EVALUATING BACKGROUND, CONTEXTUAL, AND MOTIVATIONAL

FACTORS THAT INFLUENCE THE PERSISTENCE AND ATTRITION OF

COLLEGE STUDENTS

A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Philosophy

by

Jackie C. Thomas, Jr.

December 2012

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Dr. Christopher Wolters – Motivation (literally and figuratively)

Dr. Heidi Kennedy - Perspective

Shon Dorsey – Friendship

Eta Mu Chapter of Alpha Phi Alpha – Greatness

thank you.

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Abstract

Retaining and graduating students has become an issue of widespread concern among today's colleges and universities. Current research suggests that, on average, four-year colleges and universities in the United States graduate approximately 58% of their students each year (National Center for Education Statistics, 2012). For the past forty years, faculty, staff, and administrators have been interested in identifying factors that may increase the number of students who persist and complete a college degree. The present study used a theoretical model of college student persistence and attrition to test background, contextual, and motivational factors that may influence college student persistence and attrition.

Participants in this study were undergraduate men and women ($N = 595$) who attended a large, diverse, urban, four-year university in Texas. Participants were asked to complete an 84-item online survey that was used to assess the following factors: background characteristics, campus involvement, faculty mentoring, peer group interactions, sense of belonging, utility value, self-efficacy, residential status, enrollment status, transfer status, and financial concern. These factors were used to help predict institutional persistence attitudes, general persistence attitudes, and attrition. Institutional persistence attitudes describe a student's attitude about persisting at the current institution he or she is attending. General persistence attitudes refer to a student's overall attitude about persisting in college. Finally, attrition describes the process in which a student fails to reenroll from the fall 2011 semester to the spring 2012 semester.

Results from a series of ANOVAs found that African-American students reported weaker persistence attitudes than White and Hispanic students. Differences in institutional persistence attitudes were also found among students who transferred from another institution and those who did not. More specifically, students who transferred from another institution reported stronger institutional persistence attitudes than those who did not. Interestingly, results of the ANOVAs indicated no differences in institutional persistence attitudes and general persistence attitudes between full-time and part-time students and students who lived on campus and off campus.

A pair of hierarchical multiple linear regressions was conducted to evaluate the extent to which student background characteristics, contextual factors, and motivational factors were able to predict institutional persistence attitudes and general persistence attitudes. Results from these analyses indicated that faculty mentoring, parents' education level, socioeconomic status, race, campus involvement, peer group interactions, utility value, self-efficacy, and sense of belonging were all significant predictors of institutional persistence attitudes. In the second multiple regression, gender, race, parents' college expectations, financial concern, utility value and peer group interactions were significantly related to general persistence attitudes.

Finally, a subset of the participants ($N = 245$) who provided the necessary data was used to conduct a hierarchical logistic regression that evaluated the extent to which student background characteristics, contextual factors, and motivational factors could be used to predict attrition. Results from the first step of the hierarchical logistic regression found that prior performance was negatively related to student attrition. The second step of the logistic regression failed to achieve significance. The findings from this study will

be used to help educate students, parents, faculty, staff, and administrators about useful strategies and resources that can be utilized to better support and retain college students.

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Chapter I

Introduction

Retaining and graduating college students have become issues of widespread concern among today's colleges and universities. Current research suggests that on average, four-year colleges and universities in the United States graduate approximately 58% of the student population each year (National Center for Education Statistics, 2012). Additionally, reports have also found that over half of all dropouts from four-year institutions leave before the start of their second year (Allen, 1999). Although institutions of higher learning are graduating more students than years past, faculty, staff, and administration are still interested in identifying factors that may help increase the number of students who earn a college degree. Additionally, these alarming statistics have forced college administrators to pay special attention to issues of retention and graduation on their respective campuses.

Before expanding on the topic of student retention, it is important to define the various terms associated with this area of research. It is also important to point out that the conceptualization of retention and the terminology used to explain this phenomenon has changed over time. There are three important terms that will be used throughout this paper: retention, persistence, and attrition. Retention refers to the institution's ability to retain a student from admission to the university through graduation. It has also been used to describe the overarching area of research that includes persistence and attrition. Persistence can be defined as the desire and action of a student to stay within the system of higher education from beginning year through degree completion. Finally, the term attrition describes students who fail to reenroll at an institution in consecutive semesters

(Berger & Lyon, 2005). The present study focuses specifically on student persistence and attrition. More specifically, persistence will be measured by students' self-reported responses to twelve (12) likert-scale items and student attrition will be measured by a students' failure to reenroll from the fall 2011 semester to the spring 2012 semester.

Theoretical Foundation

Most theoretical models of student retention tend to be longitudinal in nature; suggesting that the college dropout process is something that occurs over an extended period of time. These models also contain several categories of variables that reflect both student and institutional characteristics. Although there have been a number of theories developed to better understand student persistence and retention, two of the most recognized and widely cited theories are Tinto's theory of student departure (Tinto, 1975) and Bean's student attrition model (Bean, 1980). Both models have been described as "college impact models" because they investigate the role that external factors in the college environment play in student retention. Additionally, both models describe retention as the result of a complex set of interactions that occur over time. The two models also suggest that pre-college attributes may impact a student's ability to adjust to his or her respective college or university. Lastly, Tinto and Bean both agree that retention is affected by the successful match between the student and his or her institution.

Tinto's (1975) theory of student departure describes the college dropout process as a longitudinal process that involves interactions between the individual and the academic and social systems of the college. His theory suggests that college students whose norms, values, and ideas align with the institution they are attending are more

likely to become academically and socially integrated into college, which is then directly related to his or her continuance in that college. Tinto's theory also posits that students enter institutions of higher education with a variety of attributes, pre-college experiences, and family backgrounds that have a direct impact on their performance. Student background characteristics and individual attributes are said to influence the development of education expectations and commitments that they bring to the college environment (Tinto, 1975). These expectations and commitments can lead to a student becoming socially and academically integrated into the college, which impacts their decision to remain in school.

Bean's (1980) student attrition model suggests that behavioral intentions are shaped by a process where beliefs shape attitudes, and attitudes shape behavioral intentions. In contrast to Tinto's theory of student departure, Bean's model focuses more on the interaction between academic, environmental, and psychological variables (Wylie, 2005). According to Bean, students' experiences with different aspects of the university environment have an impact on their beliefs. Additionally, the student attrition model recognizes that student's attitudes and decisions are also influenced by external factors to the institution (Bean & Vesper, 1990). Several variations of this model have been tested, with results showing the significant impact that organizational, personal, and environmental roles have in shaping students attitudes, intents, and intentions to persist (Bean & Vesper, 1990).

Tinto's (1975) and Bean's (1980) research on college student retention paved the way for other researchers to begin to take interest in this topic. For example, Astin (1984) developed his theory of involvement (1984) which examined student retention

from an academic and social involvement lens. His theory suggests that students learn more when they are involved in the academic and social aspects of the college experience. He noted that the most important types of involvement were academic involvement, involvement with faculty, and involvement with peers. While Astin (1984) focused on the importance of involvement, other researchers were interested in the role that psychology played in student retention. Psychological researchers introduced important psychological concepts that could be integrated into student retention research. For example, Stage (1989) and Peterson (1993) added motivation to expand on their theories of student retention. More specifically, Stage (1989) included cognition and Peterson (1993) included self-efficacy. One of the most integrated models of psychology and student retention was developed by Bean and Eaton (2000). Their psychological model of student retention included attitude behavior, coping behavior, self-efficacy, and attributions. The model suggests that students enter college with a variety of personal characteristics, and as they interact within the university environment, several psychological processes take place. For the successful student, these processes result in higher levels of self-efficacy, reduced stress, and increased locus of control, which in turn, lead to academic and social integration, intention to persist, and actual persistence. By working across disciplines and exploring other factors that may be related to persistence, researchers were able to expand the breadth and scope college student retention research.

Excluded Factors in Persistence Research

For some time, researchers have tested and evaluated several factors related to student persistence (Astin, 1984; Bean & Eaton, 2000; Cabrera, Nora, & Castaneda,

1993; St. John, 1989; Terenzini, Pascarella, & Lorang, 1982; Tinto, 1993). Some of the most common factors used to predict student persistence and retention are race, gender, prior performance, and family background (Allen, 1999; Pascarella, Seifert, & Whitt, 2008; Pascarella & Terenzini, 1980). Although it is important to continue to test and evaluate the relationship these factors have with student persistence, as post-secondary institutions continue to experience an increase in enrollment and diversity of their student body, it is important for researchers to explore additional factors that may help predict college student persistence.

One important factor that should be included more completely in retention research is motivation. Some researchers have argued that motivation should be treated as one of the most important predictors of college student persistence (Allen, 1997; Ramist, 1981). Motivation focuses on an individual's beliefs, values, and goals. Although it has been excluded from many persistence models, the relationship between motivation, academic achievement, and persistence has been tested using a variety of motivational theories (Allen, 1997; Friedman & Mandel, 2009, 2010; Rayle & Chung, 2007; Rayle, Kurpius, & Arredondo, 2007; Robbins, Allen, Casillas, Peterson, & Le, 2006, Robbins, et al., 2004). Student motivation to achieve in college can be described as an important non-cognitive dimension of the student persistence research (Allen, 1997). When motivation has been included in research studies, it has been traditionally measured by a student's desire to finish college, or has been identified as a form of goal commitment (Allen, 1999). Although the research is limited, researchers have found some positive relationships between motivation and retention. For example, House (2000) found that students' positive beliefs about their academic and intellectual abilities

were positively related to their academic performance. Additionally, Gifford, Briceno-Perriott, and Mianzo (2006) discovered that college students with internal locus of control achieved higher first year cumulative GPAs than those with external locus of control. Finally, Robbins et al. (2004) conducted a meta-analysis of 109 studies that examined the relationship between psychosocial factors and college performance and persistence. They found that performance based motivation, goal-based motivation, and social connectedness constructs successfully predicted academic persistence. The findings discovered in Robbins, et al. (2004) meta-analysis further demonstrates the importance of including motivation in college persistence research.

The Expectancy Value Theory of achievement motivation is an important motivational theory that should be included in future persistence models. It is one of the most comprehensive models used in motivation research (Wigfield & Eccles, 2000). It focuses on motivational and social factors that influence career aspirations and choice, course selection, persistence on difficult tasks, and effort (Updegraff, Eccles, Barber, & O'Brien, 1996). Expectancies can be defined as beliefs about how an individual will do on different tasks, and values involve incentives or reasons for doing the activity (Eccles & Wigfield, 2002). Two important components of the expectancy value theory are self-efficacy and utility value. Self-efficacy involves a student's beliefs about his or her ability to complete a specific task, and utility value describes how a task fits into an individual's future plans. The present study focuses on both aspects of expectancy-value theory by evaluating the relationships between self-efficacy, utility value, persistence attitudes, and attrition. The Expectancy Value Theory of achievement motivation can be a valuable addition to persistence research because it may help better understand

students' beliefs about their ability to do well in college and the value they place on a college degree.

In addition to motivation, there are other variables found in existing persistence research that should be investigated. For example, parents' college expectations, financial concern, enrollment status, residential status, and transfer status are all factors that should be included in future retention models. Parents' college expectations describe expectations that parents have for their student's college attainment. Financial concern examines students' perceived concern about their ability to finance their education. Finally, enrollment status, residential status, and transfer status refer to a student's choice to enroll as a full-time or part-time, to live on or off campus, and to enroll as a freshman, or transfer to their respective college. Each of these factors will be discussed in further detail in a later section of this paper.

In sum, based on a review of literature and an examination of several models of student retention, the current study was designed to examine the relationship between several background, contextual, and motivational factors and college student persistence and attrition. The principal investigator decided to test a theoretical model of college student persistence and attrition to provide a more comprehensive look at the relationship between several factors that have been related to college student persistence. The proposed model is divided into five sections: background factors, contextual factors, motivational factors, persistence attitudes, and attrition. Background factors that will be evaluated in the model include parents' education level, socio-economic status, parents' expectations regarding college, race, gender, and prior performance. Contextual factors in the proposed model include faculty mentoring, campus involvement, peer group

interactions, fall 2011 GPA, academic characteristics, and financial concern.
Motivational factors include utility value, self-efficacy, and sense of belonging. The
fourth section involves student's persistence attitudes and the final section of the model
will involve student attrition. The model asserts that students come to college with a
variety of different background factors. Those factors are said to influence a student's
social interactions, motivation, academic performance, academic characteristics, and
financial concern. The model then suggests that the interaction between background,
contextual, and motivational factors will influence a student's attitudes about persisting,
ultimately leading to their decision to remain at the instruction they are attending.

Before proceeding with a detailed description of the present study, the following
chapter will provide a review of the literature on college student persistence and
retention. The review will begin with a brief overview of the history of student retention.
After explaining the history of student retention, the chapter will define and describe each
factor used in the current study, as well as describe the relationship that each proposed
factor has with college student persistence.

Chapter II

Review of Related Literature

The History of Retention

The first 250 years of American higher education focused more on keeping institutions open and operational, than on student persistence and retention. During this time, very few students were interested in going to college, and for those who did attend, only a small percentage had any intentions on graduating. The earliest studies on student retention did not begin until the 1930s. During the 1930s, colleges and universities were experiencing a rapid growth in enrollment. So, for the first time in history, institutions had enough interest from prospective students that they were able to be more selective with their admissions criteria. This selectivity resulted in a more diverse study body with very distinct differences in academic ability. Classrooms now had a mix of students who were prepared to handle the academic rigor of the college environment, and others who were extremely underprepared. As expected, the students who were not prepared for college were the ones who decided to leave. Surprisingly, some of the more selective colleges and universities began to view a certain amount of dropout as a hallmark of institutional success. This mindset eventually led to the first documented study of student retention by John McNeely (Berger & Lyon, 2005).

In 1938, McNeely conducted a study, titled "College Student Mortality", on behalf of the U.S. Department of the Interior and the Office of Education. The study involved approximately sixty different 4-year colleges and universities from across the United States, and it examined some of the many factors of retention still evaluated in present day research. McNeely's study looked at factors like extent of attrition, average

time to degree completion, points in the academic career, impact of institutional size, extra-curricular involvement, and demographic data. This pioneering work set the stage for others researchers to take interest in understanding why students dropout from college.

It was not until the early 1950s that researchers began to focus on issues of persistence and retention. Although some campuses began to regularly monitor enrollment, there had only been few attempts to systematically evaluate patterns of student persistence. Interestingly, the early studies of college student departure were conducted from a psychological perspective and focused on issues like maturity, disposition and motivation. Most of the studies conducted in the 1950s and 1960s fell into six different categories: philosophical, census, autopsy, case, descriptive, and prescriptive (Spady, 1971). Philosophical studies were based on the assumption that student attrition could be prevented and consisted of recommendations on how to prevent dropout. Census studies attempted to describe the impact that attrition, dropout, and transfer had across different institutions. Autopsy (or atheoretical) studies used self-report data to understand why students decided to depart from college. Case studies tracked at-risk students as they entered college and observed what factors led to success or failure to graduate from college. Descriptive studies examined the characteristics and experiences of students who dropped out of college. Finally, prescriptive studies used college entrance information to forecast the potential for student success in college. Although these studies helped to understand persistence from a single-institution perspective, they were criticized for focusing solely on demographic and psychological characteristics, being largely atheoretical, not focusing on the interaction between student

characteristics and the environment, and failing to synthesize existing knowledge to create a coherent body of empirically based knowledge around student persistence and retention.

In the years following World War II, the United States experienced a drastic increase in the number of students enrolling in colleges and universities. Organizations like the National Youth Administration and initiatives like the GI Bill made college accessible for individuals who would have not traditionally attended an institution of higher education. By the start of the 1960s, colleges and universities were dealing with a myriad of consequences that arose from the post-World War II enrollment boom. Because of the rapid growth, colleges and universities were forced to build new campus facilities, academic buildings, and residence halls to sustain and support their growing population. As colleges and universities continued to grow and expand, Americans began to place more value on a college education. In years past, a college degree was viewed as an educational opportunity only available to the affluent. Now, individuals from different backgrounds were gaining access to higher education (Berger & Lyon, 2005).

The 1960s also witnessed two important events that had a major impact on higher education. One of the most significant events was the passage of the Higher Education Act of 1965. This landmark legislation helped to create a variety of programs (e.g. subsidized student loans, Educational Opportunity Grant) designed to increase access to higher education. In addition to the Higher Education Act of 1965, the Civil Rights Movement also led to post-secondary opportunities for African-American students and other students of color. Unfortunately, many campuses were not prepared to deal with

the increase in racial diversity on their campus. As students of color enrolled in college, it became clear that many of these students had not been academically prepared for college, resulting in lower retention rates for this population. Interestingly, lack of academic preparation was not only limited to students of color. State and federal funds now provided more middle and lower class students with access to higher education. Unfortunately, many of these students had attended high schools that only offered curriculum that focused on job preparation, not college attendance. So, not only did these students struggle to adjust to the academic environment, but they also had a hard time getting used to the social aspects of the college campus (Berger & Lyon, 2005).

By the 1970s, retention had become an increasingly popular topic among America's colleges and universities. It was not until predictions of a nationwide decrease in enrollment that retention became a major focus of educators, researchers, and institutions. It was also during the 1970s that researchers began to build theory to help better understand persistence and retention. William Spady (1971) used the emerging body of work to develop his own model of college student retention. Spady led the charge in this new area of research by developing a model to better understand the interaction between individual student characteristics and other important aspects of the college environment. He later published the article, "Dropouts from Higher Education: An Interdisciplinary Review and Synthesis," which reviewed empirical research that had been conducted around the topic of retention. In the article, he requested that future retention research focus on the interaction between student attributes and the university environment. Spady's work influenced researchers like Tinto (1975), Astin (1977), and Kamens (1974) to take interest in college student retention. By the end of the 1970s,

theory around student retention was well established and growing (Berger & Lyon, 2005).

The 1980s saw another increase in student enrollment. In an effort to maintain a reasonably sized student body, colleges and universities introduced the concept of enrollment management. Enrollment management is a systematic set of activities designed to enable educational institutions to exert more influence over student enrollment. The process uses institutional research that focuses on student college choice, student attrition, and student outcomes, to guide institution practices that will ultimately affect the enrollment and retention of students (Hossler, 1984).

As enrollment management procedures were growing and developing, researchers were continuing to advance the field of student retention. They began to use prior retention research to build upon and expand their own work. For example, Bean (1980) developed a theoretical model that examined how organizational attributes affected student persistence. Other researchers expanded on Tinto's (1975) work, by including psychological, environmental, economic, and organizational factors that may influence retention. Additionally, more studies were being conducted looking at students from different racial and ethnic backgrounds, first generation college students, and non-traditionally aged students. The growth of these theory-driven studies had an impact on the development of campus based practices, initiatives, and services designed to help support and retain college students (Berger & Lyon, 2005).

The 1990s was a time of continued expansion of research, knowledge, and strategies around college student retention. Retention had become a well-established field of study with thousands of published and unpublished studies. Many of these

studies were conducted using Tinto's theory of student departure (1975) as the model of

reference. Because Tinto's theory was the most widely used theory at the time, Braxton

and his colleagues (1997) decided to empirically test the model. What they found was

that students come to college with different entry characteristics which will impact their

initial commitment to the institution. They also discovered that a student's initial

commitment to the institution will impact his or her future commitment to the institution.

Two other important findings suggested that a student's continued commitment to the

institution is enhanced by his or her level of social integration and that the greater level of

commitment to the institution, the more likely a student will be retained through

graduation. The results suggested that social integration was key to understanding

student departure. Braxton and his colleagues (1997) recommended that future

researchers explore additional psychological, social, and organizational influences that

may impact social integration, institutional commitment, and graduation. Their

suggestion empowered researchers to continue to look for other explanatory factors that

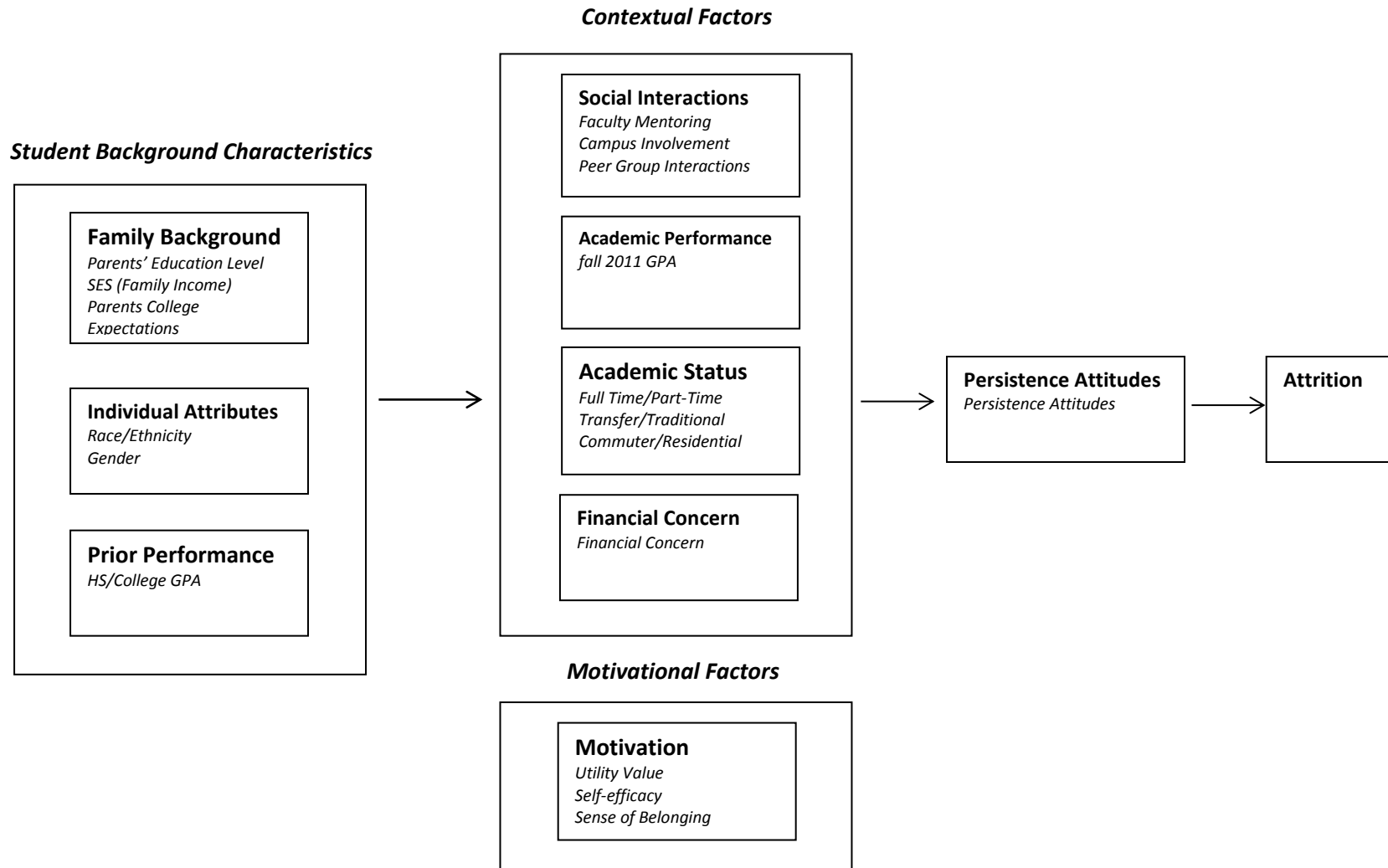may help better understand student departure (Berger & Lyon, 2005).

Current Retention

By the early 21st century, retention had become a major policy issue. Currently,

research on college student persistence and retention has become one of the most popular

fields in higher education (Berger & Lyon, 2005). Researchers have been steadfast in

identifying factors that help to predict college student persistence. Some of the most

common factors found in present persistence models include race, gender, parents'

education level and income, prior achievement, and financial need (Allen, 1999;

Pascarella, et al., 2008). Other factors found to be related to student persistence are

campus involvement, faculty mentoring, sense of belonging, academic performance, and academic characteristics (Bandura, 1997; Dowd, 2004; Flowers, 2004; Nora & Crisp; 2007).

Proposed Factors that Influence Persistence

The current study attempts to build upon the 80 years of college student departure research by evaluating a proposed conceptual model that will be used to help predict college student persistence. The model, as well as the variables chosen, was influenced by the work of Tinto (1975), Astin (1987), Bean and Eaton (2000), Pascarella and Terenzini (1980), and Eccles, et al (1983) (see Figure 1). The following section of the paper is divided into the three main components of the model: student background characteristics, contextual factors, and motivational factors. Within each main component of the model, a smaller subsection is used to describe a set of related factors. Family background, individual attributes and prior performance are subsections that fall under the student background characteristic component of the model. Social interactions, academic performance, academic characteristics, and financial concern are all part of the contextual factors component of the model. Lastly, motivation is part of the motivational factors component of the model. Each specific subsection describes a group of important factors related to persistence. For example, the family background sub-section includes the follow set of variables and their relationship to student persistence: parents' education level, socioeconomic status, and parents' expectations. The first section reviewed in this paper will be student background characteristics.

Figure 1. Proposed Theoretical Model of College Student Persistence and Attrition

Contextual Factors

Student Background Characteristics

Social Interactions
Faculty Mentoring
Campus Involvement
Peer Group Interactions

Family Background
Parents' Education Level
SES (Family Income)
Parents College
Expectations

Academic Performance
fall 2011 GPA

Academic Status
Full Time/Part-Time
Transfer/Traditional
Commuter/Residential

Persistence Attitudes
Persistence Attitudes

Attrition

Individual Attributes
Race/Ethnicity
Gender

Prior Performance
HS/College GPA

Financial Concern
Financial Concern

Motivational Factors

Motivation
Utility Value
Self-efficacy
Sense of Belonging

Student background characteristics. Student background characteristics describe traditional student performance indicators such as family background, individual attributes, and prior performance. Each of these factors is important in helping faculty and staff better understand student success at the college level. Student background characteristics are included in almost every student retention study and have been found to be significant predictors of student persistence (Robbins, et al, 2004). Family background will be the first background characteristic discussed in this section.

Family background. Different aspects of a student's family may contribute to his or her academic choices, abilities, and ability to remain in college. One important aspect found to be related to student persistence is parents' education level (Allen, 1997; NCES, 1998). Parents' education level describes the highest level of education that a student's parent(s) may have achieved. Research has shown that as parents' education increases, so does the likelihood of a student remaining in college (Choy, 2001). For example, in a report by Choy (2001), she summarized the findings of a series of studies conducted by the National Center for Educational Statistics. The study examined the experiences of high school and college students whose parents did not attend college. Results of these studies showed that students whose parents did not attend college were less likely to enroll in college, had lower educational expectations, were not as prepared academically and received less assistance from their parents. When examining long term effects, these same students were less likely to persist after three and five years, when compared to students who had parents who attended college (Choy, 2001).

Other studies involving parents' education level found similar results (Allen, 1997; Pascarella, et al., 2004; Terenzini, 1996). Terenzini (1996) and his colleagues

found that students whose parents had not attended college completed fewer first-year credit hours, studied fewer hours, worked more hours per week, were less likely to participate in an honors program, were less likely to perceive that faculty were concerned about students and teaching, and made smaller first-year gains on a standardized measure of reading comprehension. In a different study, Pascarella and his colleagues (2004) examined differences in college experiences and outcomes among 1,500 college students, from 18 different four-year colleges, who had parents who did or did not attend college. Pascarella and his colleagues (2004) classified parents' education level into three categories for the study: high parental postsecondary education, moderate parental post-secondary education, and first-generation. Results of the study found that when controlling for pre-college and demographic variables (parents' income, race, gender), students whose parents did not attend college were less likely to live on campus, had significantly lower levels of extracurricular involvement, and significantly lower levels of peer interactions. Lastly, Allen (1997) found that parents' education level had a direct effect on student's desire to finish college. Results from each of these studies suggest that students whose parents did not attend college tend to be at a disadvantage when it comes to the types of experiences they have in college.

Socioeconomic status (SES) has also been found to be a significant predictor of college student persistence (McDonough, 1997; Swail, Cabrera, & Lee, 2004; Terenzini et al., 2001; Tinto, 2006). The literature often uses parents' income level as a measure of SES. Research has consistently shown that students from low-SES backgrounds are less likely to aspire to, apply to, be prepared for, or enroll in college (Akerhielm et al., 1998; Hossler & Maple, 1993). Individuals from low-SES background are normally described

as those who have lower education, poor health, and are at or below the federal poverty line (American Psychological Association, 2012). With the changing financial landscape of higher education (e.g., increase in tuition and the shift in federal financial aid), attending college is becoming less affordable for low-income families. According to a study by the U.S. Department of Education, 36 percent of low-income students are attending institutions of higher learning, compared to 88 percent of high-income students (Howard, 2001). Additionally, research has shown that higher amounts of family income have been associated with higher levels of persistence (Dowd, 2004; Howard, 2001; St. John, 1989).

A report from the Department of Education found parents' income to be a powerful determinant of bachelor's degree attainment (Secretary of Education, 2010). The study also found that 78% of middle-income peers were able to attain a degree, while only 62% of low-income students were able to do so (Secretary of Education, 2010). Chen and DesJardins (2008) surveyed 6,733 college students and found that over a 6-year period, low income students were more likely to drop out of college than middle and high income students. When they looked more specifically at low income students, they were more likely to be female, with lower levels of educational aspiration, lower first-year college GPAs, and parents who have less than a high school education. In addition to examining low income students and their status's effect on persistence, research has also shown that parents' level of income has an impact on parents' college expectations. Low-SES parents have been found to be more likely to view a high school diploma as the norm for their children, whereas high-SES parents view a bachelors degree or higher as

the norm (Halle, 1984; Lareau, 1987, 1993; MacLeod, 1987; McDonough, 1997; Willis, 1977).

Although most developmental theories of children and adolescents have recognized that parents' college expectations are one of the most significant influences on psychological and personality development, there has been a lack of attention to how these expectations might affect college students (Agliata & Renk, 2007; Wang & Heppner, 2002). Researchers interested in this topic have found a positive relationship between parents' expectations and student educational aspirations (Benner & Mistry, 2007; Catsambis, 2001; Kirk, et al., 2011; Linver, Barber, & Eccles, 1997). In 2003, the Department of Education conducted a study that looked at family expectations that their children attend college. The sample included parents of about 6,800 students from grades 6-12. Results of the study found that two-thirds of the parents expected their children to earn at least a bachelors degree. The study also found significant differences in parents' expectations based on race, ethnicity, gender, and academic performance. For example, Asian-American parents were more likely than White, Black, or Hispanic parents to expect their children to earn at least a bachelors degrees. Additionally, White parents appeared to have more information about college costs and were able to provide financial support for their children's education than other races. Other important findings from the study suggest that many parents' college expectations do not accurately reflect their student's academic ability and potential. The study found that 86% of students who earned mostly A's were expected by their parents to get at least bachelor's degrees. The percentage fell to 64 percent for B average students. Additionally, 24 percent of students who reported earning mostly D's and F's had parents who expected them to earn

bachelor's degrees. In a separate study by Hossler and Stage (1992), they found that

parents' expectations were related to higher grade point average, greater involvement in

activities, and student's educational aspirations. Similarly, Nora and Lang (2001) also

found that pre-college parental encouragement was positively related to persistence.

Other variables found to be impacted by parents' expectations are parents' education

level, student's feelings of stress, and students' want to "please" their parents (Archer &

Lamin, 1985).

   Individual attributes. Race and gender are two important factors to consider

when discussing college persistence. Many of the initial studies on student retention

focused specifically on White, male students (Berger & Lyon, 2005; Pascarella &

Terenzini, 1998; Reason, 2009). Today, college campuses reflect a more diverse student

population (Pascarella & Terenzini, 1998; Reason, 2009). Studies have shown that White

and Asian-American students have been found to be more likely to persist than other

racial and ethnic groups (Fogel & Yaffe, 1992; Gloria, Kurpius, Hamilton, & Wilson,

1999; Guiffrida, 2003; Levin, Van Laar, & Foote, 2006; NCES, 2007; Porter, 1989;

Sutton & Kimbrough, 2001; Tinto, 1975). Because students from different racial

backgrounds come to college with different experiences, it is important to understand the

variety of factors that impact their ability to persist in college. In a study by St. John,

Carter, Chung, and Musoba (2006), they examined the factors affecting African-

American, White, and Hispanic students at public and private colleges and universities in

Indiana. Results of the study found significant differences between predictor variables

and persistence between the three racial groups. For African-American and Hispanic

students, being from a family with high income was a positively related to persistence,

but parents' education was not. For all three groups, prior academic performance had a positive influence on persistence. Additionally, they study also found that college choices influenced persistence for White and African-American students. So, for White and African-American students, attending a 4-year institution was positively related to persistence compared to enrollment at a 2-year college.

In another study, House (1997) investigated the efficacy of non-cognitive variables and academic background for the prediction of college grade performance and persistence. The study was designed to examine these relationships as a function of race. The study involved 9,589 college students. The racial make-up of the study included 8,301 White students, 644 African-American students, 378 Asian-American students, 251 Hispanic students, and 15 Native American students. Factors examined in the study included high school background, family characteristics, achievement expectancies, financial goals, social goals, and desire for recognition. Results of the study found that high school class rank and achievement expectancies were significantly related to persistence among Hispanic students. Academic background and academic self-concept were significant predictors of Asian students. ACT composite scores was the only significant predictor of persistence among Native American students. For African-American students, academic background, academic self-concept, and parental education were related to persistence. The results of this study suggest that there are important differences to evaluate between race, other predictor variables, and persistence.

Because of the growing diversity of our college campuses, it is important to continue to examine the relationship between race and persistence. Studying race is of particular importance because it can serve as both a predictor and mediator of other

variables related to persistence (Reason, 2009). Murtuagh, Burns, and Shuster (1999),

found that when factors like age, high school GPA, and college GPA were considered,

much of the differences in persistence between racial groups disappeared. The results of

the current study will help to expand on what is known about the relationship between

race, other factors, and persistence.

Gender has also been considered to be an important factor with regards to student

persistence (Allen, 1997; Reason, 2001; Robertson, 1991; Tinto, 1987). Studies

involving gender as a predictor of student persistence have found mixed results (Astin,

Korn, & Green, 1987; Hausman, Ye, Schofield, & Woods, 2009; Reason, 2001; St. John,

et. al., 2001; & Tinto; 1987). For example, in a persistence studies by Hausman, Ye,

Schofield, and Woods (2009), they found no gender differences in semester to semester

persistence. In contrast, Whalen, Saunders, and Shelly (2010) found that male students

were significantly less likely to than females to graduate or be retained at the end of six

years. Finally, a study by Roberston (1991) found that women experience significantly

more breaks in college attendance than men. Tinto's (1987) work helps to explain these

results by suggesting that women are more likely to depart from college because of social

factors, not academic ones. They are also more likely to leave voluntarily, whereas men

are more likely to stay in college until they are asked to leave because of poor academic

performance. The mixed results around gender and college student persistence warrant

more empirical research.

Prior performance. Prior performance is another extremely important factor that

has been found to be a predictor of college student persistence (Reason, 2009). Among

the many variables used to assess prior performance, high school grade point average

(GPA) is one of the most common variables used (Astin, 1997; Reason, 2009; Tross, Harper, Oscher, & Kneidinger, 2000). Illustrating the importance of prior achievement, Astin and his colleagues (1987), found that students who entered college with an "A" average were seven times more likely to graduate with a degree than those who had a "C" average. Similarly, Tross, et al., (2000) found that high school GPA was a significant predictor of student retention among 844 first year students. In contrast, in a study involving "at-risk" students, high school GPA was not a significant predictor of student success. Student success was defined as a college GPA of 2.0 or better and retention at the university for one year or more (Laskey & Hetzel, 2011). Finally, in a longitudinal study by Adleman (1999, 2006), he found a significant relationship between high school GPA and bachelors degree attainment. More specifically, he found that high school GPA was one of the strongest overall indicators of post-secondary performance.

Contextual factors. Contextual factors can be described as potential influences and experiences that are a function of the college setting. The first set of factors to be evaluated will be social interactions, which include faculty mentoring, campus involvement, and peer group interactions.

Social interactions. As seen in Tinto's (1975) and Bean's (1980) models, social integration is an important aspects of a student's college experience. College campuses provide students with several opportunities to develop relationships inside and outside of the classroom. For example, establishing a mentoring relationship with a faculty member can be perceived as one of the most important relationships that a student can form in college (Allen & Eby, 2007). Moreover, the frequency of student informal contact with faculty outside of the class has been found to be positively associated with persistence

(Pascarella & Terenzini, 1980). Although there is no consistent definition of mentoring, Nora and Crisp (2007) identified four responsibilities of faculty mentors: to provide psychological and emotional support, to help set goals and choose a career path, to provide academic subject knowledge support, and to serve as a role model. Research examining faculty mentorship classifies student-faculty mentoring in two categories: informal and formal (Allen & Eby, 2007). Informal student-faculty mentoring describes relationships that are spontaneous and gradual, where formal mentoring involves those that are officially recognized or sanctioned by the university. The benefits of having a formal or informal faculty-mentor include higher grade point averages, more credit units per semester, and actual persistence (Campbell & Campbell, 1997; Thile & Matt, 1995).

As an illustration, in a study by Campbell and Campbell (1997), they compared the academic outcomes of 339 undergraduate students who were assigned faculty mentors with 339 students who were not. The experimental and control groups were matched on gender, age, and entering GPA. The results showed that after one year, the mentored students obtained higher GPAs, completed more credit units per semester, and were less prone to attrition. In a similar study by Thile and Matt (1995), they surveyed thirty-two undergraduates who were involved in a formal mentoring program. As participants of the program, they met with faculty members, peers, and were required to attending scheduled workshops and presentations. After one year in the program, the freshmen were less likely to attrite and earned significantly higher GPAs.

In addition to developing a relationship with a faculty member, involvement in out-of-class organizations have been found to promote friendship, camaraderie, and networking opportunities among college students (Guiffrida, 2003). For the purpose of

this paper, campus involvement is defined as a student's involvement in out-of-class

student organizations (e.g. Greek letter fraternities and sororities and student government

associations) (Astin, 1984). Astin's (1984) theory of student involvement suggests that

involvement in out-of-class organizations has a positive impact on student development,

cognitive development, moral development, and leadership skills. Research has shown

that being involved on campus enhances the overall quality of a student's experience and

affects persistence and the development of educational aspirations (Astin 1977, 1993;

Kuh 1993; Pascarella & Terenzini, 2005; Tinto, 1993). Additionally, several studies have

found that participation in out-of-class organizations have been positively related to

persistence (Carroll, 1988; Christie & Dinham, 1991; Mallinckrodt, 1988; Nelson, Scott,

& Bryan 1984; Simpson, Baker, & Mellinger 1980). Research has also linked campus

involvement to the completion of a bachelor's degree and future enrollment in graduate

or professional school (Cuyjet, 2006).

Although many have researched and analyzed the positive effects of campus

involvement, Guiffrida (2004) noted that involvement in out of class organizations can

hinder the academic achievement of students who value involvement over grades. He

made a distinction between two types of students: over involved low achievers and

actively involved high achievers. He found that the over involved low achievers'

academic performance was affected by their over involvement in out of class

organizations. Those who were described as actively involved high achievers valued

academic success as their top priority. Actively involved high achievers felt that the

students who identified themselves as "over involved" were using their involvement as a

poor excuse for their lack of academic persistence. Interestingly, although a majority of

persistence research associates campus involvement with positive student outcomes, only about 60% of all 4-year college students are actually involved in campus organizations (Kuh, et al., 2006). The current study will help to further explore the relationship between campus involvement and persistence.

Peer group interactions also play an important part in students' decisions to stay at a college or university (Aleman, 1997; Astin, 1993; Kuh, 1993). Sallee and Tierney (2007) define a peer group as any set of same age-peers linked by a common interest or identity who engage in "sustained interaction". Sustained interaction suggests that individuals interact with the same set of peers on a regular basis, over a significant amount of time. Peer groups can be a student's friends, classmates, or teammates. According to Astin (1993), peers are an important type of influence that affects every aspect of development – cognitive, affective, psychological, and behavioral. In a study by Nora and Lang (2001), they found that college students who had a strong system of friends, and who perceived themselves as being able to make new friends and "fit in", were more likely to remain in college. Peer group interactions have also been associated with greater levels of overall social involvement, increased informal interactions with faculty, and greater use of campus support services (Astin, 1993; Flowers, 2004; Levin, et al., 2006).

Academic performance. As one might expect, a student's college grade point average has also been found to be a significant predictor of persistence (Belcheir, 2000; Bean & Metzner, 1985; Dowd, 2004; Isihitani & DesJardins, 2002; Nora, Barlow, & Crisp, 2005; Roweton, 1994). Research suggests that early academic success may be important to long term persistence in college (Nora, Barlow, & Crisp, 2005).

Additionally, how a student performs academically is said to have an impact on his or her academic and social experience, commitment to attain a degree, and decision to withdraw (Cabrera & Nora, 1994; Nora & Cabrera, 1996). In a study by Dowd (2004), she found that academic performance in the first year was a significant predictor of persistence. Additionally, a study involving rural college students found that college GPA was the best overall predictor of retention of college students (Roweton, 1994). Finally, results from a study conducted by Isihitani and DesJardins (2002) found that students who had a first-year GPA of below 2.0 were at a very high risk of dropping out of college in year two. The research has been consistent in confirming college grade point average as the single most important predictor of student persistence. Because of its importance, college grade point average is included as a predictor variable in the proposed model.

   Academic characteristics. Researchers have also identified other academic related factors that have been related to student persistence. For example, studies comparing full-time and part-time enrolled students have shown that full-time students are more likely to persist and graduate (Adelman, 1999; Belcheir, 2000; Ronco 1995). Students who are enrolled full-time are typically enrolled in 12 or more credit hours. In a national study, Adelman (2006) found that part-time enrollment reduced the likelihood of a student's degree completion by over 35%. In a longitudinal study conducted by Belcheir (2000), she found that full-time enrollment was a significant predictor of graduation after four, six, and ten years. Ronco (1995) conducted a study of 1,635 first-time-in-college students that attempted to determine the probability that a student's first enrollment at an institution will end in graduation, transfer, or dropout. Among the many

results of the study, what she found was that students who were academically prepared, performed well in college, and attended full-time were more likely to graduate.

Researchers have also been interested in understanding differences in persistence between transfer students and first-time in college freshmen. Current studies have largely found a negative relationship between students who transfer to a 4-year university and graduation (Adelman, 1999; Belcheir, 2000; Ganderton & Santos, 1995; Ronco, 1995). For example, in a study by Shoemaker & Selegan (2010), they found that among college students in California, one-year retention rates and graduate rates were lower for transfer students in comparison to first-time enrolled students. They also found that on average, transfer students take approximately two extra quarters to graduate compared to an average of one extra quarter for new freshmen. In contrast, research has also shown that students who transferred from another college or university have been found to be more likely to graduate than true freshmen (Adelman, 1999). For example, a study by Belcheir (2000) found that transfer students were 6.8 times more likely to graduate after 4 years than freshman. These findings suggest that there may be a need for more research examining the relationship between transfer and first-time-in-college students.

Students who choose to live on campus have been found to be more likely to perform better academically than students who do not live on campus (Astin, 1997; Bozick, 2007; Chickering, 1974; Herndon, 1984; Oguntoyinbo, 2011). Similar to out of class involvement, living on campus is a form of social integration that that Tinto (1975) mentions in his integration model. In a study by Astin (1977) involving over 225,000 college students, he found that living on campus during the first-year of college was the most important environmental factor associated with graduating. Similarly, Bozick

(2007) found that students who reside in non-school-owned housing (either in apartments or at home with their parents) are less likely to make it through the first year of college. Research conducted by Conney and Nonnamaker (1992) found some important differences between students who choose to commute and those who live on campus. First, students who did not live on campus typically came from lower SES families and were more likely to be females. They were also less likely to be engaged in campus functions. Studies have also shown that living on campus may be of great importance to the success of at-risk students. Thompson, Samiratedu, and Rafter (1993) found that living on campus was beneficial for all students regardless of race and gender, but that it was most beneficial for at-risk students. Finally, in a more recent study involving 401 college students, Nicpon et al. (2007), found that students who lived on campus had more social support from friends, higher GPAs, and more positive attitudes about persisting than those students who lived off campus.

Financial concern. The final contextual factor that will be evaluated is financial concern. College students have reported that financial concerns like having to care for a relative, having a child, and running out of money, had a major influence on their decision to drop out of college (AFT, 2003). Students also reported that concerns over their finances impacted the college they chose to attend (AFT, 2003). Results from the Cooperative Institution Research Program (CIRP) found that more than half of incoming first-time students reported some concerns about paying for college (CIRP, 2009). Over 53% of college students who participated in the CIRP reported using student loans to pay for college and 41.6% reported that cost and financial aid were very important factors in choosing which college to attend. In a qualitative study by Roweton (1994) involving 30

rural college students, he found that financial concerns had a direct impact on college selection and persistence. Although finances has been considered to be a determining factor for student persistence, students' concerns about their ability to finance their education has not often been considered in persistence research. Therefore, the current study will attempt to understand the relationship between financial concern and persistence.

Motivational factors. Motivation is an important aspect of student persistence that has been excluded from much of the persistence research. Motivational beliefs focus on an individual's beliefs, values, and goals. The current study looks at three aspects of motivation: self-efficacy, utility value, and sense of belonging.

Self-efficacy is defined as a cognitive resource that involves an individual's confidence or belief in one's ability to effectively engage in behaviors toward desired goals (Bandura, 1997). Research has shown that self-efficacy is a significant predictor of academic achievement, grade point average, continued enrollment, academic persistence decisions, self-esteem, social skills, and career choice (Davidson & Beck, 2006; Gore, Leuwerke, & Turley, 2006; Solberg, et al., 1998). Davidson and Beck (2006) found that self-efficacy significantly predicted students' decision to return after their freshman year. In order to better describe the role that self-efficacy plays in college student success, Solberg and his colleagues (1998) developed the term college self-efficacy. College self-efficacy describes an individual's belief in their ability to successfully engage in three college-related behaviors: academic, social, and roommate self-efficacy. Academic self-efficacy addresses students' beliefs in their ability to successfully complete certain academic tasks, social self-efficacy examines students' beliefs in their ability to complete

social tasks, and roommate self-efficacy involves students' beliefs in their ability to complete tasks that involve living with a roommate (i.e. dividing space and chores with residents). Gore, et al., (2006) found that students retained at the university over a two-year period expressed higher levels of college self-efficacy on the College Self-Efficacy Inventory (CSEI) than non-retained students.

Utility value describes how a task fits into an individual's future plans or goals (Wigfield & Eccles, 2000). A significant amount of utility value research involving college students has been connected to course selection and career choice (Lackland & De Lisi, 2001; Updegraff, et al., 1996; Watt, 2006). Researchers found that college students who viewed courses as more useful to their careers were more likely to enroll in similar classes (Watt, 2006; Wigfield & Eccles, 2000). Although course choice and selection are important, understanding students perceptions of the usefulness of a college degree could be considered as an important factor that may help predict persistence. In a study conducted by Thomas, Wolters, Horn, and Kennedy (in press), they found that students who had higher utility value for a college degree were more likely to report that they would stay enrolled. In a different study, Van Laar (2005) found differences in perceived usefulness of a college degree among African-American and White students. It appeared that although African-American students valued a college education more than White students prior to entering college, by the conclusion of their freshman year, this value dropped notably. Because this variable has not been included in persistence research, findings of the present study may help discover important relationships that exist between utility value and other predictor variables. Moreover, finding out college

students "overall" feeling about the usefulness of a college degree will help identify why these students may choose to remain at or leave an institution of higher learning.

Sense of belonging describes the extent to which a student perceives himself or herself to be a welcomed, valued, and respected member of the school community (Goodenow, 1992). Research has shown that students who are unable to successfully integrate into their institutions academic and social structure are less likely to persist (Johnson, et al., 2007). Additionally, a stronger sense of belonging has been linked to higher grades, higher academic motivation, higher completion rates, and intentions to persist (Sailes, 1993; Tinto, 1993). An important aspect of a student's sense of belonging is the campus racial climate. Research has shown that positive racial climates have been found to be positively related to minority students' sense of belonging (Locks, Hurtado, Bowman, & Oseguera, 2008). A positive racial campus climate is evidenced by the level of academic, social, and financial support provided to the students who are attending. Students of color have been found to be more likely to be negatively impacted by the racial climate of a campus, which has often lead to a less strong sense of belonging than White students (Gilliard, 1996).

In addition to a positive racial climate, Locks, et al., (2008), found that relationships with diverse peers impacted a students' sense of belonging. In a study by Gurin, Dey, Hurtado, and Gurin, (2002), not only did interactions with diverse peers influence a student's sense of belonging, but it also had a positive influence on a student's intellectual engagement and academic skills. Hurtado, et al. (2007) conducted a study in which they looked at how a student's sense of belonging was impacted by participation in formal structures, the racial dynamics of the college, the influence of

family, financial concerns, and the assessments of their own personal development at the end of the first year. They found that students who interacted with a graduate student or teaching assistant, received advice from an upperclassman, and interacted with peers from different racial backgrounds reported stronger sense of belonging.

Sense of belonging is an important motivational factor that has not been included in most persistence models. As evidenced by the research, sense of belonging has been found to be related to positive academic outcomes for college students (Johnson, et al., 2007; Sailes, 1993; Tinto, 1993). Therefore, the present student will help further explore the relationship between sense of belonging and student persistence and attrition.

Purpose of the Study

The current study was designed to evaluate several factors that have been found to be individually or collectively related to college student persistence. It is hypothesized that each of the student background characteristics variables will be significant predictors of college student persistence. More specifically, it is hypothesized that students who had have one or more parent who have attended college will be more likely to attend college. Additionally, students who come from higher household incomes and who have parents who have higher college expectations will also be more likely to persist. Regarding race and gender, it is hypothesized that White students will be more likely to persist than students of color. Regarding gender, women will be more likely to persist than men. Lastly, a student's who has a higher prior performance will be more likely to persist than a student who has lower prior performance.

Similar to the student background characteristics variables, it is hypothesized that variables in the social interactions, motivation, academic performance, academic

characteristics, and financial concern subsections will all be significant predictors of college student persistence. So, students who have a faculty mentor, are involved on campus, and have strong peer group interactions, see college as useful, believe that they can do well in college, and feel connected to their campus will also be more likely to persist. Additionally, students who are enrolled full-time, did not transfer to UH from another college, live on campus, and have higher fall GPAs will also be more likely to persist. Finally, it is hypothesized that students who have concerns about financing their education will be less likely to persist.

In order to successfully evaluate the proposed model, the following research questions have been derived:

Research Questions

1. Are there differences in persistence attitudes between White, African-American, Hispanic, Asian, and students of other races?

2. Are there differences in persistence attitudes between full-time and part-time students?

3. Are there differences in persistence attitudes between commuter and residential students?

4. Are there differences in persistence attitudes between traditional and transfer students?

5. To what extent do student background characteristics (family background, individual attributes, prior performance), contextual factors (social interactions, academic performance, academic characteristics, financial concern), and

motivation (self-efficacy, utility value, sense of belonging) explain persistence attitudes?

6. To what extent do student background characteristics (family background, individual attributes, prior performance), contextual factors (social interactions, academic performance, academic characteristics, financial concern), and motivation (self-efficacy, utility value, sense of belonging) explain student attrition?

Chapter III

Methodology

Participants

Participants ($N = 595$) were undergraduate students at a large, urban university in

Texas. An overwhelming majority of the participants identified as female (n = 477,

80%). Participants included 34% (n = 203) freshmen, 22% (n = 131) sophomores, 34%

(n = 201) juniors, and 10% (n = 60) seniors. Students who reported being seniors who

anticipated graduating in December of 2011 were excluded from participating in the

study. In the sample, 23% (n = 134) identified as being White/Caucasian, 22% (n = 128)

identified as being Black/African-American, 24% (n = 141) identified as being

Asian/Asian-American, and 27% (n = 163) identified as being Hispanic/Latino and 5% (n

= 29) identified as other. Only one (1) student reported being Native American/American

Indian. Other races/ethnicities reported included biracial and South Asian.

Procedure

All participants were recruited through a research subject pool administered by

the Departments of Educational Psychology and Psychology. This specific pool allows

students to choose to participate in a variety of different research projects. Participants

must log on to the research subject pool website and register for any study they are

interested in taking. The current study was listed, and students who were interested in

completing the survey were able to complete it at their own convenience via a web link to

surveymonkey.com. Students who reported being seniors who planned to graduate in

December of 2011 were excluded from participating in the study. The survey took participants approximately fifteen minutes to complete.

Students who completed the survey were asked to complete and sign a consent form and Family Educational Rights and Privacy Act (FERPA) form. Links to both forms were provided electronically. The consent form granted the principal investigator consent to conduct the study and the completed FERPA form allowed the principal investigator gather data from participants' academic record. After collecting this information from each student's academic record, all information that could be used to personally identify participants was discarded and not used for statistical purposes. Students who had not submitted both forms were contacted by the researcher via email and encouraged to turn in both forms. Students also had the option of scanning their forms and emailing them to the principal investigator.

At the end of the online survey the participant were asked if they would like to be entered into a drawing for a $50 Visa Gift Card. Those who chose to participate in the drawing were asked to indicate their name, email, and phone number so that the researcher can contact them. This information was used solely to contact the winner of the drawing. The winner was randomly chosen and was notified via email. Additionally, some students were given extra credit for their participation in the study.

Instrument

Participants completed an 85-item survey via Surveymonkey.com. A stylized copy of the survey can be found in Appendix B. The survey was organized into seven sections, each of which is described below.

Survey sections. The first section presented statements that referred to students' perceived relationship with a faculty member. The second section examined the extent to which a student is involved in out-of-class activities. Sections three, four, and five of the survey assessed students' self-reported college self-confidence, persistence attitudes, beliefs about parents' college expectations, and sense of belonging. Participants' perceived usefulness of college, peer group interactions, and financial concerns were assessed in section six. The final section included a series of demographic questions for participants to answer.

Demographic data. Participants were asked to self-report gender, academic level (e.g., freshman, sophomore, junior, senior), major, race, number of currently enrolled credit hours, parents' education level, and average family household income. Race was assessed by asking participants to select one of six choices: Caucasian/White, Black/African-American, Native American/American Indian, Asian/Asian-American, Hispanic/Latino(a), or Other Race. Participants who chose "other" had the option of entering in their own response for race/ethnicity. Parents' education level was assessed by asking participants to select one of eight responses that represented the highest level of education that their parents had obtained. Socioeconomic status was assessed by asking participants to select one of eight income levels that accurately described their annual household income. Participants were also asked to indicate their enrollment status,

transfer status, and residential status. The term enrollment status was used to describe

students who were enrolled as full-time or part-time students. Students enrolled in 12 or

more credit hours were classified as being full-time. Transfer status describes students

who transferred to the University of Houston from another institution of higher learning.

Lastly, residential status is used to identify whether or not a student lived on or off

campus. A detailed description of the demographic data can be found in Appendices D

and E.

Parents' college expectations. Six items adapted from the Living Up to Parent

Expectation subset of the Living Up to Parent Expectation Inventory (LPEI, Wang &

Heppner, 2002) were used to measure parents' college expectations. The LPEI is a

multidimensional parental expectation instrument that assesses a range of parental

expectations. The measure of parents' college expectations includes academic

performance, major choice, and career decisions. The items were based on a 5-point

scale ranging from 1 *(strongly disagree)* to 5 *(strongly agree)*. A sample item includes:

"My parents expect me to perform better than others academically". Participants'

responses were averaged, with higher scores reflecting higher parents' expectations for

their students to perform well academically in college ($\alpha = .83$).

Financial concern. Six items were used to measure student's beliefs about their

ability to finance their education. Three items were taken from the Noel-Levitz Sense of

Financial Security subsection of the Freshman Attitudes Survey (2008). Three additional

items were created by the researcher to further explore students' beliefs about their

finances. All six items were based on a 5-point scale ranging from 1 *(strongly disagree)*

to 5 *(strongly agree)*. Sample items include: "I am concerned about my ability to finance

my college education" and "I frequently worry about paying my tuition fee bill". An exploratory factor analysis using principal component extraction with Varimax rotation was conducted to evaluate the factor structure and reliability of the financial concern items. Only one factor was discovered, using the Kaiser criterion of retaining components with eigenvalues greater than one (Fabrigar, Wegnener, MacCallum, & Strahan, 1999). Factor loadings for the one factor solution can be found in Table 1.

Table 1
Financial Concern Factor Loadings

Items	Financial Concern
I don't have any financial problems that will hinder my school work	.72
I have financial problems that are very distracting and troublesome	.84
I frequently worry about paying my tuition fee bill	.87
My parents' frequently worry about paying my tuition fee bill	.68
I am concerned about my ability to finance my college education	.88
I have the financial resources that I need to finish college	.74

All six item loadings ranged from .68 to .88, which confirmed that the six items accurately described the proposed financial concern variable. Participants' responses on the financial concern variable were averaged, with higher scores suggesting a higher level of concern regarding their ability to finance college ($\alpha = .88$).

Faculty mentorship. Five items from the Interactions with Faculty Subscale of the Persistence/Voluntary Dropout Decisions Scale (P/VDD; Pascarella & Terenzini, 1980) were used to measure the extent to which a student has had a non-classroom relationship with at least one faculty member on campus. The items were based on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item

reads: "Since coming to this university, I have developed a close, personal relationship with at least one faculty member". Participants' responses were averaged, with higher scores indicating that a students has a closer, non-classroom relationship with at least one faculty member ($\alpha = .85$).

Campus involvement. Seven items from the College Student Experiences Questionnaire (CSEQ), (CSEQ; 4th Edition, 1998) were used to measure campus involvement. Campus involvement can be defined as a student's engagement or participation in out of class organizations associated with the college. Examples of out of class organizations include fraternities and sororities, student government associations, cultural advocacy groups, and residence hall associations. The seven items were based on a 5-point Likert scale ranging from 1 (*never*) to 5 (*very often*). Sample items include: "How often have you attended a meeting of a campus club, organization, or student government group" and "how often have you managed or provided leadership for a club or organization on or off campus whose members are of your same race or ethnicity." Participants' responses were averaged, with higher scores indicating that students reported a higher level of involvement in out-of-class organizations ($\alpha = .86$).

Peer group interactions. Seven items from the Peer Group Interactions subset of the Persistence/Voluntary Dropout Decisions Scale (P/VDD; Pascarella & Terenzini, 1980) were used to measure the extent to which students had developed relationships with other college students. The seven items were based on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).A sample item is "Since coming to this university, I have developed close personal relationships with other students". Participants' responses were averaged, with higher scores on the scale indicating that

students reported feeling like they had developed strong relationships with peers on campus (α =.80).

  Utility value. Six items were used to measure utility value. Two of these items were adapted from the Motivated Strategies for Learning Questionnaire (Pintrich, et al., 1993). The two items include: "I think I will be able to use what I learn in college in my future career" and "I think that what I am learning in college is useful for me to know". Four additional items were developed by the researcher in order to create a more reliable scale to measure utility value. All six items were based on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).A sample item includes: "It is important for me to get a college degree". Participants' responses were averaged, with higher scores reflecting more perceived usefulness of a college degree (α =.80).

  College self-efficacy. Twelve items modified from the College Self-Efficacy Inventory (CSEI; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993) were used to measure students' self-efficacy for college. The CSEI is an instrument that assesses the confidence students have in their ability to complete specific college related tasks. The CSEI consists of three subscales: Course Efficacy, Social Efficacy, and Roommate Efficacy. Only the course and social subscales of the CSEI were used for the present study. The roommate self-efficacy subscale was removed because the items were not relevant to this particular study. The scale for these items ranged from 1 *(not at all confident)* to 5 *(extremely confident).* A sample item asks "How confident are you that you could successfully complete the following tasks." Sample tasks included researching a term paper, doing well on your exams, and talking to your professors. Participants'

responses were averaged, with higher scores reflecting a higher level of college self-efficacy (α =.88).

Sense of belonging. Fourteen items from the University Environment Scale (UES) (Gloria & Robinson-Kurpius, 1996) were used to measure students' perception of the college or university environment. More specifically, the UES examines students' feelings about aspects of the college campus like class size, faculty and staff friendliness and support, and campus environment. It is based on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include "I do not feel valued as a student on campus" and "I feel comfortable in the university environment." Participants' responses were averaged, with higher scores suggesting a stronger sense of belonging on their campus (α =.81).

Persistence attitudes. Twelve items were used to measure students' attitudes about persisting in college. Seven items from taken from the Desire to Finish College Subscale of the College Student Inventory (Noel & Levitz, 1993) and five items were created by the researcher. The College Student Inventory (CSI) was created to assist college and university staff in identifying the needs of their student populations. The items from the Desire to Finish Subscale measure the strength of a student's commitment to completing a degree. A sample item is, "I am strongly dedicated to finishing college no matter what obstacles get in my way". The five new items were created by the principal investigator to assess students' attitudes about persisting at their specific college or university. A sample item is, "I will transfer to another university next semester". The scale for all twelve items ranged from 1 *(strongly disagree)* to 5 *(strongly agree).*

An exploratory factor analysis using principal component extraction with Varimax rotation was conducted to discover the factor structure and reliability of the twelve item persistence attitudes scale. An initial factor analysis found three separate factors based on the Kaiser criterion of retaining components with Eigen values greater than one (Fabrigar, et al., 1999). Upon reviewing the factor loadings, the principal investigator decided to conduct another factor analysis using a two factor solution. Factor loadings for the two-factor solution can be found in Table 2.

After reviewing the factor loadings, the principal investigator noticed that one of the seven items from the Desire to Finish Subscale loaded onto a different factor. As opposed to keeping the item where it initially loaded, the principal investigator chose to retain the item with the remaining items of the Desire to Finish Subscale. This decision was made in order to compare results from this study with other studies using the same set of items from the Desire to Finish Subscale. The first factor found consists of five items and is described as institutional persistence attitudes ($\alpha = .85$). Institutional persistence attitudes describes students' attitude about persisting at the current institution they are attending. The second factor consists of seven items and is described as general persistence attitudes ($\alpha = .88$). General persistence attitudes refer to a students' overall attitude about persisting in college.

Table 2
Persistence Attitudes Factor Loadings

Items	Institutional Persistence Attitudes	General Persistence Attitudes
I will transfer to another university next semester	.14	.75
I will take a semester off from school	.25	.57
I plan to graduate from the University of Houston	-.01	.80
It is likely that I will not graduate from the University of Houston	.09	.73
I will register at the University of Houston in the spring	.00	.52
I can think of many things I'd rather do than go to college	.70	.16
I often wonder if a college education is really worth all the time that I'm being asked to spend on it	.86	.09
I dread the thought of going to school for several more years	.75	.05
I would readily leave college if I found a well-paying job	.71	.14
I am strongly dedicated to finishing college no matter what obstacles get in my way	.31	.42
I often wonder if a college education is worth all the money I'm being asked to spend on it	.84	.11
I often wonder if a college education is really worth all the effort that I'm being asked to spend on it	.83	.14

Attrition. Attrition was based on a student's failure to reenroll from the fall 2011 semester to the spring 2012 semester. All students were enrolled in at least one three-hour course in the fall 2011 semester. A student's spring 2012 enrollment status was verified by an authorized university official on the campus. Students who enrolled for at least three credit hours for the spring 2012 semester were classified as "non-attrite" (coded 1) whereas those who do not enroll were classified as "attrite" (coded 0). Attrition information was gathered after the university's official reporting day (12th class

day). The 12th class was chosen because it is the last day to drop a course or

withdraw without receiving a grade, as well as the last day to drop a course without hours

counting towards the Enrollment Cap for Texas Residents.

Data Collected from Student Records

The principal investigator captured important academic data that indicated

participants' prior performance and current academic performance. More specifically,

students' high school grade point average, fall 2011 college grade point average, and

cumulative college grade point average were collected from their academic records. It is

important to note that prior performance was evaluated differently for freshmen students

and upperclassmen. For students who identified as college freshman, their high school

grade point average was used as the measure for prior performance. For all other

students, their cumulative college grade point average was used as the measure for prior

performance. A student's fall 2011 semester grade point average was used to measure

current academic performance. In order to provide consistency among all of the

academic performance indicators, high school grade point average, fall 2011 college

grade point average, and cumulative college grade point average were transformed into

three separate ordinal variables where $1 = 0 – 1.49$, $2 = 1.50 – 1.99$, $3 = 2.0 – 2.49$, $4 =$

$2.50 – 2.99$, $5 = 3.0 – 3.49$, $6= 3.5 – 3.99$, and $7 = 4.0$ GPA and above.

Chapter IV

Results

The results for this study are reported in four separate sections. The first section presents descriptive statistics and bivariate correlations of the independent and dependent variables. The second section presents the results of four ANOVAs used to explore mean level differences between persistence attitudes and race, full-time and part-time students, commuter and residential students, and traditional and non-traditional students. Section three provides the results of two hierarchical multiple regressions used to evaluate the relationship between background, contextual, and motivational factors and persistence attitudes. The final section presents the results of the hierarchical logistic regression used to understand the extent to which background, contextual, and motivational factors predict student attrition.

Descriptive Statistics and Bivariate Correlations

The means and standard deviations for the independent and dependent variables in this study are reported in Table 3. As a whole, the participants' scores on campus involvement, financial concern, and faculty mentorship were lower than all of the other predictor variables in the proposed model. Among the motivational variables, students reported that they felt that obtaining a college degree was useful to them. Students also reported feeling confident in their ability to complete college related tasks. Students' self-reported sense of belonging was lower than the other motivational variables, suggesting that were slightly indifferent about their feelings of belonging on campus. Finally, students' overall feelings about persisting in college were lower than their feelings about persisting at the institution they were attending.

Table 3

Means and Standard Deviations among Potential Factors that Influence Persistence Attitudes

	Mean	SD
Parents' Education Level	3.73	1.73
Average Household Income	3.64	1.74
Parents' College Expectations	3.62	.86
Prior Performance	4.49	1.40
Faculty Mentorship	3.13	.85
Campus Involvement	2.06	.93
Peer group interactions	3.44	.72
Utility Value	4.25	.62
Self-efficacy	3.81	.62
Sense of Belonging	3.60	.51
fall 2011 GPA	4.21	1.54
Financial Concern	2.93	1.01
Institutional Persistence Attitudes	4.41	.67
Persistence Attitudes	3.66	.92

Note: For all scales, higher scores are indicative of more extreme responses in the direction of the construct assessed.

Table 4 displays the bivariate correlations among the major variables. There were several significant correlations that existed. Looking at the three motivational variables, utility value was positively related to self-efficacy, sense of belonging, institutional persistence attitudes and general persistence attitudes. Self-efficacy was positively related to sense of belonging, institutional persistence attitudes and general persistence attitudes. Sense of belonging was also positively related to institutional persistence attitudes and general persistence attitudes. All three motivational variables were positively related to both persistence measures. The financial concern variable produced several significant negative relationships. It was found to be negatively related to

institutional persistence attitudes, general persistence attitudes, parents' education level, socio economic status, faculty mentoring, peer group interactions, utility value, self-efficacy, and sense of belonging. Of the persistence measures, institutional persistence attitudes was found to be positively related to general persistence attitudes, peer group interactions, fall 2011 GPA, and transfer status. It was negatively related to campus involvement. Lastly, general persistence attitudes were positively related to prior performance, faculty mentoring, peer group interactions, and fall 2011 GPA. An interesting finding among the persistence variables was the negative relationship between campus involvement and general persistence attitudes. In this case, students who were less involved on campus were more likely to have higher general persistence attitudes.

Table 4: *Correlations of Factors that Influence Persistence Attitudes and Attrition*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. IPA													
2. GA	.30**												
3. SES	.07	.02											
4. PCE	.02	-.03	.05										
5. Overall GPA	.08	.20**	.03	.05									
6. Faculty Mentoring	-.02	.15**	.02	.07	.21**								
7. Campus Involvement	-.11**	-.02	.06	.14**	-.08	.24**							
8. PGI	.22**	.29**	.07	.20**	.15*	.28**	.24**						
9. Utility Value	.38**	.41**	-.04	.19**	.20**	.14**	-.02	.33**					
10. Self-efficacy	.25**	.26**	.13**	.07	.14*	.21**	.08	.33**	.38**				
11. Sense of Belonging	.29**	.30**	-.09*	.15**	.16*	.28**	.05	.37**	.51**	.31**			
12. fall 2011 GPA	.20**	.16**	.17**	.05	.54**	.16**	.02	.05	.24**	.29**	.11		
13. Financial Concern	-.11**	-.27**	-.36**	.00	-.01	-.09*	-.03	-.19**	-.13**	-.17**	-.26**	-.04	

Note: $N = 595$, ** $p \leq .01$, * $p \leq .05$.. IPA = Institutional Persistence Attitudes, GA = General Persistence Attitudes, SES=Socioeconomic Status, PCE=Parents' College Expectations, PGI=Peer Group Interactions.

Evaluation of Mean Level Differences

A series of four ANOVAs was used to determine whether there were mean level differences in both persistence measures (institutional persistence attitudes and general persistence attitudes) between groups of students as determined by race, enrollment status, residential status, and transfer status. The ANOVAs were also used to help decide if the aforementioned variables would be included in the hierarchical regression analyses. The effect size was calculated for all analyses. Using Cohen's (1988) conventions, the effect sizes of these ANOVAs ranged from .00 - .01, indicating a small effect size for these analyses.

Persistence attitudes and race. The first set of ANOVAs evaluated the differences in race and persistence attitudes. For these analyses, the White/Caucasian racial category was used as the reference group for race. When examining the relationship between race and institutional persistence attitudes, the analysis was not significant [$F(4, 590) = 2.24$, $p = .06$], suggesting that there was no difference in institutional persistence attitudes based on race. In contrast, results examining the relationships between students' race and general persistence attitudes found significant relationships [$F(4, 590) = 5.88$, $p < .001$] . Tukey's post-hoc comparison of the racial/ethnic groups found that students in the White group ($M = 3.85$, SD = .88), on average, reported stronger persistence attitudes than African-American students ($M = 3.39$, SD = .99). Results also found that on average, Hispanic students ($M = 3.80$, SD = .93) reported stronger persistence attitudes than African-American students. No significant relationships were found among Asian-American students ($M = 4.31$, SD = .68) or students who identified as other ($M = 4.43$, SD = .66). The results suggest that

Asian-American students and students who identified as "other" reported similar institutional and persistence attitudes as students in the White group. In summary, race was not a significant factor with regards to students' attitudes are persisting at the current institution they are attending, but was an important factor when considering students' more general attitudes about persisting in college.

Persistence attitudes and enrollment status. The second set of ANOVAs examined the differences in institutional persistence attitudes and general persistence attitudes between full-time and part-time college students. Results of both ANOVA's found no significant differences in institutional persistence attitudes [$F(1, 588) = 2.04$, p $= .15$] or general persistence attitudes [$F(1, 588) = 1.01$, p $= .32$] among full-time and part-time college students.

Persistence attitudes and residential status. The third set of ANOVAs examined the differences in college specific persistence attitudes and general persistence attitudes between students who either lived on or off campus. Results of both analyses found no significant differences in institutional persistence attitudes [$F(1, 591) = .70$, p $= .40$] and general persistence attitudes [$F(1, 591) = .41$, p $= .52$] among students who lived on or off campus.

Persistence attitudes and transfer status. The final set of ANOVAs evaluated mean level differences between students who transferred to a 4-year university versus those who enrolled in college immediately after high school. The results of the first ANOVA found significant differences in institutional persistence attitudes between students who transferred and those who did not [$F(1, 592) = 2.62$, p $= .02$]. More specifically, on average, students who transferred from another institution ($M = 4.49$, SD

= .66) reported stronger institutional persistence attitudes than those who enrolled immediately after high school (M = 4.36, SD = .67). Results of the second ANOVA found no significant differences in general persistence attitudes and transfer status [F(1, 592) = 1.17, p = .28], suggesting that there is no difference in general persistence attitudes between students who transfer from another campus and those who enroll in college immediately after high school.

Results of the ANOVAs found no significant differences in persistence attitudes among students who lived on or off campus and those who chose to enroll as a full-time or part-time student. Initially, both residential status and enrollment status were included in the proposed model as important contextual factors that would help predict college persistence. Because both factors were not significantly related to the main predictor variables (institutional persistence attitudes and general persistence attitudes), the principal investigator decided to exclude residential status and enrollment status from the hierarchical multiple linear regression and hierarchical logistic regression analyses. The removal of these two variables also helped make the model more parsimonious.

Hierarchical Regression Analysis

A hierarchical multiple regression and hierarchical logistic regression were chosen in order to better evaluate the proposed theoretical model that is described in the study. With a hierarchical analysis, the proposed theoretical model for this study provides a framework that helps the researcher determine the order that the independent variables are entered into the regression equation. Groups of variables were entered in "blocks", which allowed the researcher to control for some variable or group of variables. Control

variables are often demographics characteristics which are thought to make a difference in scores on the dependent variable.

Before discussing the results of the regression analyses, it is important to note that the Caucasian/White racial category was coded as the reference group for race. All other racial groups were dummy coded for the regression analyses.

Background, Contextual, and Motivational Factors and Institutional Persistence Attitudes

A hierarchical multiple linear regression was conducted to examine the relationship between student background characteristics, contextual variables, motivational variables, and institutional persistence attitudes. Results of this hierarchical multiple linear regression can be found in Table 5. In the first step of the regression, race, gender, parents' education level, socioeconomic status, and parents' college expectations were entered. These variables accounted for 3% of the variance in institutional persistence attitudes ($R^2 = .03$, $F(8, 579) = 2.5$, $p < .001$). Among the variables entered in the first step, parents' education level was found to be a significant predictor of institutional persistence attitudes. These results suggest that participants whose parents had higher levels of education reported stronger institutional persistence attitudes. Additionally, results of the first step of the regression indicated that Asian-American students, on average, reported lower institutional persistence attitudes than students in the White group.

In the second step of the hierarchical multiple regression, the following block of variables were entered into the equation: faculty mentoring, campus involvement, peer group interactions, utility value, self-efficacy, sense of belonging, transfer status, and

financial concern. The block of variables, when entered together, accounted for 19.1% of the variance in institutional persistence attitudes (R² = .22, $R^2 \Delta$ = .19, F(16, 571) = 10.31, p < .001). As shown in Table 5, the results of the second step indicated that faculty mentoring, campus involvement, peer group interactions, utility value, self-efficacy, and sense of belonging were all significant predictors of institutional persistence attitudes. Interestingly, students who were less likely to report having a faculty mentor and to be involved on campus reported higher institutional persistence attitudes. Results also indicated that students who had developed close peer relationships with other students reported having higher institutional persistence attitudes. Lastly, all of the motivational variables were positively related to institutional persistence attitudes. Students who reported having higher levels of self –efficacy, sense of belonging, and utility value reported stronger institutional persistence attitudes. Among all of the predictor variables, utility value was the strongest individual predictor of institutional persistence attitudes. Parents' education level, parents' college expectations, race, gender, transfer status, and financial concern all failed to achieve significance, indicating that when considered together, they were not significant predictors of institutional persistence attitudes.

Table 5

Summary of Hierarchical Multiple Regression Predicting Institutional Persistence Attitudes

	B	SE	ß
Step 1			
Parents' Education Level	-.03	.02	-.07*
SES	.03	.02	.08
Parents College Expectations	.05	.03	.07
Race – Black	-.17	.09	-.11
Race – Hispanic	-.13	.08	-.08
Race – Asian	-.25	.09	-.16**
Race – Other	-.11	.14	-.04
Gender	.11	.07	.07
Step 2			
Parents' Education Level	-.02	.02	-.06
SES	.04	.02	.10**
Parents' College Expectations	-.03	.03	-.04
Race – Black	-.05	.08	-.03
Race – Hispanic	-.09	.08	-.06
Race – Asian	-.04	.09	-.03
Race – Other	-.05	.13	-.02
Female	-.01	.06	-.00
Faculty Mentoring	-.10	.03	-.12*
Campus Involvement	-.07	.03	-.10**
Peer group interactions	.12	.04	.13**
Utility Value	.28	.05	.26**
Self-efficacy	.09	.05	.08*
Sense of Belonging	.19	.06	.15**
Transferred to UH	.09	.05	.07
Financial Concern	.01	.03	.02

Note: $N = 595$, $R^2 = .03$, $p < .001$ for Step 1; $R^2 \Delta = .19$, $p < .001$ for Step 2 ** $p \leq .01$, * $p \leq .05$. Gender was coded: 0 = men, 1=women. SES = Socioeconomic status. SES ranged from 1 = "less than $20,000" to 7 = "$150,000 or more". Parents' education level ranged from 1= "did not graduate from high school" to 7 "completed a doctoral or another professional degree". The reference group for race was Caucasian/White.

Background, Contextual, and Motivational Factors and General Persistence

Attitudes

A second hierarchical multiple regression analysis was conducted to examine the

relationship between student background characteristics, contextual variables,

motivational variables, and general persistence attitudes. Results of this hierarchical

multiple regression are presented in Table 6. Similar to the first regression, race, gender, parents' education level, family socioeconomic status and parents' college expectations were entered in the first step of the regression. These variables accounted for approximately 6% of the variance in general persistence attitudes ($R^2 = .06$, $F(8, 579) = 4.18$, $p < .001$). Results from the first step of the regression found that, on average, women reported higher general persistence attitudes than men. Additionally, African-American and Asian students, on average, reported lower general persistence attitudes than students in the White group.

In the second step of the hierarchical multiple regression, faculty mentoring, campus involvement, peer group interactions, utility value, self-efficacy, sense of belonging, transfer status, and financial concern were also included into the model. These variables, when entered as a block, accounted for an additional 22% of the variance in general persistence attitudes ($R^2 = .28$, $R^2 \Delta = .22$, $F(16, 571) = 13.61$, $p < .001$). The results of the second step found parents' college expectations and financial concern to be negatively related to general persistence attitudes. Results also found that African-American students reported having lower persistence attitudes when compared to students in the White group. Additional results found utility value and peer group interactions to be positively related to general persistence attitudes, suggesting that students who perceived college as useful and those who had developed close peer relationships were more likely to remain in college and complete a college degree. Similar to the first regression, utility value was the strongest individual predictor of general persistence attitudes. Financial concern and peer group relationships were also strong individual predictors of institutional persistence attitudes. Students who were

more concerned about financing their education reported that they were less likely to persist in college. Additionally, students who developed close personal relationships with other students were more likely to persist in college. All other variables failed to achieve significance.

Table 6
Summary of Hierarchical Multiple Regression Predicting General Persistence Attitudes

	B	SE	ß
Step 1			
Parents' Education Level	-.02	.02	-.05
SES	.02	.02	.03
Parents' College Expectations	.00	.05	.00
Race – Black	-.46	.12	-.20**
Race – Hispanic	-.07	.11	-.03
Race – Asian	-.28	.12	-.13*
Race – Other	-.12	.19	-.03
Female	.26	.10	.11**
Step 2			
Parents' Education Level	-.03	.02	-.05
SES	-.02	.02	-.03
Parents' College Expectations	-.11	.04	-.10*
Race – Black	-.30	.11	-.13**
Race – Hispanic	-.04	.10	-.02
Race – Asian	-.10	.11	-.05
Race – Other	-.08	.17	-.02
Female	.15	.09	.07
Faculty Mentoring	.05	.04	.05
Campus Involvement	-.03	.04	-.03
Peer group interactions	.20	.06	.16**
Utility Value	.43	.07	.29**
Self-efficacy	.08	.06	.05
Sense of Belonging	.03	.08	.02
Transferred to UH	.03	.07	.02
Financial Concern	-.18	.04	-.20**

Note: $N = 595$, $R^2 = .06$, p< .001 for Step 1; $R^2 \Delta = .22$ p< .001 for Step 2 ** $p \leq .01$, * $p \leq .05$. Gender was coded: 0 = men, 1=women. SES = Socioeconomic status. SES ranged from 1 = "less than $20,000" to 7 = "$150,000 or more". Parents' education level ranged from 1= "did not graduate from high school" to 7 "completed a doctoral or another professional degree". The reference group for race was Caucasian/White.

Background, Contextual, and Motivational Factors and Student Attrition

A hierarchical logistic regression analysis was conducted to examine the relationship between student background characteristics, contextual variables, motivational variables, and student attrition. In order to conduct the analysis, the principal investigator needed access to enrollment information in the participants' student records. Only 282 participants provided consent to retrieve enrollment information. Of this subset, thirty-seven cases were excluded because of missing GPA data. Therefore, the remaining cases ($N = 245$) were used for the hierarchical logistic regression analysis.

Appendix A shows the logistic regression coefficient, Wald test, and odds ratio for each of the predictor variables. Race, gender, parents' education level, parents' income level, parents' college expectations, and prior performance were entered in the first step of the logistic regression. A test of the full model versus a model with intercept only was not statistically significant at .05, indicating that the first set of predictor variables were not able to distinguish between those who dropped out and those who did not. The overall success rate of the model was 93%. In the second step, faculty mentoring, campus involvement, peer group interactions, utility value, self-efficacy, sense of belonging, fall 2011 GPA, transfer status, and financial concern were entered simultaneously. A test of the full model versus a model with intercept only was not statistically significant at .05, indicating that the predictor variables were not able to distinguish between those who re-enrolled in the spring 2012 semester and those who did not. Based on these results, all of the contextual and motivational factors entered into the second step of the regression failed to achieve significance.

Supplementary Data and Analyses

The principal investigator also conducted some supplementary analyses that can be found in Appendices D - I. As noted in the previous section, only a small subset of participants provided consent to retrieve enrollment information, which impacted the sample size used to examine the relationships between background, contextual, and motivational factors and attrition. Therefore, it was important to explore whether the smaller ($N = 245$) and larger ($N = 595$) samples shared similar characteristics. As seen in Appendices D and E, both samples were relatively similar among important demographic data. For example, both samples were similar with regards to race, gender, and classification. A review of both samples also shows that when compared to each other, there were no vast difference in participants' responses to outcome and predictor variables (see Table 3 and Appendix E).

Two final analyses were conducted using the smaller sample of participants. The analyses were conducted in order to include prior performance and fall 2011 GPA; two variables that were excluded in the main hierarchical multiple regression analyses of this study. Results of these analyses can be found in Appendices H and I. Results of these analyses found that when controlling for background characteristics, peer group interactions, utility value, and fall 2011 GPA were positively related to institutional persistence attitudes and parents' education level, and faculty mentoring was negatively related. Additionally, the results also found that, on average, Hispanic students' reported weaker institutional persistence attitudes than students in the White group. Results of the second regression found that when controlling for background characteristics, peer group interactions and utility value were positively related to general persistence attitudes and parents' college expectations and financial concern were negatively related. With regards

to race, Asian students, on average, reported weaker persistence attitudes than students in the White group.

When compared to each other, both samples shared similar significant relationships. In both samples, peer group interactions and utility value were positively related to institutional persistence attitudes and faculty mentoring was negatively related. Additionally, both samples also found similar relationships between general persistence attitudes and peer group interactions, utility value, and financial concern. Therefore, it could be argued that both samples were fairly similar with regards to responses and results.

Chapter V

Discussion

Several studies have examined a variety of factors that have been related to college student persistence (Flowers, 2004; Gilliard, 1996; Goodenow, 1992; Hackett & Byars, 1996; Herndon, 1984; Ishitani & DesJardins, 2002; Kuh, et. al, 2006; Nora & Crisp, 2005; Oguntoyinbo, 2011; Peltier, 1999; Terenzini, Pascarella, & Lorang, 1982; Tinto, 1993). The purpose of the current study was to review and evaluate a proposed theoretical model of college student persistence and attrition. The results of this study produced a set of important findings that can be added to the college persistence and motivation literature. The current chapter will review the findings, and connect them to each major section and subsection of the proposed theoretical model. Given that the proposed model did not successfully predict student attrition, the current chapter will also discuss the implications of these results. Lastly, limitations of the study and recommendations for future research and practice are also discussed.

Background Characteristics and Persistence Attitudes and Attrition

Family background. Two important findings were discovered when controlling for background variables in both persistence attitudes analyses. The first finding revealed that socioeconomic status was positively related to institutional persistence attitudes. This finding is consistent with prior persistence research that has found that being raised in a low-income family has more of a negative influence on student persistence (Chen & DesJardins, 2007; Ishitani & DesJardins, 2002). Students from low-income families come to college with a variety of different challenges. For example, studies have shown that low-SES students are considered to be less prepared for the academic rigor of

college, when compared to high-SES students (Adelman, 2006; Akerhielm et al., 1998; Cabrera & La Nasa, 2000; Martin, Karabel, & Jaquez, 2005). Low-SES students often start college needing remedial programs that help them develop their academic skills in areas like reading, writing, and math (Howard, 2001). In addition to lack of academic preparation, low-SES students have fewer financial resources and more financial concerns than high-SES students (Beattie, 2002; Terenzini, et al., 2001). Colleges and universities should continue to provide academic support programs that will give low-SES students an opportunity to gain the necessary skills needed to be academically successful. Learning support centers, writing labs, and tutoring programs are all important services that should be offered to help these students do well in their classes.

A second finding concerned an important relationship between parents' college expectations and general persistence attitudes. More specifically, results of the study found that students who had parents with higher college expectations were less likely to persist, compared to students who reported that their parents had lower expectations. These findings are contrary to prior research that has found that parents' college expectations have a significant impact on a student's performance in college (Agliata & Renk, 2008; Wang & Heppner, 2002; Weidman, 1989). Research has shown that when a college student's performance does not seem to match their parents' expectations, the student often experiences a variety of unpleasant emotions (Higgins, 1987). Agliata and Renk (2008) conducted a study that examined the role of parent-college student expectations. Results of the study found that college students reported lower levels of self-worth and adjustment when their parents placed higher college expectations on them. In order to reverse this phenomenon, it is important for parents to communicate with their

students about their expectations. Effective communication between students and parents may lead to a more open relationship, which could result in additional emotional support during times of stress and frustration. Studies have also shown that the pressure caused by parents' expectations is one of the most common concerns students express during on-campus counseling sessions (Anderson & Yeunger, 1987; Duncan & Anderson, 1986; Kagan & Squires, 1984). A growing trend among today's colleges and universities involves creating support services for parents through a variety of different campus programs. Campus administrators should take these opportunities to educate students and parents about ways to develop healthy relationships and manageable expectations while in college.

Parents' education level was another variable within the family background subsection of the model that was evaluated in this study. Interestingly, results indicated that students with parents who have lower levels of education were more likely to report they would remain at the college they were attending. Previous work has found an opposite relationship between parents' education level and persistence (Allen, 1997; Choy, 2001, NCES, 1998; Pascarella, et.al, 2004; Terenzini, 1996), Results of this study suggest that there may be other important factors that should explored when trying to understand this relationship. In a study examining the relationship between parents' education level and persistence, Ishintani (2006) noted that high school academic attributes and other pre-college characteristics may influence students' decision to stay in college. For example, although a student's parents may not have attended college, the student may have attended an exceptional high school, where he ranked in the top of his class, and he learned the academic and social skills needed to succeed in college.

Additionally, a study by De La Rosa (2006) found that parents with less educational

background, specifically a high school diploma, wanted more education for their

students. A final idea to consider is that students from households with lower levels of

education may be motivated to complete college because they would be the first person in

their family to obtain a degree. Findings from this study suggest that researchers should

consider further exploring the relationships between parents' education level, academic

characteristics, parents' expectations, motivation, and student persistence and attrition.

Individual attributes. Prior research has identified race as an important factor

used to predict college student persistence (Allen, 1997; Berger & Braxton, 1998; Laskey

& Hetzel, 2011). Results from the current study found that African-American college

students reported weaker persistence attitudes than White and Hispanic students. This

finding is consistent with prior research that has found that African-American students

are at greater risk than White, Hispanic, and Asian students for dropping out of college

(Astin, 1997; Cuyjet, 2006; Gloria, et al, 1999; Guiffrida, 2003; Levin, et al., 2006;

Hausmann, Ye, Schofield, & Woods, 2009; Murtaugh, et al., 1999; Peltier, et al., 1999;

Sutton & Kimbrough, 2001; Tinto, 1993). These results also support statistics that have

found that only 40% of African-American students who enter college graduate; this is in

comparison to 60% of their White counterparts (Guiffrida & Douthit, 2010).

Tinto (1993) noted that African-American college students struggle to become

academically and socially integrated into the college campus, which may influence their

ability to remain at the institution they are currently attending. Colleges and universities

have used Tinto's work to explore various academic and social interventions that may

help increase the retention rate of this particular population (Habley, Bloom, & Robbins,

2012; Kuh, et al, 2006; Seidman, 2005). Therefore, it may be important to introduce early interventions that could aid in the success of African-American college students. Some examples of these interventions include campus support programs, formal mentoring programs with faculty and staff, and encouraged involvement with on-campus clubs and organizations. Other initiatives that have been helpful in retaining African-American college students include federal programs like the TRIO Program and Upward Board. These programs should continue to be offered on college campuses, as they are important programs that aid in minority student success. TRIO is a federal outreach and student services program designed to identify and provide services for individuals from disadvantaged backgrounds. Upward Bound helps to prepare high school students from low-income and first generation households to transition to college. Both programs offer services like academic instruction in mathematics, sciences, and language, as well as tutoring, counseling, mentoring, cultural enrichment and work-study programs.

Interestingly, the current study also found that Asian-American students were less like to believe that would remain at, and graduate from the institution they were currently attending. These results are contrary to prior research on Asian-American college students and persistence. Several studies involving race and persistence have found that Asian-American students are more likely to persist and graduate than any other race (Kim, 2011; Nora, Barlow, & Crisp, 2005). For example, a recent study by Kim (2011) found that Asian-American students lead all races in bachelors degree attainment. Additionally, Nora, Barlow, and Crisp (2005) found that in a study involving 2,906 first time in college students, retention rates were higher for Asian students than any other ethnic group.

Many of the studies involving Asian-American students and persistence examined their actual persistence behaviors and not their attitudes about remaining in college (Fogel & Yaffe, 1993; Gloria, et al., 1999; Kim, 2011; NCES, 2007; Nora, Barlow, & Crisp, 2005). The results of this study may suggest that Asian students' attitudes about persisting may be different than their actual behaviors. Moreover, there may be a variety of factors that influence their attitudes about persisting in college. As noted in prior persistence research (Abe & Zane, 1990; Kuo & Roysircar-Sodowsky, 1999; Okamura & Tsutsumoto, 1998), Asian students are often labeled as the "model minority". This label suggests that Asian students are performing academically and socially as expected, or better than White students. This stereotype has led students, faculty, and staff to have higher expectations of Asian students, even when those students have received the same education as other students (Yang, Byers, Ahuna, & Castro, 2002). Like many other students, Asian students face a variety of challenges when coming to college (Arthur, 2004; Moores & Popadiuk, 2011; Mori, 2000). Some of those challenges include making friends, navigating different social and cultural norms, academic concerns, communication issues, social support, family matters, and discrimination. Prior research has found higher levels of social anxiety and depression in Asian college students (Cress & Ikeda, 2003; Lau et al., 2009). Additionally, in a study by Choi, Rogers, and Werth (2009), Asian students were 1.6 times more likely to consider suicide than their White counterparts. Many of these factors could have a negative impact on their feelings about persisting in college.

Because of the stereotypes placed on Asian-American students, they are often overlooked when it comes to academic and social support. Colleges and universities may

consider paying attention to the needs of this particular group of students. For example, some campuses have an office that is dedicated to supporting minority students. It may be useful to develop specific programs that help Asian students make the social and academic adjustment to college. These programs may be in the form of small group sessions, or large programming efforts. Additionally, faculty and staff need to be cognizant about the academic expectations placed on Asian students.

Although reports are showing an increase in minority student enrollment and graduation, the education gap still exists between White and minority students (NCES, 2012; Tinto, 1993). Results of this portion of the present study highlight the importance of campus-wide programs and initiatives that are designed to increase the retention rate of minority college students. In addition to programmatic support, it is also important for researchers to continue to include race when examining a multitude of factors that may be useful in predicting college student persistence. The more studies that are conducted to help better understand the relationship between race, persistence, attrition, and other important factors, the more support can be given to help better support these underrepresented students. Lastly, faculty should be more sensitive to the needs of minority students on their campus. Results from the NSSE (2005) found that African-American college students were more likely to report being engaged in more active and collaborative learning activities in the classroom. Therefore, faculty may consider working to create environments where students of color can be more engaged in collaborative work in the classroom.

In addition to race, gender has also been found to be an important predictor of student persistence (Hausman, Ye, Schofield, & Woods, 2009; Reason, 2001; St. John, et.

al., 2001; & Tinto; 1987; Whalen, Saunders, &Shelly, 2010). Results of the current study found that women were more likely to persist in college than men. Prior studies have found differences in persistence rates among men and women (Hausman, Ye, Schofield, & Woods, 2009; Reason, 2001; St. John, et. al., 2001). Current trends in college enrollment show that the rate of attendance of women in college is growing faster than men (Reason, 2009). Interestingly, the year 2011 was the first time in American history that there were more female graduates than men (Hayes, 2012). The participants in this study were reflective of the gender shift in higher education. Approximately 80% of the participants in the current study identified as being women. With the shift in gender dynamics on the college campus, administrators should pay attention to the retention and graduation rates among men and women. For example, college administrators may consider establishing a taskforce comprised of faculty, staff, and students to explore differences in attendance patterns, motivation, and expectations among men and women.

Both race and gender are important components of Tinto's theory of student departure (1975). Tinto's (1975) model posits that individual characteristics like race and gender influence the development of educational expectations, which ultimately influences a student's decision to continue at the college they are attending. Results of this portion of the study found significant relationships between race, gender, and persistence attitudes. These findings support Tinto's theory (1975), and suggest that individual characteristics are important factors that should continue to be explored in student persistence research.

Prior performance. Prior academic performance was the only factor that successfully predicted student attrition. Findings from the current study found that

freshman who had lower high school GPAs were more likely to drop out of college.

Similarly, college sophomores, juniors, and seniors, who had lower overall college GPAs

were also more likely to drop out of college. Results of this study are consistent with

prior research that connects academic performance to persistence and retention

(Adelman, 1999, 2006; Haemmerlie & Montgomery, 2012; Isihitani & DesJardins, 2002;

Laskey & Hetzel, 2011; Nora, Barlow, & Crisp, 2005; Reason, 2009; Sparkman,

Maulding, & Roberts, 2012; Tinto, 1975; Tross, et al., 2000; Wintre & Bowers, 2007).

For example, in a study by Wintre and Bowers (2007), they found that both high school

and college GPA were related to persistence and graduation. Based on the findings of

this study, high school and college administrators should continue to track, monitor, and

provide support for students who have low GPAs. Early alert programs are good ways

for teachers, faculty, and staff to identify students who are struggling academically and

provide some form of support to get the student back on track. For example, if a

student's grade point average falls below a certain standard, he or she may be required to

meet with an early alert counselor. The counselor may then require the student to attend

tutoring, submit monthly progress reports, and participate in several study skills

workshops. By introducing these types of interventions, high schools and colleges may

be able to decrease the number students who drop out of school.

Contextual Factors and Persistence Attitudes and Attrition

      Social interactions. Surprisingly, when controlling for background

characteristics, faculty mentoring and campus involvement were negatively related to

students reported intentions to obtain a degree from their present institution. These

results are contrary to the theoretical work of Astin (1987), Tinto (1975), and Pascarella

and Terenzini (1980), which suggests that developing a mentoring relationship with faculty, and being involved in on-campus organizations are important to factors that lead to students graduating from college. Several other studies have found results that support the assumptions of these theorists (Allen & Eby, 2007; Astin, 1984; Guiffrida, 2003; Wilde & Schau, 1991).

The current study found that students who reported that they were more involved on campus were less likely to report that they would persist in college. One explanation for this unexpected finding is that these particular students represent what Guffrida (2004) describes as over involved, underachievers. These students may choose to spend more time involved in their out-of class experiences than focusing on their academics. The choice to overextend their involvement may be influenced by a variety of different reasons (Andring, 2002). Some students use student organizations as an opportunity to develop important social relationships. As these relationships grow, students can easily choose to dedicate more time to the relationships and the organization, which causes them to neglect their academic priorities. Students may also feel pressure to be involved in several different student organizations in order to demonstrate leadership to potential employers and to build up their resume. Faculty and staff should encourage over-involved students to modify the time they spend with their organizations. For example, colleges and universities could offer workshops that teach students strategies that will help them successfully balance their academic and extracurricular commitments. Faculty should consider experimenting with blending extra-curricular interests with academic curriculum. Experiential education helps connect out-of-class experiences with learning, through opportunities like service learning, leadership programs, and internships.

Utilizing these strategies may help students re-focus on the importance of doing well academically.

Prior research on mentoring has revealed that students who developed a mentoring relationship with a faculty member were more likely to obtain higher GPAs and were less prone to attrition (Campbell & Campbell, 1997; Pascarella & Terenzini, 2001; Thile & Matt, 1995). Interestingly, results of the current study found that students who reported having a mentoring relationship with a faculty member were less likely to believe that they would persist at the institution they were attending. In this particular case, these research findings may have identified a specific group of students who may have been struggling academically and decided to find a faculty member to help them be successful. These students could have sought out a mentor, or been assigned one through a formal mentoring program. For example, Vander Schee (2007) conducted a study involving 42 college students on academic probation. These students participated in a formal program that required probationary students to attend a series of meetings with both faculty and staff. The meetings were designed to help these students identify resources, and participate in activities that improve study strategies. In addition to the institution creating formal programs to support students who are struggling academically, faculty should be more proactive in reaching out to students who put forth the effort in their class, but still struggle to make the grade. Developing these relationships could be the difference in a student persisting or dropping out.

Another important social interaction to discuss is peer group interactions. The current study found that students who had stronger and more frequent interactions with peers were more likely to remain in college. These results are also consistent with the

work of Tinto (1975), Astin (1987), and Pascarella and Terenzini (1980). Research and theoretical developments in the literature on college persistence have suggested that students who establish and maintain strong social relationships feel part of the college community and are less likely to drop out (Aleman, 1997; Astin, 1987, 1993; Kuh, 1993; Nora & Lang, 2001; Pascarella & Terenzini, 1980; Tinto, 1975, 1993). These results suggest that close personal relationships with peers play a substantial role in college students' adjustment to campus. More specifically, close relationships with other college students facilitate access to academic resources and promote academic achievement (Sallee & Tierney, 2007).

Peer group relationships also play an important role in helping students feel connected to their respective campus. When reviewing the Pearson correlations, peer group interactions was positively correlated with sense of belonging, suggesting that students who had developed close personal relationships with students were more likely to feel a strong sense-of belonging to their campus. This information is important to share with college faculty and staff who have direct interactions with student. For example, faculty may consider assigning more assignments that involve students working in groups. These group assignments may help create an environment where students can begin to develop close personal relationships with some of their fellow classmates. Results this information may also be important for student affairs professionals who often work with student groups or organizations to plan and implement programs and activities. Innovative programs and activities could provide an opportunity for students to attend events where they can meet and connect with other students.

Academic performance and academic characteristics. There are several important academic variables that have been used to predict persistence (Nora, Barlow, & Crisp, 2005). For example, studies have found that a student's college GPA is an important predictor of persistence (Belcheir, 2000; Cabrera & Nora, 1994; Nora & Cabrera, 1996; Dowd, 2004; Isihitani & DesJardins, 2002; Nora, et al., 2005). Results of the current study did not find a significant relationship between college GPA and persistence. Bean (2005) offered several reasons why college GPA is not a definitive predictor of student persistence and attrition. For example Bean (2005) suggests that a high GPA does not assure continued enrollment. He also argues that GPA typically explains just a small percentage of the variance in retention. Lastly, he concludes that retention is based on many more factors than academic performance. For example, studies have found that a student's choice to enroll full-time or part-time, live on or off campus, or enroll as a first time in college freshman or transfer are important academic characteristics that have been found to impact college student persistence (Adelman, 1999; Astin, 1997; Belcheir, 2000; Bozick, 2007; Chickering, 1974; Herndon, 1984; Oguntoyinbo, 2011; Ronco, 1995). Research has shown that students who transfer to a 4-year institution continue to be at a disadvantage in terms of graduation, than those who go directly to college from high school (Pascarella & Terenzini, 2005). Contrary to prior research, results of the current study found that students who transferred from another institution reported higher institutional persistence attitudes than those who did not transfer. So, in this case, transfer students were more likely than non-transfer students to believe they would remain at, and graduate from the current campus they were attending.

It is important to note that this particular analysis did not take into account the academic classification of the participants.

In a study by Belcheir (2002), she found that transfer students had an advantage over new freshman when it came to persisting and graduating over time. Her study compared graduation rates of freshman and transfer students over a span of four, six, and ten years. Over time, being a transfer student provided a significant boost in graduation. Additionally, Belcheir (2002) also found that the advantage that transfer students had over freshman was due to the number of potential credits hours that transfer students brought to the institution. Clearer goals, increased motivation, resilience, and prior experience gained from their previous institution are additional factors that may give transfer students an advantage in graduating over non-transfer students (Belcheir, 2002; Wang, 2009).

Interestingly, results of the current study found no significant differences in persistence attitudes between full-time and part-time students or between students who live on or off campus. Results of these analyses suggest that students were committed to persisting in college and completing their education, regardless of their enrollment or residential status. Studies involving full-time and part-time students have found that full-time students are more likely to persist than part-time students (Adelman, 1999; Belcheir, 2000; NCES, 2007). Factors like outside employment and family responsibilities have been associated with the lack of persistence among part-time students. Results of the current study may have been influenced by the type of campus the participants' attended. The current study was conducted at a large, urban, commuter institution, which hosts a diverse body of students. Commuter colleges support traditional aged students who live

with their parents, older students, working students, full-time students, and part-time

students (Bean & Metzner, 1985; Braxton & Hirschy, 2005). Because students who

attend commuter campuses may often juggle multiple commitments, faculty, staff, and

administration must work to provide a campus environment that will help these students

be successful (Jacoby, 1989; Kattner, 2006). The results of the present study suggest that

the current campus provides a variety of different academic and social resources that help

full-time and part-time students excel in college.

A number of studies have found that college students who live on campus are less

likely to drop out than are those who live off campus (Astin 1973; Christie & Dinham

1991; Lopez-Turley & Wodtke, 2010; Pascarella & Chapman 1983; Wolfe 1993).

Students who live on campus are said to have more access to campus resources, as well

as more frequent contact with other students, faculty, and staff members than those

students who live off-campus. The results of the present study found no differences in

persistence attitudes between students who lived on campus and those who lived off-

campus. In support of these results, Lopez Turley and Wodtke (2010) conducted a study

that also found no differences in academic performance among students who lived on or

off campus. It is possible that students who currently live off campus may have lived on

campus at some time during their college career. Their experiences as on-campus

residents may have helped them identify important academic and social resources that

they have used throughout their college career. It is also important to point out that

although campus residence halls provide a variety of social and academic programs, other

campus departments offer similar resources that can be accessed by all students,

anywhere, and at any time. For example, students can participate in tutoring, access

books and journals from the library, and speak to an academic advisor, all via the internet. These online resources may be particularly helpful for those students who may not live on campus.

Financial concern. A student's concern about financing his or her education was a new variable included in the proposed model. Results of the study found that students who had higher concerns for financing their education had lower attitudes about persisting. Not only was the financial concern variable a significant predictor of student persistence attitudes, but it was also highly correlated with other predictor variables. For example, students who reported having higher concerns regarding financing their education scored low in the areas of faculty mentoring, peer group interactions, utility value, self-efficacy, and sense of belonging. With the rising cost of tuition and fees, university officials should pay special attention to the number of students who decide to drop out of school because of the lack of finances. Institutions should make a concerted effort to ensure that students are aware of the variety of financing options available to them (e.g. grants, scholarships, work-study). Additionally, students and parents should be properly educated on the myriad of costs associated with a post-secondary degree.

Motivational Factors and Persistence Attitudes and Attrition

Motivation. Results of the current study found that students who felt more connected to the campus, were more confident in their abilities to complete college related tasks, and believed that obtaining a college degree would be useful to them were more likely to persist in college. Sense of belonging describes the extent to which a student feels a part of the campus community. Studies have shown that a strong sense of belonging leads to student persistence and graduation (Hausman, Schofield, & Woods,

2007; Hurtado et al., 2007; Johnson, et al., 2007; Sailes, 1993; Tinto, 1973, 1993).

Additionally, Tinto's theory of student departure (1975) posits that students who are

academically and social integrated into the campus they attend are more likely to persist.

Tinto (1975) defined academic integration as the educational aspect of a student's college

experience, and social integration as a student's personal interaction with members of the

college community. College faculty play an important role in helping students become

more integrated into the campus. For example, it is important for faculty members to

create a welcoming learning environment that is conducive to learning. Additionally,

research has shown that interactions with diverse peers lead to a stronger sense of

belonging (Locks, et al., 2008). Therefore, faculty may consider providing students with

opportunities to work with different types of students inside the classroom. It is also

important for faculty members to make themselves accessible to the students who are

taking their classes. In addition to faculty, staff can also help students identify

opportunities that will help them develop a stronger sense of belonging to their

institution. Programs like convocation, intramural sports, and intercollegiate athletics are

all great opportunities for students to become more integrated into the campus.

Self-efficacy describes a student's beliefs in his or her ability to complete a

specific task. The current study focused specifically on college self-efficacy. Students in

the present study, who felt more confident in their abilities to perform college related

tasks, were more likely to report that they would complete college. Results of the current

study are consistent with prior research on self-efficacy (Bandura, 1997; Bean & Eaton,

2000; Davidson & Beck, 2006; Eccles et al., 1983; Gore, et al., 2006; Solberg, et al.,

1998). Some of the college related tasks evaluated in the current study included taking

notes, managing time, researching and writing course papers, and doing well on exams. The findings of this study suggest that colleges and universities should help students build their confidence when it comes to managing their responsibilities as a college student. A growing trending in higher education is the implementation of a college success course. The college success course is designed to help students increase their academic potential and apply strategies for success in college. Some of the topics covered in this course include goal setting, study strategies, test taking strategies, critical thinking and communication. It may be important for campuses to implement a mandatory student success course for all incoming students. These types of courses help students build the skills and confidence they needed to do well in college.

Among the motivational variables, utility value was the only variable to be significantly related to both institutional persistence and general persistence attitudes. Students who perceived college as more useful were more likely to report stronger attitudes about persisting than those who did not. Studies by Robinson Kurpius, Payakkakom, Dixon Rayle, Chee, and Arrendondo (2008) and Thomas, Wolters, Horn, and Kennedy (in press) found similar results among college students. More specifically, the more value students placed on a degree, the more likely they would be to persist. Results from the current study have important implications for institutions of higher learning. If the usefulness of a college degree has a positive impact on students' persistence attitudes, it may be important for colleges and universities to consider placing an emphasis on how aspects of the college experience will transfer to the next steps of their life. For example, many academic programs require students to participate in internship or externship programs as part of the academic requirements for graduation.

These opportunities help students connect what they have learned in class with real life work experiences. In addition to internships, college career centers also play a vital role in helping students see the importance of a college degree. Not only do career centers help students navigate the job search process, but they also help bring awareness to the personal and financial rewards that are products of a college degree.

Motivation is an important factor that can be used to help understand a student's decision to remain at the institution he or she is attending. In order to succeed in college, it is important for a student to feel a strong sense of belonging. The must also be confident in their abilities to do well in the college environment. But, ultimately, they must see the value in obtaining a college degree.

Background, Contextual, and Motivational Factors and Attrition

As noted in the beginning of this chapter, when evaluating the relationship between background, contextual, and motivational factors and attrition, the model failed to achieve significance. Despite the fact that none of the proposed factors were able to successfully predict student attrition, there are some other possible explanations that should be explored. Pleskac et al. (2011) found other important factors that led to student withdrawal. Factors like depression and conflict with roommates were among those factors. Both of these factors were not explored as predictors of persistence or attrition in the present study. In addition to depression, stress is another factor that impacts students' decisions to return to college. Studies have found that college related stress has been negatively related to academic performance (Felsten & Wilcox, 1992; Pritchard & Wilson, 2003; Russell & Petrie, 1992). Additionally, stress has been found to be an even more dominant factor influencing academic outcomes of minority student populations

(Zajacova, Lynch, & Espenshade, 2009). Other factors that may have impacted student attrition include leaving school in order to deal with a personal or family issue (e.g. death, taking care of a loved one, pregnancy), pursuing a career that may not require a college degree, and transferring to another institution.

Although the results were not significant, descriptive data regarding the students who did not return was consistent with prior research. Of the 245 students who were evaluated, 18 did not persist, producing a 7.3% attrition rate. In a persistence study involving 6,035 freshmen at the University of Houston (Croft, 2007), the semester to semester attrition rate ranged from 6.1% - 19.6%. Additionally, in a study examining the 2011 cohort of students at Indiana University, the overall semester to semester attrition rate was 10.7% (Indiana University, 2011). Therefore, when comparing results to previous reports, the current semester to semester persistence rate could be considered reasonable. With regards to race, the present study found that African-American students, followed by Hispanic students experienced the greatest rate of attrition. These findings are consistent with prior research that shows that African-American and Hispanic Students are less likely to persist than White and Asian students (Allen, 1999; Tinto, 1987).

Review of Proposed Theoretical Model

The current study was guided by a proposed theoretical model of student persistence and attrition (see figure 1). After analyzing the results of the study and evaluating the contributions of each proposed factor, the principal investigator discovered that there were variables within the model that should be re-evaluated. The findings of the current study suggest that parents' education level, socioeconomic status, parents'

expectations, race, gender, and prior performance are all important background

characteristics that should remain part of the present model. When reviewing important

contextual factors, there were a few factors that should be reconsidered. Results of the

current study found that, in terms of the model, enrollment status, residential status, and

transfer status were not able to successfully predict persistence attitudes or attrition.

Therefore, based on the results of the present study, these three factors would be excluded

from a revised version of the model. Other contextual factors that should remain in the

model include faculty mentorship, peer group interactions, campus involvement, and

GPA. Faculty mentorship, peer group interactions, campus involvement, and financial

concern were all significantly related to persistence attitudes. Although GPA was not

related to persistence, it is an important factor that is used in a majority of persistence

models. Therefore, GPA would also remain in the proposed model. Finally, results of

the study found that self-efficacy, sense of belonging, and utility value were significant

predictors of persistence attitudes. These findings suggest that motivation is an important

factor that should not only remain in the present model, but also be included in other

models of student persistence. In summary, a revised theoretical model of student

persistence and attrition would include factors like race, parents' expectations, peer group

interactions, motivation, and financial concern, but exclude factors like transfer status,

enrollment status, and residential status.

Limitations of the Current Study

There are several limitations that existed in this study. An important limitation to

note is that the current study was not able to distinguish between voluntary and

involuntary departure. Voluntary departure occurs when a student decides not to reenroll,

and involuntary departure occurs when the institution does not permit the student to reenroll. Understanding the reasons why a student did not re-enroll could have added more depth to the current study and helped further explore the actual causes of attrition. Another limitation to this study involved missing data from the study. Prior performance and fall 2011 GPA were excluded from the hierarchical multiple regression analyses because of lack of data. Similarly, over half of the participants in this study were excluded from the hierarchical logistic regression analysis because of the lack of academic data. The study could have been more robust and generalizable if the full sample size ($N = 595$) included all of the variables in the proposed persistence model.

An additional limitation to this study was the lack of a consistent measure of prior performance. Because of the limited amount of high school GPA data accessed from university records, both high school and college GPA were used to measure prior performance. In a follow-up study, it may be useful for participants to self-report this data, so that the principal investigator would not have to worry about missing or inconsistent data in students' academic records. Finally, the current study evaluated persistence and attrition from the fall 2011 semester to the spring 2012 semester. In order to better understand the influence that student background characteristics, contextual factors, and motivational factors have on persistence and attrition, it may have been beneficial to conduct a longitudinal study that covered at least one full academic year (from fall 2011 to fall 2012). Longitudinal studies make it possible to track a specific cohort of students, as well as observe what factors, over time, may have influenced persistence or attrition.

Recommendations for Practice

There are several findings from this study that may be useful for academic and student affairs professionals who are interested in increasing student persistence and graduation. For example, results of this study found that students who felt more connected to their campus were more likely to persist. These results suggest that institutions should provide opportunities for new students to connect with members of the campus community. Programs like new student orientation and welcome week help students become part of the campus culture. Both programs allow students to meet faculty, staff, and alumni, help students identify important academic resources, encourage students to find ways to get involved in co-curricular activities, and teach students about important traditions that make them feel part of the campus. More importantly, programs like new student orientation and welcome week help students to establish relationships with other students and begin to develop a sense of belonging at the campus they are attending.

The current study found that African-American and Asian-American students were less likely than White students to believe they would remain in college. Findings from this study suggest that faculty, staff, and administrators should continue to explore ways to support the academic and social needs of students of color. Some campuses offer support programs for minority students, while others have entire departments dedicated to helping these students succeed in college. Regardless of the type of support being offered, it is important that the proper attention be spent on ensuring that these students will be successful. Tinto (1993) suggests that specialized advising and counseling services, social support, community membership, and inclusivity are all important elements that are distinct to the needs of minority students, and may ultimately help them

succeed in college. Colleges and universities should also consider offering training to faculty and staff on important racial, ethnic, student development, and identity theories. Having a better understanding of these theories may help faculty and staff serve as better resources for students of color.

Findings of the current study also showed that increased financial concern was linked to lower levels of expected persistence. Therefore, it is important for institutions to help students identify opportunities for financial assistance. Along with including information about financial aid during the admissions process and new student orientation, colleges and universities should also offer financial aid workshops for students throughout the academic year. These workshops should cover topics like scholarships, work-study, budgeting, and how to properly manage your money. Although all of the topics mentioned are important, a special emphasis should be placed on budgeting and money management. For many students, their financial aid comes in one lump sum at the beginning of the semester, and they are responsible for making that money last. A new project by the Institute for College Access and Success called "Aid like a Paycheck," is designed to help students successfully manage their money. The program allows students to receive their leftover Pell Grant funding in bi-weekly paychecks (Nelson, 2011). Colleges and universities should explore programs like "Aid like a Paycheck" and consider offering this type of service as an alternative for its students.

The final implication involves motivation and the role of faculty. The current student found that self-efficacy, utility value, and sense of belonging were all important predictors of persistence attitudes. As noted earlier, internships, service learning, and

student success courses are all opportunities that faculty can use to help students build

confidence and see the value of a college education. In addition to these offerings,

faculty should also work to identify other classroom strategies that can help increase

students' utility value, self-efficacy, and sense of belonging. For example, it is important

for faculty to help students see personal meaning and value in the content that is being

taught. Faculty should also give frequent, early, and positive feedback that supports

students' beliefs that they can do well. Another important strategy involves assigning

tasks that are neither too easy, nor too difficult. Finally, faculty should create an

atmosphere that is open and positive. This type of environment will help students feel

like valued members of the learning community (Davis, 1993).

Conclusion

The study of college student retention has evolved over time. Currently, retaining

and graduating college students are extremely important issues among institutions of

higher learning (Berger & Lyon, 2005). Moreover, retention rates are considered major

indicator of success for many campuses. Most national rankings use retention rates as a

factor to determine a college's overall ranking, and in some instances, retention rates are

tied to campus accreditation and funding. Therefore, because of the value that

institutions place on retention rates, it is important to continue to discover ways to help

students graduate from college. The purpose of the current study was to evaluate a group

of factors that have been found to be related to college student persistence. The results of

the study uncovered a number of factors that, when combined with other factors, helped

to predict college student persistence. An important finding that should be highlighted in

this study is the significance of motivation. As noted in the introduction, motivation has

been excluded from theory and practice in student retention. The results of this study suggest that faculty, staff, and administrators should take interest in this work, as it appears to make a difference in students' decisions to graduate from college.

Although there are currently thousands of studies on this topic, there is still more work to be done in the area of college student persistence. Despite the effort to create a campus environment that supports the academic and social integration of students, retention rates still remain lower than most campus administrators would like (Berger & Lyon, 2005). As colleges and universities experience a growth in there student population, they must be prepared to support the individual needs of the students who attend their institution. It is going to take the collaborative work of parents, students, faculty, staff, and administration to understand what role background, contextual, and motivational factors play in aiding in the persistence and retention of college students. The more they work together, the closer they may get to understanding what it will take to increase the number of students who graduate from college.

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Appendix A

Summary of Hierarchical Logistic Regression Predicting Student Attrition

	B	S.E.	Wald	p-value	Odds Ratio
Step 1					
Parents' Education Level	.02	.18	.01	.91	.98
SES	-.09	.17	.26	.61	.92
Parents' College Expectations	.51	.36	2.03	.15	1.66
Race – Black	-.79	.88	.80	.37	.46
Race – Hispanic	-.84	.90	.86	.35	.43
Race – Asian	-.91	.99	.83	.36	.40
Race – Other	-1.49	1.19	1.56	.21	.23
Female	-1.73	1.06	2.66	.10	.18
Prior Performance	.37	.18	4.03	.05	1.45
Step 2					
Parents' Education Level	-.05	.20	.17	.68	.92
SES	-.18	.20	.86	.35	.83
Parents' College Expectations	.57	.37	2.33	.13	1.77
Race – Black	-1.20	.92	1.72	.19	.30
Race – Hispanic	-1.06	.96	1.20	.27	.35
Race – Asian	-1.53	1.10	1.92	.17	.22
Race – Other	-1.82	1.35	1.81	.18	.16
Female	-1.84	1.11	2.73	.10	.16
Prior Performance	.38	.27	2.02	.16	1.46
Faculty Mentoring	-.24	.36	.44	.51	.79
Campus Involvement	.69	.37	3.49	.06	1.99
Peer group interactions	-.11	.47	.06	.81	.89
Utility Value	.12	.59	.04	.83	1.13
Self-efficacy	-.02	.56	.00	.98	.98
Sense of Belonging	-.34	.72	.22	.64	.71
fall 2011 GPA	.02	.24	.01	.94	1.01
Transferred to UH	-.75	.58	1.68	.20	.47
Financial Concern	-.35	.31	1.27	.26	.71

Note: $N = 245$. Dependent variable 1= non-attrite, 0= attrite. Gender was coded: 0 = men, 1=women. SES = Socioeconomic status. SES ranged from 1 = "less than $20,000" to 7 = "$150,000 or more". Parents' education level ranged from 1= "did not graduate from high school" to 7 "completed a doctoral or another professional degree". The reference group for race was Caucasian/White.

Appendix B

Student Persistence Survey

The purpose of the survey is to look at factors that influence the success of college students.
The survey takes about *15* minutes to complete.

On the following pages are a series of statements regarding your experiences at the University of Houston. Please read the instructions from each section and respond with the answer that best describes how you feel.

Thank You!

Name: _____ **Peoplesoft ID#**_____

Classification: ○Freshman ○Sophomore ○Junior ○Senior ○Post-Baccalaureate ○Graduate

If you identified as being a Senior, are you graduating in: ○spring 2012, ○summer 2012, ○ fall 2012

Section A

Section Instructions Read each statement. Think of the extent to which you agree or disagree with each statement. Fill in the circle that corresponds with your answer Please note that there are no right or wrong answers. Additionally, remember to respond to all items.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My nonclassroom interactions with faculty have had a personal influence on my personal growth, values, and attitudes	○	○	○	○	○
2. My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas	○	○	○	○	○
3. My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations	○	○	○	○	○
4. Since coming to this university, I have developed a close, personal relationship with at least one faculty member	○	○	○	○	○
5. I am satisfied with the opportunities to meet and interact informally with faculty members	○	○	○	○	○

Section B

Section Instructions In your experience at this institution during the current school year, about how often have you done each of the following?	Never	Occasionally	Somewhat Often	Often	Very Often
1. Attended a meeting of a campus club, organization, or student government	○	○	○	○	○
2. Worked on a campus committee, student organization, or project (e.g. publications, student government, special event, etc.)	○	○	○	○	○
3. Worked on an off-campus committee, organization, or project (e.g. civic group, church group, community event, etc.)	○	○	○	○	○
4. Met with a faculty member or staff advisor to discuss the activities of a group or organization	○	○	○	○	○
5. Attend on campus events and activities (special speakers, cultural performances, athletic events, etc.) with friends of your same race or ethnicity	○	○	○	○	○
6. Managed or provided leadership for a club or organization on or off campus whose members are of your same race or ethnicity	○	○	○	○	○
7. Managed or provided leadership for a club or organization on or off campus (i.e. student organization, campus publication, student government, fraternity or sorority, intercollegiate or intramural sports)	○	○	○	○	○

Section C

Section Instructions Using the scale below, please indicate **how confident you are** as student at the University of Houston that you could successfully complete the following tasks:	Not at all confident	Not So Confident	Neutral	Confident	Extremely confident
1. Make new friends at college	○	○	○	○	○
2. Manage time effectively	○	○	○	○	○
3. Ask a question in class	○	○	○	○	○
4. Participate in class discussions	○	○	○	○	○
5. Research a term paper	○	○	○	○	○
6. Do well on your exams	○	○	○	○	○
7. Ask a professor a question	○	○	○	○	○
8. Understand your textbooks	○	○	○	○	○
9. Take good class notes	○	○	○	○	○
10. Keep up to date with your schoolwork	○	○	○	○	○
11. Write course papers	○	○	○	○	○

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12. Talk to your professors	○	○	○	○	○

Section D

<table>
<tr><td>Section Instructions:
Read each statement. Think of the extent to which you agree or disagree with each statement. Fill in the circle that corresponds with your answer

Please note that there are no right or wrong answers. Additionally, remember to respond to all items.</td><td>Strongly Disagree</td><td>Disagree</td><td>Neutral</td><td>Agree</td><td>Strongly Agree</td></tr>
<tr><td style="background:black"> </td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1. I will transfer to another university next semester</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>2. I will take a semester off from school</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>3. I plan to graduate from the University of Houston</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>4. It is likely that I will not graduate from the University of Houston</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>5. I will register at the University of Houston in the spring</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>6. I can think of many things I'd rather do than go to college.</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>7. I often wonder if a college education is really worth all the time that I'm being asked to spend on it</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>8. I dread the thought of going to school for several more years</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>9. I would readily leave college if I found a well paying job</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>10. I am strongly dedicated to finishing college no matter what obstacles get in my way.</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>11. I often wonder if a college education is really worth all the money I'm being asked to spend on it</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>12. I often wonder if a college education is really worth all the effort that I'm being asked to spend on it</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>13. My parents expect my academic performance to make them proud</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>14. My parents expect me to do well academically</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>15. My parents expect me to study hard in college so that I can get a high-paying job in the future</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>16. My parents expect me to pursue their ideal careers</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>17. My parents expect me to study their ideal program/major</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>18. My parents expect me to perform better than others academically</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
</table>

Section E

Section Instructions: Read each statement. Think of the extent to which you agree or disagree with each statement. Fill in the circle that corresponds with your answer Please note that there are no right or wrong answers. Additionally, remember to respond to all items.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Class sizes are so large that I feel like a number	O	O	O	O	O
2. The library staff is willing to help me find materials/books	O	O	O	O	O
3. University staff have been warm and friendly	O	O	O	O	O
4. I do not feel valued as a student on campus	O	O	O	O	O
5. Faculty have not been available to discuss my academic concerns	O	O	O	O	O
6. Financial aid staff has been willing to help me with financial concerns	O	O	O	O	O
7. The university encourages/sponsors ethnic groups on campus	O	O	O	O	O
8. There are tutoring services available for me on campus	O	O	O	O	O
9. The university seems to value minority students	O	O	O	O	O
10. Faculty have been available for help outside of class	O	O	O	O	O
11. The university seems like a cold, uncaring place to me	O	O	O	O	O
12. Faculty have been available to help me make course choices	O	O	O	O	O
13. I feel as if no one cares about me personally on this campus	O	O	O	O	O
14. I feel comfortable in the university environment	O	O	O	O	O
15. I think I will be able to use what I learn in college in my future career	O	O	O	O	O
16. I think that what I am learning in college is useful for me to know	O	O	O	O	O
17. I think it is important for me to graduate from college	O	O	O	O	O
18. It is important for me to get a college degree so that I can get a good job.	O	O	O	O	O
19. The things I learn in college are not useful to me	O	O	O	O	O

Section F

Section Instructions Think of the extent to which you agree or disagree with each statement. Fill in the circle that corresponds with your answer. Please note that there are no right or wrong answers. Additionally, remember to respond to all items.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. It is important for me to get a college degree so that I can provide for my family	O	O	O	O	O
2. Since coming to this university, I have developed close personal relationships with other students	O	O	O	O	O
3. The student friendships I have developed at this university have been personally satisfying	O	O	O	O	O
4. My interpersonal relationships with other students have had positive influence on my personal growth, attitudes, and values	O	O	O	O	O
5. My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas	O	O	O	O	O
6. It has been difficult for me to meet and make friends with other students	O	O	O	O	O
7. Few of the students I know would be willing to listen to me and help me if I had a personal problem	O	O	O	O	O
8. Most students at this university have value and attitudes different from my own	O	O	O	O	O
9. I have the financial resources that I need to finish college	O	O	O	O	O
10. I don't have any financial problems that will hinder my schoolwork	O	O	O	O	O
11. I have financial problems that are very distracting and troublesome	O	O	O	O	O
12. I frequently worry about paying my tuition fee bill	O	O	O	O	O
13. My parents frequently worry about paying my tuition fee bill	O	O	O	O	O
14. I am concerned about my ability to finance my college education	O	O	O	O	O

SECTION G

Please complete the following demographic information.

1. **Gender:** ○Male ○Female

2. **Which of the following best describes your race/ethnicity?**
   - ○ Caucasian/White
   - ○ Black/African-American
   - ○ Native American/American Indian
   - ○ Asian/Asian-American
   - ○ Hispanic/Latino(a)
   - ○ Other (Please specify:_____

3. **What is your major?** _____

4. **Currently, how many credit hours are you enrolled in this semester (fall 2011) at the University of Houston?** _____

5. **Are you currently enrolled as a full-time or part-time student?** ○Full time ○Part Time
   (Full time = 12 semester credit hours or more/ Part time = 11 semester credit hours or less)

6. **Do you currently live in one of the follow on campus residence hall or apartment complex facilities:**
   - ○ Cougar Village
   - ○ Moody Towers
   - ○ The Quadrangle
   - ○ Calhoun Lofts
   - ○ Cougar Place
   - ○ Cullen Oaks
   - ○ Cambridge Oaks
   - ○ Bayou Oaks
   - ○ No, I do not live on campus

7. **Did you transfer to the University of Houston from another college or university?** ○Yes
   ○No
   If yes, could please list institution name: _____

8. **What is the highest educational level completed by either of your parents?**

○ Did not graduate from high school

○ Completed high school or equivalent

○ Some college but did not complete a degree

○ Completed an Associate's Degree

○ Completed a Bachelor's Degree (4-year degree)

○ Completed a Master's Degree

○ Completed a doctoral or another professional degree (such as J.D. or M.D.)

○ Unknown

9. **What is your average family household income?**

○ Less than $20,000

○ $20,000 to $34,999.00

○ $35,000 to $49,999.00

○ $50,000.00 to $74,999

○ $75,000 to $99,999

○ $100,000 to $149,000

○ $150,000 or more

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!

Appendix C

Variables and Summary of Items

Sense of Belonging (α =.81)
(University Environment Scale, Gloria & Robinson-Kurpius, 1996;
Persistence/Voluntary Dropout Decisions Scale; Pascarella & Terenzini, 1980)
- Class sizes are so large that I feel like a number
- The library staff is willing to help me find materials/books
- University staff have been warm and friendly
- I do not feel valued as a student on campus
- Faculty have not been available to discuss my academic concerns
- Financial aid staff has been willing to help me with financial concerns
- The university encourages/sponsors ethnic groups on campus
- There are tutoring services available for me on campus
- The university seems to value minority students
- Faculty have been available for help outside of class
- The university seems like a cold, uncaring place to me
- Faculty have been available to help me make course choices
- I feel as if no one cares about me personally on this campus
- I feel comfortable in the university environment

Faculty Mentorship (α =.85)
(College Student Mentoring Scale; Crisp, 2009)
- My nonclassroom interactions with faculty have had a personal influence on my personal growth, values, and attitudes
- My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas
- My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations
- Since coming to this university, I have developed a close, personal relationship with at least one faculty member
- I am satisfied with the opportunities to meet and interact informally with faculty members

College Self-efficacy (α =.88)
College Self-Efficacy Inventory; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993)
Using the scale below, please indicate how confident you are as student at UH that you could successfully complete the following tasks:
- Make new friends at college
- Manage time effectively
- Ask a question in class
- Participate in class discussions
- Research a term paper

- Do well on your exams
- Ask a professor a question
- Understand your textbooks
- Take good class notes
- Keep up to date with your schoolwork
- Write course papers
- Talk to your professors

Campus Involvement (α =.86)
(The College Student Experiences Questionnaire; 4th edition, 1998)
In your experience at this institution during the current school year, about how often have you done each of the following?
- Attended a meeting of a campus club, organization, or student government
- Worked on a campus committee, student organization, or project (e.g. publications, student government, special event, etc.)
- Worked on an off-campus committee, organization, or project (e.g. civic group, church group, community event, etc.)
- Met with a faculty member or staff advisor to discuss the activities of a group or organization
- Attend on campus events and activities (special speakers, cultural performances, athletic events, etc.) with friends of your same race or ethnicity
- Managed or provided leadership for a club or organization on or off campus whose members are of your same race or ethnicity
- Managed or provided leadership for a club or organization on or off campus (i.e. student organization, campus publication, student government, fraternity or sorority, intercollegiate or intramural sports)

Utility Value (α =.80)
(Motivated Strategies for Learning Questionnaire; Pintrich & DeGroot, 1990; 4 Researcher created items*)
- I think I will be able to use what I learn in college in my future career*
- I think that what I am learning in college is useful for me to know
- I think it is important for me to graduate from college*
- It is important for me to get a college degree so that I can get a good job.*
- The things I learn in college are not useful to me
- It is important for me to get a college degree so that I can provide for my family*

Parents' College Expectations (α =.83)
(Living Up to Parent Expectation Inventory; Wang & Heppner, 2002)
- My parents expect my academic performance to make them proud
- My parents expect me to do well academically
- My parents expect me to study hard in college so that I can get a high-paying job in the future
- My parents expect me to pursue their ideal careers
- My parents expect me to study their ideal program/major

- My parents expect me to perform better than others academically

Financial Concern (α =.88)
(Noel-Levitz Sense of Financial Subsection of the Freshman Attitudes Survey, 2008; 3 Researcher Created*)
- I have the financial resources that I need to finish college
- I don't have any financial problems that will hinder my schoolwork
- I have financial problems that are very distracting and troublesome
- I frequently worry about paying my tuition fee bill*
- My parents frequently worry about paying my tuition fee bill*
- I am concerned about my ability to finance my college education*

Peer Group Interactions (α =.80)
(Persistence/Voluntary Dropout Decisions Scale; Pascarella & Terenzini, 1980)
- Since coming to this university, I have developed close personal relationships with other students
- The student friendships I have developed at this university have been personally satisfying
- My interpersonal relationships with other students have had positive influence on my personal growth, attitudes, and values
- My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas
- It has been difficult for me to meet and make friends with other students
- Few of the students I know would be willing to listen to me and help me if I had a personal problem
- Most students at this university have value and attitudes different from my own

Institutional Persistence Attitudes (α =.85)
(Researcher Created Items)
- I will transfer to another university next semester
- I will take a semester off from school
- I plan to graduate from the University of Houston
- It is likely that I will not graduate from the University of Houston
- I will register at the University of Houston in the spring

General Persistence Attitudes (α =.88)
(Desire to Finish College Subscale of the College Student Inventory; Noel & Levitz, 1993)
- I can think of many things I'd rather do than go to college.
- I often wonder if a college education is really worth all the time that I'm being asked to spend on it
- I dread the thought of going to school for several more years
- I would readily leave college if I found a well paying job
- I am strongly dedicated to finishing college no matter what obstacles get in my way.

- I often wonder if a college education is really worth all the money I'm being asked to spend on it
- I often wonder if a college education is really worth all the effort that I'm being asked to spend on it

Demographic Data

Gender: Male   Female
Classification: Freshman   Sophomore   Junior   Senior   Post-Baccalaureate   Graduate

If you identified as being a Senior, are you graduating in:
 Spring 2012, Summer 2012,   Fall 2012

Which of the following best describes your race/ethnicity?
 Asian/Asian-American
 Black/African-American
 Caucasian/White
 Hispanic/Latino(a)
 Native American/American Indian
 Other (Please specify:_____

What is your major? _____

Currently, how many credit hours are you enrolled in this semester at the University of Houston? _____

What is the highest educational level completed by either of your parents?
 Did not graduate from high school
 Completed high school or equivalent
 Some college but did not complete a degree
 Completed an Associate's Degree
 Completed a Bachelor's Degree (4-year degree)
 Completed a Master's Degree
 Completed a doctoral or another professional degree (such as J.D. or M.D.)
 Unknown

What is your average family household income?
 Less than $10,000
 Between $10,000-$24,999.00
 Between $25,000- $49,999.00
 Between $50,000.00 - $74,999
 Between $75,000 - $100,000
 Over $100,000
 Unknown

Are you currently enrolled as a full-time or part-time student? Full time   Part Time

Did you transfer to the University of Houston from another college or university?
Yes   No
If yes, could please list institution name: _____

Do you currently live in one of the follow on campus residence hall or apartment complex facilities?
Moody Towers   Cambridge Oaks
The Quadrangle   Bayou Oaks
Calhoun Lofts   Cougar Village
Cougar Place   No, I do not live on campus

Appendix D

Comparison of Demographic Data among Both Samples of Participants

N = 595		
	Frequency	Percent
Race		
Caucasian/White	134	23
Black/African-American	28	22
Asian/Asian-American	141	24
Hispanic/Latino(a)	163	27
Other	30	6
Gender		
Male	118	20
Female	477	80
Classification		
Freshman	203	34
Sophomore	131	22
Junior	201	34
Senior	60	10

N = 245		
	Frequency	Percent
Race		
Caucasian/White	51	21
Black/African-American	67	27
Asian/Asian-American	48	20
Hispanic/Latino(a)	66	27
Other	13	5
Gender		
Male	62	25
Female	183	75
Classification		
Freshman	97	40
Sophomore	56	23
Junior	69	28
Senior	23	9

Appendix E

Comparison of Demographic Data among Both Samples of Participants

N=595

	Frequency	Percent
Parents' Education Level		
Did not graduate from high school	51	9
Completed high school or equivalent	130	22
Some college but did not complete a degree	109	18
Completed an Associates Degree	52	9
Completed a Bachelors Degree	142	24
Completed a Masters Degree	64	11
Completed a Doctoral or Other Professional	32	5
Unknown	15	3
Average Household Income		
Less than $20,00	64	11
$20,00 to $34,999	109	18
$35,000 to $49,999	129	22
$50,000 to $74,999	113	19
$75,000 to $99,999	64	11
$100,000 to $149,000	69	12
$150,000 or more	41	7
Enrollment Status		
Part time	80	13
Full time	510	86
Residential Status		
Live on campus	138	23
Live off campus	455	77
Transfer Status		
Transfer Student	241	41
Non-transfer	353	59

Appendix E (continued)

Comparison of Demographic Data among Both Samples of Participants

N= 245

	Frequency	Percent
Parents' Education Level		
Did not graduate from high school	23	9
Completed high school or equivalent	59	24
Some college but did not complete A degree	47	19
Completed an Associates Degree	23	9
Completed a Bachelors Degree	53	22
Completed a Masters Degree	27	11
Completed a Doctoral or Other Professional	11	5
Average Household Income		
Less than $20,00	23	9
$20,00 to $34,999	59	24
$35,000 to $49,999	47	19
$50,000 to $74,999	23	9
$75,000 to $99,999	53	22
$100,000 to $149,000	27	11
$150,000 or more	11	5
Enrollment Status		
Part time	28	12
Full time	214	87
Residential Status		
Live on campus	70	71
Live off campus	174	29
Transfer Status		
Transfer Student	77	31
Non-transfer	168	69

Appendix F

Subset of Data (n=245): Means and Standard Deviations of Factors that Influence

Persistence Attitudes and Attrition

	Mean	SD
Parents' Education Level	3.71	1.77
Average Household Income	3.68	1.71
Parents' College Expectations	3.65	.83
Prior Performance	4.49	1.40
Faculty Mentorship	3.14	.88
Campus Involvement	2.07	.93
Peer group interactions	3.48	.71
Utility Value	4.25	.63
Self-efficacy	3.77	.63
Sense of Belonging	3.61	.53
fall 2011 GPA	4.21	1.54
Financial Concern	2.91	1.02
Institutional Persistence Attitudes	4.36	.68
Persistence Attitudes	3.58	.92

Note: For all scales, higher scores are indicative of more extreme responses in the direction of the construct assessed.

Appendix G:

Subset of Data (n=245): Correlation of Factors that Influence Persistence Attitudes and Attrition

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. IPA													
2. GA	.30**												
3. SES	.13*	.04											
4. PCE	.10	-.09	.08										
5. Overall GPA	.08	.20**	.03	.05									
6. Faculty Mentoring	-.05	.13*	.03	.06	.21**								
7. CI	-.04	.05	.10	.05	-.08	.30**							
8. PGI	.27**	.31**	.13*	.19**	.15*	.31**	.32**						
9. Utility Value	.38**	.38**	.01	.27**	.20**	.16**	-.04	.32**					
10. Self-efficacy	.23**	.25**	.13*	.15**	.14*	.23**	.16**	.33**	.44**				
11. Sense of Belonging	.27**	.31**	-.09	.16**	.16*	.27**	.06	.39**	.54**	.38**			
12. fall 2011 GPA	.20**	.16**	.17**	.05	.54**	.16**	.02	.05	.24**	.29**	.11		
13. Financial Concern	-.16**	-.25**	-.33**	-.04	-.01	-.14*	-.03	-.29**	-.13*	-.12*	-.28**	-.04	

Note: $N = 245$, ** $p \leq .01$, * $p \leq .05$. IPA = Institutional Persistence Attitudes, GA = General Persistence Attitudes, SES=Socioeconomic Status, PCE=Parents' College Expectations, CI = Campus Involvement, PGI=Peer Group Interactions.

Appendix H

Subset of Data (n=245): Summary of Hierarchical Multiple Linear Regression Predicting

Institutional Persistence Attitudes

	B	SE	ß
Step 1			
Parents' Education Level	-.05	.03	-.12
SES	.04	.03	.09
Parents' College Expectations	.12	.06	.13*
Race – Black	-.01	.13	-.01
Race – Hispanic	-.15	.14	-.10
Race – Asian	-.12	.15	-.07
Race – Other	.02	.22	.01
Female	.10	.10	.06
Prior Performance	.05	.03	.09
Step 2			
Parents' Education Level	-.06	.03	-.15*
SES	.03	.03	.08
Parents' College Expectations	.04	.06	.04
Race – Black	-.02	.13	-.01
Race – Hispanic	-.25	.13	-.16*
Race – Asian	-.13	.14	-.08
Race – Other	-.12	.21	-.04
Female	-.07	.10	-.04
Prior Performance	-.04	.04	-.08
Faculty Mentoring	-.17	.05	-.22*
Campus Involvement	-.03	.05	-.04
Peer group Interactions	.17	.07	.17*
Utility Value	.30	.09	.27**
Self-efficacy	-.01	.08	-.01
Sense of Belonging	.14	.10	.11
fall 2011 GPA	.09	.03	.20*
Transferred to UH	.02	.10	.01
Financial Concern	-.03	.05	-.04

Note: N = 245, R^2 = .06, p< .001for Step 1; $R^2 \Delta$ = .22 p< .001 for Step 2 ** $p \leq .01$, * $p \leq .05$. Gender was coded: 0 = men, 1=women. SES = Socioeconomic status. SES ranged from 1 = "less than $20,000" to 7 = "$150,000 or more". Parents' education level ranged from 1= "did not graduate from high school" to 7 "completed a doctoral or another professional degree". The reference group for race was Caucasian/White.

Appendix I

Subset of Data (n=245): Summary of Hierarchical Multiple Linear Regression Predicting

General Persistence Attitudes

	B	SE	ß
Step 1			
Parents' Education Level	-.02	.04	-.04
SES	.02	.04	.04
Parents' College Expectations	-.06	.08	-.05
Race – Black	-.19	.18	-.09
Race – Hispanic	.07	.18	.03
Race – Asian	-.33	.20	-.14
Race – Other	.34	.30	.08
Female	.22	.14	.10
Prior Performance	.15	.04	.23*
Step 2			
Parents' Education Level	-.04	.03	-.07
SES	-.02	.04	-.03
Parents' College Expectations	-.17	.07	-.14*
Race – Black	-.25	.16	-.12
Race – Hispanic	-.09	.16	-.04
Race – Asian	-.40	.18	-.17*
Race – Other	.05	.28	.01
Female	.00	.12	.00
Prior Performance	.07	.05	.10
Faculty Mentoring	-.04	.07	-.04
Campus Involvement	.05	.07	.05
Peer group interactions	.26	.09	.20*
Utility Value	.46	.11	.30**
Self-efficacy	-.02	.10	-.01
Sense of Belonging	.11	.13	.06
fall 2011 GPA	.03	.04	.05
Transferred to UH	.05	.12	.02
Financial Concern	-.16	.06	-.17*

Note: $N = 245$, $R^2 = .06$, p< .001 for Step 1; $R^2 \Delta = .22$ p< .001 for Step 2 ** $p \leq .01$, * $p \leq .05$. Gender was coded: 0 = men, 1=women. SES = Socioeconomic status. SES ranged from 1 = "less than $20,000" to 7 = "$150,000 or more". Parents' education level ranged from 1= "did not graduate from high school" to 7 "completed a doctoral or another professional degree". The reference group for race was Caucasian/White.