post-decisional stability. The component of contentment with the decision is also central to reducing negative consequences, conflict, and discomfort associated with poor quality decision making" (p.67). What role does cognition play in achieving high levels of intention to remain enrolled and degrees of contentment and commitment with the decision to complete the degree?

Social Learning Theory

This study attempts to apply cognitive methods to understand why students persist through college by examining their intention certainty. According to Bandura's (1986) Social Cognitive Theory, self-referent thought acts as a mediator between knowledge and action, and through self-reflection individuals evaluate their own experiences and thought processes. Knowledge, skill, and prior attainments are often poor predictors of subsequent attainments because the belief that individuals hold about their abilities and about the outcome of their efforts will powerfully predict their behavior (Pajares, 1996). Individuals alter their environment and their self-beliefs by their interpretation of their performance attainments. This interpretation in turn informs and alters their subsequent performance. According to Bandura (1989):

> Social cognitive theory subscribes to a model of emergent interactive agency. Persons are neither autonomous agents nor simply mechanical conveyers of animating environmental influences. Rather, they make causal contribution to their own motivation and action within a system of triadic reciprocal causation (p.1175).

This is the foundation of Bandura's (1986) conception of reciprocal determinism, which is the basis of his model of triadic reciprocal causation.

Triadic Reciprocal Causation

Lewin's (1947) forced-field theory provides the initial framework for the model of triadic reciprocal causation. According to Lewin, B = f (P, E), where individual

behavior is a function of personal variables (P) and environmental variables (E). Bandura's (1977) construct of triadic reciprocal causation builds upon the force-field model. According to Bandura, reciprocal determinism is the view that (a) personal factors in the form of cognition affect, and biological events, (b) behavior, and (c) environmental influences create interactions that result in triadic reciprocality. Thus, the interaction between students' personal/psychological characteristics, their behavior, and the environment (experiences in higher education) represents a dynamic triadic reciprocal causation system (Bandura 1997) that influences their intention to remain enrolled. Individuals are viewed both as products and as producers of their own environments and of their social systems (Pajares, 1996).

Social cognitive theory applications, specifically the concepts of self-efficacy, academic self-efficacy, efficacy motivation and persistence, and outcome expectations are of major concern in this research. Of interest is the relationship between these variables on intention to remain enrolled in college and the degree of certainty with the decision.

Self-Efficacy

Bandura (1997) uses the term self-efficacy to refer to "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p.3). According to Bandura (1997), self-efficacy beliefs constitute the key factor of human agency. Efficacy beliefs "influence the courses of action people choose to pursue, how much effort they put forth in given endeavors, how long they will persevere in the face of obstacles and failures, their resilience to adversity, whether their thought patterns are self-hindering or self-aiding, how much stress and depression they experience in coping with environmental demands, and the level of accomplishments

they realize" (p.3). According to Bandura's (1977, 1989) social cognitive theory, individuals evaluate their own experiences and thought processes through self-reflection and through this form of self-referent thought people evaluate and alter their own environments and social systems. These evaluations include perceptions of self-efficacy.

Bandura (1997) conceptualized self-efficacy as varying along three dimensions: level, strength, and generality. *Level* refers to the degree of difficulty of the behaviors or tasks that an individual feels capable of performing. *Strength* refers to the confidence a person has in his or her performance estimates. Weak self-efficacy expectations are easily modified by disconfirming experiences, while strong self-efficacy percepts are robust, promoting persistence in the face of obstacles. *Generality* of self-efficacy concerns the range of situations in which an individual considers him or herself to be efficacious (Lent & Hackett, 1987). Self-efficacy theory states that the level and strength of self-efficacy will determine several things. For example, whether or not a behavior will be initiated, how much effort will result, and how long the effort will be sustained in the face of obstacles are all determined by self-efficacy. Self-efficacy provides individuals with the ability to influence their won course of action and alter their environments (Bandura, 1997).

Bandura (1997) hypothesized that an individual's choice of activities, persistence, and effort is affected by self-efficacy beliefs. For example, people who have a low sense of efficacy for accomplishing a task may avoid it and those who believe they are capable should participate readily. Those individuals who feel efficacious are hypothesized to persist longer and work harder when they encounter difficulties as opposed to those who doubt their capabilities (Schunk, 1991). The most reliable guide

for assessing self-efficacy is the individuals' own performance. Self-efficacy may go up or down depending on success or failure, but once self-efficacy is developed in an individual, failure may not have much of an impact (Schunk, 1991). According to Lent & Hackett (1987), accurate and strong expectations of personal efficacy are crucial to the initiation and persistence of behavioral performance in human development. Self-efficacy theory has been applied to several areas of psychosocial functioning such as anxiety, phobias, health behaviors, and school achievement, with largely supportive results. For example, there is evidence that self-efficacy predicts such outcomes as academic achievement, social skills, pain tolerance, and athletic functioning (Schunk, 1991).

Though self-efficacy is an importance influence on behavior, it is not the only influence. Behavior is a function of many variables. In achievement settings, such as higher education, some other important variables are skills, outcome expectations, and the perceived value of outcomes (Schunk, 1991). When the necessary skills are lacking, self-efficacy will not produce competent performances. According to Bandura (1997), once efficacy beliefs are formed, they are not stable. They can vary in strength because the individual is constantly evaluating new information. However, once efficacy beliefs have been established over long periods of time and based on a large amount of information, they are unlikely to be changed.

Self-Efficacy for Self-Regulated Learning

Zimmerman and Schunk (1989) define self-regulated learning in terms of self-generated thoughts, feelings, and actions, which are systematically oriented toward attainment of students' own goals. Self-regulated learners engage in academic tasks for personal interest and satisfaction. They are also metacognitively and behaviorally

active participants in their own learning (Ablard & Lipschultz, 1998). Self-regulated learners also have a large arsenal of cognitive and metacognitive strategies that they deploy when needed to accomplish academic tasks. They are also quite persistent in their efforts to reach their goals (Wolters, 1998).

Research in self-regulated learning supports an increase in academic performance when students actively engage in the academic process (Ames, 1984; Dweck, 1986; Zimmerman, 1989). Therefore, self-regulated learners are typically high achievers (Zimmerman & Martinez-Pons, 1990). For example, students scoring in the top 1% on an achievement test more frequently use certain self-learning strategies that optimize (a) personal regulation (e.g., organizing and transforming information), (b) behavioral functioning (e.g., providing their own rewards and punishments based on performance), and (c) the immediate environment (e.g., reviewing notes, seeking peer assistance, and seeking adult assistance).

Zimmerman (1999) identifies five key aspects of students' efforts to self-regulate their learning: goal setting, strategy use, context adaptations, social processes, and self-monitoring. No single self-regulatory process can explain the complexity and variations in students' efforts to learn on their own.

Self-efficacy beliefs also provide students with a sense of agency to motivate their learning through use of self-regulatory processes as self-monitoring, goal setting, self-evaluation, and strategy use (Zimmerman, 2000). The more capable students judge themselves to be, the more challenging the goals they embrace (Zimmerman, Bandura, & Martinez-Pons, 1992). When self-efficacy and personal goal setting were compared with the verbal subscale of the Scholastic Aptitude Test, there was an increase of 35%

in predicting college students' final grades in a writing course (Zimmerman & Bandura, 1994).

Self-Efficacy for Academic Achievement

Perceived academic self-efficacy is defined as "personal judgements of one's capabilities to organize and execute courses of action to attain designated types of educational performances" (Zimmerman, 1995, p. 203).

According to Pajares (1996), self-efficacy research in academic settings has focused primarily on two major areas. One area has explored the link between efficacy beliefs and college major and career choice, particularly in the areas of science and mathematics (e.g. Brown, Lent, and Larkin, 1989; Farmer, Wardrop, Anderson, & Risinger, 1995; Lent, Brown, & Larkin, 1986). Researchers have reported that mathematics self-efficacy of college undergraduates was a better predictor of their mathematics interest and majors than either their prior math achievement or math outcome expectations. Also, male undergraduates report higher mathematics self-efficacy than female undergraduates (Hackett, 1985; Hackett & Betz, 1989). Findings from these self-efficacy studies have provided insights into the career development of students and can be used to develop career intervention strategies, therefore having important implications for counseling and vocational psychology (Pajares, 1996).

Studies in the second major area of research involving self-efficacy in academic settings have investigated the relationships among efficacy beliefs, related psychological constructs, and academic motivation and achievement (Pajares, 1996). Relationships among self-efficacy perceptions, self-efficacy for self-regulation, academic self-regulatory processes, and academic achievement have also been reported in the literature (Risemberg & Zimmerman, 1992; Zimmerman & Ringle, 1981;

Zimmerman & Bandura, 1994). Zimmerman, Bandura, and Martinez-Pons (1992) used path analysis to demonstrate that academic self-efficacy mediated the influence of self-efficacy for self-regulated learning on academic achievement. According to their research, academic self-efficacy influenced achievement directly as well as indirectly by raising students' grade goals. Other findings suggest that students who believe they are capable of performing academic tasks use more cognitive and metacognitive strategies and persist longer than those who do not (Pintrich & Garcia, 1991).

The research base to support the important role played by self-efficacy in predicting and explaining human behavior has been well documented by Bandura (1977, 1997). Additionally, Pajares (1996) has summarized extensive literature on academic self-efficacy. The following is a summary of Pajares' findings:

- Because of beliefs individuals hold about their abilities and the outcomes of their efforts to powerfully influence the way in which they behave, knowledge, skill and prior attainments are often poor predictors of subsequent attainments;
- mathematics self-efficacy of college undergraduates is more predictive of their interest and choice of math-related courses and majors than either their prior math achievement or math outcome expectations;
- self-efficacy is a powerful motivation construct that works well to predict academic self beliefs and performance at varying levels;
- self-efficacy beliefs are correlated with other self-efficacy beliefs, motivation constructs, and academic choices, changes, and achievement;
- general measures of self-efficacy insensitive to context are weak predictors of academic performances.

Self-Efficacy for Financial Attitudes and Difficulties

There is no doubt that finances influence decisions to leave college. Many students, especially those from working class or low-income families simply cannot carry the burden of paying for college. Many of them must rely to student loans or grants to finance their education. According to a report of a study by the U.S. Department of Education, the average student loan has increased by 16 percent in the past four years, while grants have increased by 19 percent (Mulhauser, 2001).

According to some researchers of student persistence (Bean, 1982; Bean & Metzner, 1985;), finances not only impact students' withdrawal decisions directly, but extend indirectly through other variables such as academic factors, a students' socialization process, and such psychological outcomes as satisfaction with the institution, perceptions of fitting in or belonging to the institution, commitment to the goal of college completion, and intent to persist. Metzer and Bean (1987) found that finance attitudes had a small but significant effect on intent to persist among nontraditional students attending a midwestern urban institution. Cabrera, Castaneda, Nora, and Hengstler (1992) found a direct effect of satisfaction with financial support (finance attitudes) on students' satisfaction with the course loads (courses), college academic performance (GPA), and persistence for a sample of college students enrolled at a southwestern institution.

Examining the problem of finances through Tinto's (1997) model of student departure, Bean and Metzner (1985) and Cabrera et al (1990) have argued that students' concerns with finances, along with other external factors to the institution, can affect their academic integration by increasing anxieties associated with the need of securing resources to finance their education, and by limiting the amount of time spent in

academically related activities. Social integration can be affected as well, when students do not have the funds to participate in the social component of the institution.

Finances can also have a direct effect on institutional and goal commitments. Students may be less likely to be committed to an institution or the goal of securing a college degree to the extent to which concerns about the cost of attending college made alternative such as finding full time employment more appealing (Bean & Metzner 1985; Cabrera et al., 1990). Cabrera, Nora, and Castaneda (1992) found that students' satisfaction with having received financial support for his or her institution and from family affected his or her academic and intellectual development.

Self-Efficacy for Career Decision-Making

Self-efficacy theory was extended to the field of career development by Gail Hackett and Nancy Betz (Betz and Hackett, 1981; Betz and Hackett, 1986; Hackett and Betz, 1981). Career decision-making self-efficacy identifies the extent to which students have confidence (self-efficacy) about their ability to engage in educational and occupational information-gathering, goal-planning, and decision-making (Taylor & Betz, 1983). Career development literature suggests a relationship between declaration of a major and academic success (Foote, 1980). Hackett and Betz, (1981) found that efficacy expectations are related to the degree of persistence and success in college major and career choice.

Career decision-making is not simply a matter of choosing a major. It involves problem solving and confidence in ability to make decisions. According to Bandura (1997), "people who lack confidence in their judgement have difficulty making decisions and sticking with them even if they have been taught the strategies for doing so" (p. 427). In other words, people are unlikely to invest much effort in exploring

career options unless they are confident in their ability to make good decisions. Many students avoid the career decision-making process until they are forced to choose a major. Bandura and Wood (1989) found that during complex decision-making, self-efficacy for problem solving was linked to the ability for individuals to remain effective analytical thinkers.

Research using college students has shown a relationship between career and academic self-efficacy and vocational decision-making. Bergeron and Romano (1994) found that students who distrust their capability to make good sound decisions are not only uncertain about a vocational career but unsettled about what academic major to pursue. Students who enter postsecondary education both unsure of vocational direction and only marginally prepared academically are especially prone to drop out and not return (Peterson, 1993). The degree of career related self-efficacy can also effect academic and social integration in college. According to research by Peterson (1993), the higher the students' beliefs in their efficacy to decide what career to pursue, the more strongly they become integrated into the social and academic life of their educational environment. In addition, when students reflect upon, analyze, and synthesize what they have learned, they are better able to integrate their personal aspirations and career goals with their educational plans. Taylor and Pompa (1990) compared multiple predictors of occupational indecision, including locus of control, importance attached to a career, and career decision-making self-efficacy. Career decision-making self-efficacy was found to be the only significant predictor of vocational indecision in college students. In a study examining psychosocial correlates of decision certainty in academic major selection, Bienvenu (2000), found that self-

efficacy, self-appraisal, and to a lesser degree locus of control are all important elements of decision certainty.

Though there is an abundance of research linking self-efficacy to career decision-making, further research is needed. Taylor and Pompa (1990) suggest that more research is needed to "verify the hypothesized link between increasing efficacy expectations and enhancing career decidedness" (p.30). Lent, Brown, and Larkin (1984) recommend that additional measures be created to assess self-efficacy in relation to different aspects of career behavior. The authors also suggest that it would be useful to study self-efficacy's effects in mediating the outcomes of different career interventions and to devise systematic attempts to enhance career related self-efficacy. According to the authors, "this may be an extremely important treatment goal to the extent that weak efficacy expectations may restrict either career choices or career-related performance" (p.361).

Motivation

Motivation is primarily concerned with how behavior is activated and maintained (Bandura, 1977). According to Bandura, motivation is sometimes acquired through avoiding aversive external stimuli, such as hunger, thirst, and pain. A great deal of human motivation, however, is initiated and sustained over long periods in the absence of external stimulation. The capacity to represent future consequences in thought provides one cognitively based source of motivation. Many of the things we do are designed to gain benefits and avert future difficulties. A second cognitively based source of motivation operates through goal setting and self-regulating reinforcement, which are intervening influences.

Goal Setting and Motivation

Goal setting is hypothesized to be an important cognitive process which affects motivation (Schunk, 1991). According to Bandura (1977),

> When individuals commit themselves to explicit goals, perceived negative discrepancies between wheat they do and what they seek to achieve create dissatisfactions that serve as motivational inducements for change (p.161).

The link between goal setting and motivation can be illustrated with students who set a goal or are given a goal by teachers. These students are likely to experience an initial sense of self-efficacy for attaining it. They are also apt to make a commitment to attempt is, which is necessary for goals to affect performance. As the students work at the task, they engage in activities they believe will lead to goal attainment such as attending to instruction, rehearsing information to be remembered, expending effort, and persisting (Locke & Latham, 1990; Schunk, 1991; Bandura, 1988). The motivational effects do not derive from the goals themselves, but from the fact that people tend to respond evaluatively to their own behavior. Providing students with feedback on goal progress also raises self-efficacy (Bandura & Cervone, 1983). Heightened self-efficacy sustains motivation and improves skill development (Schunk, 1991).

The motivational benefits of goals depends upon three properties: proximity, specificity, and difficulty. Proximal (close at hand) goals promote self-efficacy and motivation better than distant goals because it makes it easier for students to judge progress. Goals that incorporate specific performance standards raise efficacy motivation better than general goals for the same reason (e.g. “Do your best”). Difficult goals are more effective as skills develop because they offer more information about capabilities (Schunk, 1991).

Theories of Motivation

Motivation theories are based on a set of assumptions about the nature of people and about the factors that cause them to take action. It has often been said that the study of motivation is an inquiry into the *why* of behavior. According to Deci and Ryan (1987), organismic theories of motivation tend to view the organism as active, that is, being volitional and initiating behaviors. According to this perspective, people have intrinsic needs and physiological drives, and these needs provide the energy for the person to act on (rather than to be reactive to) the environment and to manage their drives and emotions. The following are descriptions of different motivational theories as outlined by Deci and Ryan:

- Drive Theories

  According to the psychoanalytic tradition, behavior can ultimately be reduced to a small number of psychological drives. Within psychoanalytic psychology, motivation theory began with Freud's (1914) drive theory, often called instinct theory. Freud asserted that there are two important drives-sex and aggression. For several decades, researchers worked to develop systems for the explanation of behavior based on drive theories, but it became increasingly clear that drive theories were not adequate for dealing with many of the observed complexities of behavior.

- Intrinsic Motivation

  Intrinsic motivation is based in the innate, organismic needs for competence and self-determination. The primary rewards for behavior are effectance and autonomy. The intrinsic needs for competence and self-determination motivate an ongoing process of seeking and attempting to conquer challenges that are optimal. People seek challenges that are suited to their competencies and that are neither too easy

nor too difficult. When they find new challenges, they work to conquer them and do so persistently. When people experience intrinsic motivation, they experience interest and enjoyment and feel confident and self-determining.

- Self-Determination

  In psychodynamic psychology, drives or impulses account for the tendencies to act, but they do not provide an adequate theory of action. Self-determinism is a concept of self-direction, entailing conscious processes such as imagining future outcomes to account for the wide range of volitional activity we observe. The key issue for self-direction is flexibility in psychological structures that allow one's attitudes to direct action toward the effective achievement of one's aims.

- Alternative (Nonmotivational) Approaches

  Operant psychology has explored the direction and persistence of behavior but has steadfastly refused to postulate about the nature of organisms' needs. The direction of behavior is said to be caused by past reinforcements. An extension of the nonmotivational approach of operant psychology can be seen in cognitive psychology known as cognitive-behaviorism, which is most closely represented by social learning theory. This approach asserts that behavior is a function of one's expectations about future reinforcement.

Academic Motivation and Persistence

Research has investigated the notion that students' self-efficacy about their capabilities to process academic material can influence motivation and learning (Schunk, 1991). When students believe they will have difficulty comprehending material, they are apt to hold a low self-efficacy for learning it. Students who feel more capable of handling and processing the information should feel more efficacious. As students work on tasks,

they derive information about how well they are learning. The perception that they are comprehending material enhances efficacy and motivation. In turn, a higher sense of efficacy leads students to perform those activities that they believe will result in learning.

According to Bandura (1995), students with a high sense of efficacy for accomplishing educational tasks will work harder, participate more readily, and persist for a longer period of time than those with low self-efficacy. Two measures of effort have been employed in research on self-efficacy which include rate of performance and expenditure of energy. There is evidence that self-efficacy is associated with both indices of motivation.

Considerable support has also been found regarding the effects of perceived self-efficacy on persistence (Bandura, 1995). For example, Schunk (1981) found that modeling arithmetic instruction increase students' self-efficacy beliefs, persistence during the post-test, and acquisition of arithmetic skills in students who were very low achievers in mathematics. Students' perceived self-efficacy influences their skill acquisition both directly and indirectly by heightening persistence, indicating that perceived self-efficacy influences students' learning through cognitive as well as motivational mechanisms.

Thus far, the constructs of intention, decision certainty, self-efficacy, and motivation have been reviewed in terms of recent literature. This study also seeks to understand the role of outcome expectations and how they influence a students' intention to remain enrolled in college.

Outcome Expectations

Self-efficacy is often confused with outcome expectations when, in fact, they are two different constructs. An outcome expectancy is a person's estimate that a certain behavior will produce a resulting outcome. Self-efficacy is the individuals conviction that he or she can execute the behavior needed to produce the desired outcome (Bandura, 1997). An outcome expectation is thus a belief about the consequences of a behavior. An efficacy expectation, on the other hand, is a belief concerning the performance of a behavior (Hackett & Betz, 1981).

Expectancy-Value Theories

The concept of outcome expectations is derived from expectancy-value theories, which stress the notion that behavior is a joint function of (a) people's expectations of obtaining a particular outcome as a function of performing a behavior and (b) the extent that they value those outcomes (Schunk, 1991). These theories assume that when people contemplate attaining various goals in given situations, they will make judgements of the likelihood of attaining those goals. People will not attempt goals perceived as unattainable because they have little motivation to attempt the impossible. Even a positive outcome expectation does not produce action is the goal is not valued. It is an attractive goal, along with the belief that it is attainable, that motivates people to act. Outcome expectations and values will influence, but do not guarantee motivation and learning (Schunk, 1991). For example, students who value teacher praise and believe that learning complicated mathematical problems will earn that praise will not be motivated to learn the problems if they doubt their capabilities to do so.

Clearly, if an educational outcome is thought to be unattainable or worthless, students will not be motivated (Bandura, 1995). Outcome expectations and values

themselves are insufficient to motivate high performance. For example, students might believe that they will graduate from college and get a good job if they work hard (positive outcome expectation), but they may seriously doubt their capabilities to learn the material on an exam (low self-efficacy). Self-efficacy and outcome expectancy are related, but are separable in situations where outcomes are poorly linked with performance quality (e.g., all students will receive good grades and graduate from college, regardless of performance). Low self-efficacy expectations may prevent a person from attempting to perform a task even if he or she is certain that the performance of that task would lead to a desired outcome. Successful performance of a given behavior is probably the most powerful source of strong self-efficacy expectations (Hackett & Betz, 1981).

Bandura (1997) argued that because the outcomes people expect are largely dependent on their judgements of what they can accomplish, it is unlikely that outcome expectations will make much of an independent contribution to predictions of behavior when self-efficacy perceptions are controlled. According to Bandura (1997), "In most social, intellectual, and physical pursuits, those who judge themselves highly efficacious will expect favorable outcomes, whereas those who expect poor performances of themselves will conjure up negative outcomes" (p.24).

Given what appears to be a powerful trait with the potential to effect many different areas of a persons life, investigating linkages between self-efficacy and intention certainty is one of the main focuses of this study. This study also examines the link between the variables, self-efficacy, academic self-efficacy, efficacy motivation and persistence, and outcome expectations. It is hypothesized that students with high degrees of self-efficacy, efficacy motivation and persistence, and outcome expectations

will have a higher level of intention certainty. This study hypothesizes that students who have high levels of intention certainty are more likely to persist to obtain the bachelor's degree. Psychosocial variables such as self-efficacy, academic self-efficacy, efficacy motivation and persistence, and outcome expectations will be examined to determine their influence on intention certainty.

Literature related to degree completion has historically focused on why students choose to leave college in the context of presage and demographic variables. Few studies focus on students' who intend to remain enrolled by examining psychosocial variables. This next section examines retention literature, specifically on the theory of Vincent Tinto and institutional responses to retention. In an effort to determine new ways to study retention (determining characteristics of students who stay as opposed to students who leave by examining psychosocial variables) it is important to examine what the literature says about this growing problem in higher education.

Tinto's Theory of College Student Departure

In general terms, retention refers to the ability of an institution to keep a student enrolled from one point to another. Tinto (1993) stated that almost half of the students entering two-year colleges and more than one-fourth of students entering four-year institutions leave at the end of the first year. Approximately 1.1 million students will leave higher education without ever completing a degree.

By far, the greatest amount of research of student retention theory centers on the notion of academic and social integration into the university community. One of the most widely accepted theories was introduced in the 1970's by Vincent Tinto. The next section outlines Tinto's theory of college student departure.

Tinto (1993) purposes that the extent to which the student becomes academically and socially integrated into the formal and informal academic and social systems of an institution determines whether or not a student will stay enrolled. The theory states that students enter college with various individual characteristics which include family and community background characteristics (e.g., parental educational level, social status), individual attributes (e.g., ability, race, and gender), skills (e.g. intellectual and social), financial resources, dispositions (e.g. motivations, intellectual, and political preferences), and precollege experiences with school (e.g., students' high school record of academic achievement). Student's initial commitments to the institution and to the goal of college graduation as well as the departure decision are directly influenced by each student entry characteristic. Initial commitment to the institution and commitment to the goal of graduation affect the student's degree of integration into the academic and social systems of the college or university. Each attribute affects departure indirectly through its effect on the formulation of intentions and commitments regarding education. Intention refers to the level and type of education desired by the student. Commitments indicate the degree to which students are committed to attaining their goals (goal commitment) and to the institution into which they enter (institutional commitment) (Tinto, 1993).

According to Tinto's theory, the institution, and the academic and social communities that make up the institution, are part of an external environment with its own set of values and behavioral requirements. Tinto acknowledges the fact external commitments do alter a students intentions (plans) and goal and institutional commitments throughout the students college career. These external commitments are largely independent of the institution. According to Tinto, external events may

indirectly influence departure due to its impact on academic and social integration. As such, individuals may withdraw from college, even when experiences within college are positive.

Given all individual attributes at the time of entry into the institution, Tinto also argues that subsequent experiences within the institution are related to continuance in that institution. Examples of internal institutional experiences include interactions with faculty, staff, and other members of the college, including other students. Tinto purports that positive interactions, which further one's social and academic integration, increases the likelihood of persisting to obtain a college degree. Conversely, the lower the degree of academic and social integration, the more likely a student is to leave the institution.

Tinto's theory draws upon the works of anthropology, sociology, psychology, and education. Tinto expands on Van Gennep's study of rites of passage, which focuses on the movement of individuals from one group to another, and Durkheim's theory of suicide, which examines the role that the social environment plays in incorporating or excluding an individual. Tinto notes that the works of Durkheim and Van Gennep provide a way of understanding how colleges, comprised of different social and intellectual communities, come to influence the leaving of their students. He does caution, however, that the communities that Durkheim and Van Gennep has in mind are unlike college communities in that colleges are usually comprised of many communities or "subcultures", each with its own set of values and norms (Tinto, 1993). Tinto asserts that a student's academic and social integration at an institution are key contributors in his or her decision to stay or leave.

Academic and Social Integration

According to Tinto (1993), colleges are made up of both academic and social systems that are characteristically different in terms of formal and informal structures. Academic systems center entirely with the formal education of students. The activities of academic systems center around faculty and staff and the physical layout of the institution, such as laboratories and classrooms. The social systems of the institution centers around interactions among students, faculty, and staff and take place largely outside of the formal academic arena. Academic integration is a measure of the students' perceptions of their academic experiences with faculty, counselors, and administrators, as well as perceptions about their career preparation at their institutions. Tinto (1993) referred to this integration as the individual's evaluation of the academic system. Social integration is a measure of student's informal contacts with faculty members, counselors, and peer groups. Such interaction could include extracurricular activities such as sports, clubs, and organizations as well as nonclassroom interactions with faculty members and administrators.

There is a growing body of research that supports Tinto's assertions about academic and social integration in student persistence (Sidle & McReynolds, 1999; Pascarella & Terenzini, 1980; Levitz, Noel, & Richter, 1999, Glass & Garrett, 1995, Murtaugh, Burns, & Schuster, 1999; Zea, Reisen, Beil, & Caplan, 1997; Sydow & Sandel, 1998). For example, Pascarella and Terenzini (1980) and Terenzini, Lorang, and Pascarella (1981) explored whether academic and social integration (using and instrument they developed) could differentiate students who persist through college versus those who drop out, controlling for precollege traits, academic performance, and extracurricular involvement. Both studies found support for academic and social

integration as relatively stable predictors of persistence. Pascarella and Terenzini (1983) later found general support for the influence of academic and social integration in student persistence with a residential four-year population. Bers and Smith (1991) supported what is known about the influence of academic and social integration and student's educational objectives and intent to reenroll, on two-year college student persistence. Grosset (1991) found that, in general, the quality of integration experiences was more important to student persistence than the quantity of those experiences and that academic integration was somewhat more influential than social integration. Fox (1986) also found that both academic and social integration were important to persistence, but academic integration was a stronger predictor of persistence in an ethnic minority sample.

Researchers have also found evidence in contrast to Tinto's theory. For example, Mallinckrodt and Sedlacek (1987) found that social integration was more important than academic integration in a sample of African American students. Nora (1987) found that for Chicano community college students, neither academic integration nor social integration affected retention rates significantly. In this study, institutional/goal commitments affected student retention measures significantly more than that of academic and social integration. Also, Pascarella, Duby, & Iverson (1983) found a negative influence of social integration on persistence in a commuter institution setting.

Tinto (1993) also stresses that integration in one system need not imply integration in the other. For example, a student can conceivably integrate into the social system of college, but may withdraw as a result of failure to integrate into the academic domain of college (e.g. failure to maintain needed grades). Conversely, a student may successfully

integrate into the academic system of college and still leave as a result of failure to integrate into the social system.

According to Tinto (1993), the very notion of education entails a commitment on the part of students to their own education and an evaluation of their goals and intentions. Educational institutions must also develop policies for retention that takes into account the same degree of commitment to education and persistence.

The Principles of Effective Retention

There are many different types of retention programs, which differ in form, structure, mode of operation, and focus (Tinto, 1993). The similarities in effective retention programs have more to do with the way institutions think about retention, the amount of emphasis they place on their programs, and the ends in which they direct their energy. Tinto refers to these commonalties as "the principles of effective retention".

Tinto's (1993) first principle of effective retention reads as follows: *"Effective retention programs are committed to the students they serve. They put student welfare ahead of other institutional goals"* (p.146). Tinto believes that this first principle is the responsibility of all university members, faculty and staff. A strong commitment to students permeates the character of the institution and is reflected in the daily activities of all university members. Commitment to students generates a commitment on the part of students to the institution.

The second principle of effective retention outlined by Tinto (1993) reads: *"Effective retention programs are first and foremost committed to the education of all, not just some, of their students"* (p.146). Commitment to students goes beyond doing what needs to be done to retain students. Commitment means caring about the

education of all students. Successful institutions see it as an integral part of their mission to pursue the goal of student learning. These successful institutions carefully monitor student learning and actively involve students in the learning process.

The third, and last, principle of effective retention reads: *"Effective retention programs are committed to the development of supportive social and educational communities in which all students are integrated as competent members"* (Tinto, 1993 p.147). This last principle stresses the importance of community that is so central to Tinto's theory. Effective retention programs concern themselves with the academic and social integration of all students by consciously reaching out to make contact with students in a variety of settings. These institutions typically employ faculty and peer mentoring programs, residential learning communities, and forums that serve to heighten the degree of interaction between students and institutional members.

Keeping in mind the three principles of effective retention programs outlined by Tinto (1993), the next section examines what institutions are doing to retain students.

Institutional Responses to Retention

The following is a review of the literature as it applies to how institutions are responding to the retention problem.

Freshman Seminar/Orientation

Freshman seminar courses typically meets weekly throughout the students' first semester of college. The purpose of freshman seminar courses is to assist students in developing academic, personal, and social skills necessary for college success. It is suggested that these courses be offered for college credit, generally 1-3 credits per course (Glass & Garrett, 1995). Some suggested topics for discussion in the course include: budgets and credit card debt, dealing with the opposite sex, study skills, stress

management, e-mail, substance abuse, note taking, and time management, to name a few (Wilgoren, 1999). According to Glass & Garrett (1995), research has shown that students completing a freshman seminar course have lower attrition rates and higher grade point averages than student who do not take such a course. In the fall of 1997, Oregon State University initiated a week-long student orientation program, which was continued throughout the first year for new students, supplementing the freshman orientation course. Students taking this freshman orientation course appeared to be at a reduced risk of dropping out (Murtaugh, Burns, & Schuster, 1999).

In a study by Sidle & McReynolds (1999), findings indicate that students enrolled in a freshman-year experience course tended to have higher cumulative grade point averages and higher earned credit hour ratios of attempted credit hours than students with similar characteristics who entered the university at the same time but did not enroll in the course. Also, evaluations of the freshman-year course showed that the majority of students agreed or strongly agreed that taking the course helped them feel more comfortable at a university, assisted their understanding of the purposes of an education, and increased their belief that they could succeed. Tinto (1993) is a proponent of freshman seminar groups, particularly for at-risk students. According to Tinto, "at-risk students learn best in supportive small groups that serve to provide both skills and social support to those who would otherwise be marginal to the life of the institution" (p.184).

Student Involvement

A large part of the impact of college on students is due to the extent in which a student interacts with faculty members and peers (Pascarella & Terenzini, 1991). According to Pascarella & Terenzini (1991), "extracurricular involvement may be seen

as a more formalize manifestation of one's interpersonal involvement during college" (p. 624). Astin (1984) defines involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (p.297). Thus, according to Astin, a highly involved student is one who devotes a considerable amount of energy to studying, participates in student organizations, frequently interacts with faculty members and other students, and spends a lot of time on campus. Involvement in campus extracurricular activities (e.g. student government, fraternities & sororities, newspaper staff, etc) are shown to be positively associated with satisfaction with campus life (Astin, 1993). According to Reisberg (1999), some universities are requiring freshmen to participate in "enrichment activities" on the campus. As part of their grade, students may choose to attend a football game, go to a play, or hold an office in student government. The time spent with these activities keeps students on campus and engaged with other students.

Student/Faculty Interaction

Student-faculty interaction has been found to have a strong relationship to student satisfaction with the college experience. Astin (1993) found that student/faculty interaction was positively correlated with intellectual and personal growth as well as personality and attitudinal outcomes (e.g. scholarship, social activism, leadership, and artistic inclination). Astin also found that student/faculty interaction positively correlated with behavioral outcomes (tutoring other students) and career outcomes (choosing a career, particularly in college teaching). Pascarella and Terenzini (1980) found that the quality and impact of student-faculty informal contacts may be as important to student's institutional integration and, thereby, their likelihood of persisting through college as the frequency with which such interactions occur. Some

strategies used by faculty to engage with students include: encouragement and support, helping students define their goals, sending notes, making phone calls, discussing the results of dropping out, emphasizing class attendance, and referring students to see counselors and tutors (Sydow & Sandel, 1998). Some educators feel that faculty members should assist every student in developing an educational plan prior to the end of the registration period and that faculty and staff members take a personal interest in student success (Catron, 1999). Student-faculty interaction in and out of the classroom has been shown to promote student academic integration, which results in persistence (Sidle & McReynolds, 1999).

Residential Colleges/Learning Communities

Residential colleges seem to the new "rage" in the student retention literature, but the idea is certainly not a new one. The earliest known residential college was Merton of Oxford, founded in 1264 by the Bishop of Rochester to take care of the "temporalities" of students and govern their lives (and their behavior). The residential idea was reinforced by an American habit of placing these colleges in rural settings, away from the temptations of the cities, where other residential arrangements would have been available (Ryan, 1992). Today, the residential college serves to provide a living/learning opportunity for students for the purpose of developing friendship between students, personal, and academic support. Students have the opportunity to go to class with the same group of students and receive additional help from live-in faculty and peer mentors who are available to assist the students when needed.

Learning communities also seem to provide the same type of assistance to students without the residential component. For example, Fort Lewis College in Colorado has reorganized its first-year curriculum to create "theme linked courses".

Instead of registering for four or five different courses in the fall, freshmen select a "cluster" of two or three courses that share a common theme, in addition to one or two additional classes. The same students see each other in more than one class and faculty members who teach the cluster serve as mentors (Reisberg, 1999).

Tinto, Russo, & Kadel (1994) also found that students in a the Coordinated Studies Program (CSP) at Seattle Central Community College reported being significantly more involved than non-CSP students in a range of learning activities and saw themselves as having made greater intellectual gains over the course of the year than did their non-CSP peers. The Coordinated Studies Program course activities include lectures, guest speakers, small-group activities, seminar sessions, and field trips. Student involvement was enhanced by an increasing amount of social, emotional, and academic peer support that emerged from classroom activities.

According to Tinto (1993) the process of collaborative learning that takes place in these learning communities is as important as its content. The primary intent of these courses is to actively involve students in the learning process in a collaborative, rather than competing manner, which in turn promotes both student learning and academic and social integration (Tinto, 1993). In these communities, faculty and mentors are able to monitor students an look for signs of would-be dropouts, intervening when necessary.

Retention Task Force

Having a retention steering or advisory committee is an integral aspect of promoting retention. Research indicates that student success is highest when retention efforts are coordinated by a centralized office or person, making the effort visible, and giving it a sense of importance. In addition, it is crucial that retention efforts are supported by the top administrator (Parker, 1997). Initial task force members should be

members of the faculty, academic administrators, student affairs division, and students. Members of the task force should be those who see students as individuals and have a passion for watching them grow, develop, and succeed. The majority of the task force's time should be spent deciding on a plan of action that fits the campus and establishing priorities for the retention improvement effort. A student satisfaction inventory is recommended to identify performance gaps. The task force should then start with two to four priorities that are the most critical then mobilize the energy and resources necessary to make them happen (Levitz, Noel, & Richter, 1999).

Other Innovative Retention Programs

Several colleges have taken unconventional approaches to solving the retention problem on their campus. Ohio State University, for example, has turned to a consulting company that specializes in recruitment and retention to identify incoming freshmen who are most at-risk of dropping out before their sophomore year. Based on the USA Group/Noel-Levitz analysis, Ohio State established a "personal contact program" for students who were most at risk. Academic advisors contact students to offer tutoring and guidance services to those who had ranked low in their high-school classes or had taken few math courses. Student-affairs professionals contacted students to find out if they felt a sense of belonging on campus. The university is still monitoring the success of that program (Reisberg, 1999).

Another innovative retention program is currently underway at Youngstown State University in Youngstown, Ohio. Youngstown State University is offering a $200 tuition credit for freshmen who complete their first two years and for juniors who graduate within two years. In addition to this tuition credit, Youngstown State is offering students who complete their bachelor's degree within four consecutive years a

tuition waver for three semester hours of graduate credit at Youngstown. Youngstown State is also receiving $4 million in grants over the next two years (Reisberg, 1999).

Chapter Summary

This literature review began with a discussion of the dependent variable in this study, intention certainty by examining intention and decision certainty. A review of the literature on intention revealed two prominent theories, the theory of reasoned action (Fishbein & Ajzen, 1975) and a revision of the theory called the theory of planned behavior (Ajzen & Madden, 1986). The constructs of intention, volition, and perceived behavioral control were defined and discussed. Decision Certainty was discussed next, specifically its' key elements of commitment to decisions made and contentment with decisions made. Intention and decision certainty comprise the two components of the dependent variable, intention certainty.

Self-efficacy theory was the third major focus of this literature review. According to Bandura (1997) efficacy beliefs help determine how much effort people will expend on any given activity, how long they will persevere when presented with different obstacles, and how resilient they will be in face of adversity. Low self-efficacy expectations may prevent a person from attempting to perform a task, even if that task is expected to produce desirable outcomes. If individuals lack expectations of personal efficacy in one or more career-related behavioral domains, the individual is less likely to initiate effective and satisfying choices and plans (Hackett & Betz, 1981).

Motivation and outcome expectations were discussed next and numerous studies were cited, particularly the work of Albert Bandura to further explain and clarify the variables.

Finally, a review of the literature on retention examines previous research on college dropouts. This study, however, chooses to focus on students' who remain enrolled in college, specifically, their intention to remain enrolled and complete the bachelors' degree. It is important to discuss retention and retention efforts, however, because it could be suggested that students who have a higher intention certainty will likely be retained. The specific theory of Vincent Tinto was discussed as well as historical and current institutional responses to the retention problem. As we learned from the literature review on retention, research on the problem of student retention has historically focused on why students *leave* higher education within the context of demographic and presage variables. This study examines the reasons students intend to stay enrolled in college by examining psychosocial variables believed to influence retention. A description of the methodology for the study is provided in Chapter 3.

CHAPTER 3 METHODOLOGY AND PROCEDURES

This chapter provides a description of the methodology that was used in the study. Included in this chapter is a description of the sampling design, the study measures, data collection and processing, and data analysis procedures.

Sampling Design

The population for this study was comprised of students enrolled for the summer 2001 semester at the University of Louisiana at Lafayette. A printout listing all summer classes was obtained from the Office of Institutional Research at the beginning of the semester. Classes were selected by systematic sampling in which every fifth class was chosen to participate in the study. Letters were sent to faculty members teaching the courses to explain the study and solicit their participation (Appendix A). The data collection and processing section of this chapter further provides more details.

Study Measures

Four measures were used in the study to collect data measuring each of the variables discussed in chapter one. All students who chose to participate in the study were given a packet which contained a Demographic Information Form, which was used to collect demographic data and the four measures specifically designed for this study. College student self-efficacy was evaluated using the College Student Self-Efficacy Scale (CSSES) which measured students' strengths of self-efficacy beliefs within the following categories: self-efficacy for self-regulated learning, self-efficacy for academic achievement, financial attitudes/difficulties, and career decision-making self-efficacy. Motivation was evaluated by scores on the Student Motivation Scale (SMS) which measured students' strength of student motivation and persistence in the

face of obstacles and barriers to the completion of the bachelors' degree. Outcome Expectations was evaluated by scores on the Student Outcome Expectations Scale (SOES) which measured students' perceptions of the extent to which remaining enrolled in higher education and persisting to attain a college degree will have positive, personal, cognitive, affective, and psychosocial consequences. Finally, intention certainty was evaluated using the Student Intention Certainty Scale (SICS) which included items to assess intention as well as commitment to and contentment with the decision to remain enrolled in college to degree completion. All measures were specifically designed for this study and included in one packet.

A scale comprised of 3 items was included in the set of measures as an empirical check for respondents who might be influenced to answer personal questions in a less than honest manner (Crowne & Marlowe, 1964). These items comprised the Social Desirability Scale (SDS) and were combined with the Student Outcome Expectations Scale. A copy of these measures is included in Appendix B (Table B.1).

Demographic Information Form

The Demographic Information Form was used to collect demographic information such as gender, race, grade point average, parents SES, college major, and age for documenting characteristics of the sample and for framing some supplemental analyses.

College Student Self-Efficacy Scale (CSSES)

The College Student Self-Efficacy Scale (CSSES) which was developed specifically for this study was used to measure students' strengths of self-efficacy beliefs. College Student Self-Efficacy was considered to be multifaceted and contained the following facets: self-efficacy for self-regulated learning, self-efficacy for academic

achievement, financial attitudes/difficulties, and career decision-making. Items on the SSES were adapted and adopted from Zimmerman, et al., 1992; Roeser, Midgley, & Urdan, 1996; Pintrich & DeGroot, 1990; Canbrera et al., 1992; Cabrera, 1988; Mallette & Cabrera, 1991; & Bienvenu, 2000. Sample items on the CSSES which assessed self-regulated learning include *Indicate the strength of your belief that you can finish homework assignments by deadlines* and *Indicate the strength of your belief that you can arrange a place to study without distractions.* These items were adapted from the Self-Efficacy for Self-Regulated Learning Scale (Zimmerman, Bandura, & Mattinez-Pons, 1992) which measure students' perceived capabilities to use a variety of self-regulated learning strategies.

Items on the CSSES which assessed self-efficacy for academic achievement include *Indicate the strength of your belief that you can do an excellent job on the problems and tasks assigned for the courses you are taking this semester* and *Indicate the strength of your belief that you can learn general mathematics.* These items were adapted from the Academic Self-Efficacy Scale (Roeser, Midgley, & Urdan, 1996) which assessed students' beliefs that they can master the material and skills taught in school.

One item on the CSSES assessed financial attitudes/difficulties. This item was *Indicate the strength of your belief that you can secure the necessary funds to complete college.* This item was specifically designed for this study and assessed students' self-efficacy beliefs about their ability to overcome financial difficulties while in college.

Finally, items on the CSSES which assessed self-efficacy for career decision making includes *Indicate the strength of your belief that you can decide what you value most in an education* and *Indicate the strength of your belief that you can choose a*

major or career that suits your abilities. These items were adapted from Bienvenu (2000) and are based on Crites (1978) Career Maturity Inventory, which identifies the extent to which students feel confident about their ability to engage in educational and occupational information gathering and goal planning activities.

The complete CSSES consisted of 32 items to which students responded using a four point Likert Scale ranging from 1=Very Weak to 4=Very Strong. A copy of the CSSES can be found in Appendix B.

Student Motivation Scale (SMS)

The Student Motivation Scale (SMS) which was designed specifically for this study was used to assess the amount of effort or persistence put forth by students, how students persist in the face of barriers, and the effects of failure on future motivation. Items on the Student Motivation Scale were adapted from Pintrich and DeGroot (1990). Sample items from this scale include *Even when I make a disappointing grade I am able to study hard for the next exam* and *I prefer class work that is challenging so that I can learn new things.* The scale consists of 6 items and students' responded to each item using a four-point Likert Scale ranging from 1=Strongly Disgree to 4=Strongly Agree. A copy of the SMS can be found in Appendix B.

Student Outcome Expectations Scale (SOES)

The Student Outcome Expectations Scale (SOES) which was designed specifically for this study was used to measure students' perceptions of the extent to which remaining enrolled in higher education and persisting to attain a college degree would have positive personal, cognitive, affective, and psychosocial consequences. Items for this measure were adapted and adopted from Hackett, Betz, Casas, & Rocha-Singh (1992) and Betz & Voyten (1997). Sample items from the SOES include *An*

undergraduate degree will allow me to obtain a well paying job and *I will have failed if I don't get my degree.* The complete SOES consists of 16 items and students' responded to each item using a four point Likert Scale ranging from 1=Strongly Disgree to 4=Strongly Agree. A copy of the SOES can be found in Appendix B.

Student Intention Certainty Scale (SICS)

The Student Intention Certainty Scale (SICS) was specifically designed for this study to measure the level of intention to remain enrolled in college and the degree of contentment with and commitment to the decision to complete the degree. Two items on the scale were adapted and adopted from Cabrera, Nora, & Castaneda (1993). The remainder of the items were adapted from Bienvenu (2000). Items from the SICS which assess intention to remain enrolled in college include *I intend to obtain my undergraduate degree* and *I am certain I will obtain my degree no matter what obstacles I may face.* One item on the SICS assesses for commitment to the decision to obtain the bachelors' degree. This item reads *I am committed to obtain my bachelors' degree despite the many obstacles I may face.* One item assesses for contentment with the decision to obtain the bachelors' degree. This item reads *I am satisfied with the decision to obtain my bachelors' degree.* The scale is comprised of 8 items and students responded to each item using a four point Likert Scale ranging from 1=Strongly Disagree to 4=Strongly Agree. A copy of the SICS can be found in Appendix B.

Social Desirability Scale (SDS)

As previously mentioned the Social Desirability Scale was included as an empirical check for respondents who may choose to respond to items in a socially desirable (fake good) manner (Crowne & Marlowe, 1964). Students' responded to each

item using a four point Likert Scale ranging from 1=Strongly Disagree to 4=Strongly Agree. Sample items from the SDS include: *I am quick to admit I made a mistake* and *I am always courteous, even to people who disagree with me.* Items on this scale were combined with the Outcome Expectations Scale (items 4, 6, & 9). A copy of this the SDS can be found in Appendix B.

The above sections describe all measures which were used in the study including sample questions. Permission to go forth with the study was granted from the Institutional Review Board at both Louisiana State University and the University of Louisiana at Lafayette. As all of the measures used were created specifically for this study, it was important to inspect all test items to judge whether they covered the content they purported to measure. This was done by using a panel of experts to establish initial face and content validity.

Face and Content Validity

Face validity of all measures was explored by using experts in the field of higher education (counseling, higher education administration, education research faculty) and counselors (career and personal counselors, including a Psychologist). These experts were asked to assess the usability of the instrument, the clarity of the items, readability of the questions, etc. These experts reviewed the measures by assessing the ability of items to accurately represent common theory and practice. Feedback obtained from the experts was used to revise the measures.

In addition to using experts to insure validity, a pilot group of undergraduate students was used in an initial screening procedure in order to strengthen the face validity of the measures and to check for clarity of language and understandability of the instructions, etc.

Pilot Testing

Prior to administering the survey measures to students, a pilot test was completed with members of the target population (undergraduate students enrolled in summer school at the University of Louisiana at Lafayette). The pilot test was designed to examine the face validity and readability of the questionnaire, the length of time needed to complete the questionnaire, and to identify any problems or confusing aspects of the questionnaire. This researcher administered the questionnaire to a group of students through convenience sampling. Considerations of classification, age, race, etc was made to ensure representation of the overall target population.

The time it took for the students to complete the questionnaire was obtained by recording the beginning and ending times for each student. Each student was also asked the following questions upon completion of the questionnaire: a) What difficulties did you have in completing the questionnaire? b) Were the written and oral instructions clear and concise? c) Did you encounter any difficulty with any section or individual question on the questionnaire? d) Do you have any recommendations for improving the questionnaire? A few of the questions were reworded for clarity as a result of feedback from students in the pilot study.

Once face validity was established and pilot testing was completed, the surveys were administered to students. This next section describes the data collection and processing procedures which were used in this study.

Data Collection and Processing

Participants were selected from intact classrooms only. The target sample for this study was approximately 500 students. Undergraduate enrollment for the summer semester at UL Lafayette during the summer 2001 semester was 6,400 students. The

desired sample comprised slightly less than ten percent of the student population. Once consent forms were received from professors, arrangements were made by the researcher to either visit each classroom and administer the surveys or get the appropriate number of surveys to the faculty member so that they could administer the surveys at a time convenient to them. Surveys were sent to professors who chose to administer them along with a letter of instruction (Appendix B, Table B.2). A deadline was given to faculty members who chose to administer the surveys during a regularly scheduled class period. The sample was comprised of students in courses of faculty who granted permission to participate in the study. If a faculty member decided to cancel the study or for some reason changed his or her mind about participating, a comparable class was chosen from the list provide by the Office of Institutional Research. Fortunately, it was not necessary to do this.

Students were solicited on a voluntary basis after a full explanation of informed consent and confidentiality. Students were also asked to sign a consent form, which further explained the study. Table B.3 (Appendix B) contains a copy of the consent form. Questionnaires were kept in a locked file cabinet until they were ready to be machine scored.

Electronically scannable data collection forms were produced through the Louisiana State University Measurement and Evaluation Center (MEC) to ease data entry. All data were collected in a manner that insured anonymity of participants and was treated confidentiality.

Data Collection and Timelines

The packets containing consent forms, pencils, questionnaires, and instructions were hand delivered immediately following Institutional Review Board approval to

each faculty member who chose to administer the survey themselves. These faculty members were able to administer the questionnaires during any class period held during the summer semester but before the deadline, which was August 1, 2001. Once students completed the questionnaires, the faculty member contacted the researcher, who then picked up the questionnaires within a 48-hour period. For faculty members who chose not to administer the questionnaires, arrangements were made to visit the classroom at an agreed upon time to administer the questionnaires. It was necessary to do this in two of the selected classes.

As sets of measures were completed, they were reviewed to ensure that instructions for filling in responses and erasing changes were followed. When needed, bubbling in and erasing improvements were made to responses to increase accurate scanning and to minimize error rates. Only 15 of the surveys were discarded because they were not filled out completely. All completed surveys were delivered to the Measurement and Evaluation Center at Louisiana State University on August 6, 2001. Scanning of the documents, creation of data files, and data analyses followed.

Data Analyses

A variety of data analyses were completed to examine the characteristics of the sample, the various instruments used and to test the formal hypotheses and research questions framing the study. These analyses included the following statistical procedures:

1. Descriptive statistical analyses of all demographic variables and instrument items, and all study variables for the purpose of organizing, clarifying and summarizing the data.

2. Principal components analyses using individual students as the units of analysis to reduce the measures into empirically-derived latent constructs.
3. Internal consistency (Cronbach Alpha) reliability analyses of sub-scales and/or total scores for all measures.
4. Multiple regression analyses to examine the relative contribution of the study variables in explaining variation in intention certainty and to examine the value-addedness of the psychological variables included in the study to existing models of student retention in higher education.
5. Additional causal comparative analyses for selected subgroups in the study (e.g., comparisons made by age, classification, grade point average, etc.).

Descriptive Statistics

Summary statistics were completed including means, standard deviations, ranges of scores, and means expressed as percentages of the maximum possible score for each item for all demographic, independent, and dependent variables. Statistics were compiled and reported for the total sample.

Principal Components Analysis

The data compiled for all scales utilized in the study was subjected to principal components analysis procedures to test the dimensionality of the underlying constructs. An unconstrained principal component solution was completed for each measure followed by additional analyses that extracted from one to multiple factors. Factor to factor and item to factor intercorrelations were completed for the entire sample using students as the units of analysis. Orthogonal rotations (VARIMAX procedures) were utilized since identifying a set of statistically independent factors was desired. These analyses were completed for the entire sample.

In order to select solutions which represented the best conceptual and statistical interpretation of the data, three general decision making rules were established and utilized for all the measures. First, an item had to have a minimum loading of r =.33 in order to be retained on a factor. Second, the item was retained on only one factor-the factor on which it had the highest loading. Third, if an item loaded r =.33 or greater on more than one factor, the item was retained on a single factor if the difference between squared loadings was 10% or greater.

The Student Motivation Scale and the Social Desirability Scale were combined into Opinionnaire III for the purpose of disguising the social desirability items during data collection. For this reason, Opinionnaire III was factor analyzed intact in order to confirm that each scale would factor out together demonstrating that the items of each scale would group together.

Reliability Analysis

Cronbach (1957) alpha internal consistency reliability coefficients were computed for factored subscales of the College Student Self-Efficacy Scale, Student Outcome Expectation Scale, and the Student Intention Certainty Scale identified through the various principal components analyses in order to examine the internal consistency reliability of the scales and subscales. Cronbach alpha internal consistency reliability coefficients were also obtained for items retained on the one-factor Student Motivation Scale, which is included in Table 4.8.

Correlation Analysis

A series of bivariate correlation analyses was completed to examine relationships between factored subscales of the various independent variables and the dependent variable. The independent variables in the study were operationalized by the

College Student Self-Efficacy Scale, Student Motivation Scale, and the Student Outcome Expectation Scale. The dependent variable was operationalized by the Student Intention Certainty Scale. A summary of the results of the Social Desirability Scale, which was included in the Student Outcome Expectation Scale, is shown in Table 4.10.

Regression Analysis

In order to provide additional information in answering one of the supplemental research hypotheses, regression analyses procedures were computed. This procedure was necessary to provide information regarding relationships between the dependent and independent variables. Regression analyses were completed by regressing the Student Intention Certainty Scale (SICS) on the three independent variable measures of the College Student Self-Efficacy Scale (CSSES), the Student Motivation Scale (SMS), and the Student Outcome Expectation Scale (SOES).

Causal Comparative Analyses

Causal comparative analyses were completed for selected subgroups in the study. After an initial analysis of means and standard deviations of factored variables, multivariate analysis of variance (MANOVA) procedures were completed to determine whether selected groups differed on more than one dependent variable. In addition, a series of one-way analysis of variance (ANOVA) procedures were also completed in order to examine differences between race and the CSSES and SOES. Post-hoc comparisons (Scheffe') tests were completed for statistically significant ANOVA's ($p<.05$) in each analysis.

Chapter Summary

Chapter 3 provides a description of the methodology for the study. Included is a description of the sampling design, instrumentation, data collection and processing, and data analysis procedures. Also included in this chapter is a description of procedures used to develop the measures for the study.

CHAPTER 4: RESULTS

Chapter 4 presents the results of the data analyses completed in the study. Described in this chapter are the following results: a) descriptive statistics for characteristics of the sample; b) descriptive statistics for the measurement items; c) descriptive statistics for the independent and dependent variables; d) principal components analyses of the College Student Self-Efficacy Scale, Student Motivation Scale, Student Outcome Expectation Scale, and the Student Intention Certainty Scale; e) internal consistency reliabilities of the measures; f) intercorrelations among the measures and subscales; g) analyses related to the major research hypotheses; and h) analyses pertinent to supplemental research questions.

Summary of Descriptive Statistics of Study Measures and Sample

The sample for the study consisted of students attending the University of Louisiana at Lafayette during the summer 2001 session who enrolled in courses needed to obtain their bachelor's degrees under faculty members who consented to allow their classes to be included in the study. A total of 496 students participated in completing the set of survey measures. Fifteen of the surveys were discarded because they were not filled out completely (over thirty percent of the items were not completed). Multiple responses on items were treated as non-responses. Surveys were also excluded for obvious failure on the part of a student to complete the survey in an honest manner. For example, some students marked one answer throughout the entire document or created patterns of responses. Each survey was examined individually and a determination was made at that time to process or not process the survey.

Appendix C provides a detailed profile of personal demographics for the sample that includes the following categories: age, gender, race, marital status, parental status, high school GPA, college GPA, classification, current college, honors college, father's education level, mother's education level, financial assistance, type of financial assistance, off campus housing status, participation in campus organizations and functions, types of campus organizations, formally declared major, major college, intent to enroll for the next semester. Percentages reported for the demographic categories that do not total to 100% are due to missing data. Table 4.1 is an abbreviated version of Appendix C. These results are highlighted in the section that follows.

The highest percentage of students (37.9%) indicated they were between 21 and 25 years of age with age breakdown as follows: 16-18 (5.0%), 19-21 (29.0%), 21-25 (37.9%), 26-30 (14.3%), and over 30 (13.8%). By gender, females (68.9) participated in the study more than males (30.4%). By race, Caucasians comprised the largest sub-sample (67.9%) followed by African Americans (24.0%), Asian, (2.3%), Native American (2.1%), Other (2.0%), and Hispanic (1.4%). Only 1.1% of respondents did not indicate their race on the survey. Respondents indicated their marital status as single (72.8%), married (24.3%), and other (2.3%) and 71.7% of respondents indicated they had no children.

The majority of students reported their high school GPA was between 3.6 and 4.0 (30.8), followed by 2.51 and 3.0 (27.2%) and 2.26 and 2.50 (22.2%) and 3.1 and 3.5 (10.7%). The majority of students reported their college GPA was between 2.26 and 2.50 (31.5%) followed by 3.6 and 4.0 (25.9%) and 3.1-3.5 (15.6%).

Table 4.1

Profile of Sample by Personal Characteristics of Respondents (n=441)

Characteristics	Frequency	Percentage of Total [a]
Age		
16-18	22	5.0
19-21	128	29.0
21-25	167	37.9
26-30	63	14.3
Over 30	61	13.8
Missing Data	0	0
Gender		
Female	304	68.9
Male	134	30.4
Missing Data	3	.7
Race		
African American	106	24.0
Native American	9	2.1
Caucasian	296	67.9
Asian	10	2.3
Hispanic	6	1.4

(table continues)

Characteristics	Frequency	Percentage of Total [a]
Other	9	2.0
Missing Data	5	1.1
Marital Status		
Single	321	72.8
Married	107	24.3
Other	10	2.3
Missing Data	3	.7
Parental Status		
Children	121	27.4
No Children	316	71.7
Missing Data	4	.9
High School GPA		
2.0-2.25	35	7.9
2.26-2.50	98	22.2
2.51-3.0	120	27.2
3.1-3.5	47	10.7
3.6-4.0	136	30.8
Missing Data	5	1.1

(table continues)

Characteristics	Frequency	Percentage of Total [a]
College GPA		
2.0-2.25	48	10.9
2.26-2.50	139	31.5
2.51-3.0	66	15.0
3.1-3.5	69	15.6
3.6-4.0	114	25.9
Missing Data	5	1.1
Classification		
Freshman	28	6.3
Sophomore	93	21.1
Junior	93	21.1
Senior	177	40.1
Missing Data	50	11.3

[a] Percentage of the total for each variable

Academic classification of the respondents ranged from freshman (6.3%) to senior (40.1%). Both sophomores and juniors represented 21.1% of the respondents. The demographic breakdown for the sample was compared to the personal characteristics of all UL Lafayette students attending the summer 2001 session as shown in Appendix C.

Summary of Descriptive Statistics for Measurement Instrument Items

Descriptive statistics were calculated for each measure used to operationalize the dependent and independent variables in the study. Means, standard deviations, and percentages of the maximum possible scores for all items were computed on the College Student Self-Efficacy Scale (CCSES), Student Motivation Scale (SMS), Student Outcome Expectation Scale (SOES) and the Student Intention Certainty Scale (SICS). Tables of these descriptive statistics are included in Appendix D. An individual table including the content of each item is provided for each measure. For each measure, scores range from 1-4, as students marked answers on a four-point, modified Likert Scale (1=Very Weak to 4=Very Strong) for the Student Self-Efficacy Scale, and (1=Strongly Disagree to 4=Strongly Agree) for the Student Outcome Expectation Scale, Student Motivation Scale, and Student Intention Certainty Scale.

Table D.1 (Appendix D) summarizes the descriptive statistics for the 32 items comprising the College Student Self-Efficacy Scale (CSSES). For this measure, item means ranged from a low of 2.28 for item 19 (Learn foreign languages) to 3.56 for item 1 (Finish homework by deadlines).

Descriptive statistics for the Student Motivation Scale (SMS) are shown in Table D.2. For this 6-item scale, the lowest mean score was 2.96 for item 5 (Even when study materials are dull and uninteresting, I keep working until I am finished). The highest mean score was 3.61 for item 2 (Even if I fail a few courses, I will persist until I get my bachelor's degree).

Descriptive statistics for the Student Outcome Expectation Scale (SOES) are summarized in Table D.3. Item mean scores for this 13-item measure ranged from 2.82 for item 1 (An undergraduate degree will allow me to obtain a well paying job) to 3.76 for item 10 (I am proud when I make a good grade or do well in a course).

Table D.4 summarizes descriptive statistics for the 8-item Student Intention Certainty Scale (SICS). The lowest mean item score for this measure was for item 5 (1.53) (I frequently think about dropping out of college). The highest mean score for this measure was for item 2 (I intend to obtain my bachelor's degree).

Summary of Results of Factor Analyses[1]

Factor (principal components) analysis procedures were completed on all measures utilized in the study for the purpose of identifying latent constructs and refining the various measures. These analyses were completed before subsequent analyses pertaining to the research hypotheses framing the study and supplemental research questions were completed. The most pertinent factor analysis tables are contained in this chapter. Appendix E also contains additional summary tables of item communalities and factor structure coefficients from items retained in various analyses.

[1] The term "factor" in this discussion and throughout the document is used to refer to latent constructs identified through the various principal component analyses. It is recognized that a principal component solution is not the same statistically as a factor.

Items were retained on factors using the decision rules outlined in Chapter 3 (p.85). Results of these analyses are reported in the sections that follow.

Factor Analyses of the College Student Self-Efficacy Scale

The College Student Self-Efficacy Scale was subjected to a series of exploratory principal components analyses to assess the dimensionality of the self-efficacy construct. First, an unconstrained solution was computed followed by solutions systematically extracting from one to eight factors with orthogonal rotations as appropriate using the entire sample (n=441). Table 1 of Appendix E provides a summary of the one-factor, principal components solution for the College Student Self-Efficacy Scale. Factor loadings (correlations) for items retained in this solution ranged from .29 to .68. Thirty-one of the 32 items demonstrated loadings meeting the minimum criteria for retention on a factor (.33). Approximately 26% of the variance in the data was explained by the one-factor solution.

A five-factor solution (Table 4.2) best represented the decision rules established for retaining items on factors, the best structure for the initial item pool, and the variance explained by various solutions. A three-factor orthogonal solution also provided a reasonable conceptual fit with the findings, however this solution had characteristics which rendered it less suitable. Only one of the 32 items in the three-factor solution failed to meet the criteria for retention on a factor (i.e., r=.33). This three-factor solution accounted for 41.7% of the total item variance.

A total of 30 items loaded on the five-factor orthogonal solution; nine on Factor I, eight on Factor II, three on Factor III, five on Factor IV, and five on Factor V. Factor I, identified as Organizing and Planning Major was comprised of items assessing

students' beliefs in their abilities to execute the required actions to accomplish goals, determine the steps to complete their major, and persist with the chosen major until they graduate. Factor I accounted for 26.8% of the variance in the data. Factor II, labeled Academic Efficacy, accounted for 7.7% of the total item variance. Items loading on this factor represent students' beliefs in their ability to perform the necessary actions to complete academic work. Examples of this include finishing homework by deadlines, concentrating on school subjects, taking notes in class, and organizing schoolwork. The third factor, Learning Efficacy, accounted for 7.2% of the total item variance. Items loading on this factor represent students' beliefs in their ability to learn information needed for courses. The fourth factor, Verbal Efficacy accounted for 4.9% of the total item variance and include items representing students' beliefs in their abilities to learn verbally such as reading, writing, and English. The fifth factor, Quantitative & Scientific Efficacy, accounted for 4.2% of the total item variance in the solution and includes items representing students' beliefs in their abilities to perform mathematically as well as scientifically. The total variance explained by the five-factor solution was 50.8%.

Factor Analyses of the Student Motivation Scale

An exploratory factor analysis was also completed for the Student Motivation Scale (SMS) using the entire sample (n=441). This analysis resulted in a one-factor solution for the six-item measure. Item loadings ranged from .57 (item 4) to .73 (item 1). All items on this measure met the criteria for retention. The total variance explained for this solution was 42%. Items retained in the one-factor solution of the Student Motivation Scale were subsequently utilized in analyses pertinent to answering the

Table 4.2

Summary of Communalities and Factor Item/Component Loadings for Items Retained in the Five-Component Orthogonal Solution for the College Student Self-Efficacy Scale (CSSES) (n=441)

CSSES Item #	Communality Estimates [a]	Item/Component I	II	III	IV	V
1.	.39	.12	**.59**	.03	.10	.14
2.	.47	.03	**.63**	.18	.14	.10
3.	.61	.15	**.74**	.11	.13	.04
4.	.38	.12	**.57**	.10	.09	.14
5.*	.36	.04	.40	.12	.42	.07
6.	.59	.15	**.73**	.11	.10	.01
7.	.65	.21	**.77**	.04	.03	.02
8.	.36	.16	.26	**.47**	.20	.05
9.	.41	.17	**.52**	.30	.00	.08
10.	.34	.21	.11	**.52**	.12	.03
11.*	.47	.25	.48	.40	.03	.06
12.	.45	.24	**.51**	.31	.05	.15
13.	.81	.16	.15	.11	.02	**.86**
14.	.80	.10	.12	.12	.06	**.87**
15.	.76	.00	.08	.75	.07	**.42**
16.	.68	.00	.06	**.76**	.10	.28

(table continues)

CSSES Item #	Communality Estimates [a]	Item/Component I	II	III	IV	V
17.	.57	.23	.19	.09	**.66**	.16
18.	.49	.21	.02	.09	.38	**.53**
19.	.29	.03	.16	.27	.27	**.33**
20.	.54	.14	.10	.28	**.64**	.09
21.	.61	.22	.26	.02	**.70**	.05
22.	.32	**.50**	.22	.05	.08	.07
23.	.34	.28	.05	.20	**.46**	.00
24.	.45	**.56**	.19	.05	.25	.15
25.	.51	**.63**	.12	.23	.11	.14
26.	.57	**.66**	.27	.22	.13	.02
27.	.61	**.69**	.32	.13	.02	.08
28.	.61	**.73**	.22	.10	.10	.00
29.	.36	**.51**	.05	.02	.23	.19
30.	.64	**.77**	.11	.03	.14	.06
31.	.47	**.63**	.00	.01	.21	.17
32.	.20	.28	.02	.07	**.33**	.06
Variance Explained [b]		26.8%	7.7%	7.2%	4.9%	4.2%
Total Variance Explained [c] 50.8%						

Bold Type indicates item/factor location

* Indicates loadings that did not meet criteria for item retention on factor

[a] Sum of squared loadings for this five-factor solution

[b] Percentage of variance explained by each factor

[c] Percentage of total variance explained by the five-factor solution

research hypothesis and questions. Table 4.3 summarizes the results of this one-factor solution.

Factor Analyses of the Student Outcome Expectation Scale

An exploratory factor (principal components) analysis was also completed for the Student Outcome Expectation Scale (SOES). A three-factor solution that accounted for 58.2% of the total item variance (Table 4.4) was determined to best represent this thirteen-item measure. Factor I, Future Orientation, accounted for 28.1% of the total item variance. This factor represents students' expectations that obtaining a bachelor's degree will enable them to achieve future goals and experience professional rewards. Factor II, Economic Satisfaction, accounted for 15.2% of the total item variance and represents students' expectations that obtaining the bachelors' degree will enrich their lives financially. Factor III, Personal Expectations, accounted for 12.1% of the variance in the solution and represents students' personal feelings about not obtaining the bachelors' degree. For example, students' indicated they would feel disappointed and/or would disappoint family and friends if they did not complete the degree.

Factor Analysis of the Student Intention Certainty Scale

Table 4.5 summarizes the results of a two-factor exploratory factor (principal components) analysis for the seven-item Student Intention Certainty Scale (SICS). Item/factor loadings were rather robust and varied from .55 to .85. This solution accounted for 58.8% of the total item variance. Five items loaded on Factor I (Intention). This factor identified students' levels of intention to obtain a bachelor's degree and their levels of certainty in obtaining the degree and accounted for 35% of

Table 4.3

Summary of the One-Factor Solution in the Student Motivation Scale (SMS) (n=441)

SMS Item #	Communality Estimates [a]	Factor Coefficients
1.	.52	.72
2.	.34	.58
3.	.36	.60
4.	.32	.57
5.	.46	.68
6.	.52	.72
Total Variance Explained [b]	.42%	

[a] Sum of squared loadings for this one-factor solution
[b] Percentage of total variance explained by the one-factor solution

Table 4.4

Summary of the Rotated Communalities and Item/Component Loadings for Items Retained in the Three-Factor Orthogonal Solution for the Student Outcome Expectation Scale (SOES) (n=441)

SOES Items #	Communality Estimate [a]	Item/Component Loadings I	II	III
1	.66	.03	**.81**	.08
2.	.63	.09	**.79**	.04
3.	.48	**.69**	.07	.02
5.	.66	.01	.09	**.81**
7.	.41	**.41**	.35	.34
8.	.71	.08	.03	**.84**
10.	.56	**.65**	.32	.19
11.	.51	**.67**	.22	.09
12.	.43	**.54**	.37	.03
13.	.67	**.82**	.04	.01
14.	.52	.31	**.62**	.19
15.	.55	**.65**	.33	.13
16.	.64	**.80**	.01	.01
Variance Explained [b]		28.1%	15.2%	12.1%
Total Variance Explained [c]	57.2%			

Bold Type indicates item/factor loading

[a] Sum of squared loadings for this three-factor solution

[b] Percentage of variance explained by each factor

[c] Percentage of total variance explained by the three-factor solution

Note: Items 4, 6, & 9 (Social Desirability) were not included in the factor analysis

Table 4.5

Summary of Communalities and Item/Component Loadings for Items Retained in the Two-Factor Orthogonal Solution for the Student Intention Certainty Scale (SICS) (n=441)

SIRES Item #	Communality Estimates [a]	Item/Component Loading I	II
1.	.31	**.55**	.05
2.	.70	**.84**	.04
3.	.69	**.83**	.00
4.	.75	**.85**	.17
5.	.42	.00	**.65**
5.	.66	.07	**.81**
6.	.70	.11	**.83**
7.	.47	**.61**	.31
Variance Explained [b]		35.0%	23.8%
Total Variance Explained [c]		58.8%	

[a] Sum of squared loadings for this two-factor solution
[b] Percentage of variance explained by each factor
[c] Percentage of total variance explained by the two-factor solution

the variance in the solution. Factor II, identified as Commitment, retained two items. This factor accounted for 23.8% of the variance in the solution and identified students' degree of commitment to obtaining a bachelor's degree.

Summary of Factor Analyses and Descriptive Statistics for the Study Measures

A summary of the results of the factor (principal components) analyses completed on the study is represented by Table 4.6. The table shows the number of factors, the number of items retained to operationalize each factor, the range in item/factor loadings, and the total variance explained by the various analyses. In an effort to ease interpretation of comparing scores across the various variables/measures, descriptive statistics for grand means and standard deviations for each factored subscale were computed. These results are reported in table 4.7.

Summary of Reliability Analyses

Cronbach Alpha internal consistency reliability coefficients were computed for factored subscales of the College Student-Self Efficacy Scale, Student Outcome Expectation Scale, Student Intention Certainty Scale, and the one-factor Student Motivation Scale. Table 4.8 contains a summary of these analyses.

College Student Self-Efficacy Scale Reliability Analyses

Alpha coefficients were computed for each of the five factored subscales and for all 29 items retained in the College Student Self-Efficacy Scale. The resulting coefficients ranged from .50 to .86. Of the five subcales, the highest coefficient was for Organizing and Planning Major (Alpha=.86) and the lowest was for Learning Efficacy (Alpha=.50). For Academic Efficacy, the Alpha coefficient was .84, for Verbal

Table 4.6

Summary of Results of Principal Components Analyses Completed on the Study Measures (n=441)

Measure	Number Of factors	Items Retained [a]	Range in Item/ Factor Loadings	Total Variance Explained
CCSES	5	30	.33-.87	50.8%
SMS	1	6	.57-.72	42.0%
SOES	3	13	.41-.84	57.2%
SICS	2	8	.55-.84	58.8%

[a] Items retained for each factor for these measures are shown in Appendix F

Table 4.7

Summary of Means, Standard Deviations, and Percentages of the Maximum Possible Score for Each Factored Subscale of the Study Measures

Variable/Subscale	Max Score [b]	$\bar{X}$	S.D	% Max Poss. [c]
CSSES (32)	128	99.28	12.61	77.56
Organizing & Planning Major (9)	36	29.96	4.25	83.22
Academic Efficacy (8)	32	25.09	3.93	78.40
Learning Efficacy (3)	12	8.70	1.73	72.50
Verbal Efficacy (5)	20	15.46	2.64	77.30
Quantitative & Scientific Efficacy (5)	20	14.84	2.88	74.20
SMS (6)	24	19.38	2.60	96.90
SOES (16)	64	50.37	5.57	78.70
Future Orientation (8)	32	27.73	3.18	86.65
Economic Satisfaction (3)	12	8.82	1.69	73.50
Personal Expectations (2)	8	5.75	1.62	71.87
SICS (8)	32	23.00	2.90	71.87
Intention (5)	16	18.17	2.24	90.85
Commitment (3)	12	4.95	1.96	41.25

a. Number of items on variable/subscale
b. Maximum possible score for the variable/subscale
c. Percentage Maximum Possible Score is derived by dividing the mean score by the maximum possible score for the scale

Table 4.8

Summary of Standardized Cronbach Alpha Reliability Coefficients for Factored Scales of all Measures Utilized in the Study (n=441)

Measures/Subscale	Alpha Coefficient
College Student Self-Efficacy Scale (32) [a]	
Subscales	
Organizing & Planning Major (9)	.86
Academic Efficacy (8)	.84
Learning Efficacy (3)	.50
Verbal Efficacy (5)	.65
Quantitative & Scientific Efficacy (5)	.75
Student Motivation Scale (6)	.72
Student Outcome Expectation Scale (16)	
Future Orientation (8)	.84
Economic Satisfaction (3)	.69
Personal Expectations (2)	.63
Student Intention Certainty Scale (8)	
Intention (4)	.75
Commitment (3)	.68

[a] Number of items on measure

Efficacy, the Alpha was .65 and for Quantitative & Scientific Efficacy, the Alpha was .75. (See Table 4.8).

Student Motivation Scale Reliability Analysis

The Alpha coefficient for the one-factor Student Motivation Scale (shown in Table 4.8) was .72.

Student Outcome Expectation Scale Reliability Analysis

Cronbach Alpha reliability coefficients were computed for the three-factor solution of the Student Outcome Expectation Scale. Factor I, Future Orientation, had the highest coefficient (.84) followed by Factor II, Economic Satisfaction (.69) and Factor III, Personal Expectations (.63).

Student Intention Certainty Scale

Cronbach Alpha reliability coefficients were computed for the two-factor solution of the Student Intention Certainty Scale. The Alpha for the first factor (Intention) was .75 and the Alpha for the second factor (Commitment) was .68.

Bivariate Correlation Analyses

To address hypotheses 1-3, Pearson product moment correlation analyses were computed among the study variables as defined by the results of the various factor analyses described above. Correlation procedures were also completed using the subscales of the measures determined by the principal components analyses. These correlations are shown in Table 4.9. The correlation analyses completed using the social desirability measure are shown in Table 4.10.

Table 4.9

Summary of Intercorrelations of the Student Intention Certainty Scale Factors with Other Variables (n=441)

Measures/Subscale	I [a]	C [b]
CSSES		
CSSES-Organizing and Planning Major	.39***	.13**
CSSES-Academic Efficacy	.27***	.11**
CSSES-Learning Efficacy	.16***	.11**
CSSES-Verbal Efficacy	.22***	.05
CSSES- Quantitative and Scientific Efficacy	.21***	.07**
SMS	.34***	.23**
SOES		
SOES-Future Orientation	.48***	.09*
SOES-Economic Satisfaction	.18***	.02
SOES- Personal Expectations	.12**	.01
SICS		
SICS- Intention	---	
SICS- Commitment	.03	---

* p<.05; **p<.01; ***p<.001
[a] Intention
[b] Commitment

Table 4.10

Summary of Intercorrelations of Social Desirability Scale with Other Study Variables/Subscales (n=441)

Measure/Subscale	r
CSSES	
CSSES-Organizing and Planning Major	.18***
CSSES-Academic Efficacy	.09*
CSSES-Learning Efficacy	.02
CSSES-Verbal Efficacy	.19***
CSSES- Quantitative and Scientific Efficacy	-.02
SMS	.18***
SOES	
SOES-Future Orientation	.25***
SOES-Economic Satisfaction	.11**
SOES- Personal Expectations	.07**
SICS	
SICS-Intention	.13**
SICS-Commitment	.02

* =p<.05; ** =p<.01; *** =p<.001

Results Pertaining to Research Hypotheses

Research Hypothesis 1: There is a statistically significant, positive relationship between students' levels of self-efficacy beliefs about their capabilities to persist to graduation and their levels of intention certainty.

To address this hypothesis, Pearson product-moment correlation analyses were completed using individual students as the units of analysis. Of particular interest to the first research hypothesis, is the correlation between factored subscales of the College Student Self-Efficacy Scale (CSSES) and the Student Intention Certainty Scale (SICS). These correlations are shown in Table 4.9. These correlations ranged in magnitude from very low (r=.05) to moderately strong (r=.39). and were all statistically significant ($p<.05$) and positive in direction, with the exception of the SICS-Commitment subscale and the CSSES- Verbal Efficacy subscale. For the table total, all 10 of the correlations were in the direction predicted by the first hypothesis. The strongest correlation was between the CSSES-Organizing and Planning Major subscale and the SICS-Intention subscale (r=.39, $p<.001$). The weakest correlation was between the CSSES-Verbal Efficacy subscale and the SICS- Commitment subscale (r=.05, $p>.05$). Considered collectively, the correlation results shown in Tables 4.9 between the CSSES and the SICS provide rather consistent, but only moderately strong support for the first hypothesis.

Research Hypothesis 2: There is a statistically significant, positive relationship between students' strength of motivation and students' levels of intention certainty.

This hypothesis was tested by computing Pearson-product moment correlations between the Student Motivation Scale (SMS) and the two factors of the Student

Intention Certainty measure (I and C) using individual students as the units of analysis. Table 4.9 includes a summary of Pearson-product moment correlation coefficients between the SMS and the SICS. These correlations were .34 ($p<.001$) (SMS/I) and .23 ($p<.01$) (SMS/C). These two correlations were statistically significant and both were in the direction predicted by the hypothesis. These correlations provide support for and confirm the second hypothesis.

Hypothesis 3: There is a statistically significant, positive relationship between students' positive outcome expectations and their levels of intention certainty.

To test this hypothesis, Pearson product-moment correlation coefficients were computed between the Student Outcome Expectation Scale (SOES) and the Student Intention Certainty Scale (SICS). These results are shown in Table 4.9. These correlations ranged in magnitude from .01 to .48 and four of the six correlations were statistically significant ($p<.05$). The strongest correlation was between the SOES-Future Orientation subscale and the SICS-Intention subscale ($r=.48$, $p<.001$). For the table total, four of the six correlations were in the predicted direction. Considered collectively, these results provide reasonable support for the third research hypothesis.

Social Desirability Analyses

Correlation coefficients were also computed for the items comprising the Social Desirability Scale (SDS) and the factored measures. These results are shown in Table 4.10. The strength of the relationship between students' responses to the SDS and their responses to the other measures were rather minimal. These correlations ranged from .02 to .24 with only four of 11 correlations exceeding .15. These results show that

students' responses to the study measures were largely independent of the effects of responding in a socially desirable manner.

Summary of Analyses Pertaining to Research Questions

A variety of data analyses were completed to address the four supplemental research questions explicated in Chapter 1. These analyses included the factor analyses and bivariate correlations previously discussed, as well as additional correlation, MANOVA and regression analyses. The results of these additional analyses as they pertain to the supplemental research questions are presented in the sections that follow. Results are shown presented for each research question.

Research Question 1: What is the empirical structure of the various measures designed to assess elements of (a) college student self-efficacy, (b) motivation, and (c) outcome expectations?

Research Question 2: What is the empirical structure of the measure designed to assess intention certainty?

To address these two research questions, a series of factor (principal components) analyses were completed with each of the study measures. These results have been previously explicated on Table 4.6 and will not be reiterated here.

Research Question 3: What is the relationship between the various independent variables in the study?

To address this question, Pearson product-moment correlation coefficients were computed between the factored subscales of the independent variables in the study: CSSES, SMS, and the SOES.

Table 4.11 shows the correlations between factored subscales of the independent variables utilized in the study. For the College Student Self Efficacy Scale (CSSES), correlations ranged from .02 (Quantitative & Scientific Efficacy and SOES-Personal Expectations) to .55 (Organizing & Planning Major and Verbal Efficacy). All correlations were statistically significant ($p<.05$) with the exception of the CSSES subscales that were correlated with the SOES-Personal Expectations subscale.

Table 4.11 shows correlation coefficients computed between the Student Motivation Scale (SMS) and factored subscales of the other measures. Correlations between the SMS and the various subscales ranged from .04 (SOES-Personal Expectations) to .54 (CSSES-Organizing & Planning Major). All correlations were statistically significant ($p< .0001$) with the exception of the correlation between the SMS and the Personal Expectation subscale of the SOES. Five of the eight correlations exceed .41.

Correlation coefficients were computed between the factored subscales of the Student Outcome Expectation Scale (SOES) and the other measures/subscales. Table 4.11 shows these correlations, which ranged from .02(CSSES-Quantitative and Scientific Efficacy and the SOES-Personal Expectations) and .53 (CSSES-Organizing and Planning Major and SOES-Future Orientation). None of the correlations between the SOES-Personal Expectations subscale and the other subscales was statistically significant.

Research Question 4: Do student groups differ on any of the study measures when classified by selected demographic characteristics?

Table 4.11

Summary of Intercorrelations Between Factored Subscales of the Various Independent Variables (n=441)

Instrument		OPM[a]	AE[b]	LE[c]	VE[d]	QSE[e]	SMS[f]	FO[g]	ES[h]	PE[i]
CSSES										
	OPM	---	.49***	.37***	.55***	.33***	.54***	.53***	.17***	.06
	AE		---	.40***	.35***	.33***	.48***	.32***	.15***	-.06
	LE			---	.36***	.47***	.43***	.16***	.06**	-.03
	VE				---	.32***	.42***	.28***	.08**	-.04
	QSE					---	.30***	.21***	.18***	.02
SMS							---	.49***	.17***	.04
SOES										
	FO							---	.46***	.21***
	ES								---	.13***
	PE									---

*p<.05 ; **p<.001; ***p<.0001

[a] Organizing & Planning Major
[b] Academic Efficacy
[c] Learning Efficacy
[d] Verbal Efficacy
[e] Quantitative & Scientific Efficacy
[f] Student Motivation Scale
[g] Future Orientation
[h] Economic Satisfaction
[i] Personal Expectations

Group Comparisons

The fourth research question was designed to explore whether groups of students classified by various demographic characteristics (e.g., gender, age) significantly differed in their responses to the study measures. Means and standard deviations for all measures and measurement subscales were computed for students grouped by various demographic characteristics. Subsequently, these descriptive statistics were examined to determine whether significance tests would be fruitful. The initial inspections of these results showed that means differences between most groups on the measurement scales were much too small to be of any practical importance of educational significance. The only mean differences that appeared large enough to address with tests of statistical significance were those associated with race and students' responses to the College Student Self-Efficacy Scale (CSSES) and the Student Outcome Expectations Scale (SOES).

To tests for the statistical significance of differences on the CSSES measures for students grouped by race, a multivariate analysis of variance (MANOVA) was computed with 6 levels of race (as an independent variable set) and five factored dimensions of the CSSES as a dependent variable set. This MANOVA was statistically significant ($F=2.3$, $p<.000$). Within the MANOVA, group differences were largely accounted for by the CSSES Organizing and Panning Major and Verbal Efficacy subscales. Subsequently a series of five univariate analyses of variance (ANOVAs) was computed using 6 levels of race as an independent variable set and each CSSES subscale as the dependent variable. These ANOVA results demonstrated statistical significance for only the Verbal Efficacy subscale ($F=4.95$; $p<.0002$). Subsequently,

post hoc comparisons between student groups classified by race were made for the CSSES Verbal Efficacy subscale using the Scheffe' procedure. The Scheffe' group comparison procedure was used as a conservative and stringent post hoc test because no prior predictions about group differences were made.

Results of the post hoc comparisons among student groups classified by race showed statistically significant differences in CSSES Verbal Efficacy scores between only two groups African American and Asian students ($t=4.73$; $p<.05$). The CSSES Verbal Efficacy mean score for African American students was 16.17 and for Asian students the mean score was 12.9. These differences are consistent with the tenets of self-efficacy theory (Bandura, 1997) and make intuitive sense as well considering that English is not the native language of many Asian students.

To test for the significance of differences on the Student Outcomes Expectation Scales (SOES) among students grouped by race, a second MANOVA was computed using the three factored subscales of the SOES as a dependent variable set and six levels of race as an independent variable set. This analysis yielded a statistically significant MANOVA ($F=1.85$; $p<.024$). Subsequently, three univariate ANOVAs were computed for the six levels of Race as an independent variable set and each of the SOES subscales as a dependent variable. Only the ANOVA for the third SOES subscale (Personal Expectations) was statistically significant ($F=2.22$; $p<.051$). The Scheffe' post hoc group comparison procedure was then computed to compare the six student groups. The Scheffe test was statistically significant ($t=2.78$; $p<.05$). The largest significant differences in SOES Personal Expectations scores were between African American students (mean score = 5.35) and Caucasian Students (mean score = 5.84) and African

American Students and Hispanic students (mean score = 7.00). Interestingly, these results show greater self efficacy strength for the personal expectations measure among Hispanic students than among Caucasian and African American Students

Research Question 5: How much of the variation in intention certainty among students is accounted for by the combination of self-efficacy beliefs, motivation, and outcome expectations?

Regression Analysis

Stepwise multiple regression analyses were used to determine the degree of variation in intention certainty among students' accounted for by the combination of the self-efficacy, motivation, and outcome expectations variables. For these analyses, the two factored subscales of the Intention Certainty measure were regressed on the factored subscales of the College Student Self-Efficacy Scale (CSSES), the Student Motivation Scale (SMS), and the Student Outcome Expectation Scale (SOES).

Table 4.12 shows the results of the regression analysis regressing the SICS-Intention subscale (dependent variable) on all factored subscales of the other study measures (independent variables). Column headings in the regression table include for each step in the analysis the variable entered, the multiple correlation (R), the coefficient of determination (R^2), the change in the coefficient of determination (ΔR^2), the F value for the variable entered (F), and the level of statistical significance for the variable entered (p). In this regression analysis, the Student Outcome Expectation measure-Future Orientation subscale (SOES-Future Orientation) was identified as the first predictor variable (R^2=.23) followed by the College Student Self-Efficacy Scale-Organizing and Planning Major measure (CSSES-OPM) (R^2=.26). Both variables

Table 4.12

Stepwise Regression of the Student Intention Certainty Scale (SICS)-Intention Subcale on the Factored Subscales of the College Student Self-Efficacy Scale (CSSES), the Student Motivation Scale (SMS), and the Student Outcome Expectation Scale (SOES)

Step	Variable Entered	R	R^2	ΔR	F	P
1	SOES-FO[a]	.48	.23	.22	113.38	.00001
2	CSSES-OPM[b]	.51	.26	.25	66.02	.00001

[a] Student Outcome Expectation Scale-Future Orientation Subscale
[b] College Student Self-Efficacy Scale-Organizing & Planning Major Subscale

were statistically significant ($p<.0001$) and the latter accounted for an additional 3% of the variation in the Intention subscale of the SICS. This two-variable regression model accounted for approximately 26% of the variation among students in their intentions to remain enrolled in college.

The SICS-Commitment subscale was regressed on all factored subscales of the study measures (independent variables). In this analysis, the Student Motivation scale was the only predictor variable to enter the regression model ($R=.24$, $p<.0001$).

Tables 4.13 and 4.14 show results of the regression analyses regressing the SICS-Intention and Commitment subscales (dependent variable) on all factored subscales of the study measures in addition to several demographic variables. The demographic variables chosen to enter the regression model were: high school grade point average, mothers' education level, and fathers' education level.

In Table 4.13, the Student Outcome Expectation-Future Orientation subscale (SOES-Future Orientation) was identified as the first predictor variable ($R^2=.25$). The second predictor variable was the College Student Self-Efficacy Scale ($R^2=.27$) and the third predictor variable was high school grade point average ($R^2=.28$). This three-variable model accounted for 28% of the total variation in the SICS-Intention Subscale among students. All variables retained in the regression model were statistically significant ($p<.00001$).

Table 4.14 shows the results of the analysis regressing the SICS-Commitment subscale on all factored subscales of the study measures and the demographic variables mentioned above. In this regression, a two variable model emerges that only accounted

Table 4.13

Stepwise Regression of the Student Intention Certainty Scale (SICS)-Intention Subscale on the Factored Subscales of the College Student Self-Efficacy Scale (CSSES), the Student Motivation Scale (SMS), the Student Outcome Expectation Scale (SOES), and Selected Demographic Variables

Step	Variable Entered	R	R^2	? R	F	P
1	SOES-FO[a]	.50	.25	.24	118.39	.00001
2	CSSES[b]	.52	.27	.27	68.51	.00001
3	HS GPA[c]	.53	.28	.27	47.87	.00001

[a] Student Outcome Expectation Scale-Future Orientation Subscale
[b] College Student Self-Efficacy Scale
[c] High School Grade Point Average

Table 4.14

Stepwise Regression of the Student Intention Certainty Scale (SICS)-Commitment Subscale on the Factored Subscales of the College Student Self-Efficacy Scale (CSSES), the Student Motivation Scale (SMS), the Student Outcome Expectation Scale (SOES), and Selected Demographic Variables

Step	Variable Entered	R	R^2	? R	F	P
1	SMS[a]	.23	.05	.05	19.39	.00001
2	HS GPA[c]	.25	.06	.06	12.49	.00001

[a] Student Motivation Scale
[b] High School Grade Point Average

for 6% of the total variation in the SICS-Commitment subscale. The first variable to enter the model was the Student Motivation Scale (R^2=.05). The second variable to enter the regression model was high school grade point average (R^2=.06). This latter variable only accounted for an additional 1% of the variation in the SICS-Commitment subscale. All variables were statistically significant (p<.00001)

Chapter Summary

Chapter 4 describes the results of the data analyses completed in the study. Described in this chapter, are the following analyses and results: descriptive statistics for the sample and independent and dependent variables, factor (principal component analyses) results for the study measures, reliability analyses, causal comparative analyses, and regression analyses. These statistical procedures were used to address the three research hypotheses, and the research questions framing the study. Chapter V that follows includes major findings and conclusions from the study and discussion of the implications of the results for theory, future research and practice.

CHAPTER 5: CONCLUSIONS, DISCUSSION, IMPLICATIONS

This chapter begins with a brief overview of the study. The significance, purpose, and intended contributions to the field are restated. Major findings and conclusions derived as a result of the data analyses follow and these are discussed as they relate to theory, future research, and practice. The chapter concludes with a summary of the study.

Overview of the Study

A review of the literature showed that presage and demographic variables (e.g. race, gender, ability, etc.) are commonly linked to persistence in college without consideration for psychological constructs. An extensive literature review on retention showed that the issue was studied primarily by examining personal and institutional factors that contribute to student dropout rates. In this study, the focus on personal attributes had more to do with psychological constructs than socioeconomic factors or demographics. Additionally, this studied shifted the research focus to examine students' intentions to remain enrolled in college as opposed to studying students who leave college. Prior research has primarily focused on students who have already dropped out of college or those who are considering dropping out of college (Tinto, 1993; Brawer, 1996; Bonham & Luckie, 1993). By examining students' who intend to remain enrolled in college, we begin to develop a nomological network (Cronbach & Meehl, 1955) for understanding student retention in higher education.

Models of Retention

By far, the greatest amount of research of student retention theory centers on the notion of academic and social integration into the university community. One of the most widely accepted theories was introduced in the 1970's by Vincent Tinto. Tinto

(1993) purposes that the extent to which the student becomes academically and socially integrated into the formal and informal academic and social systems of an institution determines whether or not a student will stay enrolled. Tinto postulates that students enter college with various individual characteristics which include family and community background characteristics (e.g., parental educational level, social status), individual attributes (e.g., ability, race, and gender), skills (e.g. intellectual and social), financial resources, dispositions (e.g. attitudes, motivations, intellectual, and political preferences), and precollege experiences with school (e.g., students' high school record of academic achievement). Students' initial commitments to the institution and to the goal of college graduation as well as the departure decision are directly influenced by each student entry characteristic. Tinto's model has added a considerable amount of information in the retention literature; however, one of the limitations of his theory is that it does not take into consideration psychological characteristics. *As used here, psychological characteristics refers to student self-efficacy beliefs, academic motivation, outcome expectations, and intention to pursue the bachelors' degree.* There are a large number of theory-based, empirically derived constructs in the psychological literature that have shown clear linkages to human behavior. To date, the Tinto model has not included these constructs in attempts to explain students leaving higher education settings. This study was not a direct test or a critique of Tinto's model, but a self-contained study that attempted to add a piece to the literature on college student retention. This study included the measurement of students' self-efficacy beliefs, academic motivation, and outcome expectations and sought to link these psychological constructs to students' intentions to remain enrolled in higher education.

Study Variables

Central to this study was the construct called *intention certainty*. In considering students who chose to remain in college, as opposed to those who leave it was decided that human intention factored heavily into the equation. Intentions are the degree to which a person has consciously formulated plans to perform or not perform a behavior (Ajzen & Madden, 1986). Research on intention indicates that the stronger a person's intention, the harder a person is expected to try, and hence the greater the likelihood the behavior will actually be performed. Much of the research on intention has been conducted within the framework of the Theory of Reasoned Action (Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (Ajzen & Madden, 1986). Intention has been studied heavily in the psychological literature, but has not been studied in the higher education literature with regard to retention. Of interest in this study was not only a students' intentions to remain enrolled in college, but their levels of certainty with the decision to persist to degree attainment. Intention certainty is a new variable specifically developed for this study. Therefore there is a need to better understand the conceptual basis of this construct and to develop a viable measure of this construct for use in future research.

The link between intentions to remain enrolled in college and college student retention was discussed in Chapter1. In this study, intention certainty was used as a proxy measure of college student retention. Thus, the inference can be made that students who have stronger intentions to remain enrolled in college are *more likely* to complete the actions necessary to attain the bachelors' degree than students with weaker intentions. *This study did not directly study college student retention or college student*

dropouts. The focus of the study was on the covariation among the variables measured for a sample of students who were still in attendance at one state university.

Three psychological constructs were examined for their linkages to intention certainty. *Self-efficacy* was examined in terms of self-efficacy for self-regulated learning, academic achievement, financial attitudes and difficulties, and career decision-making. The conception and measurement of self-efficacy was derived from the theoretical framework within social-cognitive theory discussed by Bandura (1997). These components of self-efficacy were collectively conceptualized as College Student Self-Efficacy. *Motivation* has been defined as a system of self-regulatory mechanisms that include selection, activation, and sustained direction of behavior toward a certain goal (Bandura, 1977). Motivation is primarily concerned with how behavior is activated and maintained (Bandura, 1977). *Outcome expectations* was defined as a belief about the consequences of a behavior that accrues to the individual. The concept of outcome expectations is derived from expectancy-value theories, which stress the notion that behavior is a joint function of (a) people's expectations of obtaining a particular outcome as a function of performing a behavior and (b) the extent that they value those outcomes (Schunk, 1991).

It was postulated that the three psychological constructs described above are related to the degree of intention certainty in college students. Intention certainty is a new variable, designed specially for this research, and is defined as the degree to which a person has consciously formulated plans to perform or not perform some behavior and the level of commitment to and contentment with the decision after it has been made. This variable combines findings from research on intention (Fishbein & Ajzen, 1975) and decision certainty (Bienvenu, 2000).

Conceptual Framework of the Study

Figure 1 (p.25) outlines the conceptual framework for the study. The figure depicts constructs believed to impact students' intentions to remain enrolled in college and to persist in attaining the degree. The figure depicts student presage variables and demographic characteristics as inputs in the intention formation process (e.g. age, gender, ethnicity, grade point average, family educational background). These variables are similar to the individual characteristics described by Tinto (1993) in his theory of college student departure. The constructs of college student self-efficacy, motivation, outcome expectations, and decision certainty are believed to contribute to students' intentions to remain enrolled in college. Likewise, intention was also expected to influence self-efficacy, motivation, and outcome expectations. Thus, the model depicted in figure 1 is reciprocal.

Study Measures

To operationalize the three psychological constructs in the study (self-efficacy, motivation and outcome expectations) and in order to examine their relationship to intention certainty, a student survey was developed. This survey utilized a set of demographic questions and four measures. *All measures used in this study were original measures created specifically for this study*. The College Student Self-Efficacy Scale (CSSES), which measured students' strengths of self-efficacy beliefs was comprised of the following categories: self-efficacy for self-regulated learning, self-efficacy for academic achievement, self-efficacy for financial attitudes/difficulties, and career decision-making self-efficacy. Items on the CSSES were adapted and adopted from Zimmerman, et al, 1992; Roeser, Midgley, & Urdan, 1996; Pintrich & DeGroot,

1990; Canberra et al., 1992; Cabrera, 1988; Mallette & Cabrera, 1991; & Bienvenu, 2000.

The Student Motivation Scale (SMS), developed for the study was used to assess the degree of effort or persistence put forth by students, how students persist in the face of barriers, and the effects of failure on future motivation to pursue academic tasks and the college/university degree. Items on the SMS were adapted from Pintrich & DeGroot (1990).

The Student Outcome Expectation Scale (SOES) was used to measure students' perceptions of the extent to which remaining enrolled in higher education and persisting to attain a college degree would have positive personal, cognitive, affective, and psychosocial consequences. This measure was specifically designed for this study and items from this measure were adapted from Hackett, Betz, Casas, & Rocha-Singh (1992) and Betz & Voyten (1997).

The Student Intention Certainty Scale (SICS) specifically designed for this study to measured the level of intention to remain enrolled in college and the degree of contentment with and commitment to the decision to complete the degree. Items on this measure were adapted from Cabrera, Nora, & Castaneda (1993) and Bienvenu (2000).

Also included in the set of measures was a measure of social desirability to empirically check for respondents who may have chosen to respond to items in a socially desirable (fake good) manner (Crowne & Marlowe, 1964). This three-item measure called the Social Desirability Scale (SDS) was integrated with items comprising the Student Outcome Expectation Scale (SOES).

Sample and Data Analyses

Data for this study were collected from 441 undergraduate students enrolled at the University of Louisiana at Lafayette during the summer 2001 semester. Surveys were administered to whole classes chosen by systematic sampling. The data were then subjected to various statistical analyses to refine the measures, test the research hypotheses, and answer the research questions framing the study. The following statistical procedures were used to address the three research hypotheses, and five research questions framing the study: descriptive statistics, factor (principal component) analyses, reliability analyses, causal comparative analyses, and regression analyses. The section that follows summarizes the research hypotheses and questions framing the study. Finally, conclusions resulting from the study will be discussed.

Research Hypotheses and Questions

Hypothesis 1: College Student Self-Efficacy and Intention certainty

There is a statistically significant, positive relationship between students' levels of self-efficacy beliefs about their capabilities to persist to graduation and their levels of intention certainty.

Hypothesis 2: Motivation and Intention Certainty

There is a statistically significant, positive relationship between students' strength of motivation and students' strength of intention certainty.

Hypothesis 3: Outcome Expectations and Intention Certainty

There is a statistically significant, positive relationship between students' positive outcome expectations and intention certainty.

In addition to the primary research hypotheses, the following research questions were addressed by this study:

- What is the empirical structure of the various measures designed to assess elements of self-efficacy theory, (a) college student self-efficacy beliefs, (b) motivation, and (d) outcome expectations?
- What is the empirical structure of the measure designed to assess intention certainty?
- Is there a relationship between demographic characteristics of students and any of the study measures or results?
- Do student groups differ on any of the study measures when classified by selected demographic characteristics?

Major Findings and Conclusions

In Chapter 4 of this study, a large number of statistical findings were reported after examining relationships among the study variables. The findings and conclusions derived from the statistical analyses and considered most important for subsequent discussion are presented below.

Major Finding Number One

The quality of the measures developed specifically for this study was supported by the results from the sample used.

- Conclusion (s)

1. Measures used in this study, with some additional refinements, can be used with confidence in future research and theory development.
2. The College Student Self-Efficacy Scale (CSSES) can be measured as a multi-dimensional, continuous variable.

Major Finding Number Two

The hypothesized relationships between the independent variables and intention certainty were generally corroborated.

- Conclusion (s)

1. The psychosocial variables of self-efficacy, motivation, and outcome expectation are important elements of the certainty of students' intentions to remain enrolled in college.
2. College student self-efficacy, motivation, and outcome expectations are important elements of intention and, to a lesser degree, commitment, within intention certainty.

Major Finding Number Three

There are few differences among student groups classified by presage variables (age, gender, high school grade point average, college grade point average, race, father's education level, and mother's education level) on the measures of the psychological variables included in the study.

- Conclusion

1. Prior retention models that utilize presage and demographic variables as major inputs into the retention equation are called into question.

Major Finding Number Four

Positive outcome expectations and, to a lesser degree, college student self-efficacy beliefs, make stronger contributions to students' intentions to remain enrolled in college than student motivation variables.

- Conclusion (s)

1. Students who believe that obtaining the degree will bring forth career satisfaction and believe in their capabilities to do what is necessary to complete the degree have stronger intentions to remain enrolled in college than students who posses weaker such beliefs.
2. Students who believe in their capabilities to succeed academically and who believe in their capabilities to overcome obstacles faced in college, have stronger intentions to remain enrolled in college than students who posses weaker such beliefs.

Major Finding Number Five

The psychological variables utilized in the study appear to be more powerful predictors of college student's intentions to remain enrolled in college than previously studied demographic and presage variables.

- Conclusion

1. Variables included in existing models to predict and explain retention in institutions of higher education are not as potent predictors as some of the psychological variables used in this study.

2. Future studies of college student retention and /or withdrawal should consider the use of psychological variables to explain or predict student withdrawal from higher education settings.

Implications for Theory

The importance of this study to theory is three-fold. First, this study contributes to existing theory regarding the constructs of self-efficacy, motivation, and outcome expectations by examining the role each variable plays in intention certainty. Second, because intention certainty is a new construct in the literature, this research contributes

to an initial understanding of this new construct. The original measures developed for the study can be utilized in further theory-based research in higher education settings. Finally, the findings of the study have implications for applying current, and developing new, theoretical models for students who intend to remain enrolled in college, rather than continuing to focus on students who leave college. Implications for the intention certainty model and theoretical implications for each variable are discussed below.

Intention Certainty Model

Results of the current study indicate the importance of psychosocial variables in the study of intention and thus, college student retention. Self-efficacy, outcome expectations, and to a lesser degree, motivation were all shown to play a reasonable role in the formation of intention to remain enrolled in college and the degree of certainty with the decision to persist to degree attainment.

The conceptual framework of the study is shown and discussed in Chapter 1 (p.25). The framework shows that student presage and demographic characteristics are included as inputs in the intention formation process (e.g. age, gender, ethnicity, grade point average, family educational background). Psychological variables studied (self-efficacy, motivation, and outcome expectations) are included in the model as mediating variables, which affect intention certainty and, according to intention theory, are likely to impact behavior (remaining enrolled in college to degree attainment). All mediating variables in this study are considered to be dynamic processes. College student self-efficacy beliefs, motivation, and outcome expectations are considered to be dynamic constructs because they can be changed as sources of information are filtered through current perceptions, personal knowledge, and the individual's interactions with and reactions to situations and tasks. Likewise, the framework suggests that intention

certainty interacts with and influences self-efficacy, motivation, and outcome expectations.

Presage variables were included in this framework due to the strong utilization of these variables in retention studies (Tinto, 1997; Rendon, 1992; Rodriguez, R. 1997; Collision, M., 1999; Kunkel, C., 1994; Zumdahl, S. 1996). Results of this study do not support the importance of these variables in the intention formation process. For example, regressing the Student Intention Certainty Scale on the psychological variables along with selected demographic variables (Tables 4.13 & 4.14), showed that the psychological variables were more powerful than the demographic variables in predicting student intention to remain enrolled in college.

Additional research is needed with more reliable measurement in an attempt to further understand the complex relationship between the psychological variables studied. All psychosocial variables studied were found to have a relationship with intention certainty. A discussion of the psychological variables utilized in the study and implications for theory follows.

Self-Efficacy Theory

The results of the study provide information that has implications for self-efficacy theory. Self-efficacy refers to "the belief in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3). Self-efficacy is not considered to be a global construct, but is specific to different tasks and constructs. Thus, an individual can feel efficacious with regard to their ability to do math, but not English. The results of this study show that self-efficacy beliefs across performance domains are only moderately related. Factor analysis of the College Student Self-Efficacy Scale (CSSES) identified statistically independent subscales

(performance domains). The subscales were Self-efficacy for organizing and planning major, academic efficacy, learning efficacy, verbal efficacy, and quantitative and scientific efficacy. The factor analysis results for the self-efficacy beliefs measure clearly support that students in their study differentiated their self-efficacy strengths across different performance domains.

Bandura (1997) acknowledges that a failure to recognize the transfer of efficacy beliefs across activities or settings would constrict people to having to reestablish their sense of self-efficacy with each activity attempted. He suggests that mastery experiences can produce some degree of generalized self-efficacy beliefs and that the presence of similar sub-skills is essential to mastery experiences. Certainly it can be argued that the presence of sub-skills such as organizing and planning a major, academic efficacy, learning efficacy, etc. would all be needed to possess a reasonable degree of intention certainty. The results of this study suggest this is the case.
In the factor analysis of the CSSES, the five factors were rotated to be statistically independent of each other. However, the intercorrelations among the five factors ranged from .32 to .54 which provides some support for the generalizability of students' self-efficacy beliefs across these self-efficacy assessment domains.

The results of this study also indicate that students with strong self-efficacy beliefs have moderate levels of intention certainty, however, the correlations were not as strong as expected (.05 to .39). According to Bandura (1997), "A high sense of personal efficacy in a responsive environment that rewards valued accomplishments, fosters aspirations, productive engagement in activities, and a sense of fulfillment are the conditions that enable people to exercise substantial control over their lives through self-development" (p,21). According to Betz and Hackett (1986), there are many

activities that, if done well, guarantee outcomes that are valuable, but these are not pursued by people who doubt their ability to succeed. The findings of this study indicate that though self-efficacy is an important element of intention certainty, it is not more important than the outcomes perceived by the individual. In other words, the perceived outcome derived from obtaining a degree (particularly for the Student Outcome Expectation-Future Orientation subscale) was more importantly linked to intention certainty than their perceived abilities to perform the behaviors necessary to attain that degree (College Student Self-Efficacy-Organizing and Planning Major subscale). In this study, the relationship between the measure of self-efficacy beliefs and the measure of outcome expectations was rather weak, which supports Bandura's (1993) contention that self-efficacy and outcome expectations are essentially different constructs. The one exception was the correlation between the College Student Self-Efficacy Scale-Organizing and Planning Major subscale and the Outcome Expectations Scale-Future Orientation subscale ($r=.53$, $p<.0001$). This suggests that students who feel they have the ability to organize and plan the events needed to complete their field of study also had positive outcome expectations about the future associated with obtaining the degree.

Motivation Theory

According to Bandura (1997), motivation is a system of self-regulatory mechanisms that includes selection, activation, and sustained direction of behavior toward certain goals. Motivation is primarily concerned with how behavior is activated and maintained. Results of the regression analyses indicated that motivation did not account for any of the variation among students in their intentions to remain enrolled in college over and above that accounted for by students' self-efficacy beliefs and outcome

expectations. This finding suggests that measures of academic self-efficacy beliefs in higher education contexts are better predictors of retention than more generalized measures of academic motivation. In examining the commitment subscale of the intention certainty variable, however, motivation was the only predictor variable to enter the regression model. This indicates that students who are highly motivated to complete college have a stronger commitment to do so or, conversely, those students who have higher levels of commitment are also strongly motivated to complete college.

Previous research has investigated the notion that students' self-efficacy beliefs about their capabilities to process academic material can influence motivation and learning (Schunk, 1991). The relationship between self-efficacy and motivation is reciprocal. As students work on tasks, they derive information about how well they are learning. The perception that they are comprehending material strengthens self-efficacy beliefs and subsequent motivation. In turn, a higher sense of efficacy leads students to perform and persist in those activities that they believe will result in learning. The findings of this study provide support for the theoretical linkages between students' self-efficacy beliefs and academic motivation. These relations are all positive in direction, statistically significant ($p<.0001$), and range in magnitude from .29 to .54 (see Table 4.11).

Outcome Expectation Theory

An outcome expectancy is a person's estimate that a certain behavior will produce a resulting outcome (Bandura, 1997). An outcome expectation is thus a belief about the consequences of a behavior that accrue to the individual. Bandura (1997) differentiates efficacy expectation from outcome expectation. Beliefs in one's ability to perform a task is efficacy expectation. Beliefs about what will accrue to the individual

as a result of a performance (whether psychological, physical, social, emotional, or intellectual) is efficacy outcome expectation. The results of this study indicate that the SOES-Future Orientation measure of outcome expectations was the strongest correlate of intention to remain enrolled in college. Thus, students who expect that degree attainment will produce desirable outcomes (whether it be financial, career related, etc.) have stronger intentions to attain the degree than students with weaker outcome expectations. This finding is not new to achievement settings, such as higher education. In a study completed by Schunk (1991), behavior was determined to be a function of skill, outcome expectations, and the perceived value of outcomes. The concept of outcome expectations is derived from expectancy-value theories, which stress the notion that behavior is a joint function of (a) people's expectations of obtaining a particular outcome as a function of performing a behavior and (b) the extent that they value those outcomes (Schunk, 1991). These theories assume that when individuals contemplate attaining various goals in given situations, they will make judgements of the likelihood of attaining those goals. This particular statement is similar to Bandura's notion of efficacy expectation. Efficacy expectation refers to the idea that individuals will not attempt to pursue goals that they believe they are not capable of obtaining and is different from outcome expectations. Even a positive outcome expectation does not produce action if the goal is not valued if efficacy motivation is low. Students who indicated they had higher intentions to complete the degree apparently believe the degree will hold some value for them. The strongest correlation between intention and outcome expectations was related to the future orientation subscale of the Student Outcome Expectation Scale. This factor represents students' expectations that obtaining a bachelor's degree would enable them to achieve future goals and experience

professional rewards. The second strongest outcome expectation correlate of the Intention measure was the SOES-Economic satisfaction subscale ($r=.18$; $p<.0001$). Thus, the expectation associated with obtaining the degree had more to do with career goals and professionalism than financial gains.

Intention Theory

Intention has been defined as the degree to which a person has consciously formulated plans to perform or not perform some behavior and the level of commitment to and contentment with the decision after it has been made (Bienvenu, 2000). Intentions are indicators of how hard people are willing to try and how much effort they are willing to put forth to perform a behavior (Ajzen, 1991). Examining intentions is an alternative approach to studying student retention and persistence toward obtaining the bachelors' degree because of the assumption that intentions guide behavior. Many years of research in the psychological literature indicates this to be the case (Fishbein & Ajzen, 1975; Ajzen & Madden, 1986; Schifter & Ajzen, 1985).

Much of the research on intention has been completed within the framework of the "theory of reasoned action" (Fishbein & Ajzen, 1975, Ajzen & Fishbein, 1980). According to this theory, the antecedent of any behavior is the *intention* to perform that behavior. The stronger a individuals' intention, the greater the likelihood the behavior will actually be performed. Two conceptually independent determinants of intention are specified in Fishbein and Ajzen's theory. One is a personal factor termed *attitude toward the behavior*. This refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior in question. The second predictor of intention is *subjective norm*. Subjective norm is a social factor and refers to the perceived social pressure to perform or not to perform the behavior. Results of this study confirm that

outcome expectations, particularly outcomes toward future orientation are the strongest contributor to intention to remain enrolled in college and pursue the degree.

Decision Certainty Theory

Conceptually, decision certainty is defined as the current degree of commitment to, and contentment with, a choice (deciding to obtain a bachelors' degree) after a decision is made (Bienvenu, 2000). The degree of satisfaction, freedom from doubt, and other negative feelings once the decision is made reflects the level of contentment with the decision. The level of post-decision stability of the choice and degree of dedication an individual exerts in fulfilling that choice reflects the level of commitment to the decision. Central to most psychological formulations of the decision making process is the concept of commitment (Janis & Mann, 1977). In this study, intention certainty included both the commitment and contentment elements in its' definition. The Student Intention Certainty Scale (SICS) included items to address both commitment and contentment however, factor analysis of the study sample (n=441) grouped items of the Student Intention Certainty Scale into two factors, which did not include contentment. The two factors identified were intention and commitment. This may call into question the contentment component of the decision certainty definition. Alternatively, contentment may be a viable element of intention certainty which needs further work to align conceptual and operational definitions. Clearly, further research is needed to determine if contentment is indeed an essential element of decision certainty.

Implications for Future Research

The research findings illustrate the importance of using psychological variables in the study of college student retention. Prior research on intention indicates that it is a strong indicator of subsequent performance of behavior (Fishbein & Ajze, 1975; Ajzen

& Madden, 1986; Schifter & Ajzen, 1985). By studying intention to remain enrolled in college, researchers can gain information about student behavior that might be used to guide policy-making decisions. By understanding theory-rich constructs such as self-efficacy, motivation, and most importantly, outcome expectations, college administrators will have a better understanding of today's student. Also, by studying students who are still enrolled in college as opposed to those who have already left, administrators have a chance to make an impact on those students and hopefully retain them.

An additional implication for future research involves the presage variables included in the study. The extant literature on retention reflects an importance of these variables (Tinto, 1997; Rendon, 1992; Rodriguez, R. 1997; Collision, M., 1999; Kunkel, C., 1994; Zumdahl, S. 1996) In this study, student groups compared on the presage variables were not found to differ on the study variables. The one exception was small group differences noted between groups classified by race on the College Student Self-Efficacy Scale, Factors 1 (Organizing and Planning Major) and 3 (Learning Efficacy). In future research, it may be important to examine race when studying self-efficacy, particularly with regard to these two variables.

Selected demographic variables were included in a regression analysis along with the independent variables in an attempt to determine if the demographic variables chosen were more powerful in predicting intention than the psychosocial variables used in the study. Results of the regression analysis indicate that the psychosocial variables, specifically, the outcome expectation, self-efficacy, and motivation variables were more powerful predictors of student intention than the selected Tinto variables (HS GPA, Parents Education Levels). Specifically, intention was most strongly predicted by

student's self-efficacy beliefs and commitment was most predicted by student motivation. The demographic variables only accounted for 1% of the variance in the dependent variables. It is important to note that the study only examined high school grade point average and parents' education levels in relation to the independent variables. Results of this regression analysis *clearly* shows the power of psychological variables relative to the traditional demographic variables in studying student intention certainty and hence, college student retention. Again, it is important to note that this study is not a critique of Tinto's model or the use of examining demographic and presage variables in the study of college student retention. This study only hopes to demonstrate the importance of examining theory-rich psychological variables and should be viewed as an extension of the traditional retention models.

Additional research may also want to address methodological changes. For example, all of the measures used in the study were self-report measures. Future studies may want to include mixed methodologies (qualitative as well as quantitative data). Interviews with students may shed some light on why students decide to persist to degree attainment that self-report, quantitative measures may not pick up on.

Another implication of the findings of this study for future research centers around the measures used to operationalize the constructs of self-efficacy, academic motivation, outcome expectations, and intention certainty. All measures used were adapted from existing measures, but specifically modified for use in this study. The measures created for this study: the College Student Self-Efficacy Scale (CSSES), the Student Motivation Scale (SMS), the Student Outcome Expectations Scale (SOES), and the Student Intention Certainty Scale (SICS) with some minor exceptions appear to be useful in future research with confidence. Exceptions include subscales of measures that

yield lowered than desired reliabilities of the data (see Table 4.8). The CSSES subscale designed to measure Learning Efficacy, for example, clearly needs additional conceptual attention and item development (Alpha=.50). Of the eleven Alpha reliabilities compiled for the measures and measurement subscales, for this student sample, five were lower than .70. The most reliable results were evident for the CSSES-Organizing and Planning Major subscale (.86) and the Student Outcome Expectations Scale-Future Orientation subscale (.84) (see Table 4.8). As would be expected, these two subscales made the most important contribution to accounting for variation in the dependent variable of intention in the regression analysis (see Table 4.12).

College Student Self-Efficacy Scale (CSSES)

The College Student Self-Efficacy Scale (CSSES) was developed specifically for this study and was used to measure strengths of students' self-efficacy beliefs. The College Student Self-Efficacy was considered to be multifaceted and comprised of the following facets: self-efficacy for self-regulated learning, self-efficacy for academic achievement, financial attitudes/difficulties, and career decision-making. Items on the SSES were adapted and adopted from Zimmerman, et al., 1992; Roeser, Midgley, & Urdan, 1996; Pintrich & DeGroot, 1990; Canbrera et al., 1992; Cabrera, 1988; Mallette & Cabrera, 1991; & Bienvenu, 2000.

Factor analysis procedures on the CSSES completed in this study identified a five-factor solution as the most acceptable multiple dimension representation of the data. The five factors identified were organizing and planning major, academic efficacy, learning efficacy, verbal efficacy, and quantitative and scientific efficacy. Reliability coefficients for the factored subscales of the CSSES ranged from .50 to .86.

Two items on the CSSES were not retained on any factor. Those items were: 1) *indicate the strength of your belief that you can use the library to get information for class assignments* and 2) *indicate the strength of your belief that you can master the courses you are taking this semester.* The first item was intended to gather information about a students' belief that he or she can utilize available resources necessary to complete college. The second item was intended to gather information about a student's belief that he or she feels they can learn the material necessary to complete their college courses that semester. It is recommended these particular items need to be conceptually reexamined, perhaps, reworded or deleted before they are used in subsequent research studies.

Student Motivation Scale (SMS)

The Student Motivation Scale (SMS), which was designed specifically for this study was used to assess the amount of effort or persistence put forth by students, students' persistence in the face of barriers to goal attainment, and the effects of failure on future motivation to pursue goals. Items on the Student Motivation Scale were adapted from Pintrich and DeGroot (1990).

Factor analysis procedures of the SMS completed in this study identified a one-factor solution as the most acceptable representation of the data. The reliability coefficient for the SMS was .72. All six items of the SMS were retained. The reliability for the SMS for this sample was rather reasonable for a new measure. However, continued examinations of the SMS validity using measures of retention, and the role that motivation might play in the conceptual framework guiding this study, need to be included in future research.

Student Outcome Expectations Scale (SOES)

The Student Outcome Expectations Scale (SOES), which was designed specifically for this study was used to measure students' perceptions of the extent to which remaining enrolled in higher education and persisting to attain a college degree would have positive personal, cognitive, affective, and psychosocial consequences. Items for this measure were adopted and/or adapted from Hackett, Betz, Casas, & Rocha-Singh (1992) and Betz & Voyten (1997). Factor analysis procedures completed on the SOES data identified a three-factor solution as the most acceptable multiple factor representation of the data. The three factors identified were Future Orientation, Economic Satisfaction, and Personal Expectations. All items of the items comprising the SOES were retained in this solution.

Reliability coefficients for the SOES ranged for this sample ranged from .63 to .84. These initial statistical findings are encouraging but they suggest further development of this measure is needed. The regression results reported in the study clearly link outcome expectations with intention certainty and provide criterion-related validity evidence for this new outcome expectation measure.

Student Intention Certainty Scale (SICS)

The Student Intention Certainty Scale (SICS) was specifically designed for this study to measure the level of intention to remain enrolled in college and the degree of contentment with, and commitment to, the decision to complete the college degree. Two items on the scale were adapted from Cabrera, Nora, & Castaneda (1993). The remainder of the items were adapted from a recent study (Bienvenu, 2000).

Factor analysis results of the SICS data completed in this study identified a two-factor solution as the most acceptable multiple factor representation of the data. The two

factors identified for this sample were intention and commitment. It is important to note that contentment did not factor in this solution which suggests that additional refinement of the measure is needed. All of the original eight items of the SICS were retained in the two-factor solution. Reliability coefficients for the SICS data for the two-factor dimensions were .75 (Intention) and .68 (Commitment).

The efforts made to conceptualize and operationalize all measures in this study are only initial efforts. More needs to be done to develop these measures. The conceptual framework of the study and existing gaps in the extant literature suggest the need for a more construct valid and reliable means of gathering information pertinent to studying intention certainty.

Replication of the Study

It should be recognized that these are only initial attempts to study the relationship between self-efficacy, motivation, outcome expectation, and intention certainty within the context of college student retention. These findings are far from conclusive and additional research is needed to further conceptualize these variables and to refine their operational definitions.

The variables of intention and certainty appear to be two separate psychological constructs that are not the same conceptually. For example, an individual can have strong intentions to complete the bachelors' degree but not feel certain that he or she will have the necessary skills or resources to attain that goal. Conversely, one might have a great sense of certainty about the skills needed to accomplish a particular goal, but have low levels of intended behavior toward accomplishing the goal. Given that this study provides only an initial attempt to examine these constructs in this context and that intention and certainty are powerful, psychological variables predicting

behavior, the need to measure intention certainty and further develop items on the SICS is evident.

Another recommendation is to replicate this study during a regular fall or spring semester. Conducting the study during these times could possibly yield different results. For example, it is possible that students' who attend summer school have different reasons for taking classes than students attending during a fall or spring semester (e.g., working toward teacher certification). Conversely, students' attending summer school may have stronger self-efficacy beliefs, academic motivation, and outcome expectations, which impact their intention to finish the degree than students' *only* attending during a fall or spring semester.

Another peculiarity with regard to the sample used in this study was the large number of seniors and education majors. This peculiarity could have arisen because the study was completed during a summer session. Again, these students could have been attending summer school for very specific reasons (e.g. working on certification, attempting to graduate sooner, taking classes only offered in the summer). Also, students tend to enroll in summer school to take classes considered to be more difficult in an effort to do better in the class than they would during a fall or spring semester. Of interest is also the percentage of students in the sample who have higher grades. According to sample statistics, 25.9% of the students indicated they have a cumulative college grade point average of 3.60-4.0. This could also be a phenomenon associated with students who tend to enroll in summer school. If this study were to be replicated in a fall or spring semester, it may well yield somewhat different results. Students enrolled during fall or spring semesters would predictably show greater variation in the

strengths of their self-efficacy beliefs, motivation, efficacy outcome expectations, and intention certainty than students in this study.

There is some concern about the length of the measures utilized in this study. The measure used to operationalize the data consists of three legal sized pages. The survey task required approximately 15 to 20 minutes to complete. More complete responses might be generated with the development of short forms of the various measures. These forms might be initially developed using the results of the various factor analyses (strength of item/factor loadings) from the study. Alpha reliabilities for these revised scales using this sample of students, or other samples, could also be used to develop quality short forms of the measures.

Central to this study was the construct of intention. Intentions are the degree to which a person has consciously formulated plans to perform or not perform a behavior (Ajzen & Madden, 1986). Research on intention indicates that the stronger a person's intention, the harder a person is expected to try, and hence the greater the likelihood the behavior will actually be performed. According to the Theory of Reasoned Action, (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) the antecedent of any behavior is the intention to perform the behavior. Keeping this in mind, researchers who chose to replicate this study may want to consider a longitudinal study that follows freshmen students who indicate strong intentions to obtain the bachelors' degree to see if those students actually carried through with their intention and indeed obtained the degree. One might then determine the role that academic self-efficacy beliefs, academic motivation, and efficacy outcome expectation played in the actual degree attainment. Perhaps future researchers can compare the results of this longitudinal study with

students who actually leave the university to see how the variables of interest were linked with student departure.

Implications for Practice

There are numerous implications for change in higher education practices that are suggested by the results of this study. These implications focus on practices related to student services, higher education administration, academic services, and faculty.

Retention

One of the reasons for studying intention certainty in this research was to recognize its' importance as a proxy measure of actual college student retention. Though enrollment in institutions of higher education is on the rise, colleges are having difficulty retaining students (Seidman, A. 1999). The inability to retain students poses tremendous problems for higher education institutions and students as well. Problems such as loss of revenue, lost opportunity, blocked access to certain careers, and lowered self-esteem are among the problems associated with the student dropout problem in higher education (Congoes, D. & Schopes, N., 1977).

The results of this study suggest that one way to increase the certainty of students' intentions to remain enrolled in college is by strengthening student's outcome expectations and academic self-efficacy beliefs. By focusing on the importance of these two psychological variables, and evoking change in some areas in higher education that appear to have strong impact on student retention, administrators may be able to make a difference in student retention rates. This might be particularly the case for marginally performing students. The sections that follow identify areas of importance in higher education with regard to student retention and suggest policy changes based upon the

results of this initial study linking important, psychological variables to student intention to remain in higher education.

Academic Advisors/Counselors

A major finding of this study is that students who have strong outcome expectations, are more likely to have stronger intentions to remain enrolled in college and persist to degree attainment than students' with weaker outcome expectations. Intention, as is known from prior research, is linked with the actual performance of a behavior. One of the first higher education professionals to come in contact with students is typically the academic advisor. Academic advisors have the opportunity to screen those students who are beginning their college experience and ascertain their degree of positive outcome expectations, self-efficacy, and intention certainty. With future development, the Student Outcome Expectation Scale, College Student Self-Efficacy Scale, and Student Intention Certainty Scale might be used to asses students' personal perspectives at the very beginning of their college experience. At the very least, items comprising these measures can be used to start a discussion with students as they consider the challenges they will face in pursuing their degree.

As seen in the results of this study, intention to obtain a degree is closely linked with outcome expectations, particularly with regard to future orientation. Students need to examine a link between the efforts they will put forth to obtain the degree and the personal benefits derived from that degree in the future (e.g., annual salary, social status, etc.) Appropriate resources might also be identified by academic counselors based upon dialogues with students and/or results of the measures. For example, students who are identified as having low academic self-efficacy beliefs might be referred to a student counseling center for personal counseling. Similarly, students

identified with low outcome expectations might be referred to a career center for information regarding career benefits related to their chosen major.

Academic advisors and career service professionals need to create specialized services for those identified as being high risk for dropping out. More importantly, and consistent with the focus and findings of this study, is identifying students' levels of outcome expectations related to their degree pursuits, the strength of their academic self-efficacy beliefs, and developing strategies to clearly communicate how these psychological variables are linked to the realities of remaining in college and persisting to obtain a degree.

The results of this study indicate that self-efficacy beliefs are an important variable that contributes to the intention formation process. Bandura (1997) indicates fours factors that contribute to the development of individuals' self-efficacy beliefs: a) inactive master experiences, b) vicarious experiences, c) verbal persuasion, and d) psychological and affective states. Thus, academic self-efficacy beliefs among students can be enhanced by designing interventions and activities to address these factors. Counseling center personnel appear to be the most qualified of the student services professionals to provide these services. Academic counseling can be designed to raise awareness of personal abilities and successes as well as to identify shortcomings and provide interventions to address those shortcomings. Counselors utilizing theory-rich approaches, grounded in social-cognitive theory, can assist students in increasing their sense of personal efficacy.

According to Bandura (1997), the development of mastery experiences may be the most powerful determinant of self-efficacy beliefs and should be an important component of any approach. However, other approaches might be employed such as

verbal persuasion and examination of personal strengths and shortcomings. It seems that if students can be assisted in strengthening their beliefs in their abilities to overcome obstacles and persist to degree attainment, their intention to obtain a degree and actual success would be strengthened as well.

In light of Bandura's (1997) four factors that contribute to the development of individuals' self-efficacy beliefs, the study findings have the following implications for academic counselors:

1) Academic counselors could place students in courses in which they can succeed based upon their current academic level of functioning. To do otherwise would likely set students' up for failure, and therefore, decreasing academic self-efficacy beliefs.
2) A peer modeling system could be devised whereby Juniors and Seniors would serve as mentors for Freshmen and Sophomore students. Counselors in each academic college could devise and attend to this modeling system. Students may feel more comfortable talking with other students about academic concerns than talking with counselors.
3) Academic counselors may want to employ some sort of follow up system for contacting students after their initial appointment each semester in order to address noted concerns and provide encouragement along the way, particularly for those students considered to be high-risk for dropping out of college.
4) Academic counselors can provide much needed support for students by expressing excitement over accomplishments and encouraging students to continue to pursue goals.

In examining the link between intention certainty and the independent variables in the study, it is important to point out the strong link between the College Student Self-Efficacy Scale-Organizing and Planning Major subscale and intention certainty. This strong link shows that student efficacy with regard to organizing and planning the academic major is more strongly linked to intention to remain enrolled in college than students' academic self-efficacy beliefs. From a counseling perspective, these results suggest that a strong emphasis should be placed in this area during a student's freshman year in an effort to increase efficacy related to organizing and planning their major. Counselors should take the time to sit with students and create detailed plans for carrying out the steps necessary to complete their degree. The results of this study suggest that students who have strong efficacy beliefs in their abilities to organize and plan related to their major and who have strong future orientations (know where they are headed in the future related to their career) are those who are most likely to have strong intentions to remain enrolled in college.

Extensive research documenting the linkages between self-efficacy and behavior (Bandura, 1997) and between intention and behavior (Fishbein & Ajzen, 1975) support the importance for educating student services professions in the importance of these constructs as well as the implementation of services designed to develop these characteristics among students. Academic counselors can serve a useful function in providing in-service education for academic advisors, career service professionals, recruiters, and faculty in these areas.

College Recruiters

College recruiters have been acknowledged for the part they play in getting students to college but, based on the results of this study, they may factor into the

retention process as well. As this study indicates, one of the factors that appear to have an influence on intention to remain enrolled in college is outcome expectations. Students who indicated that completion of the bachelors' degree would have positive, personal, cognitive, affective, and psychosocial consequences (positive outcome expectancy) had a higher intention to complete the degree than those with more negative views. It seems that if college recruiters would spend time educating potential students (in the high school setting) about the benefits of obtaining a college degree along with the benefits of attending their particular college, such education may make an impact on students' outcome expectations and suggest retention in college. Perhaps recruiters could enlist the aid of recent college graduates to discuss with prospective students the personal and financial benefits they can receive by obtaining a college degree. High school administrators might also take an active part in these discussions and invite parents, guardians, school counselors, and teachers to participate as well.

Faculty

The results of this study also have implications for university faculty. Bandura (1997) stresses the importance of helping students develop self-regulatory capabilities that enable them to continue to educate themselves in order to function successfully in society. "Self-regulation encompasses skills for planning, organizing and managing instructional activities; enlisting resources; regulating one's own motivation; and applying metacognitive skills to evaluate the adequacy of one's knowledge and strategies." (Bandura, 1997, p.175). Special attention is deemed necessary with regard to the development of mastery experiences in college students. For example, it is unrealistic to expect college students to have strong academic efficacy beliefs when they are challenged with tasks that are so difficult as to ensure failure.

According to Bandura (1997), repeated failures have a deleterious effect and weaken the strength of self-efficacy beliefs. Therefore, it seems important to consider that learning and efficacy building should take place simultaneously. Given this, faculty may consider adjusting the level of difficulty in courses to better accommodate individual differences and to facilitate mastery learning experiences. At several points of time in the semester, faculty might also consider assessing what students' know and adjust course material and teaching and learning activities based on those assessments. Current theory and research findings also suggest that it would be beneficial to the development of students' academic self-efficacy beliefs if faculty find ways to provide students with encouragement in their work and social recognition as they learn. Providing tutoring and/or mentoring to individual students or small student groups and encouraging students' self assessments of, and reflections about learning, are other means to strengthen students' academic self-efficacy beliefs, and subsequently, their intentions to remain enrolled in college. The results of this study support these recommendations.

Chapter Summary

Chapter V presented an overview of the study, and summary and discussion of the study's major findings and conclusions. The discussion included implications for theory, research, and future practice.

Dissertation Summary

This document describes a study of 441 undergraduate college student enrolled during a summer semester at a Carnegie Foundation, Doctoral/Research University-Intensive in an urban environment in the southeastern United States. The study was designed to examine the factors which facilitate certainty of intentions of college

students to obtain the undergraduate degree. Previous research in this area has focused on students who had already dropped out of colleges/universities as opposed to those currently enrolled. Also, previous research has examined presage and demographic variables rather than more theory-rich psychological variables in an attempt to understand the reasons behind student departure. The conceptual framework guiding this study was grounded in social-cognitive theory and the assumptions about person, environment, and behavior reflected in triadic, reciprocal causation as described by Bandura (1997). The contributions of students' self-efficacy beliefs, efficacy outcome expectations, and motivation were examined in relation to students' intentions certainty about remaining in college.

A variety of statistical procedures were used to derive information regarding the relationship between the study variables. These procedures included a) principal components analyses of the study measures, b) Cronbach Alpha internal consistency reliability analyses of empirically derived subconstructs of the measures, c) intercorrelations among the various measures and subconstructs, d) causal comparative analyses, and e) regression analyses. All measures utilized were developed specifically for this study.

Major findings of the study showed that: a) the measures developed specifically for the study are of reasonable quality, b) the hypothesized relationships between the independent variables and dependent variable were corroborated contrary to findings from prior research, c) there is little relationship between the presage variables and the psychological variables studied, d) positive outcome expectations and, to a lesser degree, students' self-efficacy beliefs, make the strongest contribution to students' intentions to remain enrolled in college and to persist in obtaining a college degree, and

e) importantly, the psychological variables utilized in the study appear to be more powerful predictors of college student's intentions to remain enrolled than previously studied demographic and presage variables.

These findings were synthesized in terms of a set of major findings and conclusions. Discussion with regard to implications of the findings for future theory development, future research, and practical applications followed.

REFERENCES

Ablard, K. & Lipschultz, R. (1998). Self-regulated learning in high-achieving students: Relations to advance reasoning, achievement goals, and gender. Journal of Educational Psychology, 90 (1), 94-101.

Abraham, C., Sheeran, P., Norman, P., Conner, M, De Vries, N. & Otten, W. (1999). When good intentions are not enough: Modeling postdecisional cognitive correlates of condom use. Journal of Applied Social Psychology, 29, (12), 2591-2612.

Allen, D. (1999). Desire to finish college: an empirical link between motivation and persistence. Research in Higher Education, 40 (4), 461-485.

Ames, C. (1984). Classrooms: Goals, structures, and student motivation. Journal of Educational Psychology, 76, 478-487.

Armitage, C.J. & Conner, M. (1999). The theory of planned behaviour: Assessment of predictive validity and perceived behavioral control. British Journal of Social Psychology, 38, 35-54.

Astin, A. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, July 1984, 297-308.

Astin, A. (1993). What matters in college: Four critical years revisited. San Francisco: Jossey-Bass Publishers.

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50, 179-211.

Ajzen, I. (1998). Models of human social behavior and their application to health psychology. Psychology and Health, 13, 735-739.

Ajzen I., & Fishbein, M. (1980). Understanding behavior and predicting social behavior. Englewood-Cliffs, NJ: Prentice-Hall.

Ajzen, I. & Madden, T. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived control. Journal of Experimental and Social Psychology, 22, 453-474.

Ajzen, I., Timko, C. & White, J. (1982). Self-monitoring and the attitude-behavior relation. Journal of Personality and Social Psychology, 42, 426-435.

Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. Social Psychology Quarterly, 55 (2), 178-204.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84 (2), 191-215.

Bandura, A. (1986). Human agency in social cognitive theory. American Psychologist, 44 (9), 1175-1184.

Bandura, A. (1995). Self-efficacy in changing societies. New York, NY: Cambridge University Press.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: W.H. Freeman.

Bandura, A. (1998). Health promotion from the perspective of social cognitive theory. Psychology and Health, 13, 623-7649.

Bandura, A. & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. Journal of Personality and Social Psychology, 45, 586-598.

Bandura, A. & Wood, R.E. (1989). Effect of perceived controllability and performance standards on self-regulation of complex decision making. Journal of Personality and Social Psychology, 56, 805-814.

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

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

Bentler, P. & Speckart, G. (1981). Models of attitude-behavior relations. Psychological Review, 86, 452-464.

Bergeron, L.M. & Romano, J.L. (1994). The relationships among career decision-making self-efficacy, educational indecision, vocational indecision, and gender. Journal of College Student Development, 35, 19-24.

Bers, T. & Smith, K. (1991). Persistence of community college students: The influence of student intent and academic and social integration. Research in Higher Education, 32 (5), 539-556.

Betz, N. & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. Journal of Counseling Psychology, 28, 399-410.

Betz, N. & Hackett, G (1986). Applications of self-efficacy theory to understanding career choice behavior. Journal of Social and Clinical Psychology, 4 (3), 279-289.

Betz, N. & Voyten, K. (1997). Efficacy and outcome expectations influence career exploration and decidedness. The Career Development Quarterly, 46, 179-189.

Betz, N. E. (1988). The assessment of career development and maturity. In W.B. Walsh & S.H. Osipow (Eds.), Career Decision Making (pp. 77-136). Hillsdale, N.J.: Erlbaum.

Bienvenu, C. (2000). Psychosocial correlates of decision certainty in academic major selection of college students. Unpublished doctoral dissertation, Louisiana State University.

Bong, M. (1999). Role of self-efficacy and task value in predicting college students' course performance and future enrollment intentions. Paper presented at the annual convention of the American Psychological Association. Boston, MA.

Bonham, L. & Luckie, J. (1993). Taking a break in schooling: Why community college students stop out. Community College Journal of Research and Practice, 17 (3), 257-270.

Brawer, F.B. (1996). Retention-attrition in the nineties. Los Angeles, CA: ERIC Clearinghouse of Community Colleges. (ED 393510).

Brown, S. D., Lent, R. D., & Larkin, K. C. (1989). Self-efficacy as a moderator of scholastic aptitude-academic performance relationships. Journal of Vocational Behavior, 35, 64-75.

Cabrera, A.F., Nora, A., & Castaneda, M. (1992), The role of finances in the persistence process: A structural model. Research in Higher Education, 33 (5), 571-593.

Cabrera, A. F., Stampen, J.O., & Hansen, W.L. (1990). Exploring the effects of ability to pay on persistence in college. Review of Higher Education, 13 (3), 303-336.

Catron, J. (1999, November 12). What can we do to keep students from dropping out of college [Letter to the Editor]. Chronicle of Higher Education.

Cohn, E. & Geske, T. (1990). The Economics of Education. New York: Pergamon Press.

Collins, J.L (1982). Self-efficacy and ability in achievement behavior. Paper presented at the annual meeting of the American Educational Research Association, New York.

Collison, M. (1999). The new complexion of retention services. Black Issues in Higher Education, 15 (26), 34-37.

Congos, D. & Schoeps, N. (1997). A model for evaluating retention programs. Journal of Developmental Education, 21 (2), 2-8.

Conner, M. & Armitage, C. (1998). Extending the theory of planned behavior: A review and avenues for further research. Journal of Applied Social Psychology, 28, 1429-1464.

Conner, M., Warren, R., Close, S. & Sparks, P. (1999). Alcohol consumption and the theory of planned behavior: An examination of the cognitive mediation of past behavior. Journal of Applied Social Psychology, 29 (8), 1676-1704.

Cronbach, L.J. & Meehl. P.E. (1955). Construct validity in psychological tests. American Psychologist, 52, 281-302.

Crowne, D. P. & Marlow, D. (1964). The Approval Motive. New York: Wiley.

Deci, E.L. & Ryan, R. M. (1987). Intrinsic Motivation and Self-Determination in Human Behavior. New York: Plenum Press.

Dweck, C. (1986). Motivational processes affecting learning. American Psychologist, 41, 1040-1048.

Dzewaltowski, D.A., Noble, J. M., Shaw, J. M. (1990). Physical activity participation: Social cognitive theory versus the theory of reasoned action and the theory of planned behavior. Journal of Sport and Exercise Psychology, 12, 388-405.

Farmer, H. S., Wardrop, J. L., Anderson, M. Z. & Risinger, R. (1995). Women's career choices: Focus on science, math, and technology careers. Journal of Counseling Psychology, 42, 155-170.

Fishbein, M. & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Addison-Wesley Publishing Company: Reading, Ma.

Foote, B. (1980). Determined-and undetermined-major students: How different are they? Journal of College Student Personnel, 21, 29-34.

Fox, R.N. (1986). Applications of a conceptual model of college withdrawal to disadvantaged students. American Educational Research Journal, 23, 415-421.

Fredricks, A. & Dossett, K. (1983). Attitude-behavior relations: A comparison of the Fishbein-Ajzen and the Bentler-Speckart models. Journal of Personality and Social Psychology, 45, 501-512.

Freud, S. (1914). On Narcissism. In The Standard Edition of the Complete Works of Sigmund Freud. London: Hogarth Press.

Glass, J.C. & Garrett, M.S. (1995). Student participation in a college orientation course, retention, and grade point average. Community College Journal of Research and Practice, 19, 117-132.

Gordon, R. (1989). Intention and expectation measures as predictors of academic performance. Journal of Applied Social Psychology, 19 (5), 405-415.

Grosset, J. (1991). Patterns of integration, commitment, and student characteristics and retention among younger and older students. Research in Higher Education, 32 (2), 159-177.

Hackett, G. (1985). The role of mathematics self-efficacy in the choice of math-related majors of college women and men: A path analysis. Journal of Counseling Psychology, 32, 47-56.

Hackett, G. & Betz, N. (1981). A self-efficacy approach to the career development of women. Journal of Vocational Behavior, 18, 326-339.

Hackett, G. & Betz, N. (1989). An exploration of the mathematics self-efficacy/mathematics performance correspondence. Journal for Research in Mathematics Education, 20, 261-273.

Harren, V.A. (1979). A model of career decision making for college students. Journal of Vocational Behavior, 14, 119-133.

Janis, I.L. & Mann, L. (1977). Decision Making. New York: The Free Press.

Kramer, G. L., Higley, H. B., & Olsen, D. (1994). Changes in academic major among undergraduate students. College & University, Winter 1994.

Kunkel, C. (1994). Women's needs on campus: How universities meet them. Initiatives, 56 (2), 15-28.

Lent, R. W., Brown, S. D., & Larkin, K. C. (1986). Self-efficacy in the prediction of academic performance and perceived career options. Journal of Counseling Psychology, 33, 265-269.

Levitz, R., Noel, L. & Richter, B. (1999). Strategic moves for retention success. New Directions for Higher Education, 108, 31-48.

Lewin, K. (1947). Frontiers in group dynamics. Human Relations, 1, 5-41.

Locke, E. A, & Latham, G. P. (1990). A Theory of Goal Setting and Task Performance. Englewood Cliffs, NJ: Prentice-Hall.

Mallette, B., & Cabrera, A. (1991). Determinants of withdrawal behavior: An exploratory study. Research in Higher Education, 32 (2), 179-194.

Mallinckrodt, B. & Sedlacek, W.E. (1987). Student retention and use of campus facilities by race. National Association of Student Personnel Administrators, 24 (3), 28-32.

Manstead, A. S. R., Proffitt, C. & Smart, J.L. (1983). Predicting and understanding mothers' infant-feeding intentions and behavior: Testing the theory of reasoned action. Journal of Personality and Social Psychology, 44, 657-671.

Manstead, A.S.R. & van Eekelen, S.A.M. (1998). Distinguishing between perceived behavioral control and self-efficacy in the domain of academic achievement intentions and behaviors. Journal of Applied Social Psychology, 28 (15), 1375-1392.

Metzner, B.S. & Bean, J.P. (1987). The estimation of a concptual model of nontraditional undergraduate student attrition. Research in Higher Education, 27 (1), 25-38.

Mulhauser, D. (August 10, 2001). Financial assistance for students rose sharply over the past 4 years. Chronicle of Higher Education.

Murtaugh, P. Burns, L. & Schuster, J. (1999). Predicting the retention of university students. Research in Higher Education, 40 (3), 355-371.

Netemeyer, R., Burton, S., & Johnston, M. (1991). A comparison of two models for the prediction of volitional and goal-directed behavior: A confirmatory analysis approach. Social Psychology Quarterly, 53, 148-164.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. Review of Educational Research, 66 (4), 543-578.

Parker, C.E. (1997). Making retention work. Black Issues in Higher Education. February 20, 1997. p.120.

Pascarella, E., Duby, P., & Iverson, B. (1983). A test and reconceptualization of a theoretical model of college withdrawal in a commuter institution setting. Sociology of Education, 56, 88-100.

Pascarella, E. & Terenzini (1991). How college affects students. San Francisco: Jossey-Bass Publishers.

Pascarella, E. & Terenzini, P. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. Journal of Higher Education, 51 (1), 60-75.

Pascarella, E. & Terenzini, P. (1983). Predicting voluntary freshman year persistence/withdrawal behavior in a residential university: A path analytic validation of Tinto's model. Journal of Educational Psychology, 75 (2), 215-226.

Peterson, S. (1993). Career decision-making self-efficacy and social and academic integration of underprepared college students: Variations based on background characteristics. Journal of Vocational Education Research, 18 (1), 77-115.

Phillips, S.D. & Pazienza, N.J. (1988). History and theory of the assessment of career development and decision making. In W.B. Walsh & S.H. Osipow (Eds.), Career-Decision Making (pp. 1-31). Hillsdale, N.J: Erlbaum.

Phillips, S.D. & Strohmer, D. C. (1983). Vocationally mature coping strategies and progress in the decision-making process: A canonical analysis. Journal of Counseling Psychology, 30, 395-402.

Pintrich, P. R. & Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M. Maehr & P. R. Pintrich (Eds.), Advances in motivation and achievement: Goals and self-regulatory processes (Vol. 7, pp. 371-402). Greenwich, CT: JAI Press.

Reisberg, L. (October 8, 1999). Colleges struggle to keep would-be dropouts enrolled. Chronicle of Higher Education.

Rendon, L. (1992). From the barrio to the academy: Revelations of a Mexican American "scholarship girl." New Directions for Community Colleges, 80, 55-64.

Risemberg, R. & Zimmerman, B. J. (1992). Self-regulated learning in gifted students. Roeper Review, 15, 98-101.

Rodriguez, R. (1997, November 27). Learning to live a warrior's life. Black Issues in Higher Education, 15 (26), 42-43.

Roeser, R., Midley, C., & Urdan, T. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. Journal of Educational Psychology, 88 (3), 408-422.

Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 80, Whole No. 609.

Ryan, M. (1992). Residential colleges: A legacy of living and learning together. Change, September/October. p.26-35.

Schifter, D. B. & Ajzen, I. (1985). Intention, perceived control, and weight loss: An application of the theory of planned behavior. Journal of Personality and Social Psychology, 49, 843-851.

Schunk, D. H. (1981). Modeling and attributional feedback effects on children's achievement: A self-efficacy analysis. Journal of Educational Psychology, 74, 93-105.

Schunk, D. H. (1989). Self-efficacy and achievement behaviors. Educational Psychology Review, 1, 173-208.

Schunk, D.H. (1991). Self-efficacy and academic motivation. Educational Psychologist, 26, (3&4), 207-231.

Seidman, A. (1996). Retention revisited: R=E, Id + E & In, Iv. College and University, 71 (4), 18-20.

Seidman, A. (1999). [Website: www.collegeways.com]

Sidle, M. & McReynolds, J. (1999). The freshman year experience: Student retention and student success. NASPA Journal, 36 (4), 288-300.

Slaney, R.B. (1980). Expressed vocational choice and vocational indecision. Journal of Counseling Psychology, 27, 122-129.

Smetana, J. G. & Adler, N. E. (1980). Fishbein's value x expectancy model: An examination of some assumptions. Personality and Social Psychology Bulletin, 6, 89-96.

Sydow, D. & Sandel, R. (1998). Making student retention an institutional priority. Community College Journal of Research and Practice, 22, 635-643.

Taylor, K.M. & Betz, N.E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. Journal of Vocational Behavior, 22, 63-81.

Taylor, K.M. & Pompa, J. (1990). An examination of the relationships among career decision-making self-efficacy, career salience, locus of control, and vocational indecision. Journal of Vocational Behavior, 37, 17-31.

Terenzini, P., Lorang, W. & Pascarella, E. (1981). Predicting freshman persistence and voluntary dropout decisions: A replication. Research in Higher Education, 15 (2), 109-127.

Tiedman, D.V. (1961). Decisions and vocational development: A paradigm and its implications. Personnel & Guidance Journal, 40, 15-21.

Tiedman, D.V. & O'Hara, R.P. (1963). Career development: Choice and adjustment. New York: College Entrance Examination Board.

Tinto, V. (1993). Leaving college: Rethinking the causes and cures of student attrition. Chicago: The University of Chicago Press.

Tinto, V., Russo, P., & Kadel, S. (1994). Constructing educational communities: Increasing retention in challenging circumstances. Change, Feb/Mar 1994.

Titley, R.W., Titley, B.S., & Wolff, W.M. (1976). The major changers: Continuity or discontinuity in the career decision process? Journal of Vocational Behavior, 8, 105-111.

Warshaw, P. & Davis, F. (1985). Disentangling behavioral intention and behavioral expectation. Journal of Experimental Social Psychology, 21, 213-228.

Wilgoren, Jodi (1995). Life 101:Useful skills for college and beyond. [website: www.nytimes.com]. October 15, 1999.

Williams, S.L. & Zane, G. (1989). Guided mastery and stimulus exposure treatments for severe performance anxiety in agoraphobics. Behavior Research Therapy, 27, 238-245.

Wolters, C. A. (1998). Self-regulated learning and college students' regulation of motivation. Journal of Educational Psychology, 90, (2), 224-235.

Wycoff, S. (1998). Retention theories in higher education: Implications for institutional practice. Recruitment & Retention in Higher Education, 12 (2), 2-7.

Zea, M., Reisen, C., Beil, C., & Caplan, R. (1997). Predicting intention to remain in college among ethnic minority and nonminority students. The Journal of Social Psychology, 137 (2), 149-160.

Zimmerman, B.J. (1989). A social cognitive view of self-regulated academic learning. Journal of Educational Psychology, 81, 329-339.

Zimmerman, B. J. (1995). Self-efficacy and educational development. In A. Bandura (Ed.), Self-efficacy in changing societies (pp. 202-231). New York, NY: Cambridge University Press.

Zimmerman, B.J. (1999). Commentary: toward a cyclically interactive view of self-regulated learning. International Journal of Educational Research, 31, 545-551.

Zimmerman, B.J. (2000). Self-efficacy: An essential motive to learn. Contemporary Educational Psychology, 25, 82-91.

Zimmerman, B. J. & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. American Educational Research Journal, 31, 845-862.

Zimmerman, B.J., & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, ad giftedness to self-efficacy and strategy use. Journal of Educational Psychology, 82, 51-59.

Zimmerman, B. J., Bandura, A. & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. American Educational Research Journal, 29, 663-676.

Zimmerman, B. J. & Ringle, J. (1981). Effects of model persistence and statement of confidence on children's self-efficacy and problem-solving. Journal of Educational Psychology, 73, 485-493.

Zimmerman, B.J., & Schunk, D.H. (1989). Self-regulated learning and academic achievement: Theory, Research, and Practice. New York: Springer.

Zumdahl, S. (1996). Mission impossible? Improving retention of science majors among minorities and women. Journal of Chemical Education, 73 (11), A266-A267.

APPENDIX A:

LETTER TO FACULTY SOLITICING PARTICIPATION

Table A.1

Letter to Faculty Soliciting Participation
Note: This letter was contained to a single page with an attached consent form. Inclusion here has lengthened it to two pages with an attachment.

Campus Correspondence

To: UL Lafayette Faculty Members Teaching Undergraduate Courses Summer 2001

From: Carol Landry, Counselor
Counseling & Testing Center

RE: Dissertation Research

Date: July 2001

I am a doctoral student in the Department of Educational Leadership, Research, and Counseling at Louisiana State University. I am conducting a study to fulfill the dissertation requirement of the doctoral degree and plan to collect my data this summer. I am contacting you to request you assistance with this study. My research is an attempt to ascertain the level of students' intention to remain enrolled in college and the degree of decision certainty regarding the decision to remain enrolled and obtain the bachelors' degree.

Specifically, I am interested in the relationship between intention to remain enrolled and the variables of self-efficacy, motivation and persistence, and outcome expectations of students at various levels of degree completion. For this reason, students from all classifications (i.e. freshmen, sophomore, etc.) will be utilized in the sample. This study is consistent with the IRB Guidelines for using human subjects and student participation will be voluntary.

The sample was obtained by systematic sampling. A random sample of summer classes was generated by the office of Institutional Research. Your class was selected in this sample. If you agree to participate in this study, I will need your assistance to collect data via a survey instrument during any class period of the course you are offering. I will provide you with the instrument packet that will contain the instructions, consent forms, and the survey. The survey task for students will require approximately 15 minutes to complete. The survey can be given at any time during the semester at your convenience. If you are unwilling to administer the survey, but would still like to help with my dissertation, please contact me and we will arrange a time for me to administer the survey to your class.

If you agree to participate in this study, please complete and return the enclosed form to me no later than **Friday July 13, 2001** via fax at 482-5163 or campus mail at Counseling & Testing, Olivier Hall.

Please contact me by phone at 482-6480 or email at carollandry@louisiana.edu if you have any questions or need clarification about the study. I appreciate your assistance in helping me with this process and am willing to provide you with an executive summary of the study findings if you are interested.

Thank you for your attention and hopefully your assistance in supporting this study.

Table A.2

Letter to Faculty Soliciting Participation: Attached Consent Form

Faculty Participation Consent Form

Title of Study: Self-Efficacy, Motivation, and Outcome Expectation Correlates of College Student Retention

Course Name/Section: _____

Faculty Member/Instructor's Name: _____

I grant permission for my class to voluntarily participate in the study as described.

_____

Signature of Faculty Member/Instructor

Please complete this form by July 13, 2001
via fax 482-5163 or campus mail to:

Carol Landry
Counseling & Testing
212 Olivier Hall

APPENDIX B

SET OF MEASURES, LETTERS OF INSTRUCTION FOR FACULTY, STUDENT CONSENT FORM

Table B.1

Set of Measures Administered to all Student Sample

Note: The original instrument was electronically scanned and was printed on three legal sized pages. On the original instrument, students bubbled-in their responses on the instrument. The questionnaire is formatted here to integrate with the entire document.

Demographic Information

Age: 16-18 ___ 19-21 ___ 21-25 ___ 26-30 ___ Over 30 ___

Gender: Female ___ Male ___

Race: African American ___ Caucasian ___ Hispanic ___
Native American ___ Asian ___
Other ___

Marital Status: Single ___ Married ___ Other ___

Do you have children? Yes ___ No ___

High School GPA (on four point scale): 2.0-2.25 ___ 2.26-2.50 ___
2.51-3.0 ___ 3.1-3.5 ___ 3.6-4.0 ___

College GPA (on four point scale): 2.0-2.25 ___ 2.26-2.50 ___
2.51-3.0 ___ 3.1-3.5 ___ 3.6-4.0 ___

Classification: Freshman ___ Sophomore ___ Junior ___ Senior ___

College: Junior Division ___
Applied Life Sciences ___
College of the Arts ___
Business Administration ___
Education ___
Engineering ___
Liberal Arts ___
Nursing ___
Sciences ___

General Studies ___

Are you in the Honors College? Yes ___ No ___

What is the highest level of education obtained by parents?
(Answer one for each parent)

	Father or male guardian	Mother or female guardian
less than high school graduation	( )	( )
graduated from high school but did not go any further	( )	( )
went to vocational, trade, or business school	( )	( )
attended college, but did not earn a degree	( )	( )
earned an associate degree	( )	( )
earned a bachelor's degree	( )	( )
attended graduate school	( )	( )
earned a master's degree	( )	( )
earned a doctorate degree	( )	( )

Do you receive financial aid to attend UL Lafayette? Yes ___ No ___

If yes, check all that apply

TOPS Scholarship ___	GI Bill ___	Vocational Rehab ___
Pell Grant ___	Student Loans ___	Other ___

Do you currently live on campus? Yes ___ No ___

If no, check where you live:
_____ an apartment or house off campus alone
_____ an apartment or house off campus with your parents
_____ an apartment or house off campus with your spouse
_____ an apartment or house on campus with your spouse

_____ an apartment or house off campus with other students
_____ an apartment or house off campus with friends who are not students at UL

Do you participate in any campus organization or regularly attend campus functions?
Yes ___ No ___

If yes, check all that apply:
Academic Organization ___
Religious, Social, or Political Organization ___
Student Government ___
Service Organizations ___
Residence Hall Association ___
Attend UL sporting events _____

Have you formally declared a major with the university? Yes _____ No _____

If yes, please indicate to what college you belong:

Applied Life Sciences ___	Liberal Arts ___
College of the Arts ___	Nursing ___
Business Administration ___	Sciences ___
Education ___	
Engineering ___	
General Studies ___	

Will you attend UL Lafayette during the regular academic year?
Yes ___ No ___

STUDENT OPINIONNAIRE 1

Instructions: Please read each statement below carefully and indicate how strong your belief is that you could accomplish each of the following tasks by marking your answer according to the 4 point key below. Mark your answer by completely filling in one and only one circle on the answer sheet. USE A NUMBER 2 PENCIL ONLY.

1 = Very Weak 2 = Weak 3 = Strong 4= Very Strong

INDICATE THE STRENGTH OF YOUR BELIEF THAT YOU CAN:

1. Finish homework assignments by deadlines?	1	2	3	4
2. Study when there are other interesting things to do?	1	2	3	4
3. Concentrate on school subjects?	1	2	3	4
4. Take notes in class?	1	2	3	4
5. Use the library to get information for class assignments?	1	2	3	4
6. Plan your schoolwork?	1	2	3	4
7. Organize your schoolwork?	1	2	3	4
8. Remember information presented in class and textbooks?	1	2	3	4
9. Arrange a place to study without distractions?	1	2	3	4
10. Participate in class discussions?	1	2	3	4
11. Master the courses you are taking this semester?	1	2	3	4
12. Do an excellent job on the problems and tasks assigned for the courses you are taking this semester?	1	2	3	4
13. Learn general mathematics?	1	2	3	4
14. Learn algebra?	1	2	3	4

15. Learn science?	1	2	3	4
16. Learn biology?	1	2	3	4
17. Learn reading and writing language skills?	1	2	3	4
18. Learn to use computers?	1	2	3	4
19. Learn foreign languages?	1	2	3	4
20. Learn social studies?	1	2	3	4
21. Learn English grammar?	1	2	3	4
22. Secure necessary funds to complete college?	1	2	3	4
23. List several majors that you are interested in?	1	2	3	4
24. Select one major from a list of potential majors you are considering?	1	2	3	4
25. Make a plan of your goals for the next five years?	1	2	3	4
26. Accurately assess your abilities?	1	2	3	4
27. Determine the steps you need to take to successfully complete your chosen major?	1	2	3	4
28. Decide what you value most in an occupation?	1	2	3	4
29. Resist attempts of parents or friends to push you into a career or major you believe is beyond your abilities?	1	2	3	4
30. Choose a major or career that suits your abilities?	1	2	3	4
31. Choose the best major for you even if it took longer to finish your college degree?	1	2	3	4
32. Come up with a strategy to deal with flunking out of college?	1	2	3	4

STUDENT OPINIONNAIRE 2

Instructions: Please read each statement below carefully and indicate how much you agree or disagree with each statement by marking your answer according to the 4 point key below. Mark your answer by completely filling in one and only one circle on the answer sheet.

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

1. Even when I make a disappointing grade I am able to study hard for the next exam.	1	2	3	4
2. Even if I fail a few courses, I will persist until I get my bachelor's degree.	1	2	3	4
3. I prefer class work that is challenging so I can learn new things.	1	2	3	4
4. I am able to overcome financial difficulties while in college.	1	2	3	4
5. Even when study materials are dull and uninteresting, I keep working until I finish.	1	2	3	4
6. I am able to persistently work at my career goal even when I get frustrated.	1	2	3	4

STUDENT OPINIONNAIRE 3

Instructions: Please read each statement below carefully and indicate how much you agree or disagree with each statement by marking your answer according to the 4 point key below. Mark your answer by completely filling in one and only one circle on the answer sheet.

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

1. An undergraduate degree will allow me to obtain a well-paying job.	1	2	3	4
2. If I obtain a bachelors' degree I will get a "fair shake" in the job market.	1	2	3	4
3. If I work hard enough, I will get this degree.	1	2	3	4

4. I am quick to admit I made a mistake.	1	2	3	4
5. I will disappoint my family and friends if I do not succeed in getting this degree.	1	2	3	4
6. I am always courteous, even to people who disagree with me.	1	2	3	4
7. Getting my undergraduate degree also means I will do better with the rest of my life.	1	2	3	4
8. I will have failed if I don't get my degree.	1	2	3	4
9. I am sometimes irritated by those who ask favors of me.	1	2	3	4
10. Getting my degree means I will be able to achieve my future goals.	1	2	3	4
11. If I know my interest and abilities, I will be able to get this degree.	1	2	3	4
12. Earning my undergraduate degree will fulfill my more immediate personal and professional needs.	1	2	3	4
13. I am proud when I make a good grade or do well in a course.	1	2	3	4
14. Getting my bachelors' degree will allow me to meet my financial goals.	1	2	3	4
15. Obtaining my bachelors' degree will allow me to expand my interests and abilities.	1	2	3	4
16. If I complete my degree, I will feel very proud of myself.	1	2	3	4

STUDENT OPINIONNAIRE 4

Instructions: Please read each statement below carefully and indicate how much you agree or disagree with each statement by marking your answer according to the 4 point key below. Mark your answer by completely filling in one and only one circle on the answer sheet.

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

1. It is likely I will re-enroll at UL Lafayette next semester.	1	2	3	4
2. I intend to obtain my undergraduate degree.	1	2	3	4
3. I am satisfied with the decision to obtain my bachelor's degree.	1	2	3	4
4. I am committed to obtain my bachelor's degree despite the many obstacles I am likely to face.	1	2	3	4
5. I frequently think about dropping out of college.	1	2	3	4
6. If I won the lottery today, I would quit college.	1	2	3	4
7. If I was offered a high-paying job today, I would quit college.	1	2	3	4
8. I am certain I will obtain my degree no matter what obstacles I may face.	1	2	3	4

Table B.2

Letters of Instruction For Faculty

Note: The letter was contained on a single page when distributed. Inclusion here lengthened it to two pages.

Faculty Member: _____
Course: _____

Dear Colleague:

Thank you for agreeing to participate in my dissertation research. The purpose of this inquiry is to explore relationships between a several variables which help explain a students' intention to remain enrolled in college and their degree of certainty with the decision to complete the college degree. The questionnaire is relatively straightforward and should take about ten to fifteen minutes to complete. The directions for each section should be easy for your students to understand. The instrument was successfully tested with a pilot group of college students from diverse backgrounds.

IN ORDER TO INSURE CONSISTENCY, PLEASE FOLLOW THE STEPS AS SHOWN BELOW:

1. Announce that you have agreed to provide class time for students' to complete a survey that will be used in the dissertation research of an LSU graduate student. Note that the survey will take about ten to fifteen minutes to complete.

2. Explain that participation is voluntary.

3. Announce that LSU and UL Lafayette requires consent of students be given prior to participating in research conducted on campus.

4. Distribute the consent forms, instrument, and a pencil to each student who agrees to participate. Explain that consent forms must be read and signed before they complete the instrument.

5. Please read these directions:

"Use only a #2 pencil for marking your responses. Do not use a fountain pen, ball point pen, or colored pencil. If you are using a mechanical pencil, make sure it has #2 lead. Fill in only one answer for each item. Make all marks heavy and black. Fill in each circle completely, but do not extend your marks outside the circle. Erase, any stray marks or smudges. If you change your mind about an answer, erase the first answer completely. Instructions for the questionnaire are at the beginning of each section."

After your students have completed the survey, please contact me at 482-6480 or 235-6062 indicating that the surveys have been completed. I will contact you to arrange to pick up the completed materials.

If you would like to receive a summary of the results of this research, please include a written note indicating your request and your campus address.

Again, thank you for your time and assistance. I greatly appreciate your willingness to assist me with my dissertation research. Sincerely, Carol Landry

Table B.3

Student Consent Form

Note: This form was contained to one page when distributed. Inclusion here lengthened it to two pages.

Student Consent Form

1. Title of Research Study: Psychosocial Correlates of Students' Intention to Remain Enrolled in College.

2. Project Director Dr. Chad Ellett phone number 706-310-1022
   Student Investigator Carol Landry phone number 337-482-6480

3. Purpose of the Research:
This study proposes to explore the relationship between several psychosocial variables which may impact a student's intention to remain enrolled in college and persist to obtain the bachelor's degree and the degree of certainty with which the decision is made.

4. Procedures for the Research:
If you agree to participate in this study, you will be asked to complete the following survey. The survey items are designed to gather information about a students' level of intention to remain enrolled in college and the psychosocial variables believed to impact student intention. This survey should take about 15 minutes to complete.

5. Potential Risks:
No risks are associated with completing this survey.

6. Potential Benefits:
It is hoped that data collected will provide new insight into student retention by examining psychosocial variables believed to impact intention to remain in college and obtain the bachelor's degree.

7. Alternative Procedures:
This research does not allow for alternative procedures, however, your participation is entirely voluntary and you may choose to cease participation at any time without consequence.

8. Protection of Confidentiality:
Your privacy will be maintained and your identity will not be revealed at any time. Please **do not** place your name on the survey instrument. All data collected will be securely stored at all times.

9. Signature:

"I have been fully informed of the above-described procedure with its possible benefits and risks and I give my permission for participation in the study."

_____	_____	_____
Signature	Name (please print)	Date

APPENDIX C

SUMMARY OF PERSONAL CHARACTERISITCS

Table C.1

Profile of Sample by Personal Characteristics of Respondents (n=441) and Profile of Overall Student Population at UL Lafayette for Summer 2001 by Personal Characteristics. Undergraduate Enrollment = 5,272**

Characteristics	Sample Frequency	Sample % of total	Population Frequency	Population % of total
Age				
16-18	22	5.0	331	06.27
19-21	128	29.0	2,007	38.06
21-25	167	37.9	1,514	28.71
26-30	63	14.3	601	11.39
Over 30	61	13.8	813	15.42
Missing Data	0	0	0	0
Gender				
Female	304	68.9	3,259	61.81
Male	134	30.4	2,013	38.18
Missing Data	3	.7	0	0
Race				
African American	106	24.0	1,193	22.61
Native American	9	2.1	31	00.58
Caucasian	296	67.9	3,637	68.98
Asian	10	2.3	83	01.57

(table continues)

Characteristics	Sample Frequency	Sample % of Total	Population Frequency	Population % of Total
Hispanic	6	1.4	68	01.28
Other	9	2.0	261	01.15
Missing Data	5	1.1	0	0
Marital Status				
Single	321	72.8	N/A	N/A
Married	107	24.3	N/A	N/A
Other	10	2.3	N/A	N/A
Missing Data	3	.7	N/A	N/A
Parental Status				
Children	121	27.4	N/A	N/A
No Children	316	71.7	N/A	N/A
Missing Data	4	.9	N/A	N/A
High School GPA				
2.0-2.25	35	7.9	67	01.27
2.26-2.50	98	22.2	120	02.27
2.51-3.0	120	27.2	408	07.73
3.1-3.5	47	10.7	399	07.56
3.6-4.0	136	30.8	344	06.52

(table continues)

Characteristics	Sample Frequency	Sample % of Total	Population Frequency	Population % of Total
Missing Data	5	1.1	3,902	74.01
College GPA				
2.0-2.25	48	10.9	713	13.52
2.26-2.50	139	31.5	741	14.05
2.51-3.0	66	15.0	1,299	24.63
3.1-3.5	69	15.6	728	13.80
3.6-4.0	114	25.9	525	09.95
Missing Data	5	1.1	1,266	24.01
Classification				
Freshman	28	6.3	874	16.57
Sophomore	93	21.1	961	18.22
Junior	93	21.1	1,013	19.21
Senior	177	40.1	1,971	37.38
Missing Data	50	11.3	0	0
Non Degree-Seeking	N/A	N/A	453	08.59
College				
Junior Division	31	7.0	2,891	54.83
Applied Life Science	24	5.4	1,971	37.38
College of the Arts	24	5.4	102	01.93

(table continues)

Characteristics	Sample Frequency	Sample % of Total	Population Frequency	Population % of Total
Business Administration	48	10.9	445	08.44
Education	157	35.6	553	10.48
Engineering	20	4.5	185	03.50
Liberal Arts	41	9.3	348	06.60
General Studies	35	7.9	174	03.30
Nursing	18	4.1	83	01.57
Sciences	26	5.9	172	03.26
University College	N/A	N/A	175	03.31
Missing Data	17	3.9	0	0
Honors College				
Yes	16	3.6	N/A	N/A
No	423	95.9	N/A	N/A
Missing Data	2	.5	N/A	N/A
Father's Education Level				
Less than High School	66	15.0	N/A	N/A
Graduated High School	115	26.1	N/A	N/A
Vocational, Trade, Business	35	7.9	N/A	N/A
Attended College, No Degree	79	17.9	N/A	N/A
Earned Associate's Degree	14	3.2	N/A	N/A

(table continues)

Characteristics	Sample Frequency	Sample %of Total	Population Frequency	Population % of Total
Earned Bachelor's Degree	82	18.6	N/A	N/A
Attended Graduate School	5	1.1	N/A	N/A
Earned Master's Degree	23	5.2	N/A	N/A
Earned Doctorate's Degree	15	3.4	N/A	N/A
Missing Data	7	1.6	N/A	N/A
Mother's Education Level				
Less than High School	49	11.1	N/A	N/A
Graduated High School	142	32.2	N/A	N/A
Vocational, Trade, Business	61	13.8	N/A	N/A
Attended College, No Degree	67	15.2	N/A	N/A
Earned Associate's Degree	12	2.7	N/A	N/A
Earned Bachelor's Degree	57	12.9	N/A	N/A
Attended Graduate School	6	1.4	N/A	N/A
Earned Master's Degree	32	7.3	N/A	N/A
Earned Doctorate's Degree	8	1.8	N/A	N/A
Missing Data	7	1.6	N/A	N/A
Financial Assistance				
Yes	262	59.4	N/A	N/A

(table continues)

Characteristics	Sample Frequency	Sample % of Total	Population Frequency	Population % of Total
No	174	39.5	N/A	N/A
Missing Data	5	1.1	N/A	N/A
Type of Assistance				
TOPS	85	19.3*	N/A	N/A
Pell Grant	129	29.3	N/A	N/A
GI Bill	10	2.3	N/A	N/A
Student Loans	150	34.0	N/A	N/A
Vocational Rehab	14	3.2	N/A	N/A
Other	60	13.6	N/A	N/A
Off Campus Housing				
Off Campus Alone	87	19.7	N/A	N/A
Off Campus with Parents	120	27.2	N/A	N/A
Off Campus with Spouse	101	22.9	N/A	N/A
On Campus with Spouse	8	1.8	N/A	N/A
Off Campus/Other Students	52	11.8	N/A	N/A
Off Campus/Non Students	31	7.0	N/A	N/A
Missing Data	42	9.5	N/A	N/A
Participate in Campus Organization or Attend Campus Functions				
Yes	135	30.6	N/A	N/A

(table continues)

Characteristics	Sample Frequency	Sample % of Total	Population Frequency	Population % of Total
No	300	68.0	N/A	N/A
Missing Data	6	1.4	N/A	N/A
Types of Campus Organizations				
Academic Organization	39	8.8*	N/A	N/A
Religious, Social, Political	44	10.0	N/A	N/A
Student Government	10	2.3	N/A	N/A
Service Organization	36	8.2	N/A	N/A
Residence Hall Association	6	1.4	N/A	N/A
UL Sporting Events	91	20.6	N/A	N/A
Formally Declared Major				
Yes	399	90.5	N/A	N/A
No	31	7.0	N/A	N/A
Missing Data	11	2.5	N/A	N/A
Major College				
Junior Division	N/A	N/A	2,891	54.83
Applied Life Science	30	6.8*	144	02.73
College of the Arts	23	5.2	102	01.93
Business Administration	53	12.0	445	08.44
Education	149	33.8	553	10.48

(table continues)

Characteristics	Sample Frequency	Sample % of Total	Population Frequency	Population % of Total
Engineering	22	5.0	185	03.50
General Studies	34	7.7	174	03.30
Liberal Arts	43	9.8	348	06.60
Nursing	17	3.9	83	01.57
Sciences	27	6.1	172	03.26
University College	N/A	N/A	175	03.31
Missing Data	43	9.8	0	0
Will Attend During Regular Academic Year				
Yes	390	88.4	N/A	N/A
No	50	11.3	N/A	N/A
Missing Data	1	.2	N/A	N/A

* percentage of totals do not add up to 100 due to multiple answers
Information was obtained from the UL Lafayette Office of Institutional Research
Information was not available for the following categories: Marital Status, Parental Status, Honors College, Father's Educational Level, Mother's Educational Level, Financial Assistance, Off Campus Housing, Participate in Campus Organization or Attend Campus Functions, Types of Campus Organizations, Formally Declared Major, Will Attend During Regular Academic Year.

APPENDIX D

SUMMARY OF DESCRIPTIVE STATISTICS

Table D.1

Summary of the Descriptive Statistics for Each Item for the College Student Self-Efficacy Scale (CSSES) (n=441)

Item		M	SD	%Max*
1.	Finish homework by deadlines.	3.56	.596	.89
2.	Study when there are other interesting things to do.	2.75	.750	.68
3.	Concentrate on school subjects.	3.09	.622	.77
4.	Take notes in class.	3.49	.661	.87
5.	Use the library to get information for class assignments.	2.77	.948	.69
6.	Plan your schoolwork.	2.92	.817	.73
7.	Organize your schoolwo rk.	3.08	.813	.77
8.	Remember information presented in class.	3.13	.654	.78
9.	Arrange a place to study without distractions.	3.05	.815	.76
10.	Participate in class discussions.	2.81	.886	.70
11.	Master the courses you are taking this semester.	3.08	.692	.77
12.	Do an excellent job on the problems and tasks assigned for the courses you are taking this semester.	3.11	.638	.78
13.	Learn general mathematics.	3.23	.768	.81
14.	Learn Algebra.	3.10	.852	.76
15.	Learn Science.	2.94	.793	.74
16.	Learn Biology.	2.77	.873	.69
17.	Learn reading and writing language skills.	3.34	.678	.84
18.	Learn to use computers.	3.28	.699	.82
19.	Learn foreign languages.	2.28	.952	.57
20.	Learn Social Studies.	3.04	.765	.76
21.	Learn English grammar.	3.26	.716	.82
22.	Secure necessary funds to complete college.	3.18	.785	.79
23.	List several majors you are interested in.	2.95	.827	.74
24.	Select one major from a list of potential majors you are considering.	3.35	.667	.84
25.	Make a plan of your goals for the next five years.	3.22	.771	.80
26.	Accurately assess your abilities.	3.19	.628	.79

(table continues)

Item		M	SD	%Max*
27.	Determine the steps you need to take to successfully complete your chosen major.	3.37	.635	.84
28.	Decide what you value most in an occupation.	3.39	.616	.85
29.	Resist attempts of parents or friends to push you into a career or major you believe is beyond your abilities.	3.40	.693	.85
30.	Choose a major or career that suits you.	3.48	.592	.87
31.	Choose the best major for you even if it took longer to finish your college degree.	3.37	.755	.84
32.	Come up with a strategy to deal with flunking out of college.	2.82	1.06	.71

*Percentage of maximum is calculated by dividing the item mean score by the maximum possible score for the item. All College Student Self-Efficacy Scale items have a maximum possible score of four (4).
Note: Responses were assigned the following values: Very Weak=1, Weak=2, Strong=3, Very Strong=4.

Table D.2

Summary of the Descriptive Statistics for Each Item of the Student Motivation Scale (SMS) (n=441)

Item		M	SD	%Max*
1.	Even when I make a disappointing grade I am able to study hard for the next exam.	3.37	.637	.84
2.	Even if I fail a few courses, I will persist until I get my bachelor's degree.	3.61	.550	.90
3.	I prefer class work that is challenging so I can learn new things.	3.05	.757	.76
4.	I am able to overcome financial difficulties while in college.	3.13	.762	.78
5.	Even when study materials are dull and uninteresting, I keep working until I am finished.	2.96	.698	.74
6.	I am able to persistently work at my career goal even when I get frustrated.	3.25	.579	.81

*Percentage of maximum is calculated by dividing the item mean score by the maximum possible score for the item. All Student Motivation Scale items have a maximum possible score of four (4).
Note: Responses were assigned the following values: Very Weak=1, Weak=2, Strong=3, Very Strong=4.

Table D.3

Summary of the Descriptive Statistics for Each Item for the Student Outcome Expectation Scale (SOES) (n=441)*

Item		M	SD	%Max**
1.	An undergraduate degree will allow me to obtain a well paying job.	2.82	.731	.71
2.	If I obtain a bachelor's degree I will get a "fair shake" in the job market.	2.88	.652	.72
3.	If I work hard enough, I will get this degree.	3.66	.494	.92
4.	I will disappoint my friends and family if I do not succeed in getting this degree.	2.98	.911	.75
5.	Getting my undergraduate degree also means I will do better with the rest of my life.	3.17	.717	.79
6.	I will have failed if I do not get my degree.	2.76	.982	.69
7.	Getting my degree means I will be able to achieve my future goals.	3.37	.614	.84
8.	If I know my interests and abilities, I will be able to get this degree.	3.38	.596	.85
9.	Earning my undergraduate degree will fulfill my more immediate personal and professional needs.	3.28	.634	.82
10.	I am proud when I make a good grade or do well in a course.	3.76	.435	.94
11.	Getting my bachelor's degree will allow me to meet my financial goals.	3.13	.771	.78
12.	Obtaining my bachelor's degree will allow me to expand my interests and abilities.	3.40	.577	.85
13.	If I complete this degree, I will feel very proud of myself.	3.73	.441	.93

*Items do not add up to number of items on inventory because social desirability items are pulled out.

**Percentage of maximum is calculated by dividing the item mean score by the maximum possible score for the item. All Student Outcome Expectation Scale items have a maximum possible score of four (4).

Note: Responses were assigned the following values: Very Weak=1, Weak=2, Strong=3, Very Strong=4.

Table D.4

Summary of Descriptive Statistics for Each Item for the Student Intention Certainty Scale (SICS) (n=441)

Item		M	SD	%Max*
1.	It is likely I will re-enroll at UL Lafayette next semester.	3.41	.954	.85
2.	I intend to obtain my bachelor's degree.	3.73	.496	.93
3.	I am satisfied with the decision to obtain my bachelor's degree.	3.65	.582	.91
4.	I am committed to obtain my bachelor's degree despite the many obstacles I am likely to face.	3.70	.485	.93
5.	I frequently think about dropping out of college.	1.53	.825	.38
6.	If I won the lottery today, I would quit college.	1.69	.885	.42
7.	If I was offered a high paying job, I would quit college.	1.74	.795	.44
8.	I am certain I will obtain my degree no matter what obstacles I may face.	3.68	.533	.92

*Percentage of maximum is calculated by dividing the item mean score by the maximum possible score for the item. All Student Intent to Remain Enrolled Scale items have a maximum possible score of four (4).
Note: Responses were assigned the following values: Very Weak=1, Weak=2, Strong=3, Very Strong=4.

Table D.5

Summary of Descriptive Statistics for Each Item on the Social Desirability Scale (SDS) (n=441)

Item		M	SD	%Max*
1.	I am quick to admit I made a mistake.	3.06	.728	.77
2.	I am courteous, even to people who disagree with me.	3.05	.690	.76
3.	I am sometime irritated by those who ask favors of me.	2.24	.760	.56

*Percentage of maximum is calculated by dividing the item mean score by the maximum possible score for the item. All Social Desirability Scale items have a maximum possible score of four (4).
Note: Responses were assigned the following values: Very Weak=1, Weak=2, Strong=3, Very Strong=4.

APPENDIX E:

FACTOR ANALYSIS

Table E.1

Summary of Factor Structure Coefficients for Items Retained for the One-Factor Solution for the College Student Self-Efficacy Scale (CSSES) (n=441)

CSSES Item #	Communality Estimates [a]	1 Factor [b]
1	.22	.47
2	.28	.53
3	.38	.62
4	.19	.44
5	.22	.47
6	.36	.60
7	.36	.60
8	.22	.47
9	.24	.49
10	.16	.40
11	.36	.60
12	.37	.61
13	.19	.44
14	.13	.36
15	.18	.43
16	.16	.40

(table continues)

CSSES Item #	Communality Estimates [a]	1 Factor [b]
17.	.32	.56
18.	.20	.45
19.	.12	.34
20.	.20	.45
21.	.32	.57
22.	.25	.50
23.	.13	.37
24.	.35	.59
25.	.29	.54
26.	.45	.67
27.	.46	.68
28.	.41	.64
29.	.23	.48
30.	.33	.58
31.	.25	.50
32.	.08	.29
Variance Explained [b] = 26.8%		

a. Principal components solution
b. Percentage of item variance explained by the one-factor solution

APPENDIX F

ITEM LOCATION FOR FACTORED SUBSCALES OF THE COLLEGE STUDENT SELF-EFFICACY SCALE, THE STUDENT OUTCOME EXPECTATION SCALE, AND THE STUDENT INTENTION CERTAINTY SCALE

Table F.1

Item Location Index for Factored Subscales of the College Student Self-Efficacy Scale (CSSES)

CSSES Subscale, Item number/Content
Organizing and Planning Major (9)*
22. Secure necessary funds to complete college.
24. Select one major from a list of potential majors you are considering.
25. Make a plan of your goals for the next five years.
26. Accurately assess your abilities.
27. Determine the steps you need to take to successfully complete your chosen major.
28. Decide what you value most in an occupation.
29. Resist attempts of parents or friends to push you into a career or major you believe is beyond your abilities.
30. Choose a major or career that suits your abilities.
31. Choose the best major, even if it takes longer to graduate.
Academic Efficacy (8)
1. Finish homework by deadlines.
2. Study when there are other interesting things to do.
3. Concentrate on school subjects.
4. Take notes in class.

(table continues)

CSSES Subscale, Item Number/Content

6. Plan your schoolwork.

7. Organize your schoolwork.

9. Arrange a place to study without distractions.

12. Do an excellent job on problems and tasks assigned for the courses you are taking this semester.

Learning Efficacy (3)

8. Remember information presented in class and textbooks.

10. Participate in class discussions.

16. Learn Biology

Verbal Efficacy (5)

17. Learn reading, writing, and language skills.

20. Learn Social Studies.

21. Learn English grammar.

23. List several majors that you are interested in.

32. Come up with a strategy to deal with flunking out of college.

Quantitative Efficacy (5)

13. Learn general mathematics.

14. Learn algebra.

15. Learn Science

18. Learn to use computers.

19. Learn foreign languages.

Table F.2

Item Location Index for Factored Subscales of the Student Outcome Expectation Scale (SOES)

SOES Subscale, Item Number/Content
Future Orientation (8)
3. If I work hard enough, I will get this degree.
7. Getting my undergraduate degree also means I will do better with the rest of my life.
10. Getting my degree means I will be able to achieve my future goals.
11. If I know my interests and abilities, I will be able to get this degree.
12. Earning my undergraduate degree will fulfill my more immediate personal and professional needs.
15. Obtaining my bachelors' degree will allow me to expand my interests and abilities.
16. If I complete my degree, I will feel very proud of myself.
Economic Satisfaction (3)
1. An undergraduate degree will allow me to obtain a well-paying job.
2. If I obtain a bachelors' degree, I will get a "fair shake" in the job market.
14. Getting my bachelors' degree will allow me to obtain my financial goals.
Personal Expectations (2)
5. I will disappoint my family and friends if I do not succeed in getting this degree.
8. I will have failed if I do not get this degree.
13. I am proud when I make a good grade or do well in a course.

Table F.3

Item Location Index for Factored Subscales of the Student Intention Certainty Scale (SICS)

SICS Subscale, Item Number/Content
Intention (5)
1. It is likely I will re-enroll at UL Lafayette next semester.
2. I intend to obtain my undergraduate degree.
3. I am satisfied with the decision to obtain my bachelor's degree.
4. I am committed to obtain my bachelor's degree despite the many obstacles I am likely to face.
8. I am certain I will obtain my degree no matter what obstacles I may face.
Commitment (3)
5. I frequently think about dropping out of college.
6. If I won the lottery today, I would quit college.
7. If I was offered a high-paying job today, I would quit college.

VITA

Carol Couvillion Landry was born on October 7, 1970, in Cottonport, Louisiana to Russell and Carolyn Couvillion. She was married on August 7, 1999 to Stephen W. Landry and resides in Lafayette, Louisiana. She has a son, Andrew Stephen Landry, who is one year old.

Carol graduated in 1988 from Cottonport High School in Cottonport, Louisiana. She then attended the University of Southwestern Louisiana and graduated in 1992 with a bachelor's degree in general studies, behavioral science concentration. She attended Louisiana State University and graduated with her Master of Arts degree in agency counseling in 1995. Carol then obtained state licensure as a Licensed Professional Counselor in 1997. She began her doctoral program later that year and will graduate with the degree of Doctor of Philosophy in educational administration and supervision from Louisiana State University during the spring 2003 commencement ceremonies.

Carol has been employed the University of Louisiana at Lafayette as a counselor since July 1996.