ABSTRACT

FREEMAN, ADRIANNE DARNELL. The Influence of Late Course Registration on Student Success in Higher Education. (Under the direction of Dr. Michelle Bartlett)

Late registration is an institutional practice that is driven by the funding structures that are based on institutional enrollment. While late registration practices provide access for students who would be forced to remain out of school for an additional semester and facilitates funding for the institution, there may be negative impacts from the practice experienced by both the student and the institution. The purpose of this study is to examine the influence of late registration practices on student success and persistence at a historically black institution located in North Carolina.

The research questions that guided this study were (1) What are the demographics and student characteristics of late registrants of first-year students at a specific college? (2) How much variance is explained for GPA for students who have registered late after controlling the gender variable? (3) How much variance is explained for persistence for students who have registered late after controlling for the gender variable? Descriptive analysis, chi-square, linear regression, and logistic regression were the statistical methods used to analyze the data.

Descriptive analysis was used to analyze the data sample in order to ascertain the demographics and student characteristics of those students who registered for classes late. A chi-square analysis was conducted in order to determine if there was any significance between the demographic variables (race, gender, and age), student characteristics (student type, receipt of Pell) and late registration. Linear regression was performed in order to determine how much variance was present in the GPA for students who registered late after controlling for the gender variable. Finally, logistic regression was performed in order to determine how much variance was present for the persistence of students after controlling for the gender variable.

The analysis of the data indicates that late registration does impact the earned GPA of male students who register late. It was also indicated that female students who register late have a higher likelihood of persistence.

The Influence of Late Course Registration on Student Success and Persistence in Higher
Education

by
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DEDICATION

Aiden, Taylor, and Camryn.

~Auntie loves you!

BIOGRAPHY

Born to Darnell and Marilyn Sharpless, Adrianne Darnell Freeman is the eldest of two children. She was born in Greensboro, NC and spent her childhood moving around the south before returning to Greensboro, NC to attend high school.

Adrianne completed her Bachelor's in Professional Biology at South Carolina State University. After working and teaching at both the secondary and post-secondary levels, she went on to earn her Master's in Student Personnel Administration in Higher Education at the University of North Carolina at Greensboro. When she is not spending quality time with her family, she enjoys reading, photography and the opportunity to travel.

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CHAPTER 1

Introduction

As institutional funding has become more and more dependent on enrollment, enrollment management professionals have begun to realize an increased demand for faster, easier, and more convenient admission and registration processes. Part of this process is the increasing tendency to allow students to be admitted and enrolled in classes later into the term (Dowd & Shieh, 2014). While practices such as these are financially advantageous to the institution, these practices are not always in the best interest of the student and can have negative impacts on the institution as well. What Moltz in his *Inside Higher Ed* article, "Ending the Late Option" (2011), shares concerning San Jacinto College is one example. San Jacinto College, a state-funded institution, is a community college within the Greater Houston Texas area. The college receives its "per student funding based on the enrollments of fall semesters in even numbered years" (2011). In 2008, 1,300 San Jacinto students registered late for courses. "Nearly half of those late enrollees either failed or withdrew from the relevant course-about 15 percentage points more than their on-time enrolling peers" (Moltz, 2011). While these retention statistics were quite alarming, the late enrolled students, regardless of their status at the end of the term, had generated revenue for the college through both tuition dollars and state enrollment-based appropriations (Moltz, 2011).

This phenomenon was also documented at the College of Southern Nevada (Dowd & Shieh, 2014), who ended the practice of late registration after noting how it correlated with higher rates of student departure. Because the college received the majority of their annual appropriations based on the FTE enrollment that was measured as of the date of census, it still benefitted financially regardless of the students' status at the end of the semester. The institution participating in this study has reported instances in which students have been impacted by their

own late registration practices. These practices, have in some cases, impeded the student's academic progress and been a noted cause of student attrition.

Background of the Problem

Students who are admitted and registered on time are placed at a strategic advantage over those who are admitted late. "Late registration limits those opportunities for engagement" (O'Banion, 2012). Researchers have noted a myriad of issues that result from late admission or registration. Some of the most glaring disadvantages include the following:

- Many state and/or institutional financial aid programs operate on a first come, first serve basis with awards being made until funds are depleted. Late applications for aid may yield a much smaller than anticipated or needed award due to the lack of available funding. (McKinney & Novak, 2015)

- Students who are admitted late risk missing out on orientation which provides crucial information about how to navigate the institutional system (Tinto, 1993).

- Students who are admitted and register for classes late may miss the first day of class, thereby missing the first day of class routines that establish expectations, making it harder to forge relationships with other students and the instructor (Mancini, 2017, O'Banion, 2012).

Financial Aid. Financial aid awards provide students with the freedom to participate in social and academic activities that further the likelihood of persistence (Tinto, 1993). These awards may be presented in the form of student loans, grants, and federal work-study opportunities. Of the awards that are available, student loans are typically more readily available but less desirable. Grant and federal work-study opportunities, while are more limited, are more desirable because of the long-range benefits. Many researchers have reached the consensus that

grants and work-study are more effective in promoting persistence than loans and other forms of aid because (1) they provide a financial benefit and (2) students make contact with other people on campus, particularly faculty and staff (Tinto, 1993). Unfortunately, these opportunities are limited in availability. Late admitted students frequently miss the opportunity of being awarded such financial aid opportunities and therefore rely heavily on loans. Financial aid availability or the lack thereof, resulting from the late admission, may impact the trajectory of one's academic career. This lack of availability may cause students to adjust their academic plans to include an adjustment to the form of participation, full time to part-time, or delaying the start to when funds are available.

Orientation Programs. Orientation programs are designed to connect new students with members of the university community and with various communities within the community that make up its daily life. The long-term goal of orientation programming is to incorporate the student within the academic and social communities of the institution. Two primary benefits of orientation programs include (1) cementing the student's personal affiliations which tie the new student into the fabric of student culture and (2) enabling the newcomer to acquire useful information as to the informal character of institutional life (Tinto, 1993). Students who are admitted late to an institution risk missing out on orientation activities. Not experiencing the more frequent and rewarding interactions that occur between students and other members of the institution, these late admitted students also miss out on another opportunity to be encouraged to persist to completion in challenging times.

First Day of Class. While little quantitative research has been conducted to support the idea of "first day of class attendance" benefits, the concept is deeply rooted in theories such as Tinto's student departure theory (1987), and student integration model (1975) and "conventional

wisdom" (Mancini, 2017). From her observations at Valencia Community College, Mancini (2017) concludes that "students who started classes after the first day are often the first to withdraw or seek academic support." Research conducted by the Center for Community College Student Engagement (2012) indicates that students who miss the first day of class often miss due to late registration and are at an early disadvantage. This disadvantage is a result of the student missing out on course expectations, important course guidelines and instructions regarding early assignments. As such, students that enter the class late risk lower grades which usually results in a lack of persistence.

Problem Statement

Students who are admitted and enrolled in class late have been observed to have a higher course withdrawal rate, lower GPAs, and lower retention rates (Moore &Shulock, 2009). As a result, the rate of attrition during the first semester tends to increase. More importantly, the likelihood of persistence through to degree completion significantly may decline as a result. O'Banion (2012) points out that while almost every institution of higher education practices late registration, the evidence is mounting that this practice wreaks havoc on the ability of the institution to achieve any type of completion goals.

Purpose Statement

The purpose of this study was to determine if there is a relationship between the date in which the student registers for class and the student's academic success. Throughout the study, there was a focus on the late registration practices of a single institution. Academic success, for the purpose of this study, was measured by semester GPA, first semester completion, and persistence through to the next semester. A secondary aim of the study was to provide research

for the existing gap in the literature that relates to this topic in relation to the four-year institution.

Significance of the Study

The available literature has provided discussions on late registration policies and practices at both two-year and four-year institutions with the most notable discussions focusing on the two-year institution. The information presented provides mixed findings on the effectiveness of such policy and practice. For example, in 2002 in an effort to compare early, regular, and late registration on student success, Smith, Street, and Olivarez found that 80% of regular and 35% of late registering students were retained to the following semester. They also noted that new students who registered on time for courses only withdrew from 10% of their courses, while their counterparts who registered late withdrew from 21% of their courses. As a result of their findings, the trio of researchers finds late registration to be a "deterrent to student's academic success and retention." Conversely, in her doctoral research, Keck (2007) asserted that students who registered late had a high likelihood of successfully completing coursework (not earning a failing, incomplete, or withdrawal grade). These results supported her assumption that the success of late registrants is due largely because of the student's dedication or determination and focus on the task. Her findings also supported similar findings of a 1990 study conducted by D.T. Angelo in which he concluded that late registrants were likely to successfully complete classes. The studies that produced these three contradictory findings were all conducted on community college campuses. With this in mind, the intent of this study was to provide findings that will prove to be significant in adding to the already existing body of literature as it relates to late registration policy and practice; however, focusing on the four-year institution provided an

opportunity for the analysis of institutional policy and practice as it relates to late registration at a four-year institution and the implication it has on student success.

Theoretical Framework

There are a number of theories that relate to student attrition, persistence, and success in college. These theories range from psychosocial and cognitive theories rooted in the individual psyche to theories that offer societal and environmental factors for the basis for persistence, with some combining causal factors from each of the perspectives (Weiss, 1999). The theory that provided the theoretical foundation for this study was Vincent Tinto's 1993 version of his theory of departure, the Longitudinal Model of Departure from Institutions of Higher Education.

Vincent Tinto's Longitudinal Model of Departure from Institutions of Higher Education was appropriate for the examination of late registration practices and their impact on student success because of the model's focus on what happens within the institution during the pre-entry and post-entry events. The model examines three major cornerstones of student departure. The first focuses on events that occur within the institution prior to and following a student's enrollment. Secondly, the model examines the longitudinal process by which individuals come to voluntarily withdraw from institutions. Finally, the model provides a description of the individual and institutional attributes that are associated with the withdrawal from the institution.

While the model seeks to explain the behavior of departure, it is not intended to function as a systems model of departure. Through this model, Tinto illustrates that the degree in which a student interacts or engages with the institution and its community can enhance or weaken the student's intention and commitment to the university, thereby influencing the student's eventual departure from the university. In making his case against late registration practices, O'Banion (2012) posits that late registration limits the opportunities for engagement with the institution is,

therefore, a positive indicator for departure. This underscores Tinto's assertion that if a student has a negative experience or lacks engagement with an institution they are more prone to depart from the institution.

For the purpose of this model, Tinto defines departure as a culmination of a longitudinal process of interactions that occur between the student who possesses a set of given "pre-entry" attributes, skills, financial resources, prior educational experiences, dispositions (intentions and commitments) and other members of the institutions academic and social communities (1993). The "pre-entry" attributes as have been defined in the studies of Weiss (1999) include family background, socioeconomic status, gender, race, academic ability, and parental education. These attributes are important to note because of their indirect influence on departure which occurs by the influence these attributes may have on the formation of the student's commitment to the institution. Additionally, Tinto uses the model to illustrate how experience modifies commitment and intention as it relates to the university and educational attainment. For the purpose of this study, the longitudinal model of departure will be used to illustrate if students who possess certain pre-entry attributes are negatively impacted by the late registration practices utilized by a specific four-year institution.
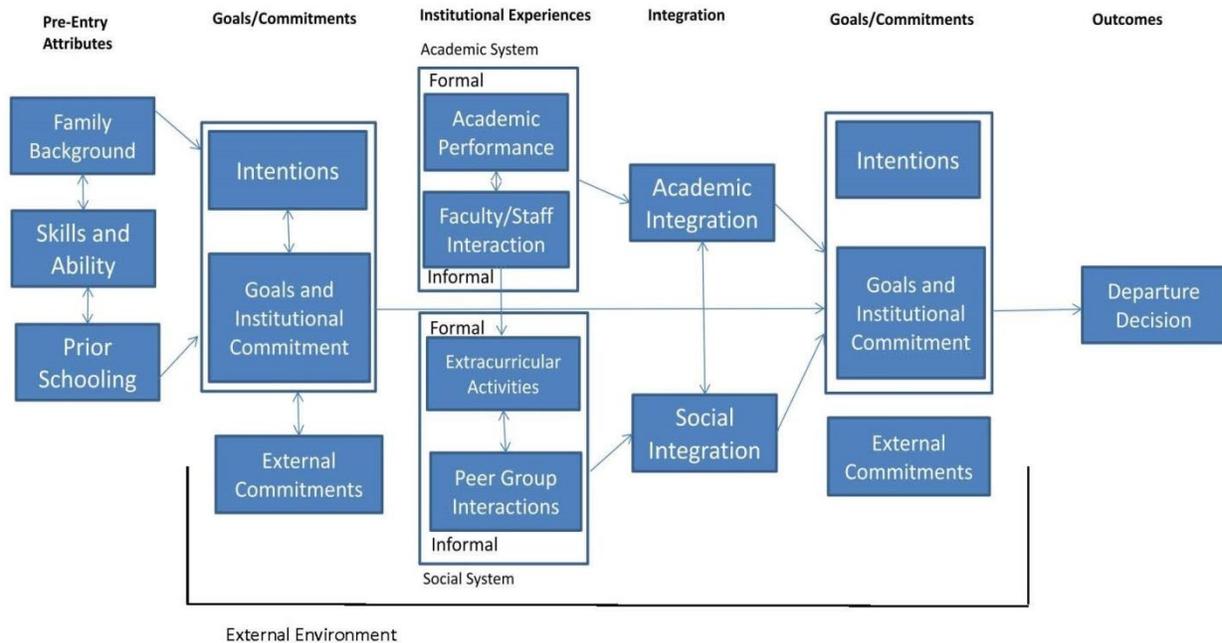
Figure 1.1. Theoretical Framework illustrating the longitudinal process that impacts the student's decision to depart from the institution.

Conceptual Framework

The diagram below illustrates the conceptual framework of the proposed study. This includes the retention factors that are to be studied, the groups of participants to be compared, how these groups will be identified, and the anticipated outcomes. This is significant, not only because of the lifelong impact the student outcomes may have, but also because of the impact student outcomes will have on the institution.
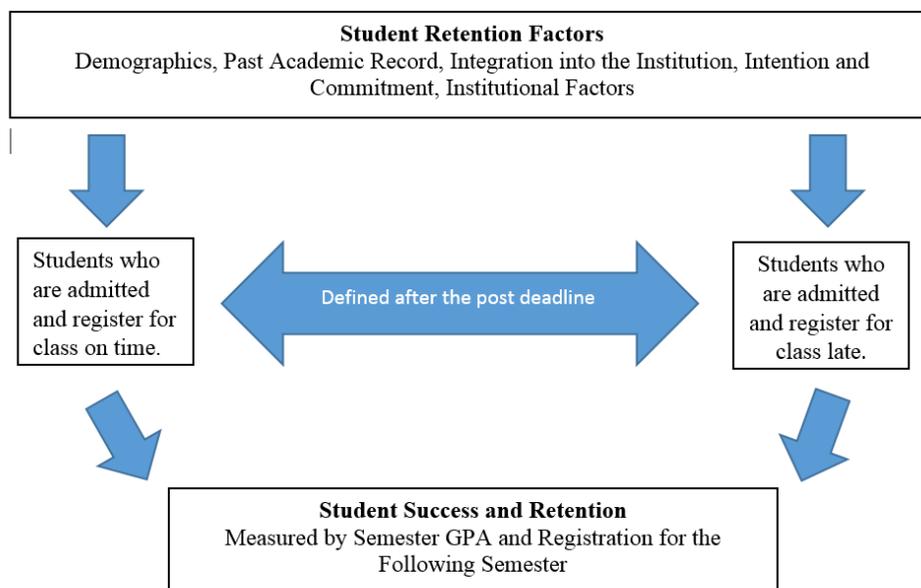
Figure 2. Conceptual Framework illustrating the factors to be studied, the participant groups to be compared, how the groups are to be identified, and the measure of anticipated outcomes.

It is important to study the causes of attrition and student persistence because of their impact on both the student and the institution. When a student does not persist, the institution loses a revenue stream. More importantly, a student may experience the lifelong impact of delaying or derailing his/her life's aspirations (Freer-Weiss, 2004). The date in which a student completes a college application and registers for class is related to his or her academic success. In a 2004 study, Freer-Weiss examined the application and registration behaviors of 285 first time matriculated freshmen at an open-access college. The purpose of the study was to understand if the registration pattern impacted the student's academic achievement and his/her persistence. During this research, it was revealed that not only did those students who were admitted and registered late have a higher rate of attrition, but also the demographic characteristics of those who registered late were typically different from those who were admitted and registered on time.

The diagram above outlines the conceptual framework of the proposed study. This begins with the two groups that will be examined through this study, students who are admitted and register for classes on time and students who are admitted and register for class late. For the purpose of this study, admitted and registered on time will be defined as any student that is admitted before university identified deadlines and have classes secured during the assigned registration period. Admitted and registered late will be defined as any student who is admitted after the university identified deadlines and classes are secured after the registration period or official start of classes. The retention factors that will be examined in this study include the following: demographics, past academic record, integration into the institution, intention and commitment factors, and institutional factors. These factors will be measured by analyzing student outcome factors such as semester GPA and registration for the following semester.

Definition of Terms

This study includes a list of terms that relate to registration protocols, student type, student success, persistence, and statistical analysis. The following list provides a definition for each term.

BANNER Repository: The BANNER repository is a comprehensive student information system that provides a full range of functions from strategic management to records management. The university uses BANNER as the central repository for current student information. (https://www.ellucian.com/Software/Banner-Student/)

Census Date: The date on which a school takes a "snapshot" of its enrollment for reporting or record-keeping purposes. For the purpose of this study, the census date will be identified s the date that marks the end of the first 10 percent of the semester (Federal Student Aid, 2011).

Chi-Square: The Chi-Square Test of Independence determines whether there is an association between categorical variables (i.e., whether the variables are independent or related). It is a nonparametric test (https://libguides.library.kent.edu/SPSS/ChiSquare).

Descriptive Statistics: Brief descriptive coefficients that summarize given data set, which can be either a representation of the entire or a sample of the population. Descriptive statistics are often broken down into measures of central tendency and measures of validity (http://methods.sagepub.com/Reference/encyc-of-research-design/n111.xml, 2010).

First Time New Freshman (First Time Undergraduate): A first time new freshman shall be defined as any student who has enrolled in the university in a degree seeking program and has no prior post-secondary course enrollment. This includes any student that may have enrolled in summer school during the summer prior to the fall term immediately following their high school graduation (UNC Policy Manual, 2015).

Frequencies: The number of times an event occurred within an experimental study (Nicol, 2011).

Linear Regression: A statistical method that allows for the summary and study of relationships between two quantitative variables. This method attempts to model the relationship between two variables by fitting a linear equation to observed data (Daniel, Onwuegbuzie, Leech, 2011).

Logistic Regression: A logistic regression is a statistical method used in research designs that call for analyzing the relationship of an outcome or dependent variable to one or more predictors or independent variables when the dependent variable has only two categories, is a nominal scale variable with three or more categories, or is an ordinal scale variable with three or more categories (Yang, 2011).

Standard Deviation: A statistical measure that provides a measure of variability of a data set (McClaave& Dietrich, 1991).

Transfer Student: A transfer student shall be defined as any student who has enrolled in any post-secondary institution after graduation from high school (UNC Policy Manual, 2015).

Withdrawal: The act of leaving school before graduation. For the purpose of this study, withdrawal has been used interchangeably with departure. (Murtaugh, Burns, and Schuster, 1999).

Univariate Analysis: The simplest form of analyzing data in order to describe causes or relationships. This is done by summarizing the data and identifying patterns within the data. This analysis involves data that contains only one variable. It does not deal with causes or relationships.

Variance: The measure of variability for a collection of data values is a number that is meant to convey the idea of spread for the data set. The most commonly used measures of variability for sample data are the range, interquartile range, variance or standard deviation and coefficient of variation (Peck, Olsen & Devore, 2001).

Research Questions

Listed below are the three research questions that guided the activities related to this study:

1. What are the demographics and student characteristics of late registrants of first-year students at a specific college?

2. How much variance is explained for GPA for students who have registered late after controlling the gender variable?

3. How much variance is explained for persistence for students who have registered late after controlling for the gender variable?

Limitations

The primary limitation of this study was the literature that is currently available. The published literature that is available is primarily based on research that has been conducted on two-year or open-enrollment campuses. Limited research has been conducted on campuses of four-year institutions. As a result, there is a perceived gap in literature as it relates to the four-year institution. Additional research must be conducted at a four-year institution in order to close the perceived gap in the literature.

The selected data set for this study was a secondary limitation. The data set will be drawn from a single four-year public institution that has been designated as a Historically Black College or University (HBCU). The approximate enrollment of the institution is 5,100 students, which includes undergraduate, graduate, and professional students. In order to provide a more detailed examination of the impact of late registration on student's academic success, data is needed from institutions that vary in size, type, and location. Additionally, the data set will only include first time freshmen, transfer, and readmit students. In order to have a substantial data set, enrollment data was collected from the fall and spring terms for three consecutive years.

Delimitations

There were several noted delimitations of this study. The first included the chosen research method. A qualitative study would have allowed the exploration of intent, commitment, and experience, which has been a factor relating to student retention (Tinto, 1993). Tinto posits that if a student has a positive experience with an institution, his/her commitment to the institution and degree attainment is strengthened. Conversely, if the student has a negative

experience with an institution, his/her commitment to the institution and degree is weakened. In order to narrow the scope of the study, it has been decided to forgo a qualitative study that would focus on intent and commitment. The research focused on specific individual student factors such as age, gender, race, and past academic success (Tinto, 1993). A second delimitation of the study was the bound for inquiry set by the researcher. The data sample for this study was collected from the admission cycles from fall 2015 through the spring 2018 term.

Summary

Late registration practices have been championed by many. The arguments that support the practice of late registration are wide-ranging. They include the practice enhances access or opportunity to the institution for students to the practice generates revenue for the institution. Unfortunately, many institutions have documented that this practice is not always advantageous for the student. This study is was conducted in order to explore how the late registration practices at a four-year institution impacted the first year retention rate of first year freshmen, transfer, and readmit students.

Chapter one provides an introduction to the practice of late registration and how it may negatively impact student success. This discussion provides a foundation for the basis of this study and introduces the proposed research questions that will guide the study. This foundation is presented in the form of the conceptual and theoretical frameworks. These frameworks will be further discussed in Chapter Two. The information provided in Chapter One also provides justification for the proposed research. To supplement the understanding of the information that is being introduced, a list of key terms that will be used throughout the study and the associated definitions are presented. Also presented in this chapter is a discussion of the limitations of this study. The limitations are identified as the available literature and the selected data set for the

study. In addition to the limitations, the delimitations of the study are also provided in this

chapter.

CHAPTER 2
Literature Review

Introduction

The purpose of this study was to determine if the date in which a student applies and is admitted to college and subsequently registers for class impacts the student's academic success. The study also created an image of students who persist through the first semester and those who do not. This chapter provides a review of literature that will serve to identify and provide an explanation of research studies, theories, and models related to student departure or attrition and late registration. The final section of the review will include an examination of student retention factors such as demographic factors, lack of integration, intention, and commitment, and institutional factors.

Student Retention Models and Theories

Alexander Astin- I-E-O College Impact Model. AlexanderAstin's Input-Environment-Output (I-E-O) College Impact Model was developed to emphasize the changes that are associated with institutions and student experiences (Ahmad, Anantharaan, and Ismail, 2011). The I-E-O Model is generally used to conduct assessments in higher education. Many leaders and researchers not only use it to assess programs, policies, and practices; but to describe and predict institutional outcomes.

The I-E-O Model consists of three key elements: input, environment, and output. Inputs, as per Astin, are the personal qualities that a student possesses and brings with them to the institution (Smith, Street, and Olivarez, 2010; Ahmad, Anatharaman, Ismail, 2011). The environment refers to the experiences students have while at the institution (Smith, Street, and Olivarez, 2010; Ahmad, Anatharaman, Ismail, 2011). Astin theorizes that the input variables have a significant impact on the environment variables. These two variables work together to

influence the last component of the model output (Smith, Street, and Olivarez, 2010). Output

references the talents developed while enrolled in the school (Smith, Street, and Olivarez, 2010;

Ahmad, Anatharaman, Ismail, 2011).

Metzner and Bean-Model of Attrition for Nontraditional Students. As enrollment has

become increasingly more composed of the "nontraditional" student, these students have

presented a higher rate of attrition than do their traditional counterparts (Bean and Metzner,

1985). As this has become more of a phenomenon, there has become a need to understand why

these students are not persisting. Attrition studies had been almost exclusively dedicated to the

traditional student with the exception of those studies that had simply tabulated the dropout rates

of nontraditional students. After linking models of traditional student attrition and behavioral

theories and conducting extensive literature reviews, Bean and Metzner developed a conceptual

model of nontraditional student attrition. This model provides a definition of the nontraditional

student and describes the variables that contribute to their attrition.

According to Bean and Metzner's 1985 model, the nontraditional student possesses one

or more of the following characteristics (Bean and Metzner, 1985, Metzner and Bean, 1987):

- does not live on campus

- older than 24

- is enrolled less than full time

Age, which is typically used to classify a student as traditional or nontraditional, is not

the most important distinction between the two as is typically thought. The most important

distinction, according to Chickering, is the student's residential status as it has a significant

impact on the socialization of the student (Bean and Metzner, 1985). In-campus living has a

profound impact on the socialization of traditional students, while commuter students who spend

less time on campus are less socialized with the institutional community than their traditional counterparts.

In the classification of traditional or nontraditional students, age is the secondary factor. Students who are over the age of 23 are generally considered nontraditional students. This characteristic is important because these students "have already developed self-control and values typically identified with maturity, and are less susceptible to socialization than traditional students" (Metzner and Bean, 1985).

The final determinant of a student's status as a traditional or nontraditional student is enrollment status. Enrollment status has been found to impact the student's "socializing influence" Part-time enrollment reduces the amount of student-to-student and student-to-faculty contact (Metzner and Bean, 1985) that is maximized during full-time enrollment.

Metzner and Bean's model is structured based on the linkages made among the four variables that influence the dropout decisions for nontraditional students (Bean and Metzner, 1985; Metzner and Bean, 1987).

1. Students who exhibit poor academic performance are expected to drop out at a higher rate than those who perform well academically.

2. A student's intent to leave is not influenced by psychological outcomes, but also by academic variables.

3. The background and defining variables such as high school GPA and educational goals that impact the decision to leave are often mediated by internal variables.

4. Environmental factors such as finances, employment, support, family responsibilities, and transfer opportunities often have a substantial impact on whether or not a student will dropout.

Ultimately, the model developed by Metzner and Bean recognizes that the nontraditional student has less opportunity to become socially integrated on campus and therefore social integration plays less of a role in attrition for these students. It is the influence of these four variables that have the ultimate impact.

Metzner and Bean also include two compensatory interaction effects in their model of attrition for nontraditional students. The first is between the two elements "Academic Variables" and "Environmental Variables". In this case, Metzner and Bean theorize that positive environmental variables can be influential enough for a nontraditional student who has a low value for the academic variables to remain in school (Bean &Metzner, 1985; Metzner& Bean, 1987; Summers, 2003). Conversely, Bean and Metzner posit that if a student has very high academic variables, but the environmental variables are negative, the student is likely to drop out of school. The second compensatory interaction is between the elements "Academic Outcomes" and "Psychological Outcomes" (Bean &Metzner, 1985; Metzner& Bean, 1987; Summers, 2003). In this interaction, Metzner and Bean consider the psychological outcomes to influence the student's decision to drop out of school (Bean &Metzner, 1985; Metzner& Bean, 1987; Summers, 2003). In considering a positive psychological outcome versus poor academic outcomes, the theory is that the student will remain in school, while the student who experiences a negative psychological outcome but positive academic outcome is likely to drop out (Bean &Metzner, 1985; Metzner& Bean, 1987; Summers, 2003).

Vincent Tinto-Longitudinal Model of Institutional Departure. Tinto's 1975 model of student departure was based on the work of Emile Durkheim, French academician and intellectual, which has served as a guide for many of the studies and subsequent theories of attrition and student departure from higher education. Many well known and often used theories

are based in these studies and have pointed out that it is "important to understand that institutional departure does not necessarily lead to suicide or represent suicidal behavior" (Tinto, 1993); however, suicide and institutional departure do draw many striking analogies that are worth taking note. The most striking being that both represent a form of voluntary withdrawal from the local communities that is as much a reflection of the community as it is of the individual who withdraws (Tinto, 1993).

Durkheim posits that there are four modes of suicide: altruistic, anomic, fatalistic, and egotistical. Of the four modes, egotistical suicide helps to shape the thinking and thus provides a foundation for future theories of institutional departure from higher education. Egotistical suicide is a mode of suicide that arises when individuals are unable to integrate socially or intellectually with their community (Tinto, 1993). Here, Durkheim is referring to social integration as the personal affiliation from the day to day interactions among different members of society and the intellectual integration as the sharing of values that are held in common with others within the society.

With the use of the term integration, Durkheim implies that the individual has conformed to the norms and values that define the community. Institutions of higher education are microcosms that are composed of both academic and social communities. These communities may include subcultures that include their own set of values and norms. In order to achieve persistence, students must find membership and the support the membership provides within these communities.

In addition to integration within communities, theorists have been able to relate other aspects of Durkheim's suicide theory to models of attrition. For example, the idea that one's disposition and how one reacts to stressful situations or conditions is indicative of how likely one

is to adopt a suicidal response. The educational analogy to suicide being that it is these same dispositions that persuade an individual to depart from an institution rather than persist. These dispositions are typically measured as intentions and commitment (Tinto, 1993).

In the 1993 revision to his model, Tinto maintains the structure of the original model while offering a new perspective on student departure. This perspective, the failure to negotiate the rites of passage, was influenced by the 1960 study conducted by Arthur Van Gennep.

Arthur Van Gennep's classic 1960 study, The Rites of Passage, provided Tinto with a conceptual framework through his studies of the rites of passage in tribal societies. Through this study, Van Gennep examined the process individuals in these societies undergo during their transition from childhood to adulthood. This examination provides an understanding for not only student departure, but also the process of transitioning for high school to college,

Van Gennep (1960) identified three rites of passage that occur during an individual's life. These phases include the following:

1. separation: Involves the separation of the individual from past associations, maybe characterized by a marked decline in the interactions with people (Van Gennep, 1960; Tinto 1993).

2. transitions: Individuals begin to interact in new ways with members of the group into which they seek membership. Isolation, training, and orientation are essential in ensuring that there is a separation from past associations and the formal adoption of new behaviors and norms (Van Gennep, 1960; Tinto 1993).

3. incorporations: Includes the taking on of new behaviors and patterns of interactions within a new group in order to establish membership (Van Gennep, 1960; Tinto 1993).

Van Gennep posits that in order to gain full membership within a society, they must first pass through all three phases.

Tinto (1993) suggests that Van Gennep's findings provide a frame for which student persistence may be examined and by extension the process of student departure. Tinto posits that student persistence, most notably that first-year college, is analogous to the transitions experienced in one's life. In order for persistence to occur, the student must disconnect or separate himself/herself from that which is familiar (separation). This is much like moving away from home and isolating oneself from familiar relationships. The student enters a period of transition or adjusting to his/her surroundings once he/she arrives at school. The transition can be difficult and the failure to successfully navigate the difficulties faced during the early phases could lead to departure (Tinto, 1993). During the final phase, incorporation, the student begins to accept the new norms and patterns of behavior.

In addition to the three passages, Van Gennep noted that going through a formal ritual or ceremony is required to successfully enter a new society. In education, ceremonies such as graduation serve this function. Unfortunately, in higher education, these ceremonies rarely exist. This lack of formal confirmation of membership increases the likelihood of withdrawal as students lack a sense of belonging (Tinto, 1993)

Student Retention Factors.

Bean 2001 provides the following description of student retention and the issues associated with this institutional phenomenon. "A leaver or dropout is a student who enters a college or university with intention of graduation, and due to personal or institutional shortcomings, leaves school and for an extended period of time, does not return to the original, or any other school." Research on this topic has identified factors that influence the likelihood

that an institution will have the ability to retain a student through to graduation. These factors include past academic performance, demographic factors, lack of integration, intentions, and commitment, and institutional factors. A review of the literature for each of these factors will be presented.

Past Academic Performance. Academic readiness is determined by assessing three distinct overlapping qualities. These qualities include (1) the high school course-taking patterns, (2) high school grade point average (GPA), and (3) standardized tests (ACT or SAT). High school course-taking patterns, according to DeAngelo and Franke (2016), provide an indication of the exposure of the content knowledge needed for success in the introduction to college coursework. High school GPA, according to the researchers, measures the development of the core academic skills while distinctively measuring noncognitive skills such as effort and study skills. Finally, DeAngelo and Franke (2016) note that standardized test scores provide a measure of ability and core academic skills. The overlap in these qualities occurs between high school course-taking patterns and high school GPA and high school GPA and standardized test scores. DeAngelo and Franke (2016) point out that the high school course-taking patterns and the high school GPA overlap by their assessment of the student's content knowledge and high school GPA and standardized tests overlap by their assessment of the student's core academic skills.

Research conducted on prior academic histories has concluded that academic readiness has a positive correlation to student retention at an institution of higher education (Tinto 1993; Radunzel, 2017). Radunzel (2017) points out specifically the impact of high school course-taking patterns by making note of a 2008 policy brief by Achieve. This brief advises that students who enroll in a math sequence beginning with Algebra I and continuing with subsequent math courses have skills like critical reasoning and higher order thinking that are developed and continue to

build. As a result, the highest level of math completed is considered to be one of the most important factors associated with bachelor's degree completion.

Demographic Factors. There have been numerous studies conducted that have examined the demographic factors and how they influence student departure. The results of these studies have identified a number of factors that institutions must consider when developing programming or interventions that will counter student departure. Schmid and Abel (2003) highlight a community college study conducted by the Educational Testing Service (ETS) in 2000 that identified seven demographic factors that put students at risk for not attaining a degree. These factors included delayed entry, part-time enrollment, full-time work, financial independence, dependents, single parenthood, and community college attendance without a high school diploma. While Schmid and Abel (2003) were specifically examining the demographic risk factors for student success on a specific community college campus, their research indicates that the named demographic factors are also applicable to the four-year institutions.

More recent studies have examined the effects of demographic factors and their influence on student departure. Reason (2009) highlights these studies in his review of research related to college student retention. Reason specifically identifies gender and race/ethnicity as two of the more prevalent demographic factors that are identified in the more recent research as having an influence on student retention and withdrawal.

According to Reason (2009), the research as it relates to gender has yielded mixed results. Reason's research presents multiple theorists Astin (1975), Tinto (1987), and Astin, Korn, and Green (1987) who has determined that gender significantly influences student withdrawal. As he continues his review of the literature, he presents research conducted not only by himself (2001), but also by St. John et al (2001), and Murtaugh, Burns, and Schuster (1999)

that yielded significantly different results. Thus Reason concludes that the significance of the influence of gender is determined by its interaction with other variables.

Reason (2009) also explores the influence of race and ethnicity, which is very prevalent in research related to predicting retention or departure. Race and ethnicity were found to be significant in predicting student departure. Murtaugh, Burns, and Schuster (1999) note that racial groups may have different experiences that may contribute to varying degrees of integration, commitment, and engagement that are a result of differing cultural values and norms as they relate to education.

Lack of Integration. Tinto (1993) determined that "less than 25 percent of all institutional departures, nationally, take the form of academic dismissal". This indicates that most departures from institutions occur by voluntary action. This action is a reflection of the student's level of satisfaction with the social and intellectual experiences within the institution and how they have facilitated the student's integration into the social and intellectual life of the institution (Tinto, 1993). To support this claim, one can look to Metzner and Bean's Model of Attrition for Nontraditional Students (1985, 1987). Here, Metzner and Bean theorize that even if the student has a positive academic experience, the student is likely to withdraw if he/she are not satisfied with his/her environment or had a negative psychological experience within the institution. Tinto (1993) identifies this as incongruence or a lack of institutional fit.

"Students who do not feel at home in an institution or do not believe an institution can help them meet their goals are unlikely to persist"(Karp, Hughes, & O'Gara, 2010). Incongruence is a result of the student's perception that he/she does not fit in or does not conform to the social and intellectual norms of the institution. Students that feel that they do not

fit in will withdraw as a result of determining that they no longer desire to be in the institutional environment and that continued enrollment is not in their best interest (Tinto, 1993).

Isolation, which may often be a result of incongruence, is the result of the lack of meaningful or substantial contact with peers and other members of the social and academic communities of the college (Tinto, 1993). Tinto notes a 1976 study of voluntary withdrawal from a liberal arts college in order to build his integration framework. The results of this study indicate that those students that persisted to degree completion were more likely to either identify with someone on campus or maintained a significant relationship with someone on campus than did the "voluntary leavers". Academically, according to the study, students that feel isolated are very similar to those that persist. These students simply have not established a significant personal connection with someone on campus. The results of this study support Astin's theory of Study-Faculty Interaction. Astin theorizes that a student's frequent interaction with faculty or staff has a stronger correlation to their satisfaction with the college than any other noted interaction or student or institutional characteristic. The frequent interactions with the faculty and staff of an institution strengthen the overall student satisfaction with all aspects of institutional experiences (Astin, 1999).

Intentions and Commitment. Intentions and commitment have long been associated with student departure (Tinto, 1993). Tinto (1993) defines intentions as the goal that the student sets that is specified by the level and type of occupation that is desired. The degree in which the individual pledges to complete those goals and the institution in which he/she are enrolled is considered by Tinto (1993) to make up the student's commitment.

Intentions parallel student success in that there are multiple definitions of the two constructs. The intention and the idea of student success are different for each student that enters

college. While there are several indicators of intention and student success, many consider degree attainment to be the most definitive measure (Tinto, 1993; Kuh et al, 2006).

Intention has a high impact on commitment and like intentions; there are varying degrees of commitment to education. An individual's commitment to education can be impacted by the student attending an institution that is not his/her first choice, a student enrolling in an institution with the intention of transferring, and the student attending college at the expectation of their family (Tinto, 1993).

Tinto's Longitudinal Model of Student Departure (1993) posits that the interactive experiences which enhance a student's social and intellectual integration may reformulate the intention and commitment the student may have had at enrollment. This can enhance the likelihood of persistence to degree completion as positive integration can increase goals and strengthen the student's commitment.

Institutional Factors. A 2009 study conducted by Osegura and Rhee focused on the influence of the institutional retention climate on student persistence to degree completion. Within this study, the researchers specifically focused on the norms and values of the academic environment and determined that if the climate of the institution is one in which withdrawal is the norm, more students are likely to follow suit. In addition to examining student characteristics that play into withdrawal, it is important to examine those institutional factors that contribute to the student's experience that play a role in the decision to depart from the institution.

Orientation programs have been the answer for some institutions to resolve the issue of student departure. Two primary benefits include (1) cementing the student's personal affiliations which tie the new student into the fabric of student culture and (2) enabling the newcomer to acquire useful information as to the informal character of institutional life (Tinto, 1993).

Murtaugh et al. (1999) determined that students who are more oriented to the university are more likely to persist to degree completion. Orientation programs allow students to be introduced to institutional values and norms. Osegura and Rhee (2009) posit that the disengagement with these values and institutional norms have an influence on the student's decision to leave campus.

"Other theorists have placed greater weight on how cultural norms organizational structures and processes may affect student success, but generally support Tinto's dual emphasis on student attributes and institutional practices as the key to understanding college persistence and completion" (Brock, 2010). Bureaucratic factors are an institutional factor that should be examined when exploring student withdrawal.

Bureaucratic factors of an institution are defined as the way in which formal exchanges of resources between a student and institution take place and may also include other interpersonal aspects (Bean, 2005). An example of these exchanges include the exchanges that may occur between a student and the Financial Aid Office in order to complete the financial aid application and receive information regarding the financial aid award. Another example is when a student interacts positively with the Admissions Office to receive admissions information and to complete the admission application process. Bean (2010) believes that while the bureaucratic factors of an institution are essential, they can be disastrous if a student fails to successfully negotiate these formal requirements and too much emphasis is placed upon them. For "pragmatic" students, Bean (2010) indicates that the bureaucracy doesn't pose an issue for their completion as rules and regulations do not present less of an obstacle. For the less pragmatic student, the bureaucracy can cause greater alienation. Bean (2010) theorizes that students who feel helped and empowered by the exchanges that they have with service offices on campus will

feel loyal and persist through completion, while those who get lost in the bureaucracy feel powerless in the "maze" and can become alienated and tend to withdraw from school.

Late Registration Practices. Just as the definitions and policies regarding late registration vary (Tompkins & Williams, 2015), the overall conclusions regarding the effectiveness of this practice vary as well. "Some policymakers and practitioners laud late registration for granting access to students who otherwise would not be able to enroll in a given semester" (Weiss, 1999), while others feel that late registration can be detrimental to both the student and institution (O'Banion, 2012). The one thing that can be agreed on is that late registration is one of the bureaucratic factors that all students must successfully navigate. One of the first impressions that a student forms about an institution develops during this process (Mills, 2014). Responses from the Noel-Levitz 2011 Student Satisfaction Survey indicate that many students find this to be a challenge. Among the perceived challenges of this process are the deadlines and course availability. As discussed in previous literature, if the student fails to successfully navigate these challenges, it may lead to feelings of alienation and powerlessness-this ultimately being disastrous for the student and leading to the departure from the institution (Bean, 2010).

One of the earliest noted studies on late registration practices was conducted by Chilton in 1964. The purpose of this study was to determine if there were a significant difference and relationship between students who enroll late and those who enroll on time. For this study, Chilton chose a cohort of students that consisted of 325 freshmen and 325 sophomore students who enrolled at the selected institution between 1955 and 1962. The results of this study indicate that by the end of the semester, late registrants were more likely to have been placed on academic probation than were regular or on-time registrants. Additionally, late registrants were

more likely to drop more classes. Further analysis conducted yielded a profile of students who were likely to register late. Chilton noted that these students were more likely to be transfer students, which he noted may indicate the student's lack of stability.

As previously noted, the gap in literature regarding this topic extends to literature related to the four-year institution. Parks (1974) followed Chilton's research by conducting a study on a four-year campus as well. The results of his study were similar to those of Chilton. He found that late registrants tended to be older than the regular registrants and were more likely to be placed on academic probation than their on-time counterparts. Parks also noted a significant statistical difference between the GPAs of late registrants and on time registrants. This confirmed his hypothesis that late registrants were more likely to drop classes than those who registered on time.

Other studies that examined late registration and its impact on student success that was conducted at the four-year institution yielded the same general results. In a quantitative study, Dirkhoff (1992) found that students who registered late were more likely to drop the course. Bryant, D. Darnley, J., Fleming, S., Somers, P. (1996) found that students who registered late were more likely to be nontraditional, placed on academic probation, and experience social and/or academic isolation. One study that highlights the four-year institution is the study conducted by Neighbors (1996). This study compared the registration behaviors of students at a community college, private four-year institution, and a public four-year institution. The results of this study varied somewhat from others that have been conducted. Neighbors found that both early and late registrants dropped courses at the same rate, an average 1.0 course per term, while regular registrants only dropped an average of 0.8 courses per term. Consistent with other studies

was the institutional withdrawal rate, with late registrants withdrawing at a higher rate than early or regular registrants.

Davis, Frogge, and Reid (2013) conducted a study in which they analyzed the relationship between the application date and influential student success factors. The purpose of the study was to determine if there was any relationship between the date in which a student completes their application to the institution and subsequently registers for class and his or her academic success. A random quota sampling from the selected institution's enrollment of 13,565 students was selected using data from four academic terms. The study found that there was a statistically significant relationship between the application and registration dates and student success when variables such as age, gender, financial aid, and enrollment in developmental courses are factored into the analysis. There are several studies in which the focus is the relationship between application and registration deadlines and student success. For a comprehensive review of studies related to this topic see Table 1.

To understand late registration and its impact on student success, researchers have examined why students register late. Maalouf (2012) and Keck (2007) conducted qualitative surveys in order to identify what factors lead to students registering late. Many of the responses to these surveys indicated that many students register late simply because of procrastination and delaying the decision to go to college. Other responses indicated that there was a delay or difficulty in processing financial aid, a lack of awareness of the start of class, the failed plans to attend another institution, other family obligations, and the uncertainty in a work schedule.

In addition to identifying why students register late, researchers sought to identify who these students may include. Many studies have identified the characteristics that are common to late registrants. In her 2007 study, Keck determined that full-time or nontraditional students are

more likely than nontraditional or part-time students to enroll late; male students are more likely than female students to enroll late than females; white and Asian students are more likely to enroll on time than do Black and Hispanic students. These findings are similar to those of Maalouf with the noted exceptions being that Maalouf (2012) found that it was the nontraditional student, and non-curricular student who does not declare a major that is more likely to register late. Keck's findings are also similar to the demographic pattern identified by Weiss (2000). Weiss noted that those who register late were more likely to be a non-traditional student who seeking an associate's degree, to needs developmental education, and is part-time.

As research continues, practitioners argue the merits of late registration practices. In 1990, Angelo measured the effects, if any, of late registration on student persistence and academic achievement. Through this study, the rate of persistence and the level of academic achievement of late registered and on time registered students were compared. Angelo hypothesized that students who registered late would be less likely to persist and have a lower level of academic performance than did those who registered on time. The results of his research proved the opposite and did not support his hypothesis. The late registrants had a 45.74% noncompletion rate while the timely registrants had a 51.03% noncompletion rate. Additionally, there was no "appreciable" difference in academic performance as the timely group had a mean grade of 2.98 at the end of the term while the late registrants had a mean grade of 2.97. It is important to note that Angelo conducted his study at a community college, where students are more likely to engage in what Duncan (1985) termed as 'academic window shopping' than their four-year counterparts. Duncan postulates that community college students may have less specific academic goals. As such, Angelo argues that institutions that practice late registration

may wish to continue the practice and integrate academic or career counseling for those who are identified as engaging in "window shopping".

There are many critics of late registration practices. Many feel that by allowing students to either apply for admission or register for classes late, the institution is setting the student up of imminent failure (Smith et al., 2002; Wang &Pilarzyk, 2007; Weiss, 1999, 2000, O'Banion, 2012). Arguments against late registration include missing the first day of class routines that establish expectations, making it harder to forge relationships with other students and the instructor (Mancini, 2017, O'Banion, 2012). Bryant et al. (1996) agree citing the first days of class as the orientation period, noting that this is when students are oriented to the class and the faculty. Additionally, Bryant et al. indicate that during the first week of class, the first assignments and quizzes are assigned in many classes. This puts the late registrant in a "constant catch-up" mode. In addition to trying to catch up in their courses, late registrants often struggle with completing financial aid applications on time and receiving financial aid awards. This further stresses these students, making them less prepared for their academic demands (Wang &Pilarzyk, 2007). Students who register on time don't experience these delays and are able to enter class more academically and financially prepared (Wang &Pilarzyk, 2007).

Table 2.1

A review of literature related to registration practices and student success and departure

Authors	Date	Setting	Method of Research	Statistics Used	Conclusions
Chilton, B.S.	1964	Community College	Quantitative	ANOVA, critical ratio, chi-square, t-test	Late registrants are more likely to be placed on academic probation and less likely to be retained.
Parks, K.M.	1974	Four-year institution	Quantitative	chi-square, t-test	Late registrants are more likely to be older, transfer students, have lower GPAs and more likely to drop courses than regular registrants
Dirkoff, G. M.	1992	Four-year institution	Quantitative	ANOVA	Students who registered late were more likely to drop the course.
Angelo, D.T.	1990	Community College	Quantitative	ANOVA, t-test	Late registration did not impact GPA, retention or completion rates.
Bryant, D. Danley, J., Fleming, S., Somers, P.	1996	Four Year institution	Qualitative		Students who register late are more likely to be nontraditional, on academic probation, and experience social and/or academic isolation.
Neighbors, J.E.G.	1996	Community College, four-year institution-private, public	Quantitative	Stepwise regression, ANOVA, t-test	Late registrants had a higher frequency of withdrawal and lower GPA than students who registered early.
Weiss, D.F.	1999	Community College	Qualitative	Orientational qualitative inquiry	Traditional and nontraditional late admits defined. Traditional late admits were at a higher risk for attrition due to the deficiency of goals and commitment.

Table 2.1 (continued)

A review of literature related to registration practices and student success and departure

Authors	Date	Setting	Method of Research	Statistics Used	Conclusions
Street, M.A.	2000	Community College	Quantitative	Covariance, chi-square	Late registrants were shown to be much less likely to persist to the spring semester than were early or regular registrants.
Weiss, D. F.	2000	Community College	Quantitative	t-test, One-way ANOVA	Late registrants possessed identifiable characteristics and were less likely to be retained. No statistical significance was found to exist between the time of registration/semester GPA and the proportion of hours that were completed.
Wang, Y., Pilarzyk, T	2007	Community College	Quantitative	Spearman correlation coefficients, t-test, chi-square	A significant relationship between date of application and student success was identified. Early admits earned a higher GPA and obtained higher course completion than did those who applied and were admitted late.
Ford, G.G. Stahl, K.J., Walker, M.E., Ford, A.M.	2008	Four-year institution	Quantitative	Multiple regression	Students who registered late for the selected psychology course had a significantly lower course average at the end of the term.
Bolton, W.	2013	Community College	Qualitative	Case Study	Students who are late admitted and late registrants have lower rates of academic success and persistence.

Table2.1 (continued)
A review of literature related to registration practices and student success and departure.

Authors	Date	Setting	Methods of Research	Statistics Used	Conclusions
Davis, A., Frogge, G. Reid, E.C.	2013	Community College	Quantitative	Multiple regression, t-tests, ANOVA	Application and registration dates have a statistical significance when variables such as age, gender, financial aid, and developmental courses are factored into the analysis.
Mills, L.	2014	Four-year institution	Quantitative	chi-square, t-test	Late registrants do not perform as well as those who register early/on time and are less likely to re-register for subsequent semesters. No significant statistical relationship was noted in the demographics tested and registration protocols.

Note. The information presented in the table includes a review of literature as it relates to the registration practices of two and four-year institutions and its impact on student success and departure.

Summary

As institutions seek to fulfill goals of retention and completion, more research is focusing on the causes of institutional withdrawal and departure. Research has identified institutional practices such as late admission and late course registration as one of the factors relating to this problem. The literature presented in this review explores the theories that have been developed in order to explain student behaviors as they relate to student departure and the factors that lead to this behavior. The literature also provides an illustration of the factors that are common among those students that typically apply to an institution late and subsequently register for classes late.

The research presented in this literature provides an idea of how these institutional practices

impact student success.

CHAPTER 3
Methodology

Introduction

The purpose of this study was to determine if there is any relationship between the date in which the student registers for class and the student's academic success. Throughout the study, there was a focus on the late registration practices of a single four-year institution. Academic success for the purpose of this study was measured by semester GPA, first semester completion, and persistence through to the following semester. The study is also was intended to provide an image of students who persist through the first semester and those who don't through key demographic factors. Therefore, the research methods of the study will be detailed in the following sections.

Research Design

This study was a non-experimental quantitative research study. Student outcomes that were examined included semester GPA, first semester completion (through the examination of earned versus attempted hours), first semester completion (through the examination of earned versus attempted hours), persistence through to the following semester (through the examination of future course enrollment), and course withdrawal. In order to examine these outcomes the following data about each student involved in the study was collected: the date of initial registration (not to include drop/add), semester GPA, any courses dropped (to be designated by W or D), the date the student registered for the following semester, and the date of institutional withdrawal. Additional information collected included gender, age, race, prior college work, and recipient of Pell grant. Through the use of SPSS software, the data collected was analyzed and any existing relationships between the date of registration and student success were identified. In addition, a caricature of the late registrant will be painted.

Setting

The sample for this study was collected from a historically black university located in the central Piedmont region of North Carolina. The university features a liberal arts curriculum that offers over 40 undergraduate degrees and 10 graduate degrees, including both masters and doctoral level programs. The academic calendar is a semester-based academic calendar. As a public, co-ed institution, the university enrolls approximately 5,100 students annually.

Sample

This sample consisted of students that applied and were admitted late to the university. For the purpose of this study, three years of enrollment data were requested. The terms that were included in the data collection included fall 2015 (201580), 2016 (201680), 2017 (201780) and spring 2016 (201620), 2017(201720), and 2018 (201820). The students that were examined were classified with an application type of First Time New Freshman (FTNF), Transfer (T), and Readmit (RA). The need for student consent to collect and use the data collected was not required as there was no identifying information collected. Additional data that was collected included the date of application, date of declared intent to enroll, date of registration, semester GPA, number of hours attempted, number of hours completed, number of hours dropped, date of institutional withdrawal (if applicable), gender, age, and if the student registered for the following semester. A request was submitted to the Office of Scholarship and Financial Aid for information pertaining to the student receipt of Pell grant monies.

Data Source

This study utilized data collected from the institution's BANNER information repository. The study took advantage of available admissions and enrollment information that included applications, registration records, and transcripts. By utilizing the information provided in the

student records, a more accurate and reliable depiction of each student's progression toward

completion was available than would have been had self-reported data been used. Information

regarding the receipt of the Pell grant was obtained through reporting by the Office of

Scholarship and Financial Aid. The sample was composed of those who were admitted to the

university between the fall 2015 and spring 2018 semesters. Late registration was defined as any

registration that occurred beyond the initial registration and during the late registration period as

defined by the university.

Table 3.1
University registration protocol

Term	Registration Opens	Registration Closes	Late Registration Period
Fall 2015	3/30/2015	4/16/2015	08/17/15-09/01/15
Spring 2016	11/2/2015	11/23/2015	01/07/16-01/15/16
Fall 2016	3/8/2016	4/13/2016	08/18/16-09/02/16
Spring 2017	11/7/2016	11/22/2016	01/07/17-01/25/17
Fall 2017	3/29/2017	4/14/2017	08/21/17-09/05/17
Spring 2018	11/6/2017	11/2/2017	01/09/18-01/25/18
Fall 2018	3/29/2018	4/17/2018	08/20/18-08/31/18

Note. Registration protocols for the Fall 2015, 2016, 2017 and Spring 2016,
2017, 2018 terms.

The identification of students who are in their first year of attendance at the university

resulted from data collected as a result of a customized WebFocus report. WebFocus is the

online analytical processing (OLAP) that allows users to view information contained in the

BANNER repository from different perspectives at different levels.

Data Collection

Data was collected using the university's computerized student information system,

BANNER. Information collected from BANNER included demographic information for each

student involved in the study. The data was collected in a stratified random sample. Participants

in this study were numbered and this number was used to identify them throughout the study.

The first term course registration and first term GPA, along with course or institutional

withdrawals, if applicable, was used to determine successful completion. These variables are

defined below in Table 3.2.

Table 3.2
Variables that will be collected for research

Variables	Definition
First Term Course Registration	Total attempted course during the first term of enrollment
Second Term Course Registration	Total attempted courses during the second term of enrollment
First Term GPA	Cumulative GPA earned at the conclusion of the first term of enrollment
Second Term GPA	Cumulative GPA earned at the conclusion of the second term of enrollment
Hours Earned (First Term)	Total hours earned at the completion of the first term of enrollment
Hours Earned (Second Term)	Total hours earned at the completion of the second term of enrollment
Course Withdrawal	Any course that the student terminates for any reason prior to the official end of the term
Institutional Withdrawal	Departure from the university prior to the official end of the school term for any reason

Note. The variables that will be collected for research during the proposed study are presented
along with their corresponding definitions.

Admission files from the fall 2015, 2016, 2017 and spring 2016, 2017, 2018 terms were used to

identify the data samples. Table 3.3 describes the demographic variables that will be examined.

Table 3.3

Demographic variables

Variables	Definition
Gender	Male, Female, Prefer not to disclose
Age	Age at the time of application
Race	As indicated on the application for admission: (applicants may select one or more of the following): American Indian or Alaska Native, Black or African American, White, Asian, Native American or Other Pacific Islander
Prior College Work	College credits earned at any postsecondary institution

Note. The demographic variables that will be collected for research during the proposed study and their definitions are presented.

Data Analysis

Table 3.4

Research questions and analysis

Research Question	Independent Variable	Dependent Variable	Analysis Technique	What will be Reported
What are the demographics and the student characteristics of late registrants of first-year students at a specific college?	Late Registration	Student Demographics	Descriptive Analysis, chi-square	The descriptive statistics of the participants in this sample.
How much variance is explained for GPA for students who registered late after controlling for gender?	Gender, Late Registration	GPA	Logistic Regression	The amount of variance in the GPAs of female and male students who registered for class late.
How much variance is explained for persistence for students who registered late after controlling for gender?	Gender, Late Registration	Persistence	Logistic Regression	The amount of variance in persistence for female and male students who registered for class late.

Note. The table presents the research questions for the proposed study, the variables, the intended method of analysis and what will be results are expected to be reported.

The first research question for this study identified the demographics and characteristics of students that either registered early or late. The independent variables are the student demographics such as age, gender, race and those that are the recipient of Pell grant. The dependent variables are identified as the registration deadlines which are defined by the university and students as they are identified by each application type, male or female, Black, White, or Asian and Pell grant recipients. Using SPSS, a descriptive analysis will be conducted in addition to chi-square and a t-test in order to identify the demographics and characteristics of the students involved in the study.

The second research question identified how much variance is explained for the GPA of students who registered for class on time or late after controlling for gender. Using SPSS, a linear regression analysis was used to explain the relationship between these variables. The final research question identified how much variance is explained for persistence after controlling for gender. The independent variables are identified as the registration deadline identified by the university. The dependent variables are identified as those student outcomes-semester GPA, student persistence, and the frequency in which the student withdraws from class. Using SPSS, logistic regression was used to predict the odds of student persistence and identify the amount of variance present.

The comprehensive statistical analysis for this study will include an analysis of frequency and a test of significance. A chi-square analysis will be conducted in order to analyze the frequencies of two late registration scenarios. The first will include examinations frequencies of the registration for subsequent semesters, which is necessary in order to analyze the impact of late registration, the independent variable, and student persistence, the dependent variable. The second will include the examination of frequency between late registration, the dependent

variable; and the independent variables gender, and receipt of Pell Grant. Following the statistical analysis of frequencies, there will be a statistical analysis of significance in order to gather information about the relationships between age and late registration, student success, and late registration, and the average GPA and late registration. In order to conduct the two analyses, an independent samples t-test will be conducted.

Ethics

The purpose of the Institutional Review Board (IRB) is to protect the rights and welfare of the human subjects that have been identified to participate in the research study. Any research that involves the participation of human subjects requires the approval of the IRB, prior to the start of the study (https://ced.ncsu.edu/graduate/graduate-student-services/doctoral-resources/). In the case of this particular research study, approvals will be required from both the institution sponsoring the research (NCSU) and the institution where the research will be conducted.

Student data was requested from a public four-year institution in North Carolina. The enrollment of the institution is approximately 5,100 students. The institution has also been designated as an HBCU. A written request for data and a copy of the IRB approval was submitted to the Office of the Registrar and the Office of Scholarship and Financial Aid. The requests included information informing the offices of the nature of the study and for the release of the data. Personal identifying information was not to be used in the research.

There was no known risk associated with the participants of this study. To preserve the confidentiality of student records involved in this study, each individual was identified with a randomly selected number which served as their identification throughout the study. The researcher also developed and assigned codes to represent the designated variables. Only the

researcher had access to the data. All data was maintained on an encrypted flash drive, accessible only by a password that was designated by the researcher.

Summary

The purpose of this study was to identify any existing relationships between the date in which a student registers for class and the student's academic success. Data, as it related to six semesters, was provided by a four-year public HBCU in North Carolina. The data included the student's registration date, semester GPA, number of hours registered, any course withdrawals, gender, age, and receipt of the Pell grant. The data was requested by the researcher and provided in a Microsoft Excel file. In order to provide a description of the demographic and characteristics of the students who register late, identify any relationships, and identify variance a descriptive analysis, chi-square, t-test, linear regression and logistic, respectively, were chosen. The data were analyzed through the use of SPSS. The results and analysis are discussed in Chapter IV.

Chapter IV
Data Analysis

Introduction

This ex post facto non-experimental quantitative study was conducted in order to examine the relationship between late registration protocols and student success. The study also sought to identify the demographics and characteristics of students who register early/on time and those that register late. The research questions that guided the activities for this study include the following:

1. What are the demographics and student characteristics of late registrants of first-year students at a specific college?

2. How much variance is explained for GPA for students who registered late after controlling for gender?

3. How much variance is explained for persistence for students who registered late after controlling for the gender?

During this study, student success was measured by GPA and persistence, which is evidenced by student registration for subsequent semesters. The student demographics measured in the study were student type, race, gender, age, and receipt of Pell grant. The student data that was used in the study was provided by a four-year public HBCU located in North Carolina with an approximate enrollment 5,100. The data that was provided included New First Time Freshmen, Transfer, and Readmit students.

The data collected included the fall 2015, 2016, 2017 semesters and the spring 2016, 2017, 2016, 2018 semesters. To establish the registration protocol, the researcher used the student's registration date as provided by the university. The semester GPA that was provided was used as an indicator of student success. The institution also indicated if the student persisted

to the subsequent semester and if classes were dropped. These measures were used in order to demonstrate persistence.

The Statistical Package for the Social Sciences (SPSS) was used to complete all statistical analysis of the data. This includes descriptive statistics as calculated by univariate analysis, chi-square, and bivariate analysis of variances such as linear regression and logistic regression.

Results

Q1: What are the demographics and student characteristics of late registrants of first-year students at a specific college? Univariate analysis of the data sample provides a quantitative description of the participants in this sample. This analysis included the frequency distribution and central tendency of the variables designated for the study. The sample used for this study included a total of 4836 students. These students represented new students who enrolled at the study institution during the six identified semesters (Fall 2015, 2016, 2017 and Spring 2016, 2017, 2018). The participant sample was composed of 2613 (54.0%) First Time New Freshmen, 1666 (34.4%) Transfer, and 557 (11.5%) Readmit students. SPSS output from the descriptive analysis related to the frequency of each student type within the sample is provided below as Tables 4.1, 4.2, and 4.3.

Table 4.1
The frequency of first time new freshmen

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	2223	46.0	45.0	46.0
	1.0	2316	54.0	54.0	100.0
	Total	4836	100.0	100.0	

Note. SPSS output from the descriptive analysis of the frequency of First Time New Freshmen within the sample. First Time New Freshmen are coded as 1.0, the remaining students within the sample are coded as 0.0.

Table 4.2

The frequency of transfer students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	3170	65.6	65.6	65.6
	1.0	1666	34.4	34.4	100.0
	Total	4836	100.0	100.0	

Note. SPSS output from the descriptive analysis of the frequency of Transfer students within the sample. Transfer students are coded as 1.0, the remaining students within the sample are coded as 0.0.

Table 4.3

The frequency of readmit students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	4279	88.5	88.5	88.5
	1.0	557	11.5	11.5	100.0
	Total	4836	100.0	100.0	

Note. SPSS output from the descriptive analysis of the frequency of Readmit students within the sample. Readmit students are coded as 1.0, the remaining students within the sample are coded as 0.0.

During these six semesters, 3415 (70.6%) first year students of the institution (First Time New Freshmen, Transfers, and Readmits) were identified as female and 1399 (28.9%) first year students of the institution identified as male. Twenty-two of the participants chose not to disclose their gender to the institution. The SPSS output from the descriptive analysis of the frequency of male and female students within the sample is provided in Table 4.4 below.

Table 4.4

The frequency of gender within the sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	1399	28.9	29.1	29.1
	1.0	3415	70.6	70.9	100.0
	Total	4814	99.5	100.0	
Missing	System	22	0.5		
	Total	4836	100		

Note. SPSS output from the descriptive analysis of the frequency of male and female students within the sample. Males are coded as 0.0. Female students are coded as 1.0.

The descriptive analysis related to the frequency of race distribution throughout the sample was conducted using SPSS. The output of this analysis is illustrated below in Table 4.5. The sample was racially diverse as sample included 764 (15.8%) of the participants indicating their race as White, 3678 (76.1%) of the participants indicating their race as Black, 96 (2.0%) of the participants indicating their race as Hispanic, and 298 (6.3%) of the participants indicating their race as Other. The Other designation included one of the following: American Indian, Alaskan Native, Native Hawaiian/Pacific Islander, Asian/Pacific Islander, Mixed Race, or the student declined to disclose.

Table 4.5
The frequency of race within the sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	764	15.8	15.8	15.8
	2.0	3678	76.1	76.1	91.9
	3.0	37	.8	.8	92.6
	4.0	66	1.4	1.4	94
	5.0	96	2	2	96
	6.0	66	1.4	1.4	97.3
	7.0	129	2.7	2.7	100
Total		4836	100.0	100.0	

Note. SPSS output from the descriptive analysis of the frequency of race distribution throughout the sample. White is coded as 1.0, Black is coded as 2.0, and Hispanic is coded as 5.0. For the purposes of reporting the remaining distributions were combined.

During the six semesters that were included in this study, 3720 (76.9%) of the participants registered on time and 1116 (23.1%) registered for classes late. The SPSS output of the descriptive analysis of the frequency of late and on-time registrants is included below in Table 4.6.

Table 4.6

The frequency of late and on-time registrants.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0.0	3720	76.9	76.9	76.9
	1.0	1116	23.1	23.1	100.0
	Total	4836	100.0	100.0	

*Note.*SPSS output from the descriptive analysis of the frequency of late and on-time registrants throughout the sample. On time registration is coded as 0.0. Late registration is coded as 1.0.

The analysis of the data indicated that of the students that registered late, 117(10.5%) were First Time New Freshmen, 680 (60.9%) were Transfer students and 319 (28.6%) were Readmit students. See Tables 4.7(Freshmen), 4.8 (Transfer), and 4.9 (Readmit) below.

Table 4.7

The frequency of first time new freshmen who register late

		First Time New Freshmen		
			0.0	1.0	Total
Late	0.0	Count	1224	2496[b]	3720
		Expected Count	1710	2010	3720
		% Within Late	32.9%	67.1%	100.0%
		% Within NFTF	55.1%	95.5%	76.9%
		% of Total	25.3%	51.6%	76.9%
	1.0	Count	999[a]	117[b]	1116
		Expected Count	513	603	1116.0
		% Within Late	89.5%	10.5%	100.0%
		% Within NFTF	44.9%	4.5%	23.1%
		% of Total	20.7%	2.4%	23.1%
Total		Count	2223	2613	4836
		Expected Count	22230	2613.0	4836.0
		% Within Late	46.0%	54.0%	100.0%
		% Within NFTF	100.0%	100.0%	100.0%
		% of Total	46.0%	54.0%	100.0%

Note. Contingency table produced from the SPSS analysis of the frequency of New First Time Freshmen who registered late. Late is coded as 1.0 and on time registration is coded as 0.0. New First Time Freshmen are coded as 1.0 and all other student types are coded as 0.0. The subscript denotes a subset of the New First Time Freshmen categories whose column proportions do not differ significantly for each other at the 0.5 level.

Table 4.8

The frequency of transfer students who register late

			Transfer		
			0.0	1.0	Total
Late	0.0	Count	1224	2496[b]	3720
		Expected Count	1710	2010	3720
		% Within Late	32.9%	67.1%	100.0%
		% Within Transfer	55.1%	95.5%	76.9%
		% of Total	25.3%	51.6%	76.9%
	1.0	Count	999[a]	117[b]	1116
		Expected Count	513	603	1116.0
		% Within Late	89.5%	10.5%	100.0%
		% Within Transfer	44.9%	4.5%	23.1%
		% of Total	20.7%	2.4%	23.1%
Total		Count	2223	2613	4836
		Expected Count	22230	2613.0	4836.0
		% Within Late	46.0%	54.0%	100.0%
		% Within NFTF	100.0%	100.0%	100.0%
		% of Total	46.0%	54.0%	100.0%

Note. Contingency table produced from the SPSS analysis of the frequency of Transfer students who registered late. Late is coded as 1.0 and on time registration is coded as 0.0. Transfer is coded as 1.0 and all other student types are coded as 0.0. The subscript denotes a subset of the Transfer categories whose column proportions do not differ significantly for each other at the 0.5 level.

Table 4.9

The frequency of readmit students who register late.

			Readmit		
			0.0	1.0	Total
Late	0.0	Count	3482	238[b]	3720
		Expected Count	2438.5	1281.5	3720.0
		% Within Late	93.6%	6.4%	100.0%
		% Within Readmit	81.4%	42.7%	76.9%
		% of Total	72.0%	4.9%	76.9%
	1.0	Count	797a	319	1116
		Expected Count	987.5	128.5	1116.0
		% Within Late	71.4%	28.6%	100.0%
		% Within Readmit	18.6%	57.3%	21.1%
		% of Total	16.5%	6.6%	23.1%

Table 4.9 (continued)
The frequency of readmit students who register late

		Readmit		
		0.0	1.0	Total
Total	Count	4279	557	4836
	Expected Count	4879.0	557.0	4836.0
	% Within Late	88.5%	11.5%	100.0%
	% Within Readmit	100.0%	100.0%	100.0%
	% of Total	88.5%	11.5%	100.0%

Note. Contingency table produced from the SPSS analysis of the frequency of Readmit who registered late. Late is coded as 1.0 and on time registration is coded as 0.0. Readmit is coded as 1.0 and all other student types are coded as 0.0. The subscript denotes a subset of the Readmit categories whose column proportions do not differ significantly for each other at the 0.5 level.

Chi-square analysis technique was conducted in order to determine if there was significance between student type and late registration. In the first comparison, the two variables student type (First Time New Freshmen) and registration (late or on time) were compared and found not to be significantly related, Pearson X^2=(2, N=4836)=1107.76, p< .00. The percentage of First Time New Freshmen that registered late or on time was 11% and 67% respectively (See Table 4.10).

Table 4.10

Results of the chi-square tests for new first time freshmen and late registration

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1107.759[a]	1	.000		
Continuity Correction	1105.481	1	.000		
Likelihood Ratio	1210.430	1	.000		
Fisher's Exact Test				.000	.000
Linear-by Linear Association	1107.53	1	.000		
N of Valid Cases	4836				

Note. SPSS output of a chi-square analysis of New First Time Freshmen who registered late for the first term.

In the second comparison, the two variables student type (Transfer) and registration (late or on time) were compared and found to not be significantly related, Pearson $X^2 = (2, N=4836) = 450.55$, p<.00. The SPSS output of the chi-square is provided below in Table 4.11. The percentage of Transfer students that registered late or on time was 61% and 27% respectively (See Table 4.8).

Table 4.11

Results of the chi-square tests for transfer students and late registration

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	450.553[a]	1	.000		
Continuity Correction	449.029	1	.000		
Likelihood Ratio	432.823	1	.000		
Fisher's Exact Test				.000	.000

Table 4.11 (continued)
Results of the chi-square tests for transfer students and late registration.

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Linear-by Linear Association	450.459	1	.000		
N of Valid Cases	4836				

Note. SPSS output of a chi-square analysis of Transfer students who registered late for the first term.

The third comparison examined the two variables student type (Readmit) and registration (late or on time). The comparison found that there was no significant difference in the proportions at the .05 level, Pearson X^2(2, N=4836) =414.64, p<.00. The SPSS output of the chi-square is provided below in Table 4.10. The percentage of Readmit students that registered late or on time was 29% and 6% respectively (See Table 4.9).

Table 4.12
Results of the chi-square tests for readmit students and late registration

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	414.638[a]	1	.000		
Continuity Correction	412.646	1	.000		
Likelihood Ratio	350.234	1	.000		
Fisher's Exact Test				.000	.000
Linear-by Linear Association	414.552	1	.000		
N of Valid Cases	4836				

Note. SPSS output of a chi-square analysis of Readmit who registered late for the first term.

Further analysis of the late registrants indicated that 805 (72.5%) of these students were

Female and 306 (27.5%) were Male.

Table 4.13
The frequency of students who register late by gender.

			Gender		
			0.0	1.0	Total
Late	0.0	Count	1093[a]	2610[a]	3703
		Expected Count	1076.1	2626.9	3703.0
		% Within Late	29.5%	70.5%	100.0%
		% Within Gender	78.1%	76.4%	76.9%
		% of Total	22.7%	54.2%	76.9%
	1.0	Count	306[a]	805[a]	1111
		Expected Count	322.9	788.1	1111.0
		% Within Late	27.5%	72.5%	100.0%
		% Within Gender	21.9%	23.6%	23.1%
		% of Total	6.4%	16.7%	23.1%
Total		Count	1399	3415	4814
		Expected Count	1399.0	3415.0	4814.0
		% Within Late	21.1%	70.9%	100.0%
		% Within Gender	100.0%	100.0%	100.0%
		% of Total	29.1%	70.9%	100.0%

Note. Contingency table produced from the SPSS analysis of the frequency of students who registered late by gender. Late is coded as 1.0 and on time registration is coded as 0.0. Females are coded as 1.0 and males are coded as 0.0. The subscript denotes a subset of the Gender categories whose column proportions do not differ significantly for each other at the 0.5 level.

Three hundred nineteen (28.6%) of the 1116 students who registered late identified as

White, 689 (61.7%) of students who registered late identified as Black, 18 (1.6%) of students

who registered late identified as Hispanic, and 90 (8.1%) students who registered late identified

as Other. The Other designation including one of the following: American Indian, Alaskan

Native, Native Hawaiian/Pacific Islander, Mixed Race, or the student declined to disclose.

Table 4.14

The frequency of students who register late by race.

			Gender							
			1.0	2.0	3.0	4.0	5.0	6.0	7.0	Total
Late	0.0	Count	445_a	2989_b	$27_{a,b,c,d}$	$43_{a,d}$	$78_{b,c}$	$48_{b,c,d}$	$90_{c,d}$	3720
		Expect. Count	587.7	2829.2	28.5	50.8	73.8	50.8	99.2	3720
		% Within Late	12	80.3	0.7	1.20	2.1	1.3	99.2	100
		% Within Race	58.2	81.3	73	65.2	81.3	72.7	69.8	76.9
		% of Total	9.2	61.8	0.6	0.90	1.60	1.00	1.9	76.90
	1.0	Count	319_a	689_b	$10_{a,b,c,d}$	$23_{a,d}$	$18_{b,c}$	$18_{b,c,d}$	$39_{c,d}$	1116
		Expect. Count	176.3	848.8	8.5	15.2	22.2	15.2	29.8	1116
		% Within Late	28.6	61.7	0.9	2.10	1.60	1.6	3.5	100
		% Within Race	41.8	18.7	27	34.80	18.8	27.3	30.1	23.1
		% of Total	6.6	14.2	0.2	0.50	0.40	0.4	0.8	23.1
Total		Count	764	3678	37	66	96	66	129	4836
		Expec. Count	764	3678	370	66	96	66	129	4836
		% Within Late	15.8	7.1	0.8	1.40	2.00	1.4	2.7	100
		% Within Race	100	100	100	100	100	100	100	100
		% of Total	15.8	76.1	0.8	1.40	2.00	1.4	2.7	100

Note. Contingency table produced from the SPSS analysis of the frequency of students who registered late by race. Late is coded as 1.0 and on time registration is coded as 0.0. White is coded as 1.0, Black is coded as 2.0, and Hispanic is coded as 5.0. For the purposes of reporting the remaining distributions were combined. The subscript denotes a subset of the Race categories whose column proportions do not differ significantly for each other at the 0.5 level.

There were 3327(68.8%) of the total participants sampled who were Pell grant recipients and 1509 (32.3%) of the total participants sampled did not receive Pell grant funds. Only 516 (46.2%) of the students who registered late were recipients of Pell grant funds, while 2727 (73.3%) of the students who registered on time were recipients of Pell grant funds.

Table 4.15 Continued
Frequencies of Pell grant recipients who registered late.

			Pell grant		
			1.0	2.0	Total
Late	0.0	Count	993ₐ	2727ᵦ	3720
		Expected Count	1160.8	2559.2	3720
		% Within Late	26.7	73.3	100.0
		% Within Pell	65.8	82.0	76.90
		% of Total	20.5	56.4	76.90
	1.0	Count	516ₐ	600ᵦ	1116
		Expected Count	348.2	767.8	1116
		% Within Late	46.2	53.8	100.0
		% Within Pell	34.2	18.0	23.1
		% of Total	10.7	12.4	23.1
Total		Count	1509	3327	4836
		Expected Count	1509.0	3327.0	4836.0
		% Within Late	31.2%	68.8%	100.00%
		% Within Pell	100.0%	100.0%	100.0%
		% of Total	31.2%	68.8%	100.00%

Note. Contingency table produced from the SPSS analysis of the frequency of students who are recipients of the Pell grant and have registered late. Late is coded as 1.0 and on time registration is coded as 0.0. Receipt of Pell grant is coded as 1 and no receipt of Pell grant is coded as 0. The subscript denotes a subset of the Race categories whose column proportions do not differ significantly for each other at the 0.5 level.

The institution collected the ages of 4781 (98.9%) of the participants that were involved in the study. A comprehensive analysis was conducted using the one-way ANOVA method and presented in Table 4.16 below. The analysis indicated that the mean age of the 4781 students who reported their age to the institution was 22.6 with a standard deviation of 8.61. The mean number of credit hours attempted during the first semester was 13 credit hours with a standard deviation of 3.59. The mean GPA earned during the first term was 2.69 with a standard deviation

of 1.01. The mean number of course withdrawals during the first semester was .10 with a

standard deviation of .334. During the second semester, the mean number of credit hours that

were attempted was 12 with a standard deviation of 5.52. At the end of the semester, the mean

number of credit hours earned for the semester was 11 with a standard deviation of 6.5. The

mean GPA for the second semester was 2.31 with a standard deviation of 1.30. Throughout the

second semester, students' mean number of course withdrawals was .15 with a standard

deviation of .57.

Table 4.16 Continued
Summary of population sample

	N	Minimum	Maximum	Mean	Standard Deviation
Age at application	4781	15.64	71.12	22.67	8.62
Attempted hours first semester	4836	1	24	12.74	3.59
Hours earned first semester	4836	0.00000	132	23.27	24.52
First term GPA	4836	0.00000	4	2.7	1.02
Number of course withdrawals for first semester	4836	0	4	0.1	0.334
Attempted hours second semester	4836	0	22	12.1	5.52
Hours earned second semester	4831	0.00	89.66	10.87	6.51
Second term GPA	4830	0.00000	4	2.31	1.31
Number of course withdrawals for second semester	4836	0	6	0.15	0.57
Valid N (listwise)	4775				

Note. A listwise presentation of the SPSS output containing a summary of the population sample.
It is important to note that the attempted hours earned during the first semester is a combination
of hours attempted at the institution and any hours that were transferred from previously attended
institutions.

**Q2: How much variance is demonstrated for GPA earned by students that
registered late after controlling the gender variable?**

Logistic regression is a predictive analysis that is performed in order to describe the data

and explain the relationship between the dependent and independent variables. Logistic

regression was performed in order to determine how much variance was demonstrated for the

GPA earned by students who registered late when the data was controlled by the gender variable.

Table 4.17 Continued
Test between-subjects effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	15.169a	3	5.056	4.898	0.002
Intercept	19487.732	1	19487.32	188876.3	0.000
LATE	4.641	1	4.641	4.495	0.034
GenderNum	12.434	1	12.434	12.043	0.001
Late*GenderNum	9.913	1	9.913	9.602	0.002
Error	4965.793	4810	1.032		
Total	40055.326	4214			
Corrected Total	4980.962	4813			

a. R squared =.003 (Adjusted R Squared = .002)

Note: Pre-analysis data output that illustrates the interaction between the variables late registration and gender.

The pre-analysis data indicates that there was a significant interaction between the

variables late registration and gender (F=9.602, p=.002).

Table 4.18
Late registration vs. gender

Late	GenderNum	Mean	Std. Deviation	N
0.00	0.00	2.69361848	0.96312351	1093
	1.00	2.70800805	0.97299774	2610
	Total	2.70376073	0.96998533	3703
1.00	0	2.49155229	1.2310668	306
	1	2.74589565	1.12668148	805
	Total	2.67584248	1.16138507	1111
Total	0	2.64942102	1.03062664	1399
	1	2.71693909	1.01128479	3415
	Total	2.69731762	1.01729914	4814

Note. SPSS output of descriptive statistics produced by univariate analysis of variance. The variable late represents on-time registration (0.0) and late registration (1.0). The variable GenderNum represents Male (.00) and Female (1.0) participants.

The descriptive analysis produced by univariate analysis of variance demonstrates that the mean GPA for males that registered late is 2.49, while their female counterparts who registered late have a mean GPA of 2.70.

Table 4.19 Continued
Coefficients

Model		Unstandardized Coefficients B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.546	0.018		142.61	0
	Transfer	0.434	0.03	0.202	14.249	0
2	(Constant)	2.572	0.01		139.18	0
	Transfer	0.485	0.032	0.22	15.226	0
	LATE	-0.19	0.03	-0.079	-5.3	0
3	(Constant)	2.573	0.018		139.33	0
	Transfer	0.481	0.032	0.224	15.06	0
	LATE	-0.333	0.06	-0.138	-5.561	0
	LATEBYGENDER	0.199	0.067	0.073	2.976	0.003
4	(Constant)	2.48	0.042		59.241	0
	Transfer	0.45	0.034	210	13.143	0
	LATE	-0.348	0.06	-0.144	-5.791	0
	LATEBYGENDER	0.182	0.067	0.067	2.705	0.007
	AgeatApplication	0.005	0.002	0.041	2.474	0.013

a. Dependent Variable: TermGPA1stSemester

Note: The SPSS output of Coefficients that provides an illustration of the comparisons of differences in GPA.

The Coefficients table (Table 4.19) illustrates that the constant GPA was 2.573. Students who registered late saw a drop in GPA by -0.333. Transfer students who registered late saw a 0.481 increase in GPA. The GPAs that were measured by the variable LATEBYGENDER increased by 0.199.

Table 4.20 Variance in GPA is a regression summary model that is provided in order to illustrate that there is a .050 (5%) variance in GPA earned when measuring by the variables Transfer, LATE, LATEBYGENDER, and AgeatApplication.

Table 4.20

Variance in GPA

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.202[a]	0.41	0.041	0.997400139
2	.216[b]	0.047	0.046	0.99457235
3	.220[c]	0.04	0.048	0.993751864
4	.223[d]	0.05	0.049	0.993217358

a. Predictors: (Constant), Transfer
b. Predictors: (Constant), Transfer, LATE
c. Predictors: (Constant), Transfer, LATE, LATEBYGENDER
d. Predictors: (Constant), Transfer, LATE, LATEBYGENDER, AgeatAppliction

Note: The SPSS output of the Regression Model Summary that illustrates variance in GPA when controlling for gender.

Q3: How much variance is demonstrated for persistence for students that register late after controlling for the gender variable?

Logistic regression is a predictive analysis that is performed in order to describe the data and explain the relationship between the dependent and independent variables. Logistic regression was performed in order to determine how much variance was demonstrated for the persistence of students who registered late when the data was controlled by the gender variable.

Table 4.21

Persistence by Gender

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1a	LATE(1)	1.136	0.098	134.154	1	0	3.115
	GenderNum(1)	-.084	0.098	0.722	1	0.395	0.92
	PELL(1)	0.04	0.103	0.151	1	0.697	1.041
	AgeatApplication	-.030	0.005	35.425	1	0	0.97
	RACENUM			12.056	6	0.061	
	RACENUM(1)	0.448	0.273	2.694	1	0.101	1.565
	RACENUM(2)	0.087	0.255	0.118	1	0.731	1.091
	RACENUM(3)	1.323	0.782	2.862	1	0.091	3.756
	RACENUM(4)	0.094	0.424	0.049	1	0.825	1.099
	RACENUM(5)	0.255	0.424	0.362	1	0.547	1.29
	RACENUM(6)	-.267	0.422	0.402	1	0.526	0.765
	Constant	1.721	0.293	34.507	1	0	5.589

Table 6.1 (continued)
Persistence by gender

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 2a	LATE(1)	1.134	0.098	134.064	1	0	3.109
	GenderNum(1)	-.083	0.098	0.721	1	0.396	0.92
	AgeatApplication	-.030	0.005	37.107	1	0	0.971
	RACENUM			12.627	6	0.049	
	RACENUM(1)	0.454	0.272	2.777	1	0.096	1.574
	RACENUM(2)	0.084	0.254	0.109	1	0.741	1.088
	RACENUM(3)	1.315	0.782	2.829	1	0.093	3.724
	RACENUM(4)	0.094	0.424	0.05	1	0.824	1.099
	RACENUM(5)	0.254	0.424	0.359	1	0.549	1.289
	RACENUM(6)	-.268	0.422	0.403	1	0.526	0.765
	Constant	1.724	0.293	34.649	1	0	5.604
Step 3a	LATE(1)	1.136	0.098	134.364	1	0	3.114
	AgeatApplication	-.029	0.005	36.496	1	0	0.971
	RACENUM			12.867	6	0.045	
	RACENUM(1)	0.455	0.272	2.791	1	0.095	1.576
	RACENUM(2)	0.079	0.254	0.097	1	0.756	1.082
	RACENUM(3)	1.312	0.782	2.817	1	0.093	3.715
	RACENUM(4)	0.088	0.424	0.043	1	0.836	1.092
	RACENUM(5)	0.252	0.424	0.354	1	0.552	1.287
	RACENUM(6)	-.266	0.422	0.397	1	0.529	0.767
	Constant	1.693	0.291	33.952	1	0	5.436

a. Variable(s) entered on step 1: LATE, GenderNum, PELL, AgeatApplication, RACENUM.

Note. The SPSS output of persistence on late registration when coding for gender.

The logistic regression of persistence of late registration using the variable of gender demonstrates that females are .92% more likely to withdraw from the institution after registering late. The analysis excluded male as there was not enough statistically significant information to include them in the model (See Table 4.22).

Table 4.22

Variance in the persistence of late registrants

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	3429.910a	0.05	0.093
2	3430.062a	0.05	0.093
3	3430.777a	0.05	0.093

Note: The SPSS output of the Regression Model Summary that illustrates the variance in persistence when controlling for gender.

The Regression Model Summary illustrates that there is a .093 (9.3%) variance in the persistence of students who register late.

Summary

This study included the 4836 students that the university considered to be new students during the fall 2015, 2016, 2017 and spring 2016, 2017, 2018 terms. Among these students, there were 379 students who registered on time and 1116 students who registered for class late. The population of the study was reflective of the overall student population at the university as female students were more prevalent in the study.

The initial research question was developed in order to identify the demographics and characteristics of late registrants among those students who were identified as new students at a specific college. A descriptive analysis was conducted utilizing the student type, race, gender, and receipt of Pell grant as the independent variables. Late registration was the dependent variables. The analysis indicated that there was no significance between any of the dependent variables and late registration. However, the analysis did indicate that there was a higher incidence of late registration among Transfer students and students who identified as White. The analysis also demonstrated that Pell grant recipients were more likely to register on time than those students who did not receive the same financial assistance.

The second research question was posed in order to identify the variance demonstrated in GPA by students who registered late when controlling for gender. A logistic regression analysis was conducted using gender and GPA as the independent variables and late registration as the dependent variable. The analysis demonstrated that is minimal significance present.

The final research question was posed in order to identify the amount of variance demonstrated in persistence by students who registered late when controlling for gender. A logistic regression analysis was conducted using persistence as the independent variable and late registration as the dependent variable. The analysis demonstrates that female have a slightly higher likelihood of withdrawing from the institution after registering late.

Chapter V
FINDINGS

Introduction

The practice of late registration has been found to have both positive and negative

implications for both the institution and the student. For the institution, the practice allows for an

increased number of students to register for classes and thereby increasing the full-time

enrollment which provides the basis of financial support of the institution. For the student, late

registration allows for additional access (Weiss, 1999). Unfortunately, the practice may

encourage the eventual departure from the institution as late registration causes the student to

miss the first days of class and orientation. This can inhibit the student's engagement and

investment with the institution. For the institution, student departure impacts the retention and

ultimately graduation rates. This can impact the financial support for the institution also.

The purpose of this study was to examine the influence of late registration on student success

and persistence. For the purpose of this study, student success was measured by GPA and

persistence which is evidenced by student registration for subsequent semesters. The student

demographics measured in the study were student type, race, gender, age, and receipt of Pell

grant. The student data that was used in the study was provided by a four-year public HBCU

located in North Carolina with an approximate enrollment 5,100. The data that was provided

included New First Time Freshmen, Transfer, and Readmit students.

Findings

The study focused on three research questions. The first question was posed in an effort

to identify the demographics and characteristics of students who registered late for class. The

second question sought to identify how much variance is demonstrated in the GPAs that were

earned by students, by gender, who registered late. Finally, the third question identified how

much variance is demonstrated in the persistence of students, by gender, who registered late for the first semester.

Of the 4836 students that were participants in the study, there were 3720 students who registered on time and 1116 who registered late. Overall, on average the students that participated in this sample were approximately 23 years of age. In the first semester, these students attempted approximately 13 credits hours, earning on average 23 credit hours. In the second semester, there were approximately 12 credit hours attempted by students who subsequently earned approximately 10 credits during the semester. The students in the sample had an average earned GPA of 2.7 after the first semester. After the second semester, the students had an average earned GPA of 2.3.

The results from the initial research question indicate that the majority of the students who were involved in the study were female. This is consistent with the overall population of the institution. The data indicate that in this sample female students were more likely to register for class late than their male counterparts. This finding contradicts the research findings demonstrated by Mills (2014), Kreck (2007), and Maalouf (2012). The frequency analysis of late registration by student type indicated that Transfer students were more likely to register late for class; however, this did not produce any statistical significance. When examining the data related to race and late registration, the data indicates that White students were more likely to register for class late. Again, as in the analysis of student type and late registration, this did not produce any statistical significance. Finally, it was demonstrated that students who received Pell grant assistance were more like to register on time for classes than their counterparts who did not receive the same financial assistance.

The second research question was posed in order to identify the variance demonstrated in GPA by students who registered late when controlling for gender. From the information presented, it was determined that students who registered late earn a lower GPA than those students who registered on time. When examining GPA by gender, it was determined that male students who registered late earned a lower GPA than female students that registered late. The average GPA for these males was 2.49, while their female counterparts earned a 2.79. The variance for this population was measured at .050 (5%). This indicates that the GPAs within the sample tended to vary by 5%.

The final research question was posed in order to identify the amount of variance demonstrated in persistence by students who registered late when controlling for gender. The analysis of this question demonstrated that the variance for this population was .093 (9.3%). This indicates that the likelihood of students withdrawing from the institution after registering late varied by 9.3%. The analysis also indicates that there is little likelihood of females withdrawing from the institution after registering for class late.

Study Limitations

There were two identified limitations of this study. The first was the limited amount of research or literature related to the registration protocols for four-year institutions. As stated in Chapter One, the available research is dominated by research that pertains to the community college setting.

The second limitation relates to the study sample. The sample was taken from a single HBCU located in North Carolina. The institution is a moderately sized liberal arts institution. To fully observe the impact of late registration protocols, a more diverse sample of institutions should be obtained. This diversity should include size, type (public or private), and location. The

use of data from a single institution cannot accurately depict the effects of late registration at institutions throughout the country.

Implications of the Study

For many institutions, the adherence to application and registration deadlines can jeopardize the accumulation of FTEs (full-time enrollment), which drives the financial support for the institutions (Wang &Pilarzyk, 2007). Research also provides evidence that the failure to adhere to these deadlines creates difficulties for students, as those who tend to register late also tend to file for financial aid late. This prevents on time awarding and ultimately makes them less prepared for academic work (Tinto, 1993; Wang &Pilarzyk, 2007). For Student Services Divisions, the failure to adhere to deadlines can create difficulties in managing the heavy workflow of the advising and registration process. This especially holds true in the summer months prior to the fall term (Wang &Pilarzyk, 2007). The institution highlighted in this study reports that it experiences the most difficulty in prioritizing the registration process at the start of the spring term due to the short span of the time between the return from the winter break and the start of the spring term. While the results from this specific study may not discourage late registration, there are implications for this study.

Implication #1:   Receipt of Pell grant funds impacts late registration. The results of the analysis demonstrated that Pell grant recipients were more likely to register for class on time. Those that did not receive Pell grant assistance were more likely to register late. This implies that these students may have missed the window of opportunity to be deemed Pell eligible due to a late application. This supports the research by Wang &Pilarzyk (2007) who have hypothesized that there is a positive correlation between late application for admission and academic programs, late application for Financial Aid and late course registration. These late applications

jeopardize the ability for students to receive financial aid on time in order to be prepared for class. The institution in this study practices rolling admissions, admitting students up through the tenth day of class forgoing the published admission deadline. The adherence to admissions deadlines would discourage late registration thereby allowing students to receive financial aid on time.

Implication #2: Late start classes can offset the impact of late registration. Students who are less academically prepared and/or focused tend to make their decisions concerning college later than their better prepared counterparts. By offering late starting classes, the institution may offset the impact of missing the first days of class for students who register late.

Implication #3: Race impacts late registration. The study found that White students were more likely to register for classes late than were students from other racial groups within the study. This result can imply that these students have less commitment to the institution, which is a minority-serving institution.

Implication #4: Orientation attendance impacts late registration. According to Tinto(1993), orientation programs allow students to become engaged with the institutional culture and to acquire useful information. Included in this information is how to traverse the business processes of the institution. The institution highlighted in this study offers five "Taking Care of Business" orientation sessions throughout each summer. These sessions include opportunities to meet with financial aid and academic counselors in addition to registering for class. Historically, the sessions have been available only to New First Time Freshmen and are optional. Based on the findings of this study the institution may find it beneficial to require attendance for all new students, including the Transfer and Readmit population.

Implication #5: Ending registration earlier impacts late registration. Finally, in order to encourage student success and persistence, the institution should explore the option of setting course registration deadlines for no later than one week prior to the start of classes. This would provide students with more opportunity to be better prepared for classes as the time in between classes would allow students to secure textbooks and finalize their financial aid awards.

Recommendations for Future Studies

Recommendation #1: Examination of multiple institutions. To expand the research conducted in this study, the same research should be conducted using multiple institutions. This would allow researchers to determine if the frequency of late registration protocols observed within this study is consistent with frequencies observed at other institutions. Including additional institutions would allow researchers to determine if late registration protocols have the same effect on student success and persistence that was observed in this study.

Recommendation#2: Examine the cause of late registration among racial groups. The results of this study indicate that White students were more likely to register for classes later than any other race sampled in the study. Further research should include an examination of the causes of this tardiness among this group of students. When completing such a study, a particular focus should be placed on the intention or commitment of the student who is attending an institution that has a designation of being a historically black institution. The study also demonstrated that Transfer students were more likely to register for class later than other student types. This would imply that targeted strategies should be implemented in order to ensure that this population has a seamless transfer process.

Recommendation #3: Expansion of study to include continuing students. The current study only focuses on students that were in their first year. To expand the research, an

examination of the impact of registration protocols on the success and persistence of continuing students should be conducted. This would allow researchers to determine if the frequency of male late registration versus female late registration and the impact of late registration protocols are consistent with the results obtained from the current study. This would allow for a more comprehensive depiction of the impact of late registration on student success.

Recommendation #4: Expansion of study to include qualitative factors. Vincent Tinto's Longitudinal Model of Institutional Departure (1993) identifies five characteristics that impact the student's decision to depart from the institution. These factors include the (1) pre-entry attributes such as family background, skills and ability, and prior schooling, (2) goals and commitment, (3) intention, (4) institutional experiences and (5) integration. To expand the research conducted in this study, an examination of the qualitative factors such as goals and commitment, intention, institutional experiences, and integration should be conducted.

Recommendation #5: Studies to include the impact of late registration among males. It is important to note that the study found that male students who registered late were less academically successful than their female counterparts. Future research can be expanded to examine what support programs would be appropriate to support the academic progression and success of late registering students.

Recommendation #6: Study of the impact of late registration on business practices. As Moltz (2011) indicated there is often a push for late registration because of the revenue that is generated for the institution through tuition dollars and state enrollment-based appropriations. As such, the institution participating in this study has allowed students to register for classes through the tenth day of class. As a result, the institution has reported instances in which their late registration practices have had a negative impact on students and their success and/or

persistence. One such case involves a transfer student that was admitted to the institution two days prior to the start of classes. Due to the lateness of her admission, "shortcuts", such as advising the student prior to the articulation of her transcript, were taken. The result of this "shortcut" was improper advising which led to a misrepresentation of the student's actual classification. Classes that she was given credit for during advising were not actually accepted by the institution. This resulted in her exhausting her financial aid eligibility as she had been paid for classes that were either not in her program plan or classes that were unnecessarily repeated. The result of this led to a mental breakdown of the student and she subsequently threatened self-harm. To further the research on late registration practices and its impact on student success and persistence, there should be an examination of the impact late registration has on business practices and how this may ultimately impact student success and persistence.

Conclusion

Student success and persistence have become issues that have received increased scrutiny and assessment as they have become matters of economic survival for institutions (Summers, 2003). While late registration alone may not have a significant impact on student success and persistence, it is a practice that should be examined by institution administrators. The current study found that late registration had a significant impact on males as it related to student success which was measured by GPA. The study also found that there is little likelihood that late registration impacts female student persistence. It would be wise for institutions to develop and implement a practice that pertains specifically to student persistence as dictated by gender and time of registration in order to maximize student's persistence.

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