RELATIONSHIPS AMONG AND BETWEEN EARLY AND LATE FRESHMEN

ADMISSION APPLICATIONS AND ACADEMIC PERSISTENCE

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This quantitative study investigated relationships among and between university early and late admitted freshmen and academic performance and persistence. The participants in this study consisted of 3,197 early freshmen applicants and 309 late freshmen applicants admitted at a large southwestern student centered public research university over the course of the year prior to the fall 2008 academic year. Significant results, using a statistical significance level of $p < .05$, were reported for the majority of variables examined: chi-square analysis revealed a significant relationship between application date and ethnicity; independent-samples $t$-tests revealed significant differences in SAT scores; 78.06% of late applicants were male compared to 40.83% of early applicants; mean GPA of early applicants was 2.62 compared to 2.18 among those who applied late; and lastly, 76.62% of early applicants returned the following year in comparison to 57.42% of late applicants. The results of this study provide preliminary support for the examination of admission policies and procedures in relation to late application. Recommendations are made for advising, counseling, and other interventions that may ease the transition of freshmen late applicants while enhancing retention and persistence.
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CHAPTER 1
INTRODUCTION

Research on student retention seems to be one of the most voluminously studied topics in higher education. Berger and Lyon (2005) in College Student Retention stress the importance of conceptualizing and defining retention in order to understand the complexity of this campus-based phenomenon, as the terminology used to define student departure has changed over time. They offer the following definitions to distinguish among key concepts: Attrition refers to students failing to reenroll at an institution in consecutive semesters, although these students may enroll at another institution to complete a degree (Berger & Lyon, 2005). Dropping out occurs when a student departs an institution and does not pursue higher education elsewhere (Berger & Lyon, 2005). Academic persistence refers to the desire and action of a student to stay within the overall system of higher education from beginning to degree completion (Berger & Lyon, 2005). Retention is the institution’s ability to keep students from admission to graduation (Berger & Lyon, 2005). Furthermore, voluntary departure is defined as the point at which a student decides not to reenroll, and involuntary departure occurs when the institution prevents the student from reenrolling (Berger & Lyon, 2005). Students depart institutions for a number of reasons such as high costs, limited academic majors, family obligations, and career opportunities that do not require degrees. In addition, some students conclude a post-secondary education does not meet the training requirements of an intended career such as plumbing, mechanics, or carpentry. Many people have left universities and have gone on to enjoy prosperous and successful careers. While some student departure cannot and should not be avoided, unnecessary attrition remains a concern for individual institutions (Tinto, 1987).
One of the major goals of institutions and students alike is timely degree attainment. From the student viewpoint, degree attainment is crucial in that college degrees facilitate opportunities to financial and professional progression that may not otherwise exist (Jamelske, 2008). According to the US Census Bureau (2009), workers with a college degree earned approximately $26,000 more annually than workers with high school diplomas. Specifically, in 2007, workers with a bachelor’s degree earned an average of $57,181, compared to $31,286 (US Census Bureau, 2009). Additionally, it is estimated that someone with a college degree will make approximately $2.1 million in lifetime earnings compared with high school graduates earning approximately half of that at $1.2 million (US Census Bureau, 2009). From the institutional perspective, student retention is critical, as student success is valued along with the financial sustenance secured through the payment of tuition and fees (Jamelske, 2008). Moreover, many institutions depend upon government subsidies that are awarded based on enrollment and retention data (Jamelske, 2008).

In addition, student attrition results in the allocation of valuable human resources to replace students who discontinue their education at the institution (Astin, 1975). Astin (1975) posits that four-year institutions may benefit by investing resources in preventing attrition as opposed to funding vigorous recruiting efforts. Furthermore, he suggests that the effect of student withdrawal can impact three classifications of students at once, whereas in an allotted year recruiting routines can affect only one class (Astin, 1975). Initiatives designed to retain students are estimated to be substantially more cost-effective than recruitment efforts (Cuseo, n.d.). Specifically, Noel, Levitz, and Saluri (1985) found that five students can be retained for the same cost of recruiting one new student. Student retention efforts not only provide the financial means for institutions to exist, but, more important, retention promotes the learning and
development of students for the good of society (Astin, 1975). With so much financially and socially at stake, keeping attrition rates low is a major goal of post-secondary education. However, the negative impact of student attrition remains a foremost predicament in post-secondary education (Astin, 1975; Bean, 1983; Pascarella & Terenzini, 2005; Tinto 1987).

Although varying sources of statistical data exist relative to attainment and retention, most data, current and past, clearly revealed discouraging numbers. According to a report conducted for the U.S. Department of Education (Wirt, Choy, Rooney, Provasink, Sen, & Tobin, 2004), only 55% of the 1995 entering freshmen class graduated by 2001. In addition, they found that students starting in 1989 had a similar graduation rate of 53%. One of the largest scale studies to date found that only 39% of 75,752 freshmen completed a degree in 4 years, with only 44.9% completing in 6 years (Astin, Tsui, & Avalos, 1996). In other studies, it is estimated that 37% of first-time entrants to a four-year institution will never earn a degree, and only 44% of first-time entrants will complete the degree at their initial institution (Tinto, 1993). With these dismal statistics, retention continues to be a topic attracting considerable interest. Consequently, numerous journals, books, and conferences are dedicated solely to retention. According to Jamelske (2008), with increasing public and administrative attention to university rank, public indexes, and best-buy rankings, administrators spend countless dollars and resources instituting programs designed to successfully retain newly matriculated students through retention programming. Universities utilize a variety of traditional and modern approaches to groom incoming freshmen for the first year experience (Jamelske, 2008). Resources allocated to orientation, first-year programming, success initiatives, early-alert systems, counseling, and mentoring programs are all designed to promote student success and retain students (Jamelske, 2009).
For the aforementioned reasons, student departure remains one of the most widely studied and researched areas in higher education (McNeely, 1937; Spady, 1971; Tinto, 1975; and Bean, 1980). Utilizing economic, organizational, psychological, and sociological perspectives; many theories and models exist to explain the student departure puzzle. However, Vincent Tinto’s (1975, 1993) interactionalist theory of student departure enjoys paradigmatic stature employed and referenced in thousands of research studies (Braxton, Hirschy, & McClendon, 2004). Tinto asserts that common themes related to individual dispositions, institutional interaction, and external forces all interact to influence a student’s decision to persist or leave (Tinto, 1993). Specifically, the dispositional intention and commitment a student enters college with lays the foundation of personal achievement and the groundwork of individual experiences within the institution (Tinto, 1993). Consequently, individual experiences may manifest in forms of adjustment difficulty, incongruence and isolation arising from interactions within the institutional community (Tinto, 1993). External factors said to influence retention can be described in terms of obligations external to the institution such as family, work, and finances (Tinto, 1993).

Although several theoretical models exist and are utilized to identify common retention themes, variables, and subsequent solutions; the national retention rate remains the same (Tinto, 1993). Isolating a small number of variables such as age, sex, and race may be insufficient to understand the retention puzzle (Reason, 2009). Given this intransigence, it is, therefore, appropriate to identify and examine areas that have attracted little research in terms of retention and solutions. Currently, there is a paucity of research in the area of preventative enrollment measures such as application and admissions policies that may prove to impact retention. With
the ever-changing college demographic, researchers must identify new variables and interactions that may shed light on an always evolving complex issue (Reason, 2009).

The following studies explored the limited admissions and application data research pertaining to student persistence. Gray and Hardy (1986) conducted a study at three rural community colleges to determine disparities between grade point averages (GPAs) of first-time, full-time students relative to early or late applications. Findings suggested that, at all three institutions, GPAs for early applying students were significantly higher than the GPAs of late applicants. The researchers concluded that application timing may help identify at-risk students who potentially require early intervention and counseling programs (Gray & Hardy, 1986).

Smith, Street, and Olivarez (2002) conducted a study on effects of early and late registration on the success of community college students. Findings showed that late registrants were less likely than students who registered early to persist in completing academic programs. Specifically, 80% of early and 64% of regular registrants were retained, compared to only 42% of late registrants. In addition, 10% of new on-time registrants withdrew from classes, compared to 21% who registered late. Early and regular continuing students withdrew 5% and 4% in comparison to 13% of continuing late students. The authors recommended flexible payment schedules, registration advertising, and easy-access registration to encourage early registration. In addition, they suggested that late students should participate in required counseling sessions (Smith, Street, & Olivarez, 2002).

Another study sought to examine the relationship of registration date and course grades. Sova (1986) found students who enrolled on or after the first day of classes were more likely to fail or withdraw than students enrolling early or on time. More than 80% of regular admits passed the basic English class compared to 50% of late admits. As noted in most retention
studies, the authors suggest that student late entry does not cause attrition or failure, but a complex set of factors seems to play a role. The author once again suggested that special considerations should be given when accepting or enrolling students late. Orientation, advising, and counseling services should be mandatory as a part of a late admissions contract (Sova, 1986).

Freer-Weiss (2004) examined admission files of first-time college freshmen at an open-access community college. Using Tinto’s model of attrition, the author found that late applicants had different characteristics and were less likely to persist. Specifically, degree and enrollment objectives were significantly related to application date. Students seeking a two-year degree or no degree applied later than students seeking a bachelor’s degree. The study also revealed that 44.6% of students applying within the 3 weeks before classes started had less than a 2.0 GPA, compared to 29.8% of the remaining freshmen class. The authors also found that students who applied late were significantly less likely to reenroll than were those who applied earlier. A total of 27.1% of all students who did not reenroll applied late.

According to Freer-Weiss (2004), students applying late may be at a disadvantage even before setting foot in the classroom. Students may be admitted to institutions weeks or days before the semester begins without forethought or preparation and may incur challenges not experienced by those applying to institutions on-time or early (Freer-Weiss, 2004). According to Tinto’s (1993) interactionalist model of attrition, students’ entry characteristics, as well as their institutional commitment, influence the likelihood of college persistence. Students applying late may lack the characteristics or commitment to persist in college (Freer-Weiss, 2004). Many late admits arrive with problems beyond the capacity of the institution to solve (Tinto, 1993). However, armed with the knowledge that this select population may have a disadvantage,
institutions can review admission policies and/or provide programming aimed to prevent unnecessary attrition (Freer-Weiss, 2004).

Braxton and Hirschy (2005) suggest that colleges and universities operate by the following guidelines:

College administrators should embrace a commitment to safeguarding the welfare of the student. Such an abiding commitment should manifest itself in the major decisions and day-to-day activities of college and university presidents, chief academic affairs officers, and chief student affairs officers. A commitment to the welfare of students should also guide the decisions and actions of other college and university administrative officers, student affairs practitioners, and individual faculty members. (p. 79)

The authors also argue that:

The decisions and day-to-day actions of college and university administrators and individual faculty members must resonate with the mission, goals, and values espoused by their college or university. Decisions and actions should not conflict with the mission, goals, and values embraced by the institution. Universities and colleges should abide by these guidelines and make admission and retention policies on the basis of empirical data. (p. 79)

Understanding relationships among and between student characteristics and application date may optimize learning experiences and enhance retention rates. Although retention research is abundant, to date, rigorous reviews of appropriate data bases and journals have discerned only limited literature on retention and potential relationships to application date. In light of this relative void, the goal of this study was to examine student persistence (as measured by characteristics, GPA, and re-enrollment) among newly matriculated freshmen applying early and late for the purpose of discerning implications for enrollment management practices and programming designed to enhance student retention.
Research Questions

This research study explored demographic and academic data of first-time-to college freshmen at a large student focused emerging research university in the Southwestern United States. Specifically, admission files were examined to determine if relationships exist among and between student persistence and application data. The following research questions were examined:

1. Do students who apply late have similar characteristics (ethnicity, age, gender, SAT scores) to those who apply early?
2. Do students who apply late perform as well academically as those who apply early?
3. Do students who apply late re-enroll at the same rate as those who apply early?

This study of actual student patterns yielded general and specific implications for future research. Results also indicated specific recommendations regarding admission policies, student programming, and support services to better empower student success.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Variables Related to Departure

With the advent of the Industrial Revolution, more people sought opportunities for post-secondary education (Berger & Lyon, 2005). New institutions were quickly created, focused primarily on attracting new students rather than retaining them (Berger & Lyon, 2005). As the number of students increased, institutions began to project possible decreases in enrollment due to attrition. As early as 1930, the first studies in student retention were documented (Berger & Lyon, 2005). In 1938, the U.S. Department of Interior and the Office of Education commissioned John McNeely to explore college student mortality by examining factors such as institution size, finances, student characteristics, and university involvement. This groundbreaking work is the foundation of current studies some seventy years later (Berger & Lyon, 2005).

Herzog (2005) suggests preliminary retention research facilitated the groundwork for academic query into the multiple factors that have some bearing on student persistence and degree attainment. Specifically, researchers studied the effects of direct and indirect relationships among and between student background, student and institutional commitment, and academic and social connectedness, in effort to determine constructs with the best set of interactive variables to explain the retention puzzle (Herzog, 2005; Berger & Braxton, 1998). For example, Bean (2010) suggests the most likely retained student is characterized as a full-time white student attending a four-year public or private school directly out of high-school with educated high wage earning parents. The student also matriculates with high standardized test scores, well-prepared by taking college prep classes, and attended a quality high school (Bean, 2010). In addition, the student intends to graduate, has a major and career goal selected, participates in various campus activities, is integrated into the campus community, and optimistically
approaches the school, faculty, curriculum, and social opportunities (Bean, 2010). Furthermore, effects of these attributes are cumulative, as the more attributes a student possesses, the greater the chances he or she will persist (Bean, 2010).

Other researchers (Astin, 1984; Bean, 1982; Cabrera, Nora, Castaneda, 1982) take interest in single factors that may influence retention, such as ethnicity, gender, age, learning experiences, institutional support service, intention to leave, and admission status. Students bring with them an assortment of barriers that may impede the attainment of a post-secondary degree. Many retention studies have found that students who are not retained have similar characteristics. Non-persisters are often older, employed full-time, burdened with family obligations, and less financially secure (Bean, 2010). Gender, race, ethnicity, socioeconomic status, high-school grade point average and interactions with others have been found to be related to persistence (Peltier, Laden, & Matranga, 1999). Other variables under investigation include assimilation courses (Hendel, 2007), college major (Mau, 2003), admission status (Peltier et al., 1999), classroom learning (Tinto, 1997), remedial classes, and institutional support services and programming.

According to Kuh, Cruce, Shoup, Kinzie, and Gonyea (2008), most researchers examine facets of student success utilizing the following sets of variables: (1) student background characteristics such as demographics and pre-matriculation academic and personal experience, (2) institutional characteristics such as admission policies and size (3) connections with faculty, staff, and students, (4) student encounter of the learning atmosphere, and (5) the quality and dedication students commit to educational pastimes. Moreover, they posit that researchers must determine the interactions of the above variable in conjunction with gender, race, ethnicity, and first generation status (Kuh et al., 2008). Furthermore, they suggest that concurrent examinations of race, ethnicity, and income are vital because the historical nature of the
undergraduate experience as studied from the predominantly White institution which may distinctly vary from previously underserved populations (Kuh et al., 2008).

Although much of the literature indicates that variables impact persistence by interacting with each other, for the sake of focused clarity, numerous studies have continued examining individual characteristics (Reason, 2009). Because existing data allow such inquiry, in the present study, the most widely studied variables will be presented individually.

High School Variables

Two major variables related to retention, high-school GPA and college admission test-scores, are often the focus of college admission personnel. The majority of four-year colleges institute admission standards based on normative GPAs and test scores (Reason, 2009). Astin (1997) assessed retention rates as related to students’ standardized test scores and high-school GPA. Specifically, self-reported high-school GPA and standardized test scores were the strongest predictor of college persistence (Astin, 1997). Students entering with an “A” average were 7 times more likely to graduate than those entering with a “C” average. Students with high SAT scores were 6 times more likely to graduate in 4 years than those achieving lower scores (Astin, 1997). Although significant, the measures only accounted for 12% of the variance in retention. Once again, the author suggested that retention is complicated and encompasses many variables that impact individuals differently (Astin, 1997). However, identifying variables was seen to help in developing and implementing programming intended to retain students.

Tross, Harper, Oscher, and Kneidinger (2000) also found a relationship between high-school variables and persistence. Researchers used multiple regression analysis to determine variables associated with the retention of 844 first-year university students. The only significant
variables were high-school GPA, test scores, and student conscientiousness. Specifically, the high-school GPA and test scores accounted for 29% of the retention variance (Tross et al., 2000).

**Gender**

Retention studies prior to 1980 revealed that males were more likely to persist and graduate than females. However, the feminist movement and other social changes have transformed the previous findings, resulting in mixed results on the influence of gender on retention. Dubrock (2000) found that persistence among males and females during the first three years of college differed significantly. Specifically, the researcher found that females returned for their sophomore and senior year whereas males were returned more often their junior year.

In another study, Smith (1995) found that retention and graduation rates were consistently higher for females than for males. More specifically, the study concluded that 58% of the females and 54% of males graduated within 4 years. Differences in graduation rates between males and females were greater among minority groups, with a disparity of a 10% difference between Blacks and American Indians and 5% between Hispanic female and males.

Leppel (2002) found differential effects between gender and other variables. For example, the culmination effects of age, marriage, and hours worked had a significant negative impact on both men’s and women’s persistence. In addition, Leppel (2002) found that, female business and undecided majors persisted the least. The highest persisting women were health majors. Men with business majors were more likely to persist versus the least likely of education and undecided majors (Leppel, 2002). Leppel (2002) offered that persistence differences could be explicated by the student’s relative goal commitment, subject interest, social influence, and self-image (Leppel, 2002).
Academic departure of females appears to be more determined by social forces than by academic forces and, therefore, influenced by social integration (Pascarella & Terenzini, 1983). Females may be more susceptible to external pressures that lead to departure decisions (Tinto, 1993). Astin (1975) reported that marriage reduces the chances of female persistence and degree attainment more so than it does for males. Furthermore, he suggested that married women attending college may not feel they are benefiting the family if the male is perceived as the household breadwinner (1975). Subsequently, married women may not feel supported by family to pursue education at the expense of subtracting from family and maternal obligations (Astin, 1975).

Reason (2009), in a large retention study utilizing ACT data, found that gender failed to reach significance using multivariate models. However, in simpler models, gender was proven to be a significant factor (Reason, 2009). Again, the researcher argues that the interaction among variables is the reason for masked effects. Due to mixed results, Reason (2009) suggests that gender differences in persistence warrant exploration for further review and discussions.

Race and Ethnicity

Census data demonstrates that the U.S. population is rapidly diversifying. The 1990 U.S. Census consisted of 248,709,973 people with 80.2% of the population consisting of Whites (U.S. Census Bureau, 2009). Ten years later, the population consisted of 281,421,906 people with 75.1% were White, 12.3% Black, 12.5% Hispanic, 3.6% Asian, and 0.9% American Indian (U.S. Census Bureau, 2009). With a continued growth in the minority population, college campuses are also becoming more diversified (Pascarella & Terenzini, 2005). According to the U.S. Department of Education, National Center for Education Statistic, the percentage of
minority American college students is increasing (Wirt et al., 2004). For example, in 1976 only 15% of college students were minorities as opposed to 32% in 2007 with differences attributed to increases in Hispanic and Asian or Pacific Islander students (Wirt et al., 2004). In addition, the enrollment of Black students has continued to rise from 9% percent in 1976 to 13% in 2007. Regrettably, with the record number of increases in minority students entering college, they also leave at higher rates than non-minorities (Seidman, 2005). Thus, further study of this matter and targeted advocacy remain priorities.

Theories and Models Relating to Academic Persistence

To remedy attrition problems, one must first understand causes of and key factors related to attrition. Bean (1980) noted that many phenomena, especially intrapersonal and interpersonal factors, are related to studying and reducing the longstanding problem of student attrition. Furthermore, Bean (1980) asserted that theories of academic persistence are a necessary component in guiding retention practices.

For the novice and expert, the study of retention research can create chaos, confusion, and perplexity (Tinto, 2007). Student retention models are often longitudinal, complex, and burdened with student and institutional variables that impact retention directly and indirectly (Bean, 2010). According to Astin (1984), investigators examined retention utilizing different constructs, different methodologies, and different terms, all describing the same variables. In efforts to resolve aspects of this seemingly confusing inquiry and quandary, scholars long interested in the student departure puzzle have sought to develop models to organize the multiple variables contributing to departure (Astin, 1975; Bean, 1980; Spady, 1971; Tinto, 1975). Theories of persistence and retention may provide insight as to why students leave college. Often
interchangeable in the literature, theories of departure and models of departure can be utilized to identify factors most often associated with student retention (Bean, 2010).

Student attrition was initially viewed from a psychological framework, suggesting a student’s inherent characteristics were responsible for dropping out, risking a sense that environment was limited. Current literature depicts more comprehensive inquiry incorporating organizational, economic, psychological, sociological, and interactional perspectives (Tinto, 2007).

Sociological and Interactional Movement

The 1970s sparked a wave of retention research from a sociological perspective involving a search for related behaviors and characteristics that differentiate students who persist from students who depart (Bean, 2010). In 1970, Spady proposed one of the first models of student attrition suggesting social reasons as to why students leave college. Taken from the French philosopher and sociologist Emile Durkheim’s (1951) model of why people commit suicide, Spady suggested that student attrition shared self-destructive behaviors similar to those noted by Durkheim. Durkheim (1951) asserted that people commit suicide because they lack the values of the social system in which they participate and because they lack the support of friendship. Spady suggested that, in both the instances of suicide and dropping out, a person leaves a social system (Spady, 1971), albeit with the gravity and consequences of the former being permanent and irreversible. While leaving school does not have the irrevocability of suicide, Spady’s inquiry, discoveries, and implications afford a perspective for understanding and reducing the frequency and personal and organizational impact of leaving one’s academic community. Both behaviors are obviously complex, as well.
In 1975, Tinto expanded and refined Spady’s model, yielding what has become the most studied, utilized, and cited theory of retention. Introducing the roles of social and academic integration in retaining students, Tinto also drew on the works of Durkheim (1951) and Spady (1971) in asserting that student departure stems from the meanings students assign to their academic and social interaction in college.

The crux of Tinto’s model was borrowed from Spady’s and Durkheim’s two assumptions to magnify the importance of academic and social integration. Specifically, academic integration is observed as the sharing of values, whereas social integration is produced out of the development of student kinships and faculty interactions (Tinto, 1987). Moreover, a student to some degree lacking academic or social integration is apt to withdraw from the institution. In addition, individual characteristics such as family background, individual abilities, and educational experiences may also influence departure decisions (Tinto, 1987). Family background characteristics include socioeconomic status, parental education level, and parent expectations (Tinto, 1987). Individual characteristics focus primarily on academic ability, race, and gender. Educational experience includes high-school academic achievement, which may include GPA and test scores. Specifically, Tinto (1987) noted that the above characteristics interact to influence the student’s commitment to the institution and the goal of graduating. A student is likely to persist if the commitment to the institution and the graduation goal are well aligned with the academic and social system of the institution. In 1993, Tinto revised his retention model by adding another dimension to the departure decision: failure to negotiate rites of passage. Tinto asserted students were more likely retained if they could identify, commit, and engage the attitudes and values of the institution, friends, and faculty while separating themselves from family and high school friends (Tinto, 1993). In essence, this process of
engagement and assimilation described in Tinto’s revised model seems akin to descriptions of an individual’s enculturation into new environments or societies. Overall, one can see the evolution, persistence and pervasiveness of Tinto’s model across many decades.

_Economic Movement_

A mounting interest in economic factors that impact retention was seen in the 1990s with a present day resurgence happening in light of the current economic crisis (Bean, 2010). Economic theorists study retention using an economic framework focusing on economic variables that influence whether perceived and measured social and economic benefits of degree attainment outweigh costs and sacrifices of attending college (Cabrera, Nora, & Castaneda, 1992). Specifically, this perspective holds that students are more likely to stay in school if the perceived individual benefit of attending a university, return on investment, outweighs the financial and human capital expenses (St. John, 1990).

Moreover, tuition, housing, and financial aid have been shown to have financial implications on persistence. One landmark study exploring the role of financial aid and academic persistence concluded that aid programs promote annual persistence and that the amount and category of student debt has not significantly adversely impacted retention (St. John, 1990). Specifically, students receiving aid were twice as likely to re-enroll; aid amount had a significant effect in the first 3 years, with the chances of staying in school increasing from 4% to 12% per $1,000 of additional aid; and amount of debt had a positive and significant effect in the first 3 years, with a student having more than $1,000 of debt being 2% to 8% more likely to return (St. John, 1990). Furthermore, unsubsidized debt was negatively associated, although not significant, with persistence rates in the transition period (St. John, 1990).
Organizational Movement

Organizational theorists believe that organizational behavior and structure of an institution have a direct impact on student departure. Assuming that people leave organizations for common reasons, Bean (1983) adapted Price and Mueller’s 1981 employee/work turnover model in developing a student attrition model. Bean’s model incorporates 10 variables influencing satisfaction that, in turn, influence a student’s decision to leave or persist. Five variables identical to those offered by Price and Mueller (1981) influencing student satisfaction included distributive justice, integration, instrumental communication, routinization, and participation. Bean added the additional variables of grades, practical value, development, courses, and participation. All variables were shown to have a positive interaction on persistence, with the exception of routinization (Bean, 1983).

Psychological Movement

The psychological and sociological retention movement materialized in the 1980s by researching how students gauge themselves in an educational environment (Bean, 2010). Psychological theories of attrition posit that psychological characteristic and processes play a role in the student departure puzzle (Tinto, 1993). Psychological characteristics that separate persisters from non-persisters are found on individual and college environmental levels (Braxton & Hirschy, 2005). Psychological characteristics and processes related to attrition may include motivation level, developmental level, and personality traits. Bean and Eaton’s (2002) psychological model of college student retention integrates four psychological theories that attempt to explain the student departure puzzle. According to the model, students enter college with past behavior, beliefs, and normative beliefs that shape the experience that the student
anticipates he or she will have. The institutional environment interacts with psychological processes such as self-efficacy, stress response, and locus of control in impacting motivation levels. Students responding positively to the environment adjust psychological processes as needed, leading to academic and social integration with the intent to persist (Bean & Eaton, 2002).

**Involvement Movement**

Astin’s (1984) theory of involvement asserts that the student’s level of involvement impacts the decision to stay or depart. Astin viewed the college experience in terms of input, environment, and outcome. Each student brings with him or her unique background experiences and history, termed as input. The environment encompasses the institutional extracurricular or academic activities that the student chooses to participate in. The outcome is an interaction of the input and environment that may or may not lead to attainment of a college degree (Astin, 1993). Specifically, Astin (1984) defines involvement as the physical and psychological energy a student devotes to his or her academic endeavor. An involved student vigilantly spends quality time on academic work, extra-curricular activities, and interactions with faculty, administration, and staff. The theorist suggests that students fare better by actively participating in class rather than passively taking lecture notes (Astin, 1993). Specifically, the subject-matter approach is geared toward highly motivated students who may be avid readers and good listeners. Students not interested in the subject matter or who read more slowly may not be served by this approach and may become less engaged (Astin, 1993). Next, Astin (1993) suggested that students who participate in extra-curricular activities such as athletics, student government, and sororities were more likely to feel a part of the institutional culture and are more likely to stay. Other avenues of
student involvement possibly leading to increased retention include participating in on-campus jobs, involvement in student organizations, and living in residence halls (Astin, 1993). Finally, the author asserts that the interaction between students and university faculty and staff is crucial in student involvement, with faculty interaction discerned as more strongly related to satisfaction and involvement than any other variable (Astin, 1993). Seen in this light, it is crucial that institutions find ways to engage students and faculty in meaningful relationships apart from the classroom experience.

**Current Movements**

Recent movements emphasize the need to move beyond the previous mentioned theories and focus on the institutions role in retaining students. For example, Braxton et al. (2004) posit the following basic economic, organizational, psychosocial, and sociological factors all relate to student persistence and institution commitment. Furthermore, they contend that institutional commitment to student welfare, communal potential, institutional integrity, proactive social and psychosocial engagement, and finances are all factors that directly and indirectly influence persistence (Braxton et al., 2004).

Based upon the role of all the above inclusive factors, Braxton et al. (2004) make recommendations that may enhance retention. Specifically, they recommend that mandatory orientation programs for incoming students provide substantial opportunities for interactions with faculty, peers, and staff. Next, freshmen should be required to live in on-campus housing with strong resident life programming to promote communal potential (Braxton et al., 2004). In addition, institutions must take action to increase persistence and retention rates among racial
and ethnic minorities including affirming students’ ethnic identity and culture and not merely assimilating them into the institution cultural environment (Braxton et al., 2004).

Regardless of theoretical foundation, the goals of researchers and institutions alike are student persistence and timely graduation. Institutions spend countless dollars determining causes of attrition and the subsequent solutions that may remedy the problem. The following section offers best practices derived from decades of retention research.

Solutions to Academic Retention

Despite the long history of research on retention, departure rates persist. Although the body of research on student departure has greatly increased understanding of the college student departure process, translating theory into gainful retention solutions have not materialized (Tinto, 1993). However, many programs designed to solve the student departure puzzle have been created and implemented with the goal of retaining students. In addition, Tinto (1987) posited student yield via stealth and costly recruitment strategies has noticeably diminished. Tinto (1987) asserted that institutions have come to the steadfast conclusion that efforts to increase student retention and degree completion are the primary programming tools needed to ensure continued institutional existence.

Strategic management programs come in the form of bridge programs, orientation, first-year programming, early-alerts, counseling, diversity programs, academic skill development, social programming, campus development, and early outreach. Although little attention is given to enrollment management issues such as late application and late orientation, a classic manuscript by Braxton, Brier, and Steele (2007) discerned seven best practices and interventions, based on empirical data, for improving retention: career development, respect diversity, develop
and foster student success, involve faculty in retention efforts, practice institutional integrity, foster the development of student kinship, and utilize researched retention programming.

**Career Development**

A student’s dedication to educational and career goals is suggested to be one of the strongest variables in a student’s decision to stay (Tinto, 1975). Specifically Tinto (1993) posits that institutions of higher education should be mandated in assisting students in the formation and development of career goals and objectives. Furthermore, institutions should not see career uncertainty as a deficit in student development but a likely ingredient in the complex areas of student growth and development. Tinto (1993) suggested that consequences of such institutional views are not inconsequential, as prolonged unresolved intentions can lead to exiting both the institution and higher education.

Waterman and Waterman (1972) found that career indecision was a strong predictor of those who depart. Eighty percent of the leavers did not have a concrete career plan at the time of departure. However, the researchers did not find a significant difference in GPA between the students with crystallized career plans and those without plans.

Career development is defined as the conglomerate of a person’s educational qualifications, career path, self-actualization, career shifts, learning, family interactions, accomplishments, and accolades (Dungy, 2003). Applied in the education setting, career development is described as a student’s career field examination that may lead to satisfying and rewarding employment after college (Dungy, 2003). Research indicates that career development in students leads to student academic integration (Perry, Cabrera, & Vogt, 1999). A core construct in Tinto’s interacationalist model, academic integration, leads to a sense of feeling part of the university community and may increase the likelihood of persistence (Tinto, 1975, 1993).
Braxton et al. (2007) posit that an institution’s commitment to the wellbeing of its students has bearing on student departure decisions. A steadfast concern for the growth and development of its constituents encompasses the institution’s resolve to the welfare of its students. In addition, a commitment to the career development of students can be highly influential in that student engagement in career exploration and goals imparts a major basis for the selection of appropriate courses and sequences leading to degree attainment (Braxton et al., 2004).

University and college curriculum committees are instrumental in fostering student career development by the courses and curricula they prescribe (Braxton et al., 2007). It is suggested that colleges and universities integrate career development in individual classes as well as offering courses solely designed for major and career exploration (Nora, 1987, Hoyt 2001). Such robust, career-infused courses should be offered to all students. Additionally, incoming freshmen and undecided students might benefit from a basic career course that includes attention to major selection and academic integration (Nora, 1987).

Faculty members can contribute to a student’s career development in classes they teach. Bean (1982) suggested that faculty members should explicitly reference classroom learning and the applicability to actual employment situations. Parallels between classroom learning and employment can trigger an “ah ha” experience that positively influences academic integration and the student’s decision to value the education received (Bean, 1982). Hoyt (2001) suggested that both student and teachers are workers, and the classroom a workplace where both demonstrate their best work. Furthermore, Hoyt (2001) asserted that fundamental rules for escalating productivity in the workplace should also be utilized in classrooms. Specifically, educators should 1) help students understand the significance of assigned tasks, 2) reward constructive work habits, 3) provide diversity in the tasks, 4) reward exceptional work, 5) utilize
teamwork to construct better outcomes, 6) utilize motivational evaluation procedures to encourage better performance, and 7) establish goals that are attainable by students willing to work hard (Hoyt, 2001).

Advisors and college counselors can also assist with career development by helping students discover the value of the major chosen (Bean, 1982). Engels and Harris (1999) asserted that educators and counselors need to be clear and direct in promoting lifelong career development. Specifically, they suggested that school counselors are well equipped to provide comprehensive career guidance programs striving for student career development and maturation (Engels & Harris, 1999). Often, students experience disconnects between the process of choosing a major and connections to future employment (Bean, 1982). Many students are not aware of national recognition and accolades of departments within the chosen institution and may not fully commit. Advisors and counselors can help bridge this disconnect as they are often the first source of student contact. Bean (1982) suggests advisors should present the importance of the major selection and how the major and department benefits the student.

Academic advisors are also critical in helping undecided students feel academically integrated while they do not have a specific major or department to establish roots (Cuseo, n.d). Undecided students may only be enrolled in general education classes and may not see the relevance to future employment. A weak academic foundation may lead to weak academic integration and the student’s choice to leave (Tinto, 1975). Because advisors may be the only source of stability at the institution, advisors are critical in shaping the undecided student’s perceptions that degree attainment is important and may produce favorable outcomes (Cuseo, n.d.). Bean (1982) suggested that advisors can aid undecided students in recognizing the
importance of their current classes by providing examples of the relative impact on various employment settings.

*Respect Diversity*

All students bring with them individual characteristics and histories that influence the college experience. Faculty, staff, and administration must be aware of such individuality and treat students with respect and dignity (Braxton et al., 2007). However, particular groups of students may require additional support and nurturing (Braxton et al., 2007). For example, international students, out-of-state students, first-generation students, single mothers, financially disadvantaged students, and minority students may experience greater adjustment problems than others from the same cohort (Braxton et al., 2007). The traditional view of undergraduate students as White, full-time, 18-22 years of age, and living on campus has changed (Pascarella & Terenzini, 2005; Reason, 2009). With this said, it is important to look at the new demographics and how institutions can better serve underrepresented populations (Reason, 2009).

Braxton et al. (2007) suggest that showing the institution’s commitment to placing a high value of respect on students as individuals and as groups may strengthen the students’ institutional commitment. For example, minority students may experience sociological, psychological, and economic burdens not experienced by the majority population. Cultural upbringings may preclude African American students from seeking needed psychological and academic counseling services. Institutions would be wise to promote the availability of helping services from matriculation through graduation via faculty, bulletin board, and electronic communication (Braxton et al., 2007). Recommendations also include student, peer, and mentoring programs to provide a safe environment for students to discuss pertinent issues such as racism, isolation, discriminations, and alienation (Braxton et al., 2007).
Recommendations for the retention of Latino students include focusing on relationships, counseling services, and financial aid. Based on empirical findings, LeSure-Lester (2003) suggests that administrations should be sensitive to the critical influence faculty have in retaining Latinos. Specifically, it is suggested that students should be formally introduced to faculty and advisors for the purpose of establishing immediate relationships (LeSure-Lester, 2003). Moreover, it is critical that advisors, counselors, and faculty are cognizant of different coping styles used by Latino students. When faced with alienation, Latino students may reject their own cultural values and assimilate the values of the majority population (LeSure-Lester, 2003). Counselors would be wise to help students develop more appropriate ways of coping with cultural differences that allow for retention of their own culture while integrating academically and socially to the institution.

Financial aid offices may also help in retaining underrepresented students. Braxton et al. (2007) suggest programming designed to discuss college costs and financial aid should be implemented early in high-school. It is equally valuable to offer programming detailing the application process including information about completing the application and IRS forms. Programs must be made available in both English and the parents’ native language (Braxton et al., 2007).

Another population warranting attention consists of first-generation college students. Studies exploring first-generation college students have identified several variables influencing college persistence (London, 1992; Somers, Woodhouse, & Cofer, 2004). London (1992) asserts that first-generation students live on the margins of two cultures. Students often do not wish to break away from their past even if permitted to do so and never feel fully accepted because of real or perceived prejudice in the culture they newly seek. Coupled with limited familial support
and survivor guilt if few peers from high-school are attending college, many students leave the institution at the first sign of stress (Somers et al., 2004). Based on their findings, Somers et al. offer the following recommendations to aid the first-generation students. Early college awareness programs designed to reach out to first-generation students and parents should be instituted by the receiving universities as early as middle school (Somers et al., 2004). Programs should include college admission procedures, housing, and financial aid. Students are also encouraged to participate in early academic preparation programs including Trio programs such as Upward Bound (Somers et al., 2004). Next, students are encouraged to become involved in the campus community via early social support from campus members. Such support is appropriate from counselors, advisors, faculty, staff, and those that encourage the student to attend college (Somers et al., 2004).

In addition to the above populations, it is suggested that institutions should provide services and support for all groups prone to alienation, isolation, and risk of leaving school prematurely. Populations may include but are not limited to sexual minorities, students with disabilities, Native American, Asian, and bi-racial students (Braxton et al., 2007). Another emerging population in need of great assistance consists of veterans. Institutions are accepting veterans in unprecedented numbers. A paucity of research exists on the current state of veterans returning to school after enlistment. Many institutions are implementing offices designed to assist veterans in their return or matriculation based on best practices.

**Develop and Foster Student Success**

Developing student success implies that all students are at risk when entering the institution (Braxton et al., 2007). Institutions should be aware of potential obstacles for all
students and provide remedies as soon as possible. Two such remedies, student orientation and first year seminars, are designed to create a culture of success by indoctrinating students with institutional expectations and norms while examining the strengths and weaknesses a student brings with them (Braxton et al., 2007). For example, Chickering and Kuh (2005) suggest orientations and first year programming can help students determine their preferred learning style that will encourage success and persistence. Specifically, they suggest students should be given self-diagnostic instruments such as The Myers Briggs Type Inventory or the Kolb’s Learning Styles and Adaptive Styles Inventories to become more introspective how they learn best.

Choate and Smith (2003) assert that successful freshmen need to build confidence, develop skills, learn financial management, and receive social support. Many orientation programs are created to develop such academic, personal, and social integration. Orientations are often the student’s first experience of the institution’s culture and serve as the foundation for the student’s college career. Orientation seminars typically occur in the summer and last from 2 to 3 days. Academic topics may include study skills, critical thinking, problem solving, time management, note taking, reading, and test taking. Personal development topics may include health care, mental health, stress management, nutrition, career development, goal setting, financial management, and responsible decision making. Social integration consists of facilities, resources and services, college policies and procedures, transition and commitment, clubs and organizations, diversity, faculty and peer relationships, and community service (Burgette & Magun-Jackson, 2009). Numerous research studies suggest orientations are instrumental in student retention. In one study using logistic and multiple regressions, researchers found that orientation had a positive impact on persistence from the freshmen year to sophomore year and GPA (Burgette & Magun-Jackson, 2009).
A continuation of orientation found in many institutions is the first-year seminar. The use of first-year seminars has grown dramatically in the past decade; an estimated 95% of institutions offer some form of first-year seminar (Jamelske, 2008). First-year programming varies and may be offered but not limited to formal courses, seminars, workshops, and learning communities. First-year programming combines developmental, transitional, and academic content with the goal of acclimating students positively to campus life with the hope of retaining them the next year (Braxton et al., 2007). Research has shown that first-year programming has had a positive impact on student performance and retention (Pascarella & Terenzini, 2005; Schnell & Doetkott, 2003). Pascarella and Terenzini found a 7% higher retention rate of those attending a first-year seminar compared to a matched group of non-participants. A similar study using matched control groups also found significant retention increases in participants versus non-participants (Schnell & Doetkott, 2003). Overall, first-year seminars appear to have had some positive effects and influence on retention and academic performance (Jamelske, 2008). Continued research is needed using highly rigorous analyses on how specifically these programs influence retention (Jamelske, 2008). It is important to note that programming is implemented differently at individual institutions and may not always provide the same results. Institutions also must be cognizant of their own demographic, and results may not always apply to specific institutions (Jamelske, 2008).

*Involve Faculty in Retention Efforts*

Research demonstrates that faculty-student contact inside and outside the classroom is strongly related to student retention (Astin, 1993; Pascarella & Terenezini, 1979, 1991). Astin (1993) found that the student-faculty relationship was positively related to student satisfaction
more than any other variable. Furthermore, students who frequently interact with faculty members are more likely to express satisfaction in other areas. Astin stresses the importance of the faculty-student relationship as a key determinant of student retention. Tinto (1993) asserts that warm and rewarding faculty involvement that transcends the formal classroom has been strongly linked to persistence. Conversely, limited outside contact with rigid formal classroom instruction has been linked to academic withdrawal (Pascarella & Terenzini, 1977). Pascarella and Terenzini (1979) found that outside contact had the most powerful impact on first-generation college students exhibiting low institutional commitment. Pascarella posits that institutions can positively influence student retention by encouraging outside contact that facilitates discussions about students’ academic interests and career plans (Pascarella, 1980).

Just as outside classroom contact has been significantly related to increased retention, in-class experiences are also significantly related (Braxton et al., 2007). Faculty teaching methods that utilize active learning in addition to traditional lecture have been shown to be effective (Braxton, Milem, & Sullivan, 2000). Specifically, Braxton et al. (2000) examined four active learning classroom behaviors: classroom based discussion, knowledge level test questions, group work, and complex thinking activities and found that all but group work influenced one or more of the variables that directly impact retention. Recommendations to enhance active learning include the implementation of active learning lessons and student involvement in faculty research (Braxton et al., 2007).

As stated previously, career infusion in the classroom is a useful tool that faculty should use as part of their curriculum. Hoyt (2001) suggests career education is a low-cost but effective teaching tool that must be infused in the classroom. Furthermore, the author suggests career education activities should be utilized not only during learning processes where instructors are
motivating students to learn but also should take place out of the classroom via fieldtrips to workplaces (Hoyt, 2001). Both learning environments provide occasions to demonstrate to students what is learned in class is translated to the work environment.

Other recommendations to enhance student satisfaction and engagement include the faculty use of technology. Students network with one another utilizing technology as often, if not more, than using face to face communication. Heibeiger (2007) asserts that college faculty and administrators must be cognizant of this phenomenon and learn to use electronic media to enhance faculty-student contact. The authors suggest that faculty use of technology may promote college networking and relative events, and that it may facilitate feelings of home and safety on campus. Not only should faculty engage in timely communication by phone and email, it is suggested that social-networking sites such as Twitter and Facebook be utilized to enhance student engagement (Heiberger, 2007). Further research must be done to corroborate relationships of student-faculty engagement using social networking sites that indirectly influencing retention.

Practicing Institutional Integrity

Braxton et al. (2004) posit the decisions and daily proceedings of institutional administrators, faculty, and staff must echo the mission, goals, and values advocated by their institutions. Furthermore, these decisions and actions should not diverge with the mission, goals, and values embraced by the institution.

Thus, it is recommended that day-to-day operations from admissions to graduation should function in the spirit of the mission statement increasing the chance of student retention (Braxton et al., 2007). Student recruitment is one such program that should adhere to strict guidelines
designed to inform students on all aspects of the institution whether perceived good or bad. Jamelske (2008) posits an interrelation between retention and recruitment with the increased rivalry for the preeminent college student. Moreover, prospective students and parents are increasingly utilizing publicized national higher education rankings when selecting institutions (Jamelske, 2008). Higher retention rates and better national rankings are of vital importance to institutional recruitment efforts. Jamelske (2008) asserts a circular pattern in that recruiting may stimulate a higher retention rate and, the higher retention rate attracts top level students.

Empirical studies have suggested that institutions should accurately portray the academic and cultural environment of the institution to prospective students. Specifically, Pascarella and Terenzini (1983) assert that failure to publish pertinent information may be influential in a student’s decision to attend or abstain. Students entering institutions on false or misleading information may cause potential for institutional departure. Academically, students should realistically be informed as to class sizes, class availability, time to degree completion, utilization of transfer classes, and employment expectations after graduation (Pascarella & Terenzini, 1983). Students should also have realistic expectations about the social climate from advanced knowledge of campus life groups and activities. Braxton et al. (2007) suggest that course catalogs, fact sheets, college fairs, and preview days are effective ways to disseminate information. However, to realistically experience college life, it is encouraged that students be given opportunities to attend classes and organization meetings and spend the night in campus housing.

Specifically, Chickering and Kuh (2005) suggest the admissions process can help students better understand the educational endeavor by asking students to respond to three questions: What do you want to learn?, How do you learn best?, and What knowledge and
competence do you already have that will aid in what you want to learn. They also suggest college personnel ask these questions during campus visits and orientations. Chickering and Kuh (2005) assert students will be challenged in providing reasoned answers that start students thinking even before arrival on campus.

Again, academic persistence can be influenced by the social integration that the student experiences (Tinto, 1975). Many institutional mission statements espouse the value that the institution finds in diversity. Being true to this value, institutions must be prepared to demonstrate diversity to current and prospective students by the programming offered to underrepresented groups (Braxton et al., 2007). In addition, exposure to a campus environment of intolerance and prejudice decreases a student’s commitment to the institution, thus weakening the decision to persist (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999). Institutional offices such as academic affairs and student life need to ensure that they prepare individuals from all groups and sub-groups to be tolerant and open to cultural diversity. Such preparation can include diversity awareness workshops, diversity driven curriculum, collaborative learning, mandatory faculty and staff training, and multicultural centers all designed to create a climate fostering student tolerance, acceptance, and integration (Cabrera et al., 1999).

Foster the Development of Student Kinship

Braxton et al. (2007) encourage formation of student affinity groups that share similar beliefs, values, and goals as a means to promote communal potential indirectly impact retention. Braxton et al. (2007) define communal potential as the extent that students believe in existing student subgroups with similar values, beliefs, and goals within the social communities of their institution. Braxton and Jones (2008) assert that student affinity groups facilitate peer
interactions that contribute to the acquisition of academic competence, cognitive skills, intellectual dispositions, and personal development. Student clubs and organizations, intramural sports, residence halls, and living/learning communities are such peer groups that encourage communal potential.

Learning communities are emerging institutionally across the country consisting of students with shared majors, interests, and social views. Learning communities are hoped to increase student retention by creating environments that enhance camaraderie, shared experiences, application of learning, and overall institutional engagement (Lenning & Ebbers, 1999). In addition, living-learning communities build positive experiences that help students overcome isolation and permit the type of engagement that influence decisions to persist (Astin, 1985)

According to Iso-Ahola (1989), participation in recreational activities as a coping mechanism to manage the demands of college has been shown to improve student balance and quality of life. Moreover, studies show that participation in recreational sports facilities and programs increase student persistence rates. Belch, Gebel, & Mass (2001) found that freshmen utilizing recreation centers persisted at a greater rate than non-participating freshmen. Additionally, participants at the end of the year had higher GPAs and earned more credit hours. Interestingly, results revealed that non-participants matriculated with higher high-school GPAs and standardized test scores than non-participants. Freshmen have also asserted recreation center participation has influenced decisions to remain at their institutions (Belch, Gebel, & Mass, 2001). Finally, Belch, Gebel, & Mass (2001) conclude that participation in recreational activities facilitates social interaction and generation of study groups
Social integration formed via student organizations and groups has been shown to have a positive impact on retention (Astin, 1993). Thomas (2000) examined the relationships among social networks, integration, and persistence and the implication for persistence and attrition. The author posits that the impact of multiple network characteristics influence persistence via satisfaction, performance, commitment, and intention. Specifically, he found that broad discussion networks are more valuable than narrow networks. This finding suggests that students with a higher percentage of outside peer group connections persist and excel more academically (Thomas, 2000). In addition, benefits are also found in students who befriend students with broader ties (Thomas, 2000). Furthermore, students possessing a wide range of well-connected networks more handily make new connections due to the plethora of branches extending to the overall network (Thomas, 2000).

**Utilize Researched Retention Programming**

Braxton et al. (2007) assert that institutions should implement retention programs based upon grounded empirical literature. Moreover, higher administration officials should be familiar with the effective interventions described in the literature. Widely used interventions at many institutions, including the institution in the current study, include instructional approaches, orientation and first-year seminars, mentoring, counseling, advising, and early-alert systems.

Instructional programs include courses, seminars, orientations, summer camps, and extended orientations. Instructional programs are designed to improve academic performance, thus facilitating academic persistence (Braxton et al., 2007). Previously addressed, orientations and first-year seminars are the most common programs for freshmen students and contain
In addition to orientations and first-year programming, courses and workshops targeted to all at-risk college students are created at most institutions to aid in student retention. Such programming includes early-alerts, learning centers, and mandatory courses for at-risk students. Learning centers provide students with tailored interventions designed to enhance and develop learning skills based upon individual learning style. Levin and Levin (1991) found that learning-style interventions had a positive effect on achievement and retention when students were taught how to study given individual learning styles. Learning centers, created to supplement and enhance learning, offer various student services to maximize the academic potential of its constituents. Learning center programs often include reading and study skills, supplemental instruction and tutoring, success workshops, and resource libraries.

Early-alert programs are emerging as the latest defense against student departure. Early-alerts are implemented to identify students experiencing academic, social, or personal troubles as soon as they materialize (Wasley, 2007). Early-alert program teams, including personnel from faculty, counseling staff, advising programs, first-year programming staff, the registrar’s office, the provost, and learning centers, contact students upon the first signs of impending troubles. Although a paucity of research exits as to the programs’ effectiveness, early-alert programs reinforce the personal connections that indirectly influence student satisfaction and potential to remain enrolled (Wasley, 2007). In addition, early-alert systems allow institutions to collect data on what kind of students leave and why.

Many institutions require at-risk students to enroll in mandatory courses that help facilitate success. These courses are usually an extension of first-year programs and orientation.
The curriculum is designed to cultivate the academic development in content areas such as study skills, test-taking, time management, critical thinking, stress reduction, and GPA improvement (Braxton et al., 2007). Research has shown that mandatory courses have had a positive effect on the retention of academically at-risk students (Mann, Hunt, & Alford, 2004).

Support services entailing counseling, advising, and mentoring intended to assist with academic, personal, and career development have also shown significance in reducing retention (Churchill & Iwai, 1981; Cuseo, n.d.; Pascarella & Terenzini, 1991; Tinto, 1993). University counselors and advisors are a necessary and often underutilized tool to combat retention (Cuseo, n.d.; Glennon & Baxley, 1985). Another study (Lee, Olson, Locke, Micheloson, & Odes, 2009) examining the relationship between counseling and academic performance and retention indicated that counseling was significantly associated with student retention. Specifically, students receiving counseling were more likely to persist. However, counseling and academic performance were not linked when controlling for the pre-matriculation variable of academic performance (Lee et al, 2009). Smith, Walter, and Hoey (1992) found that students who seek support services have been found to improve academic performance and academic self-efficacy, which impacts student persistence. Another study by Kulik, Kulik, and Schwalb (1983) investigated student programming designed for the purposes of college student retention. Support-service programs included study and academic-skills instruction, academic advising and counseling, academic support programs, and enrollment in developmental and remedial courses (Kulik, Kulik, & Schwalb, 1983). Findings concluded that participation in support service programs had on average an 8% higher retention rate than non-program participants. Sievaking and Perfatto (2001) found that a student- centered retention program would be effective with students who self-identified as on the threshold of dropping out. Moreover, they suggest that a
useful action is for counselors to offer reasons why students should stay instead of predicting and resolving why they might leave. In a recent study at a 4-year institution (Robbins et al., 2009), researchers tracked students' utility of campus resources and the relationship to retention. Four resource categories (academic services, social resources, recreational resources, and advising sessions) were investigated to determine associations relating to retention. Robbins et al. (2009) found that utilization of each resource category was positively associated with GPA and/or retention. Furthermore, student use of academic services and advising sessions were more prominent for higher-risk students (Robbins et al., 2009).

An increasing number of institutions are placing a greater reliance on professional advisors with specific training in counseling and/or student services (Tinto, 1993). Research (Seidman, 1991) has shown that academic advising can play a role in a student’s decision to persist or depart. A study by Seidman (1991) determining the impact of integrated admissions and counseling programs on student satisfaction, retention, and academic performance examined students undergoing a series of meetings with advisors to develop an understanding of students' goals, aspirations, and academic potential. Counselors reviewed students' files, transcripts, test scores, and made recommendations based upon Tinto's model of attrition. When compared to the control group of non-participants, results revealed while first-semester retention rates were not significantly different for the two groups, the counseled group showed significantly higher third-semester retention (88%) than the control group (68%), and the counseled group earned slightly higher GPAs than the control group. These differences were not statistically significant (Seidman, 1991). Pascarella and Terenzini (2005) cite at least 18 articles that suggest that academic advising can play a role in success and retention.
In spite of document research showing the importance of advising, on many campuses advising is seen as a clerical task, designed simply to offer students rote class schedules and tips to navigate the registration period (Cuseo, n.d.). Furthermore, a large scale longitudinal study to assess student’s undergraduate experience found undergraduates to largely dissatisfied with career and academic advising received (Astin, Korn, & Green, 1987). Astin suggests the ill-perceived academic advising experience is of critical importance given that advising is essential in helping students become involved and possibly retained (Astin, Korn, & Green, 1987). Habley (2009) calls for high level administration to place advising at the core of the institution’s teaching and learning and suggests scholars need to add depth to the limited body of research claiming advising is effective. Without the support of higher administration to substantiate the claim that advising makes a difference in the persistence and satisfaction, advising will remain a peripheral and clerical campus activity that continues to evoke dissatisfaction in student (Habley, 2009).

Mentoring programs have gained increasing popularity on many college campuses (Braxton et al., 2007). In a comprehensive critical review of literature, Crisp and Cruz (2009) found optimistic findings indicating the positive relationship between mentoring and student success. In addition, the authors qualitative findings have progressed understanding of how mentoring is experienced by the non-traditional college populations including the at-risk, minority, first-generation, and female college student (Crisp & Cruz, 2009). For example, Bordes and Arredondo (2005) studied first-year Latino students’ perceptions of mentoring and their comfort with the university environment and found a positive relationship. The authors posit the findings support Tinto’s (1993) student departure theory suggesting the higher degree of
individual institutional integration, the higher the commitment to the institution and degree completion (Bordes & Arredondo, 2005).

Although there is general accord that retention remains a problematic hindrance in many institutions, there is varied opinion on the causes and solutions. The retention anomaly is increasingly being scrutinized by many institutions for the pure fact that state funding will be severely reduced if pinpointed retention percentages are not achieved. It is critical that colleges and universities continue to employ qualitative and quantitative examinations into the causes and possible remedies to solve the retention puzzle. Therefore, the purpose of this study is to examine the relatively understudied variable of orientation date possibly impacting institutional retention. With this erudition, augmentation of current services may elucidate changes in institutional retention rate and degree attainment.
CHAPTER 3
METHODS AND PROCEDURES

As previously mentioned, although retention research is abundant, to date, rigorous reviews of appropriate data bases have discerned only limited literature on retention and potential relationships to application date. It is critical to examine retention utilizing variables that have yet been uncovered. Therefore, the goal of this study was to examine academic persistence among students applying early and late for the purposes of discerning implications for enrollment management practices and programming to enhance retention rates.

This research study explored demographic and academic data of first-time-to college freshmen at a large, student centered, public, research university located near a large metropolitan area. Specifically, admission files were examined to determine if relationships exist among and between student persistence and application date. The following research questions were examined:

1. Do students who apply late have characteristics similar to those applying early?

2. Do students who apply late perform as well academically as those applying early?

3. Do students who apply late re-enroll in the subsequent term as often as those applying early?

Because application date at a four year institution and relationships among and between persistence are exploratory in nature, this investigation approached questions and hypotheses from a null perspective with alternative hypotheses. Therefore, the following hypotheses were the foci of the proposed study.
Hypothesis 1

H₀: Students applying late have the same characteristics of those applying early.

H₁: Students applying late have different characteristics of those applying early.

Specifically, this hypothesis sought to understand if demographic characteristics such as age, ethnicity, gender and academic abilities, depicted by SAT scores, were similar among early and late applicants.

Hypothesis 2

H₀: Students applying late perform as well as those applying early.

H₁: Students applying late do not perform as well as those applying early.

This hypothesis sought to understand if differences existed in grade point average of early and late applicants. The hypothesis was tested by exploring the second semester (spring 2009) ending grade point average of early and late applying students.

Hypothesis 3

H₀: Students applying late were just as likely to re-enroll as those applying early.

H₁: Students applying late did not re-enroll at the same percentage as those applying early.

This hypothesis examined the data to determine if students re-enrolled the subsequent fall semester (fall 2009). Subsequent fall re-enrollment was examined as most students make decisions to depart institutions after the first year (Tinto, 1987).
Definition of Terms

- Academic failure: Occurrence of drops, fails, or withdrawals.
- Age: Age of student at time of orientation derived from admission data.
- Attrition: Failure of students to reenroll at the same institution in subsequent semesters.
- Academic dismissal: Student dismissed from institution due to insufficient GPA.
- Academic persistence: student success as measured by grade point average and return rate.
- Classification: Freshman, Sophomore, Junior, Senior, derived from application data.
- Dropout: Student who did not complete degree at any institution.
- Early applicant: Student applying in the months of September through April before the start of the fall 2008 term.
- Grade point average: Grade points earned after the semester.
- Late applicant: Student applying in the months of May through August before the start of the fall 2008 term.
- Persistence: Student desire to earn degree from first semester through degree completion.
- Ethnicity: White, Black, Hispanic, American Indian, or other derived from admission data. These are the specific terms used in the admission data to categorize ethnicity.
- Retention: Ability of institution to retain student from entry to degree completion.
- Sex: Male or female as termed in admissions data
- Stopout: Student sitting out for a period of time but returning to institution.
- Subsequent enrollment: enrollment in subsequent fall or spring semester.
- Withdrawal: Dropout from a specific institution who may continue elsewhere.
Design

This was a post hoc study of electronic student admission files at a large student-centered, public, research, university within the proximity of two major cities. Data including age, gender, ethnicity, GPA, SAT scores, enrollment status, and application date were extracted from electronic files. The researcher obtained permission to use institutional electronic data sets via the institutional review board screening. Identity of participants was numerically coded by the institutional research office and was anonymous to the researcher.

Population and Sample

The research was conducted at a large, student-centered, public, research, university located 30 miles north of two major U.S. cities approximating 6.5 million people. The 36,000 enrolled students have a mean age of 24.4 years and populate 97 bachelors, 101 masters, and 49 doctoral degree programs. Ethnicity was comprised of 63.68% White, 12.77% African-American, 12.03% Hispanic, 5.2% Asian-Pacific Islander, .75% American-Indian, and 4.62% listed as non-resident students.

The university adheres to an application deadline while also admitting students on a case-by-case basis through the conclusion of the twelfth day of the semester’s start. Students graduating in the top 10% of their high-school class are automatically admitted. Regular admits are determined by an algorithm of test scores, high-school rank, and GPA.

All accepted undergraduate students and freshmen are required to attend orientation before being permitted to register for classes. However, students admitted after the semester commences do not have the opportunity to attend orientation and may miss the opportunity to meet individually for advisement and counseling services. New freshmen students entering in the
fall semester are required to attend a two day new student orientation session wherein they receive individual attention and assistance with class scheduling and acclimating to university life. Orientations consist of campus-life sessions, an activities mart, placement testing, academic advising, early registration, and optional payment. Generally, nine fee-based sessions are offered typically in June, July, and August. Students not able or willing to attend a regular two day orientation have the option to attend a half day session in conjunction with transfer students the week school starts. During orientation, students have the opportunity to meet with faculty and staff from their respective college or school, new classmates, and current students. During orientation, students learn about campus resources and receive academic advising in preparation for registering for classes. They leave orientation with a class schedule for the upcoming semester.

Selection Criteria for this Study

All first-time, new-to-college students were included in the study. Early applicants were coded as students applying in the months of September through April preceding the start of the next fall 2008 semester. Late applicants were defined as students applying in the months of May through August before the fall 2008 semester.

Description of the Sample.

The population of new students ranged in age from 18-36 years. Participants hailed from across the United States and the world, with the majority residing in the state in which the institution is located. Participants were from diverse ethnicities, cultures, and financial backgrounds. Most students were classified as full time students living on campus. The total
population included 3,506 students. Of these students, 3,197 were categorized in the early group versus 309 in the late group. Ethnicities consisted of 394 early and 49 late African-Americans, 21 early and 1 late American Indian, 181 early and 17 late Asian/Pacific Islander, 453 early and 61 late Hispanic, 2,098 early and 168 late White, and 50 early and 13 late coded as Non-Resident.

Statistical Procedures

Data were analyzed using an integrated statistical package that incorporates both parametric and non-parametric analysis called STATA.

Hypothesis 1

H₀: Students applying late have the same characteristics of students applying early.

H₁: Students applying late have different characteristics of those applying early.

The first step involved analyzing the student characteristics of age, gender, SAT scores, and ethnicity using chi-square analysis, tests of proportions, and t-tests. A chi-square analysis was conducted to see if there were any significant relationships between application date and ethnicity. Descriptively, a series of difference in proportions tests were conducted to explore relationships between ethnicity and application date in additional detail. Similarly, a difference of proportions test was conducted to explore relationships between gender and application date. An independent samples t-test was used to explore relationships between SAT score and application date. Concluding, an independent samples t-test was utilized to examine relationships between age and application date.
**Hypothesis 2**

$H_0$: Students applying late perform as well as those applying early.

$H_1$: Students applying late do not perform as well as those applying early.

In this analysis, the end of the first year (spring 2009) grade point average was used as the measure of performance for comparison. An independent-samples $t$-test was conducted to explore the relationship between application date and GPA. For further detail, GPA was focused upon in relation to the variables used in the first research question.

**Hypothesis 3**

$H_0$: Students applying late were just as likely to re-enroll as those applying early.

$H_1$: Students applying late did not re-enroll at the same percentage as those applying early.

A difference in proportions test was conducted to explore the relationship between re-enrollment rate and application date. As with the second research question, additional descriptive statistics were calculated to explore the relationship between re-enrollment rates and ethnicity, age, gender, GPA, and SAT scores.
CHAPTER 4
RESULTS

The goal of this study was to explore relationships among and between application date and the academic persistence of freshmen university students. This chapter presents results of the study, and analysis of each hypothesis, yielding acceptance or rejection of the respective null and alternative hypothesis. In addition, descriptive and logistical statistics are utilized to explore and examine relationships and differences among and between early and late applicants.

Hypothesis 1

The null hypothesis assumed that late and early applying students have similar characteristics while the alternative hypothesis suggested a difference in characteristics. Specifically, this hypothesis sought to understand if demographic characteristics established in Tinto’s model of student attrition (1987) such as age, ethnicity, gender, and academic abilities depicted by SAT scores, were similar among early and late applicants. These variables were chosen because they have been represented in the literature as key variables in student retention. All variables were found to be significant at the .05 alpha level; therefore the null hypothesis was rejected in favor of the alternative hypothesis.

Age

An independent-sample t-test was conducted to explore any difference in average age on the basis of application date. Among those who applied early, the average age was 18.06 years, while the average age among those who applied late was 18.88 years. As depicted in Table 1, this difference in age was found to be statistically significant, \( t(310.42) = 4.42, p < .001 \).
Therefore the null hypothesis was rejected in favor of the alternative hypothesis that the older difference in age of late applying students versus younger age of early applying students was not due to chance.

Table 1

*Two-Sample Test of Proportions Comparing Age of Applicants*

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf.]</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>3199</td>
<td>18.0644</td>
<td>.008836</td>
<td>.4997606</td>
<td>18.04707</td>
<td>18.08172</td>
</tr>
<tr>
<td>Late</td>
<td>310</td>
<td>18.88065</td>
<td>.1843264</td>
<td>3.245402</td>
<td>18.51795</td>
<td>19.24334</td>
</tr>
<tr>
<td>Combined</td>
<td>3509</td>
<td>18.13651</td>
<td>.0185628</td>
<td>1.099603</td>
<td>18.10011</td>
<td>18.1729</td>
</tr>
<tr>
<td>Diff.</td>
<td></td>
<td>-.81625</td>
<td>.1845381</td>
<td>-1.179354</td>
<td>-.4531463</td>
<td></td>
</tr>
</tbody>
</table>

diff = mean (Early) – mean (Late)  \[ t = -4.4232 \]

*Ethnicity*

First, a chi-square analysis was conducted to discern if there were any significant relationships between application date and ethnicity. Specifically, the chi-square test was used to determine whether there was a significant relationship between two categorical variables, ethnicity and application date. A significant relationship between these two variables was found, \( \chi^2 = 27.92, p < .001 \). Therefore the null hypothesis was rejected in favor of the alternative hypothesis that differences in ethnicities of late applying students versus early applying students was not due to chance. Table 2 illustrates the chi-square analysis for application date and ethnicity while Table 3 shows the descriptive dissection of ethnicities by early and late application.
Table 2

Chi-Square Analysis for Application Date and Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Early</th>
<th>Late</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>394</td>
<td>49</td>
<td>443</td>
</tr>
<tr>
<td>American Indian</td>
<td>21</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>181</td>
<td>17</td>
<td>198</td>
</tr>
<tr>
<td>Hispanic</td>
<td>453</td>
<td>61</td>
<td>514</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>50</td>
<td>13</td>
<td>63</td>
</tr>
<tr>
<td>White</td>
<td>2,098</td>
<td>168</td>
<td>2,266</td>
</tr>
<tr>
<td>Total</td>
<td>3,197</td>
<td>309</td>
<td>3,506</td>
</tr>
</tbody>
</table>

Chi-Square = 27.9216   Pr = 0.000

Table 3

Descriptive Statistics for Race/Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Early Application</th>
<th>Late Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>394</td>
<td>49</td>
</tr>
<tr>
<td>American Indian</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>181</td>
<td>17</td>
</tr>
<tr>
<td>White</td>
<td>2,098</td>
<td>168</td>
</tr>
<tr>
<td>Hispanic</td>
<td>453</td>
<td>61</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>50</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>3,197</td>
<td>309</td>
</tr>
</tbody>
</table>
Although not part of the hypothesis test, a series of difference in proportions tests were conducted to explore the relationship between ethnicity and application date in additional detail. The first analysis looked at white respondents, comparing those who applied early with those who applied late. Whereas 65.58% of early applicant participants were white, 54.19% of late applicant participants were white. This difference in the proportion of white respondents was found to be statistically significant, $z = 4.00$, $p < .001$ and is depicted in Table 4.

Table 4

| Variable | Mean   | Std. Err. | z    | $P > |z|$ | [95% Conf Interval] |
|----------|--------|-----------|------|--------|---------------------|
| Early    | .65583 | .0083999  |      |        | .6393664 .6722935  |
| Late     | .54194 | .028298   |      |        | .4864724 .5973986  |
| diff     | .11391 | .0295184  |      |        | .0560394 .1717495  |
| under Ho:|        |           | 4.00 | .000   |                     |

$\text{diff} = \text{prop(Early)} - \text{prop(Late)}$ \hspace{1cm} $z = \text{4.0033}$

Next, a difference in proportions test, depicted in Table 5, was conducted to explore whether African-American participants significantly varied on the basis of application date. Among early applicants, 12.32% were African American, whereas 15.81% of late applicants were African-American. This difference in the proportion of African-American respondents on the basis of application date was not found to be statistically significant.
Table 5

Two-Sample Test of Proportions Comparing African-American Applicants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>z</th>
<th>P &gt;</th>
<th>z</th>
<th>[95% Conf.</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>.1231635</td>
<td>.0058102</td>
<td></td>
<td>.1117757</td>
<td>.1345513</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late</td>
<td>.1580645</td>
<td>.0207193</td>
<td></td>
<td>.1174554</td>
<td>.1986737</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diff</td>
<td>-.034901</td>
<td>.0207193</td>
<td></td>
<td>-.0770767</td>
<td>.0072746</td>
<td></td>
<td></td>
</tr>
<tr>
<td>under Ho:</td>
<td>.0197564</td>
<td>-1.77</td>
<td>0.077</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

diff = prop(Early) - prop(Late)  
z = -1.7666

The next difference in proportions test focused on Hispanic respondents, with 14.16% early and 19.68% late applicants. This difference in the percentage of Hispanic respondents on the basis of application date was found to be statistically significant, z = 2.62, p < .01 as illustrated in Table 6.

Table 6

Two-Sample Test of Proportions Comparing Hispanic Applicants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>z</th>
<th>P &gt;</th>
<th>z</th>
<th>[95% Conf.</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>.1416068</td>
<td>.0061642</td>
<td></td>
<td>.1295251</td>
<td>.1536884</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late</td>
<td>.1967742</td>
<td>.0225799</td>
<td></td>
<td>.1525184</td>
<td>.24103</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diff</td>
<td>-.0551674</td>
<td>.0234062</td>
<td></td>
<td>-.1010427</td>
<td>-.0092922</td>
<td></td>
<td></td>
</tr>
<tr>
<td>under Ho:</td>
<td>.021033</td>
<td>-2.62</td>
<td>0.009</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

diff = prop(Early) - prop(Late)  
z = -2.6229

Next, the proportion of American Indian respondents was focused upon. Among those who applied early, 0.66% of respondents were American Indian, while 0.32% of those who...
applied late were American Indian. This difference was not found to be statistically significant, as illustrated in Table 7.

Table 7

Two-Sample Test of Proportions Comparing American Indian Applicants

| Variable | Mean   | Std. Err. | z     | P > |z| | [95% Conf. Interval] |
|----------|--------|-----------|-------|-----|-----|---------------------|
| Early    | 0.0065646 | 0.0014278 |       | .0037661 | .009363 |
| Late     | 0.0032258 | 0.0032206 |       | -.0030865 | .0095381 |
| diff     | 0.0033387 | 0.0035229 | 0.71  | .003566 | .0102435 |
| under Ho: | 0.0046952 |           |       | 0.477 | |

diff = prop(Early) - prop(Late)  

z = 0.7111

The next difference in proportions test focused upon Asian respondents. Among those who applied early, 5.66% of respondents were Asian, while 5.48% of respondents who applied late were of Asian descent. This difference was not found to be statistically significant as illustrated in Table 8.

Table 8

Two-Sample Test of Proportions Comparing Asian Applicants

| Variable | Mean   | Std. Err. | z     | P > |z| | [95% Conf. Interval] |
|----------|--------|-----------|-------|-----|-----|---------------------|
| Early    | 0.0565802 | 0.0040849 |       | .048574 | .0645864 |
| Late     | 0.0548387 | 0.0129305 |       | .0294954 | .080182 |
| diff     | 0.0017415 | 0.0135604 |       | -.0248364 | .0283194 |
| under Ho: | 0.0137256 |           | 0.13  | 0.899 | |

diff = prop(Early) - prop(Late)  

z = 0.1269
Next, the difference in the proportion of non-residents was focused upon. Among those who applied early, 1.56% were non-resident respondents, while 4.19% of respondents who applied late were non-resident. This difference was found to be statistically significant, \( z = 3.33, \ p < .001 \) as noted in Table 9.

Table 9

Two-Sample Test of Proportions Comparing Non-Resident Applicants

| Variable | Mean   | Std. Err. | \( z \) | \( P > |z| \) | [95% Conf. Interval] |
|----------|--------|-----------|--------|----------------|---------------------|
| Early    | .0156299 | .0021931  |       | .0113316       | .0199282            |
| Late     | .0419355 | .0113843  |       | .0196226       | .0642484            |
| Diff     | -.0263056 | .0115936 |       | -.0490287      | -.0035825           |
| under Ho:| .0078986  |          | -3.33 | 0.001          |                     |

diff = prop(Early) - prop(Late) \( z = -3.3304 \)

Gender

Next, a difference in proportions test was conducted to explore the relationship between gender and application date. Specifically, the difference in the proportion of early and late applicant males was studied. Among early applicants, 40.83% were male, while 78.06% of late applicants were male. This difference was found to be statistically significant, \( z = 12.61, \ p < .001 \). Therefore, as depicted in Table 10, the null hypothesis was rejected in favor of the alternative hypothesis that the difference in gender of late applying students versus early applying students was not due to chance.
Next, the relationship between SAT score and application date was focused upon. The relationship between these two variables was analyzed using an independent-samples $t$-test. Respondents who applied early had an average total SAT score of 1080.55, while those who applied late had an average SAT score of 1052.76. This difference in average SAT score was found to be statistically significant, $t = 2.97, p < .01$, as illustrated in Table 11. Therefore the null hypothesis was rejected in favor of the alternative hypothesis that the lower SAT scores of late applying students versus the higher SAT scores of early applying students was not due to chance.

Table 11

Two-Sample Test of Proportions Comparing SAT Scores and Application Date

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>2776</td>
<td>1080.55</td>
<td>2.644138</td>
<td>139.3137</td>
<td>1075.366 - 1085.736</td>
</tr>
<tr>
<td>Late</td>
<td>232</td>
<td>1052.75</td>
<td>8.97538</td>
<td>136.7089</td>
<td>1035.075 - 1070.443</td>
</tr>
<tr>
<td>Combined</td>
<td>3008</td>
<td>1078.40</td>
<td>2.539686</td>
<td>139.2897</td>
<td>1073.428 - 1083.387</td>
</tr>
<tr>
<td>diff</td>
<td></td>
<td>27.79253</td>
<td>9.356757</td>
<td>9.371862</td>
<td>46.2132</td>
</tr>
</tbody>
</table>

diff = mean(Early) - mean(Late) $t = 2.9703$
Hypothesis 2

The second research question in this study asked: Do students who apply late perform the same as those applying early? Specifically, the hypothesis was tested by exploring the end of first year (spring 2009) cumulative grade point averages of early and late freshmen applicants. In this analysis, grade point average was focused upon specifically as a measure of performance. To explore the relationship between application date and GPA, an independent-samples $t$-test was conducted. Among those who applied early, the average GPA was 2.62, while the average was 2.18 among those who applied late. This difference in average GPA was found to be statistically significant, $t = 6.12, p < .001$ as depicted in Table 12. Therefore the null hypothesis was rejected in favor of the alternative hypothesis that the difference in lower grade point average of late applying students versus higher grade point average of early applying students was not due to chance.

Table 12

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>3197</td>
<td>2.62335</td>
<td>.018104</td>
<td>1.023959</td>
<td>2.587838 2.658832</td>
</tr>
<tr>
<td>Late</td>
<td>309</td>
<td>2.17568</td>
<td>.0709059</td>
<td>1.248427</td>
<td>2.036161 2.3152</td>
</tr>
<tr>
<td>Combined</td>
<td>3506</td>
<td>2.58378</td>
<td>.0177798</td>
<td>1.053218</td>
<td>2.548928 2.618647</td>
</tr>
<tr>
<td>diff</td>
<td></td>
<td>.4476545</td>
<td>.0731806</td>
<td>.3037261</td>
<td>.5915828</td>
</tr>
</tbody>
</table>

$\text{diff} = \text{mean(Early)} - \text{mean(Late)} \quad t = 6.1171$
Next, although not employed in the hypothesis, GPA was focused upon in relation to the variables included in the first research question, which consisted of ethnicity, age, gender, and SAT scores. Table 13 presents the average GPA of respondents on the basis of age and Table 14 illustrates respective differences in average GPA on the basis of ethnicity. To simplify the results, any respondents who were over the age of 19 were put into one single "20 or over" category.

Table 13

*Descriptive Statistics for Age and Grade Point Average*

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>4</td>
<td>2.40375</td>
</tr>
<tr>
<td>17</td>
<td>194</td>
<td>2.592897</td>
</tr>
<tr>
<td>18</td>
<td>2942</td>
<td>2.609297</td>
</tr>
<tr>
<td>19</td>
<td>327</td>
<td>2.445324</td>
</tr>
<tr>
<td>20 or Over</td>
<td>39</td>
<td>2.104772</td>
</tr>
<tr>
<td>Total</td>
<td>3506</td>
<td>2.584785</td>
</tr>
</tbody>
</table>
Table 14

*Descriptive Statistics for Ethnicity and Grade Point Average*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>443</td>
<td>2.24</td>
</tr>
<tr>
<td>American Indian</td>
<td>22</td>
<td>2.65</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>198</td>
<td>2.83</td>
</tr>
<tr>
<td>Hispanic</td>
<td>514</td>
<td>2.42</td>
</tr>
<tr>
<td>White</td>
<td>2266</td>
<td>2.66</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>63</td>
<td>2.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3506</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Table 15 illustrates the difference in average GPA on the basis of gender.

Table 15

*Descriptive Statistics for Gender and Grade Point Average*

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1951</td>
<td>2.71</td>
</tr>
<tr>
<td>Male</td>
<td>1555</td>
<td>2.43</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3506</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Next, differences in average GPA on the basis of SAT score was focused upon. First, a new variable representing SAT score was calculated, in which total SAT score was categorized as either above or below 1000. Table 16 illustrates the breakdown in average GPA on the basis of SAT score.
Table 16

Descriptive Statistics for SAT Scores and Grade Point Average

<table>
<thead>
<tr>
<th>SAT score</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 or less</td>
<td>989</td>
<td>2.29</td>
</tr>
<tr>
<td>Over 1000</td>
<td>2026</td>
<td>2.76</td>
</tr>
<tr>
<td>Total</td>
<td>3015</td>
<td>2.60</td>
</tr>
</tbody>
</table>

Hypothesis 3

Hypothesis three explored if students applying late are as likely to re-enroll as those who apply early. To explore the relationship between re-enrollment rate and application date, a difference in proportions test was conducted. Among respondents who applied early, 76.62% returned for the following fall semester (fall 2009). Among those who applied late, only 57.42% returned the following fall. This difference in re-enrollment rates was found to be statistically significant, $z = 7.45, p < .001$, as noted in Table 17. Therefore the null hypothesis was rejected in favor of the alternative hypothesis that the difference in lower return rates of late applying students versus higher return rates of early applying students was not due to chance.
Table 17

*Two-Sample Test of Proportions Comparing Re-enrollment rates and Application Date*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>z</th>
<th>P &gt;</th>
<th>z</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>.7661769</td>
<td>.0074834</td>
<td></td>
<td></td>
<td></td>
<td>.7515097 - .7808442</td>
</tr>
<tr>
<td>Late</td>
<td>.5741935</td>
<td>.0280837</td>
<td></td>
<td></td>
<td></td>
<td>.5191505 - .6292366</td>
</tr>
<tr>
<td>diff</td>
<td>.1919834</td>
<td>.0290637</td>
<td></td>
<td></td>
<td></td>
<td>.1350197 - .2489471</td>
</tr>
<tr>
<td>under Ho</td>
<td>.0257844</td>
<td>7.45</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

diff = prop(Early) - prop(Late)  

As with the second research question, additional descriptive statistics were calculated to explore relationships between re-enrollment rates and ethnicity, age, gender, and SAT scores, respectively. Table 18 presents the breakdown in the percentage of respondents who returned the following fall on the basis of age at time of enrollment.

Table 18

*Descriptive Statistics for Age and Re-enrollment*

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>4</td>
<td>50.00%</td>
</tr>
<tr>
<td>17</td>
<td>194</td>
<td>72.16%</td>
</tr>
<tr>
<td>18</td>
<td>2942</td>
<td>75.80%</td>
</tr>
<tr>
<td>19</td>
<td>327</td>
<td>71.25%</td>
</tr>
<tr>
<td>20 or Over</td>
<td>39</td>
<td>57.89%</td>
</tr>
<tr>
<td>Total</td>
<td>3506</td>
<td>74.86%</td>
</tr>
</tbody>
</table>
Table 19 presents the breakdown in the percentage of respondents who returned the following
fall on the basis of ethnicity.

Table 19

*Descriptive Statistics of Re-enrollment Rate and Ethnicity*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>443</td>
<td>82.02%</td>
</tr>
<tr>
<td>American Indian</td>
<td>22</td>
<td>72.72%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>198</td>
<td>78.00%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>514</td>
<td>71.79%</td>
</tr>
<tr>
<td>White</td>
<td>2266</td>
<td>73.66%</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>63</td>
<td>81.54%</td>
</tr>
<tr>
<td>Total</td>
<td>3506</td>
<td>74.86%</td>
</tr>
</tbody>
</table>

Table 20 presents average return rates on the basis of gender.

Table 20

*Descriptive Statistics of Re-enrollment Rate and Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1951</td>
<td>79.35%</td>
</tr>
<tr>
<td>Male</td>
<td>1555</td>
<td>69.23%</td>
</tr>
<tr>
<td>Total</td>
<td>3506</td>
<td>74.86%</td>
</tr>
</tbody>
</table>

Table 21 illustrates the breakdown in average return rates on the basis of SAT scores.

As before, SAT scores were categorized as either 1000 or less or over 1000.
Table 21

Descriptive Statistics of Re-enrollment Rate and SAT Scores

<table>
<thead>
<tr>
<th>SAT score</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 or less</td>
<td>989</td>
<td>73.31%</td>
</tr>
<tr>
<td>Over 1000</td>
<td>2026</td>
<td>76.70%</td>
</tr>
<tr>
<td>Total</td>
<td>3015</td>
<td>75.59%</td>
</tr>
</tbody>
</table>

Summary Results

Finally, a logistic regression analysis was conducted, which incorporated all predictors of application date in a single analysis. Table 22 presents the results of this regression analysis.

Logistic regression analysis was chosen to study the dependent variable, application date, as dichotomous, with respondents categorized as either having applied early or having applied late. In regard to ethnicity, whites were chosen as the comparison category. African-Americans were found to be more likely than whites to have applied late. Age was also found to be a significant predictor of application date, with older respondents more likely to apply late as compared with younger respondents. End of first year college GPA was also found to be a predictor of application date. Individuals with a higher GPA were less likely to have applied late. Finally, retention rates were also found to be significantly related to application date. Students who returned the following year were less likely to have applied late as compared with those who did not return. Tables 22 and 23 illustrate these data related to the logistic regression analyses.
Table 22

*Logistic Regression using White as Comparison*

<table>
<thead>
<tr>
<th>Late Application</th>
<th>Odds Ratio</th>
<th>Std. Err.</th>
<th>z</th>
<th>P &gt;</th>
<th>z</th>
<th>[95% Conf.</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>1.61816</td>
<td>.3399917</td>
<td>2.29</td>
<td>0.022</td>
<td></td>
<td>1.071952</td>
<td>2.442685</td>
</tr>
<tr>
<td>Latino</td>
<td>1.387783</td>
<td>.2711269</td>
<td>1.68</td>
<td>0.093</td>
<td></td>
<td>.9462911</td>
<td>2.035252</td>
</tr>
<tr>
<td>American Indian</td>
<td>.7249518</td>
<td>.7578039</td>
<td>-0.31</td>
<td>0.758</td>
<td></td>
<td>.0934403</td>
<td>5.6245</td>
</tr>
<tr>
<td>Asian</td>
<td>1.374671</td>
<td>.3977887</td>
<td>1.10</td>
<td>0.271</td>
<td></td>
<td>.7796261</td>
<td>2.42388</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>1.738962</td>
<td>1.10164</td>
<td>0.87</td>
<td>0.382</td>
<td></td>
<td>.5024007</td>
<td>6.019075</td>
</tr>
<tr>
<td>Age</td>
<td>1.634221</td>
<td>.1793875</td>
<td>4.47</td>
<td>0.000</td>
<td></td>
<td>1.317877</td>
<td>2.0265</td>
</tr>
<tr>
<td>Sex</td>
<td>1.139886</td>
<td>.1660727</td>
<td>0.90</td>
<td>0.369</td>
<td></td>
<td>.8567376</td>
<td>1.516614</td>
</tr>
<tr>
<td>SAT Total</td>
<td>.9995104</td>
<td>.0005819</td>
<td>-0.84</td>
<td>0.400</td>
<td></td>
<td>.9983705</td>
<td>1.000652</td>
</tr>
<tr>
<td>Current GPA</td>
<td>.8230887</td>
<td>.0562055</td>
<td>-2.85</td>
<td>0.004</td>
<td></td>
<td>.7199816</td>
<td>.9409615</td>
</tr>
<tr>
<td>Return</td>
<td>.5143171</td>
<td>.0796453</td>
<td>-4.29</td>
<td>0.000</td>
<td></td>
<td>.3796793</td>
<td>.6966988</td>
</tr>
</tbody>
</table>
Table 23

Ethnicity and Return Rates

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Odds Ratio</th>
<th>p-Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>1.62</td>
<td>0.02</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.39</td>
<td>0.09</td>
</tr>
<tr>
<td>American Indian</td>
<td>0.72</td>
<td>0.76</td>
</tr>
<tr>
<td>Asian</td>
<td>1.37</td>
<td>0.27</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>1.74</td>
<td>0.38</td>
</tr>
<tr>
<td>Age</td>
<td>1.63</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Sex</td>
<td>1.14</td>
<td>0.37</td>
</tr>
<tr>
<td>SAT Score</td>
<td>1.14</td>
<td>0.37</td>
</tr>
<tr>
<td>SAT Score</td>
<td>1.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Current GPA</td>
<td>0.82</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Return Rate</td>
<td>0.51</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Note: “N” = 3008; LR $\chi^2$(11) = 90.12, $p < .001$; Pseudo “$R^2$” = 0.0551
CHAPTER 5
DISCUSSION

In one study, Weiss (1999) found that academic advisors’ anecdotal observations characterized traditional aged late applicants as less prepared and less motivated as compared to early and on time applicants. In addition, the advisors said they believed non-traditional late applicants were less prepared academically but motivated, with life circumstances as the major factor in late application. Anecdotal comments and other indications from academic advisors and counselors assert the same observations as Weiss (1999), seeing late applicants to be ill-prepared, less-motivated, and lacking commitment to the chosen institution. Are the characterizations of late applicants perceived by their advisors and counselors warranted? The primary goal of this study was to investigate relationships among and between students applying early and late to a targeted four year institution and academic persistence. Specifically, the researcher was interested in examining participant’s pre-entry attributes, college grade point average, and re-enrollment status in relation to application date.

This study affirmed the pre-conceived perceptions of advisors and counselors and found significant relationships among and between date of application on academic success and persistence. Findings conclude a significant relationship existed between application date and grade point average. Among those who applied early, the average grade point average was 2.62%, while the average was 2.18% among those who applied late. The difference in average GPA was found to be statistically significant, \( t = 6.12, \text{“} p \text{”} < .001. \) Furthermore, only 57.42% of late applicants were retained the following year as compared to 76.2% of early applicants. This difference in re-enrollment rate was found to be statistically significant. Several significant differences were found regarding demographic characteristics among early and late applicants.
First, a chi-square analysis demonstrated a significant relationship overall between ethnicity and application date. For further detail, a series of proportion tests were conducted to explore respective relationships between ethnicity and application date. Specifically, statistically significant results were found for White, Hispanics, and non-residents. However, for African American, Asian, and American Indian students, no significance was found regarding ethnicity and application date.

The analysis on gender supports an emerging trend in higher education, the decline in persistence and success of male students. A test of proportions found that among students applying early, only 40.83% were male, and, alarmingly, 78.6% of respondents applying late were male. Although little published research is available to support the concern for the success and persistence of the male student, supporting documentation from institutional research offices warrants the need to investigate this phenomenon immediately.

As stated previously, Braxton and Hirschy (2005) suggest that colleges and universities operate by guidelines focused on student welfare safeguards as a primary concern of all members of a higher education learning community. The authors also contend that decisions and day-to-day actions of university officials, faculty and staff must adhere to or align with the mission, goals, and values espoused by their college or university. Decisions and actions should not diverge with the mission, goals, and values adopted by the institution (Braxton & Hirschy, 2005). Upholding Braxton and Hirschy’s declaration, universities and colleges should make admission and retention policies on the basis of empirical data and offer the most comprehensive programming available to aid in the persistence of the late applying student.

With this positive and humane dedication in mind, careful consideration must be given to enhancing college admission policies and programming offered to late admitted students. So
long as institutions are under extreme pressures from internal and state entities to increase yearly enrollments; institutions may fall prey to ethical dilemmas by accepting students who may be ill-prepared for the rigors of a college education. This emphasis on headcount and other impediments to putting students first gives rise to implications for practice and research. The next section discusses implications and recommendations for practice and research in enhancing student success and retention in higher education.

**Implications and Recommendations**

With the significant findings that late application may be another direct or indirect variable in the student departure puzzle, one may ask why students apply late. Weiss (1999) suggests that students may not be aware of the timeline associated with college admissions. For example, many first generation college students may not have the familial knowledge and support to encourage early college exploration and application. To remedy this possible explanation for late applications; counselors and others at higher education institutions and high schools alike should take assertive actions to promote the importance of early application via the use of informational sessions, media marketing, and the training of high school teachers and guidance counselors (Weiss, 1999). In addition, Weiss (1999) suggests the use of outreach programs in churches, community organizations, and General Educational Development (GED) sites to promote the financial and educational advantages of applying early.

Weiss (1999) suggests a second explanation for late application is the fear of failure. Many students fear the thought of rejection along with the fear of not matching up with the other students. The fear of the unknown in conjunction with the thought of failure may lead to the procrastination of application submission. Possible solutions may involve preview days for high school and transfer students that allow students to interact with faculty, staff, and current
students that may alleviate the fear of the unknown. Preview days also allow students to meet other prospective students who may share similar fears that may cast a sense of normalcy of that fear of the unknown.

A third factor suggested by Weiss (1999) is the financial obligations that early application may generate. College attendance is often intimidating and burdensome, especially in times of economic difficulty. The initial application fee, ranging from fifty plus dollars, may cause financial strain for many families at the onset. In addition, future costs of orientation, housing, books, tuition, and fees may be such an overwhelming concern that many students may not know they can afford college until late in the application process. Although applying late does not alleviate the financial burden; it may buy time to save money, obtain scholarships, or make other financial arrangements. Once again, institutions and students may benefit by offering financial outreach programs on campus and in high schools. Students and parents may be unaware of financial aid application dates or resources such as government subsidies, scholarships, and aid packages that may help alleviate the financial burdens of college. Outreach programs offered in churches, schools, and businesses that employ college age students might assuage provide timely assistance. Finally, outreach programs should be targeted toward inner city schools and offered in other languages such as Spanish (Weiss, 1999).

Another possible factor in late application is simply the personal characteristics of some students. As Weiss (1999) notes, many students lack the self-motivation and determination to follow deadlines and procedures. For example, many advisors report students assert the reason they decide to attend school and apply late is because they just did not have the chance to get around to applying. For many, school is a second, third, or forth priority to work, family, and socialization. Often these students enroll in institutions hoping to succeed by putting forth a
minimal amount of effort that still preserves their higher level priorities. Weiss (1999) suggests that it may be difficult to hold students accountable for on-time admission if they are not committed to a college education. Furthermore, Weiss suggests that many of these students are using college as a “stop-gap” until they figure out what they want to do in their lives, supporting the need for professional school and college counseling that promotes better self-understanding and academic and career planning.

The “less than motivated” students are one population that warrants considerable attention by admissions offices. Again, admissions offices face considerable pressures from internal and outside entities to increase enrollments. At the same time, one must ponder the ethical dilemmas in accepting students knowing many are unlikely to persist. The current study found that 57.42% of late enrolling freshmen returned in comparison of 76.62% of students applying early. These data indicate that 42.58% of late applicants did persist to their sophomore year. One would suggest admissions officials should utilize student readiness inventories as a part of the late admissions process. Although a significant percentage of late applicants did not persist, many late applicants did persist to the next year. The purpose of this study is not to negate the acceptance of all late applicants but a call for institutions to take responsibility for providing student support when accepting late applicants. Specifically, institutions should require special courses, seminars, and individual and group counseling as part of late admissions contracts.
Further Research

Results of this study conclude that significant relationships exist among and between late application and academic persistence. However, the study does not reveal why late applying students do not perform as well or persist at the same rate as early applying students. For example, a late applying student may have been rejected at the first school of choice and unhappy about the alternative institution. Does this disappointment create a barrier in the formation of the institutional commitment that may impact the student’s success and ultimate persistence? Future research warrants investigation of the variables and attributes of the late applying student. For example, student readiness inventories can be administered as a part of the admissions process that may discern specific variable differences among and between early and late applying students. These differences may prompt institutions to require targeted programming to assist late applicants or deny admissions until the student proves ready for college rigor.

Replication of the current study also appears warranted for transfer students. Although retention research often encompasses “true” freshmen, many transfer students enter with similar characteristics and variables that may hinder degree completion. For example, one advisor at a large institution believed many late transfer students enrolled with little, if any, forethought or preparation, a point confirmed in a statewide study by Engels (1975). It is hypothesized that more dramatic findings may be discovered utilizing application date of the transfer student versus the true freshmen. In addition, the current study encompassed 310 late applicants out of a total of 3,509 students. It is conjectured that, at the given institution, the general late transfer population is approximately three times as large as the true freshmen late population, thus allowing for stronger need to continue the current study with the transfer population.
Replication of the current study is also necessitated at other four year institutions with varying demographics and populations. As previously mentioned, location, affiliation, and prestige of an institution may impact retention rates. The current study was conducted at a large, student centered, emerging research university that may attract a different population of students from the small or large rural university. Furthermore, investigations should include private institutions as well as women’s and traditionally Black institutions.

Further studies also merit examining early and late applicants not only from first year to second, but also to degree completion. As institutions are increasingly more dependent upon public index ratings and government funding, it may be wise to study retention in view of entrance through degree completion. The majority of retention research focuses on the first year experience but more studies should focus on the entrance variables, including application date that can help predict the success of students from application through graduation.

Conclusion

Attrition negatively impacts individuals, institutions, and society. The goal of this study was to determine if differences exist among and between university freshmen students who apply late versus early and academic persistence. Significant results conclude that differences do indeed exist among students applying late versus early. With the high cost of attrition; institutions may be wise to reexamine admission policies and programming available to help retain late applicants.

The hope and purpose of this study is to create a dialogue among college administrators, counselors and other leaders on best policies and procedures to assist late applying students. Armed with the knowledge that late applicants do not persist as often as early applicants;
institutions must ponder the ethical questions on admitting less prepared students. At many institutions, late applying students do not attend orientation or may be required to attend abbreviated late orientation sessions that do not offer access to counselors and advisors. The late applying freshmen may not be given the full advantage of the early applying students who attend two day orientation sessions designed to acclimate students into the academic and social culture of the given institution. Furthermore, late applying students may face other disadvantages that hinder success even before school commences. Students attending late orientations are often faced with full classes, overworked faculty and staff, and rushed programming. For example, many students often enroll in classes not required for the intended degree because required courses have been full months before the late student arrives on campus. Institutions accepting late students should offer appropriate services and programming to the late student who may arrive with pre-existing challenges not faced by early applying students.

This study has documented that late applying students do not persist or perform as well as students who apply early. In accordance with the mission statements and values of higher education institutions, colleges must fulfill their responsibility to all constituents and offer programming and a full range of academic services, including counseling, to ensure each student has the prospect of succeeding and reaching the goals he or she strives to achieve.


