

DISSERTATION

HISPANIC MALE STUDENTS: CHANGING MAJORS AND PREDICTORS OF
GRADUATION AT ST. PETERSBURG COLLEGE

Submitted by

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ABSTRACT

HISPANIC MALE STUDENTS: CHANGING MAJORS AND PREDICTORS OF GRADUATION AT ST. PETERSBURG COLLEGE

The purpose of this study was to collect, examine, and analyze retrospective data from a cohort of Hispanic male students at St. Petersburg College (SPC) Florida, to understand how specific variables relate to the number of times Hispanic males change majors and the correlation between changing majors and graduation. The research primarily focused on the relationships among contributing variables (Crisp & Nora, 2010; Taggart & Crisp, 2011), which may influence the length of time Hispanic males take to graduate from SPC. This study was designed to answer the following two questions: whether there are factors associated with how students change majors, and how to identify patterns around changing of majors that may hinder graduation among Hispanic male students (N = 706) who had changed their majors one, two, or three times. Descriptive statistics, logistic regression, and survival analysis were used to examine and evaluate graduation as outcomes. The data collected yielded conclusions mirrored in other studies while taking into account that Hispanic students who enroll in college may be unprepared for it. Educators and researchers need to adopt the concept of acculturation for Hispanic males to focus on academic conscientiousness and ethnic identity (Ojeda et al., 2012). These appear to be factors for Hispanic males when selecting a college and/or the frequency with which they change majors, thus it may affect their likelihood of graduation.

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DEDICATION

I would like to dedicate this dissertation to my mother and father, Nira and John Davis, for instilling in me the values of higher education at an early age. It was by following their example of a strong work ethic and perseverance I was able to achieve this great endeavor. I also dedicate this dissertation to my loving family—Rebecca, Rourke, Rafe, and Riggs—for their support, patience, time, and unconditional love for me. Lastly, to my amazing in-laws, Marvin and Harriet Robbins, for accepting me into the family and never doubting my abilities.

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CHAPTER 1: INTRODUCTION

The significance of the increase in the Hispanic population and its influence on American society became evident in the 2012 presidential election, in which Hispanics represented 10% of the eligible voting population in the United States, and 72% of Hispanic voters voted to reelect President Barack Obama (Lopez & Taylor, 2012). That increase only became more pronounced leading up to the election, as the Hispanic population in the United States grew by 2.5% between 2010 and 2012 (Brown, 2014). Further, the number of eligible Hispanic voters increased by 19% (19.5 million to 23.3 million). In addition to its influence on the political arena, the Hispanic population increase resulted in a considerable spike in the number of Hispanic college students in the United States (see Table 1). “Over the past four decades, the number of Hispanics graduating with either an associate’s or a bachelor’s degree has increased sevenfold, with growth outpacing that of other groups” (Fry & Lopez, 2012, p. 1). According to a National Education for Educational Statistics Report, *Projections of Education Statistics to 2022—Forty-first Edition*, the total enrollment in postsecondary degree programs increased 45% from 1997 to 2011. Additionally, enrollment is projected to continue to increase by 13% in the next 11 years (Knapp, Kelly-Reid, & Ginder, 2012).

Table 1

Growth in Postsecondary Enrollment (in millions)

Age groups	1997 (Actual)	2011 (Actual)	2022 (Projected)
18-24	8.40	12.50	13.60
25-34	3.20	4.90	5.80
35 years and over	2.80	3.50	4.30
Total	14.40	20.90	23.70

Suro and Passel's (2003) study regarding the impact of the changing patterns of Hispanic population growth focused on the effects of previous migrations with an emphasis on the second generation. "These Latinos are U.S. citizens by birth and will be the products of U.S. schools and, for those reasons alone, they will present a different character and have a different impact on the nation than their parents" (p. 9). For instance, first-generation Hispanics are fluent in Spanish with varying degrees of proficiency in English; second-generation Hispanics show greater proficiency in English, and the third generation loses Spanish altogether (Taylor, Kochhar, Livingston, Lopez, & Morin, 2009).

According to numerous studies, one is considered "uneducated" when he or she does not have a high school diploma or its equivalent (Kosman, 1969; Mincy, Sawhill, & Wolf, 1990; Mundra, Moellmer, & Lopez-Aqueres, 2003). Fry (2010) stated that Hispanic immigrants represent the highest percentage, 52%, of the uneducated or high school dropout population in the United States, compared with the 25% of native-born Hispanics who dropout of high school. The percentage of Hispanics between 18 and 24 years of age who completed high school is 76.3%, an increase from 72.8% in 2010 (Fry & Lopez, 2010); however, this increase was attributed to higher numbers of *native-born* Hispanics who completed high school. It did not address the dropout rate or the fact that many foreign-born Hispanic students drop out of high school largely because of struggles around understanding the American education system and its opportunities (Fry, 2010).

The Hispanic population growth has impacted all levels of education, including colleges and universities. The United States is already experiencing notable consequences from the rapid growth of Hispanic college enrollment (Knapp et al., 2012). "The nation's Hispanic student population has reached a number of milestones in 2011" (Fry & Lopez, p. 4), by experiencing a

population increase. Hispanics now represent the largest minority group in postsecondary education enrollment among 18- to 24-year-olds (Fry, 2011).

According to the U.S. Census, between the years 2000 and 2012 Hispanic college enrollment rose 12.6%. “Driven by a single-year surge of 24% in Hispanic enrollment, the number of 18-to 24-year-olds attending college in the United States hit an all-time high of 12.2 million in October 2010” (Fry, 2011, p. 3). Of particular note is the significant increase of 25.2% in the number of Hispanic students enrolled in college between 2010 and 2012 (Fry & Lopez, 2012), which is indicative of an upward trend. Hispanic Serving Institutions (HSI) are particularly important because colleges and universities may receive funding under Title V of the Higher Education Act of 1965, which was amended in September 2006 to improve educational opportunities for Hispanic students (Sáenz & Ponjuán, 2009). This growth was credited to the number of people seeking to achieve the American Dream through education, and in this respect, Hispanic students are no different from any other group. Education is often viewed as a democratic force in American society; part of the ideology that students, regardless of race, gender, or social class, can study hard and rise as far as their ambitions and abilities take them (Rhoads & Valadez, 2016).

The Changing Pathways of Hispanic Youth in Adulthood (Fry, 2009) states that since the 1970s, Hispanic high school students have lower dropout rates, increased college enrollment, and have participated in the United States labor force in greater numbers. Further, they have achieved these successes in spite of numerous barriers faced as students, including the ever-changing political climate, immigration laws, incarcerations, and the lack of public support for increasing educational services needed to accommodate them (Crouch, Zakariya, & Jiandani, 2012). Although significant demographic shifts have led taxpayers to take notice of the demand

for increased educational funding for both foreign-born and native-born Hispanic students, it is not clear whether they are willing to allocate more funding (Crouch et al., 2012). Taxpayers' attitudes, or their willingness to pay taxes, are a matter of balancing interests that should be examined from three points of view: (1) the majority of students (mostly middle-class), (2) low-income students (African American and Hispanic students), and (3) taxpayers (John & Asker, 2003). The debate has been, and still is, equity versus efficient use of tax dollars. While this push and pull for funding continues, states scramble to adapt to the rising enrollment of Hispanic students.

According to Table 2, the Pew Hispanic Center analysis of the Current Population Survey (CPS) published in October 2010 and 2011, Hispanic enrollment is making a presence in the ranks of two- and four-year colleges and universities (Fry & Lopez, 2012). Hispanics represent the largest minority group to show significant changes in enrollment patterns.

Table 2

College Enrollment of 18- to 24-Year-Olds, 2010-2011 (in thousands)

Ethnicity	2010	2011	Change	Percent Change
White	7,663	7,882	219	3
Hispanics	1,814	2,079	265	15
Black	1,692	1,639	-53	-3
Asian	811	748	-63	-8
All	12,213	12,570	357	3

Table 2 displays the numerical value of the 2010 and 2011 changes and the percentage of change for each row. On Table 2, "White includes only non-Hispanic whites. The figures above refer to the white-, black- and Asian-alone populations" (Fry & Lopez, 2012, p. 7). The columns in

Table 2 do not add to the totals, because they only show the standalone ethnicities without multi-racial, such as Hispanic-Whites.

Hispanic males in particular face many challenges while navigating the educational system (Hollmann, Mulder, & Kallan, 1999; Passel, Cohn, & Lopez, 2011). Many Hispanic males who attend college are valued less, and educators expect less from them; therefore, all but exceptional students performed below typical collegiate-level students (Hall & Rowan, 2001). Of those entering the public school system, most are not adequately prepared to compete with the student majority (Sáenz & Ponjuán, 2009). They are more likely to experience disciplinary problems, be suspended, and eventually dropout of (K-12) school and join the workforce than other youth male minority groups (Sáenz & Ponjuán, 2009). Hispanic males need a rigorous and inclusive curriculum, and mentors to achieve success. Further, if school systems do not learn to tap into their Hispanic students' talent pool, it may have implications on global competitiveness (Harrell & Forney, 2003). Many variables that influence Hispanic males' success in public schools, community colleges, and universities, the most significant of these were noted by Clark, Ponjuán, Orrock, Wilson, and Flores (2013). They were (1) influence of family and culture, (2) institutional programming initiatives, and (3) communication among K-12 schools, colleges, and universities.

Educators creating postsecondary programs to aid Hispanic males need to focus on "...creating a positive educational environment to include family and community involvement, mentoring and role modeling, and supporting services and programs, which encourage Latino male students to formulate and carry out their educational goals" (Clark et al., 2013, p. 464).

Hispanic high school graduates, both male and female, between the age of 18 to 24 years old, increased from 60% in 2000 to 79% in 2013 and their dropout rate (14%) continues to

increase (Fry, 2014). That said, Hispanics have the highest dropout rate among all ethnic groups.

Aside from the Great Recession, the trend in more Hispanic youth staying in school is occurring against the backdrop of diminishing job opportunities for less-educated workers, including less-educated Hispanic workers. Hispanic students and their families may be responding to the rising returns to a college education by staying in school. (Fry, 2014, para. 5)

Sáenz and Ponjuan (2009) noted that Hispanic males vanish from the educational picture either during high school or immediately afterward. Reasons for this include disciplinary problems, suicidal and depressive tendencies, and suspension from classes (Sáenz & Ponjuan, 2009). Those who do enroll in college often find navigating courses and choosing a major to be arduous processes, due to behavioral challenges and/or the stigmatization of being labeled an “at-risk” (Sáenz & Ponjuan, 2009, p. 60). Given the sparse research concerning Hispanic males’ decisions to change majors, educators need to examine current trends to understand how to best serve students facing dropout, graduation, workforce, and policy issues (Eschbach & Gomez, 1998; Harrell & Forney, 2003; McConnell & Delgado-Romero, 2004; Nguyen, Bibo, & Engle, 2012; Ortiz, Valeiro, & Lopez, 2012; Perez & McDonough, 2008; Perna, 2000; Perrakis & Hagedorn, 2010).

Regardless of how educators or policymakers attack the potential issues arising from the growing population of Hispanics, the increasing number of Hispanic/Latino children is challenging educational systems.

The education of native-born Latino young people who are being raised by immigrant parents is likely to emerge as a key policy challenge. By 2050, the children of the second generation—a new third-plus generation—will become a major presence. (Suro & Passel, 2003, p. 7)

Without sufficient data-driven research, it will be difficult for educators and policymakers on all levels (local, state, and federal) to traverse these uncharted waters. Although not all policies are research-based, college leaders need to focus on broad research to help guide their decision-

making. In addition, they will need to look at segmented student populations to narrow the focus and address nuanced issues; for example, the reasons why Hispanic males change majors and how these changes impact their college experiences and the likelihood of graduation.

Purpose of Study

The purpose of this study was to collect, examine, and analyze retrospective data of Hispanic male students at St. Petersburg College (SPC) in Florida to understand how specific variables relate to the number of times Hispanic males change majors and the correlation between such changes and graduation. The research primarily focused on the relationships among contributing variables (Crisp & Nora, 2010; Taggart & Crisp, 2011), which may influence the length of time Hispanic males take to graduate from SPC.

Research Questions

Research regarding Hispanic male students has become more prevalent, as it relates to the significant growth in the Hispanic population in recent years. However, there is still a need to understand what guides male Hispanic students to successful college careers and graduation, including patterns associated with their changing of majors.

The research question guiding this study sought to explore the relationships of contributing variables and explain the successes of Hispanic male students graduating from SPC. Variables were identified as contributing based on the positive relationship to retention (Murtaugh, Burns, & Schuster, 1999) and Hispanic male graduation (Crisp & Nora, 2010) as predictive outcomes. This dissertation attempted to answer the following question: as they change majors, are there factors that hinder graduation among a cohort of Hispanic male students? We can gain an understanding of graduation outcomes at SPC by examining the following questions:

- Does the number of times Hispanic males change majors influence graduation outcomes?
- Does GPA influence graduation for Hispanic males?
- Does the number of total credits influence graduation for Hispanic males?
- Does financial aid acceptance influence graduation for Hispanic male students?
- Does the number of times financial aid is received influence graduation for Hispanic males?

Theoretical Student Success Triangulation

The three theoretical paradigms used to explore, guide, and anchor this research were: (1) migration, (2) transition, and (3) transformation theories. This guided perspective (see Table 3) allowed the research to address the variables as they relate to the patterns of Hispanic males changing majors and, ultimately, graduating. In addition, theoretical triangulation linearly aligns with the contributing variables (Crisp & Nora, 2010) and retention predictability (Murtaugh et al., 1999) using archival data of Hispanic male students at SPC from their first year through the change of majors to graduation.

Enrollment – Chain Migration

MacDonald and MacDonald's (1964) Chain Migration theory is important when studying groups of individuals who share a common thread. Male Hispanic students shared the gender component, but arguably the stronger element of being Hispanic/Latino, which allowed them to connect with an entire group (or groups of students) within the same race. Person and Rosenbaum's (2006) theoretical focus points out Chain Migration as an experience of a network of members who aid in destination, travel among the cohort, and receive and assist all members of the chain.

Table 3

Theoretical Grounding Phases at SPC

Phases	Theory/Elements	Utilization	Semester Credits
<i>Enrollment</i>	Chain Migration (MacDonald & MacDonald, 1964; Person & Rosenbaum, 2006)	This research did not utilize the enrollment phase, but it was important to note that cohort members started the study at different intervals. The length of time was the same for all – 3.5 years (Bailey, Calcagno, Jenkins, Leinbach, & Kienzl, 2006).	0-15
<i>Transition 1</i>	Transitional Theory (Schlossberg, 2005) <i>Situation and Self</i>	Insight of transitional factors of particular intervention points; allow coping supports, and strategies that will conform to change or a changing environment.	16-30
<i>Transition 2</i>	Transitional Theory (Schlossberg, 2005) <i>Support and Strategies</i>	Transitional factors that occur at particular points of the term that identify students who are focused and have more of a sense of direction. Making sure students' needs are met and that they are managing and controlling the transition (among variables).	31-45
<i>Graduation</i>	Transformational Theory (Mezirow, 1997; 2000)	Lagging variable information that are significant with regard to student graduation from SPC.	46-60+

For the purposes of this research, Chain Migration was used within the same context as Person and Rosenbaum's (2006) work, namely, to illustrate "...students choose colleges where a primary social contact is or has enrolled, enroll with members of their network, and look to contacts already at the college for assistance once enrolled" (p. 52). Perez and McDonough

(2008) studied Hispanic males and female focus groups in 106 high schools to examine Chain Migration theory as a social framework regarding students' choices of college. The approach taken in this research, namely, examining the SPC cohort (N = 706) by the quantitative dynamics and student choices, as well as the analysis of community colleges, is similar to Person and Rosenbaum's (2006) study of Hispanics males and females. This method is further explained in Chapter 2. Person and Rosenbaum (2006) pointed out the importance of student networks (groups with common cultural interests), which, though usually viewed as beneficial, can have both positive and negative influences on first-time college students receiving information or attempting to transition into unfamiliar environments.

Transition - Transitional Theory

The premises of Schlossberg's (2005) Transitional Theory allowed understanding of how Hispanic males navigate academic transitions. When a concept is compartmentalized into phases, it allows for visibility of the centermost linear point of a study's framework. In this study, which involved two transition phases, compartmentalizing involved plotting students' accomplishments to see which area or phase has the most influence. These phases were structured around students' success and progression. For example, students who have moved through the enrollment phase and navigated semester-after-semester are successful with regard to Schlossberg's (2005) four Ss:

1. **Transition 1 Phase (*Situation*)** - The ability to provide factors related to each transition to measure the impact of a particular point in time or across transitions;
2. **Transition 1 Phase (*Self*)** - The ability to understand students and the decision-making process, based on data collected, while wrestling with conflict;
3. **Transition 2 Phase (*Support*)** - Aids in the creation of strategies for students

navigating points of contradictions;

4. **Transition 2 Phase (*Strategies*)** - Gives meaning to the fluctuating variables that come with change.

For the contributing variables, Schlossberg's (2005) four Ss are relevant to the survival analysis and predictability for each academic variable as measured during particular intervals. Transition can be measured in intervals of growth and decline with shifts in, out, or through transitions. When attempting to understand patterns of changes in Hispanic males changing majors, the process of navigating through each point of transition and evaluating the growth or decline can be a valuable mechanism. The theoretical framework used by Perez and McDonough's (2008) research is extremely valuable when identifying transitions because it facilitated understanding the decision-making process of Hispanics and the identification of measurable variables, including social networks. For example, "...students are making decisions based on others' experiences without taking into consideration what the repercussions of these decisions might be in the long term" (p. 258).

Second, Transition Theory points to interventions regarding elements of a given situation, self, support, or implemented strategies. These four Ss influence how one copes with transitions. Each transition is identified by each term enrolled and measured based on the accumulation or number of credits. The elements of Schlossberg's (2005) four Ss may be quantitatively utilized to understand the transitions. For example, if a student receives grades (G) for four consecutive terms, the student has been engaged for the four terms enrolled. To effectively utilize and understand Schlossberg's (2005) four Ss, the transitional phases are split into two phases (Transition 1 and Transition 2). The Transition 1 phase encompassed two elements of Schlossberg's (2005) Transitional Theory—Situation and Self. The predictor variables assigned

to situations is Financial Aid (FA). Transition 2 accounted for the Support and Strategy elements of the theoretical framework. The assigned variables for support are Grades (G) and Number of Credits (NC). Not all variables are assigned to transitions; the variables listed here have possible direct relationships to each term and act as a point within each term for successful transition to the next term. For example, if a student earned a 2.00 GPA or higher and successfully passed all courses to earn all credits taken, this would be a successful transition.

Lastly, the transitional points are critical to establish measurable points, address the connection to the number of credits variable (NC), and establish the connections as a grounding element (see Table 3). This study showed what took place at individual variable intervals along the timeline; for example, the points at which students received financial aid (FA) (10 possible times in 3.5 years), and the points at which they changed their major (MC). Chapter 3 covers this analysis in detail.

Graduation - Transformative Learning Theory

Under the umbrella of the transformative paradigm, Mezirow's (1997) Transformative Learning Theory identified frames of reference that deal with the assumptions stemming from people's experiences: "[Students] selectively shape and delimit expectations, perceptions, cognition, and feelings" (p. 5). To address the frame of mind of Hispanic students as related to the completion of college, the paradigm must reflect a clear understanding of the students and their family members' "...belief[s], value of judgment, attitude[s], and the feeling[s] that shapes a particular interpretation" (p. 6). These four areas of one's mental habits are relevant because they focus on identifying attitudes that impact the decision making of students and their family members. This study addressed one area in particular, value of judgment, which aligns itself

closely with decision-making and choices Hispanic males make when changing their major. It also took into account the number of times they made such a choice.

A theoretical framework aids in structure of design by constructing a linear model that helps identify with the Hispanic males' experiences. This research attempted to draw from and analyze current articles by grounding the conceptual framework around the research of Crisp and Nora (2010). The data provided consistency in labeling and insights into the process that occurs when Hispanic males change majors.

Transformative Research Paradigm

Mertens (2010) identified the transformative paradigm by the researchers who are "...critical theorists, participatory action researchers, Marxists, feminists, racial and ethnic minorities, and persons with disabilities, among others" (p. 21). These groups typically challenge the political agenda or the social majority and align themselves with the underdog. It appeared the relationship of "us versus them" is almost expected and understood as the norm, for "...transformative researchers consciously and explicitly position themselves side by side with the less powerful in a joint effort to bring out social transformation" (Mertens, 2010, p. 21).

The transformative paradigm suggested the researcher "intentionally aims to challenge and change the understanding of participants," (Merriam, 2009, p. 92), and although this research did not identify any individual, this paradigm's ontology reflected on social positioning and different versions of reality for the privileged (Mertens, 2010). Hispanic students address reality as it happens through social movements, and although many students and families may not be able to take part in the positioning, they may be able to transform themselves as individuals (Mezirow, 2000); hence, the relationship to the transformative process was represented by graduation.

Merriam (2009) described the nature of knowledge as a means to change, emancipate, and empower. Privilege seems to be the baseline for this paradigm, one that looks at the issues through the lens of the haves and not have-nots. For example, Mertens (2010) noted “some ethnic minority psychologists believe white researchers who study their communities do so without an understanding or caring for the people who live there” (p. 23). Others argue the opposite. This is a legitimate debate; however, while this study acknowledged the importance of the privilege paradigm, it was not an area of focus. Mertens (2010) discussed some of the ways in which gender studies, racial bias, and disabilities may affect the collection of data. “In transformative research in particular, the issue has been raised as to the ability of men to study women, members of the dominant ethnic group to study minority ethnic groups, or people without disabilities to study persons with disabilities” (Mertens, 2010, p. 249) making the argument for educators to follow and study Hispanic males. For the purposes of this quantitative research, the research questions were structured to help address transformational elements or variables that are helpful to any college addressing issues with Hispanic males’ graduation.

Delimitations

This study had three noteworthy delimitations. The archival data were delimited to first-time Hispanic male students who began courses at SPC from the Fall of 2008 through Fall 2011. Second, the cohort was limited to $N = 706$ male students. All of the SPC Hispanic males started at the beginning (fall) of four different intervals, Fall 2008 through Fall 2011, thus allowing 3.5 years of possible enrollment. These years increased the size of the cohort to 706, rather than studying Hispanic male students who started, for example, in Fall 2008, for four years. Lastly, the database included all students of St. Petersburg College (SPC) taking courses on multiple campuses within Pinellas County.

This cohort (N = 706) was split into three groups: those who changed majors one, two, or three or more times. The database excluded progress made by the College Experience (CE) Initiative that began under President William Law in Fall 2011. The plan focused on five key areas dealing with student engagement as a means to address student success and graduation (Coraggio & Gardner, 2013). No variables reflecting implementation of this initiative were included in the CE database as it was assumed they had no influence on the cohort of Hispanic males.

Social Identities

As a Hispanic-American who rose through one of the United States' educational systems, I have firsthand knowledge of the challenges Hispanic students have to endure. Growing up in South Carolina, I was the only Hispanic in my middle and high schools, which was difficult, largely due to the isolation and exclusion from the student body majority. I had to learn to adapt, much like the students who participated in thematic multiracial exploration research (Miville, Constantine, Baysden, & So-Lloyd, 2005). Their chameleon-like experiences, as well as my own, provided me with a multifaceted perspective and an understanding of other races. I received a quality education without any major hurdles or problems; however, I did experience many obstacles that allow me to identify with Hispanic male students. These obstacles included hurtful comments and other instances of racism that resulted in a myriad of self-confidence issues.

Researcher's Perspective

I have the interesting perspective of arriving in this country from Brazil with nothing but the clothes on my back, living here undocumented for a long period of time, then serving and fighting during Desert Storm. My social identity has allowed me to form a unique research

perspective, one that has helped me establish a 360-degree outlook of Hispanic male students. This perspective takes on many shapes, including but not limited to the student who has never had anything, who has lost everything, with minimal or no support from friends or family, who cannot speak the language, and who persevered through all obstacles to adapt to a new nation, culture, and identity.

Through these experiences of identity, I developed empathy for students of all races and backgrounds, especially Hispanic males, and a deep understanding of their feelings, culture, thoughts, and attitudes as they navigate the educational system. I also had the opportunity to witness the empathy, or lack thereof, of those who were/are in administrative roles. This experience allowed me to educate myself by watching and absorbing the psychological effects, both internal and external, of those who assisted me and how I viewed them. As difficult as this was at times, I had no choice but to learn how to learn by adapting to my environment. The concept of Learning How to Learn (Smith, 1982) was instrumental in my development. I had to adapt to any situation, using my limited skills, language deficiencies, and finances to acquire the knowledge to learn in any environment (Merriam, Caffarella, & Baumgartner, 2012, p. 287). Learning is a complicated process involving theories, desires, and ultimately knowledge, but nothing about my experiences has been easy. Indeed, it has been an extremely painful, arduous, and timely process that I endured by finding and nurturing my faith, hope, and a strong desire to succeed.

From my professional point of view as a college administrator, I have found three reasons why my research was so crucial to me and possibly to others. First, it allowed me to gain an understanding of Hispanic male students who struggle in higher education as I did. Second, I could somehow inspire other administrators who wish to analyze data to effectively understand

the needs of Hispanic male students. Lastly, I could contribute to the limited research on Hispanic males in higher education as the issues affecting this growing population become urgent (Fry, 2011; Fry & Lopez, 2012; Gramlich, 2017).

Significance of Study

It is clear that studies are needed to examine why many Hispanic males attending colleges are ill-prepared (Fry, 2002; 2004), as well as to understand the various challenges they face related to enrollment, transition, and successful graduation processes. While the significant and continuous increase of the Hispanic population in the last decade has led to a minor uptick in studies regarding Hispanic students, most of the research has focused on the successes of Hispanic females (Fry, 2002; 2004; Gloria, Castellanos, Scull, & Villegas, 2009; Hagedorn & Lester, 2006; Nora & Rendon, 1990; Sáenz & Ponjuan, 2009, 2011; Santos, 2004).

This study, on the other hand, focused on the successes and challenges of their male counterparts. Chapter 4 is particularly important, as it will help institutions understand some of the causes and consequences of the Hispanic male students changing their majors. The site of the study, SPC, is relevant because it is located in one of the epicenters of Hispanic population. “Half of the 100 largest counties are in three states—California, Texas, and Florida” (Brown, & Lopez, 2013, p. 4.). SPC is located in one of the counties with the largest Hispanic populations in Florida and has multiple campuses within Pinellas County. Findings should have a valuable and purposeful impact on similar institutions seeking to address enrollment and retention of Hispanic males, given their current increasing population, low high school graduation rates, and overall low college success (Fry, 2002; 2011; 2014; Salinas & Hidrowoh, 2017).

CHAPTER 2: REVIEW OF LITERATURE

Research conducted in higher education related to Hispanic male students is often positioned or focused on high school graduation rates, primary and secondary education, behavior, incarceration, and violence (Fry, 2002; 2011; Gloria et al., 2009). This research drew from and analyzed current articles by grounding the conceptual framework around the research of Crisp and Nora (2010), which addressed persistence and transfer decisions of Hispanic college students by outlining principal factors, variables, and experiences. They are demographic variables, socio-cultural variables, pre-college variables, environmental pull factors, and academic experiences, each of which tied into students' outcomes.

Study Concepts

It is important to identify terms when studying topics that transcend culture, language, and customs. Comas-Díaz (2001) introduced the term *La Raza Cósmica/The Cosmic Race*, which she created as a metaphor for the evolving transformation of Latino identity in the United States. Although still evolving, a cohesive Hispanic/Latino identity can be difficult to define due to a plethora of cultural and linguistic differences that includes phonology, grammar, and vocabulary. "By a ratio of about two-to-one, young Hispanics say there are more cultural differences (64%) than commonalities (33%) within the Hispanic community in the U.S" (Taylor et al., 2009, para. 26). The definitions of Latinos and Hispanics vary from year to year and place to place; therefore, deciphering such an identity requires experiences and/or cultural acceptance, as well as a clear understanding of the history and cultural differences among the terms used to describe the Hispanic population.

According to Rhoads and Valadez (2016), a noble place to start is by embracing the idea of a *multicultural education*, a concept of openness and acceptance that transcends all cultural

borders; it contains terminology and creates structures through which multicultural students can express themselves and overcome obstacles. The term “Hispanic/Latino” is defined by the 2010 Census as “a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture of origin regardless of race” (Humes, Jones, & Ramirez, 2011, p. 4). It is important to note that “Hispanic” is a label imposed by the government, while Latino is derived from political activism (Ballysingh, Zerquera, Turner, & Sáenz, 2017). Despite this distinction, the terms Hispanic and Latino are used in this dissertation as above or as emphasized by each author. For this study, SPC uses the term “Hispanic” to identify its students and the students use this term to identify themselves.

Two phrases used interchangeably are choosing a major and choosing a career. Students seek higher education for different reasons (Workman, 2015). For Hispanic students, the American Dream tends to revolve around the ability to work hard, achieve financial security, and eventually find a job or a career (Lopez, Gonzalez-Barrera, & Krogstad, 2018), which are factors in their decision to seek higher education or a career (Taylor et al., 2009). Further, 89% of Hispanics (both males and females) point to career success as an important aspect of their lives. “Even more so than other youths, young Latinos have high aspirations for career success” (Taylor et al., 2009, para. 27). The concept of the American Dream is very real, particularly for Hispanic students who migrated or have parents who migrated to the United States from other countries. “This vision of American education is based largely upon a belief that the education system provides equal opportunity for all students” (Rhoads & Valadez, 2016, p. 57). For immigrants, achieving this dream and the opportunities that come with it involve choosing a career rather than a major; therefore, the goal of finding a job to support a family far outweighs that of attending college to enroll in a liberal arts program such as English or the humanities.

Although Hispanics have a high likelihood of dropping out of college, they are satisfied with their lives (content with a lack understanding of higher aspirations) and placed a high value on education obtained, hard work, and career success (Taylor et al., 2009, para. 4).

For purposes of this study, it is important to note that choosing majors and changing majors are *not* used interchangeably with regard to how students navigate this process. The use of the word *choosing* indicates significant decision making related to an initial choice, while the word *changing* is used within the context of an act or process of making an alternative choice (Beggs, Bantham, & Taylor, 2008; Montmarquette, Cannings, & Mahseredjian, 2002) resulting in an identifiable variable element in the database.

The third term is *panethnicity*, defined as the growth and complexities of multiple ethnicities sharing common situations and problems (McConnell & Delgado-Romero, 2004). The buckshot effect is a particularly helpful analogy in illustrating this concept with regard to Hispanic students because of the many similarities and differences among their various countries of origin. Each country can be represented by the buckshot pattern on a target, with the pattern symbolizing variations within race, language, food, culture, and so forth. The fuzziness is evident among Hispanic ethnic boundaries because of the *choices* Hispanics have in identifying with other closely related ethnic groups. The differences can be slight or substantial among groups; for example, the inclusion/exclusion of one spice in traditional dishes or major linguistic differences in slang (Eschbach & Gomez, 1998).

The concept of Chain Migration illustrates the behavioral similarities and differences within groups of Hispanic students. Chain Migration, coined and used as part of a larger framework by MacDonald and MacDonald (1964), pertains to the social network of Hispanics and how they migrate, communicate, and assist each other as a group. As further identified in

the review of the literature regarding Chain Migration, Person and Rosenbaum (2006) created one of the most comprehensive models with regard to the Hispanic population. Their research foundation focused on the social and behavior aspects of how Hispanic students (both males and females) navigated, communicated, and ultimately made decisions after having come from their country of origin (for first generations) or when navigating through a progressive search for self, cultural, or acculturation meanings (second and subsequent generations). This study utilized Chain Migration's framework and definitions to illustrate key elements of migration, social networks, and decision making among Hispanic males as a means to understand the studied cohort. Finally, the study utilized the work of Person and Rosenbaum (2006) to explore patterns among three groups, namely, those who changed their majors once, twice, or three times.

SPC Hispanic Population Analysis

Currently, the overall collegiate educational outlook for Hispanic students in the United States is dismal. While economic conditions certainly play a role, it is important to understand the larger cultural picture. Several factors affect the choices of Hispanic students around education, including the economic pressures of having to contribute to their households, poor parenting, and lack of English skills (Lopez, 2009; Peña & Rhoads, 2018; Santos, 2004). Concurrently, perceptions of family and the influence of family have an impact on students' attitudes toward postsecondary education (Fry, 2002; 2011). There are many differences between Hispanic and non-Hispanic households that influence educational decisions. For example, one of the many difficulties Hispanic students face is having Spanish as the primary language in the home. "More say they have often been encouraged by their parents to speak in Spanish than say they have often been encouraged to speak only in English—60% versus 22%" (Taylor et al., 2009, p. 26). The lack of English language skills can be crippling to K-12 children

navigating the educational environment. Even bilingual students have many stressors that make academics challenging; for example, students who speak only Spanish in the household have problems understanding instructors in class. Students who need help with homework from parents who only speak Spanish are at a particular disadvantage (Cervantes & Cordova, 2011). Another problem is “language brokering”—this is when parents who do not speak English rely on their children to act as interpreters for medical, legal, and/or educational matters (Cervantes & Cordova, 2011; Morales & Hanson, 2005). For the students, language brokering can cause “frustration, embarrassment, and pressure to translate accurately” (p. 490).

Incarceration is another challenge Hispanics face with regard to achieving life goals, including those around education. Currently, the incarceration rate among Hispanics is 857 per 100,000, which is 3.13 times greater than the rate for whites (Shaw, 2019).

Economics are also considered a significant factor in educational choices within the Hispanic community. The need to contribute financially to their families is one of the most common reasons Hispanic students do not engage in educational programs (Fry, 2002; Sáenz & Ponjuan, 2009).

“Between 2006 and 2010, the poverty rate among Hispanics increased nearly six percentage points—more than any other group—from 20.6% to 26.6%” (Taylor, Lopez, Velasco, & Motel, 2012, p. 4). “While the latest poverty rates among Hispanics are a historic low, Hispanics continue to be overrepresented among the population in poverty” (U.S. Census Bureau, 2019, para. 5). In addition, recent studies have found that 37.3% of Hispanic children are considered poor, the highest of ethnic groups in the United States (Lopez & Cohn, 2011; Lopez & Velasco, 2011; Schaefer, Mattingly, & Johnson, 2016); that number has been steadily rising and is projected to increase as the population continues to increase (Lopez & Velasco,

2011). Further, “The impact of poverty on Florida’s Hispanic and Latino children are magnified disproportionately due to their rising numbers and high concentration” (Florida Kids Count, 2016).

In Florida, the poverty percentages were below the national average (19.5% and 23.2%, respectively). Percentages may mask the actual situation as Florida has one of the fastest growing Hispanic populations in the United States (Macartney, Bishaw, & Fontenot, 2013; Manfra, Squires, Dinehart, Bleiker, Hartman, & Winsler, 2017). Florida has been identified as the state with the third largest concentration of Hispanics by the U.S. Census (Hemphill & Vanneman, 2011), 22.8% (4.3 million); only California (38.1%) and Texas (38.1%) have larger Hispanic populations.

Aside from the immediate financial and linguistic problems, Hispanic students and families face a higher rate of demographic and cultural shifts than other cultural groups in the United States. The speed to which higher education institutions are addressing these changes has necessitated arduous decisions from administrators, faculty, and students. In addition, Hispanic college students carry unique cultural characteristics that may pose challenges to academic leaders, particularly due to the lack of research (Nora & Crisp, 2009) to inform practices and programming. Colleges are responsible for identifying, nurturing, and, ultimately, setting the path toward graduation for all students. They cannot afford to overlook the need to understand factors that influence the academic achievement of Hispanic males. Leaders navigating these challenges must be aware that the growth rates and unique characteristics of Hispanic male students demand differences in funding opportunities, such as the aforementioned funding for HSIs through Title V of the Higher Education Act (Contreras, Malcom, & Bensimon, 2008).

The transformative learning (TL) process is relevant because it addresses the ideal or standard conditions that form perceptions and lead to decision-making through what Mezirow calls Frames of Reference (Mezirow, 1997). TL is the process of adult learning that challenges frames of reference or the structures of assumptions through which adults understand their experiences (Mezirow, 1997). These frames of reference “are primarily the result of cultural assimilation and the idiosyncratic influences of primary caregivers” (p. 6). Family is a major influence and acts as an agent that either helps or hinders the transformative learning process for each student as one frame of reference.

With regard to the population increase, Hispanic students and their families experience many aspects of social and cultural changes at both the national and local levels (Turner, Wildsmith, Guzman, & Alvira-Hammond, 2016), which have an impact on students’ attitudes toward postsecondary education. Hispanic males may not understand the importance of attending college and have mixed attitudes about it; they may feel invisible, having to conform and endure criticism from other students (Huerta & Fishman, 2014). In addition to Title V funding, colleges have improved student retention of Hispanic students by aligning student services with academic programs to create supportive environments (Benitez & DeAro, 2004; Sáenz & Ponjuan, 2009).

Hispanics (both males and females) made up 20.9% of the student population of Florida’s postsecondary public institutions, the fourth-largest enrollment in the state among ethnicities (Liu, 2011). Policymakers in Florida must continuously address the increased need for resources designed to assist these students, particularly Hispanic males, in narrowing the achievement gap. Moreover, Florida’s political climate, specifically around immigration reform, complicates the issue. Increased funding for programs to close achievement gaps in Florida is difficult to obtain

as states are forced to do more with less (Borman et al., 2004; Katsinas, 2005; Sáenz & Ponjuan, 2011), especially when K-12 schools compete with other non-government agencies (e.g., health, dental, and family) for scarce resources (Honeyman, Wattenbarger, & Westbrook, 1996; Manfra et al., 2017). Lastly, Florida is one of 14 states spending less than 14% of state-appropriated funds per student at the K-12 level (Leachman & Mai, 2014).

California, which has the largest Hispanic population in the nation, has longstanding challenges related to education. Research conducted by Hagedorn and Lester (2006) addressed issues concerning the inadequate college educational preparation of Hispanic K-12 students in California. Their study identified the adverse effects of students not meeting California's qualification levels for college enrollment. It recognized the success of Hispanic students (male and female) enrolled in community colleges and of the importance of exposure to advising, guidance, and policy interventions in an academically nurturing environment (Hagedorn & Lester, 2006; Perna, 2000).

Nora and Rendon's (1990) research focused on the role of the socioeconomic status and family background in academic achievement. Hispanic (both males and females) students who performed poorly in math, reading, and science had parents with lower educational attainment than parents of high-performing minority students. Identifying the socioeconomic conditions of Hispanic students is important, especially when policies and mechanisms expected to address attitudes and behavioral adjustments of male Hispanic students should be addressed in the K-12 educational system. There is a "...need to examine, develop, and revise the policies and practices to allow those students' subgroups to participate in mathematics and science-based programs of study" (Nora & Rendon, 1990, p. 38). The importance of changing social inequality for Hispanic students falls, to some degree, to educational leaders, from K-12 schools to

colleges. Many of Nora and Rendon's (1990) research principles are relevant today when addressing the importance of Hispanic socioeconomic backgrounds that can affect college preparation (Wang, 2012) and academic performance (Crisp & Nora, 2010).

Retention

Retention is an important term usually affiliated with persistence and/or graduation (Bauman, Acker-Hocevar, Talbot, Visaya, Valencia, & Ambriz, 2019; Millea, Wills, Elder, & Molina, 2018). That said, it could be a difficult concept to understand within education, because of two schools of thought: the university (on time to graduation) and the community college's (persistence rate) definitions (Wind & Ebbers, 2002). Both pose challenges when attempting to narrow to an appropriate definition, for Hispanic male students and the challenges they face, the persistence rate is often the definition of choice when measuring student success or progression toward graduation (Ballysingh et al., 2017). The reason persistence is often key when addressing the retention of Hispanic males lies with the understanding of the specific challenges they face in college (Millea et al., 2018) including those categorized as social-cultural, such as asking for help, not being masculine enough, family responsibilities, and pride (Peña & Rhoads, 2018; Sáenz & Ponjuan, 2009, 2011). At SPC, retention is identified as the persistence rate related to wraparound services that aid in consecutive registration, semester after semester. SPC's metrics are aligned to measure retention as success, which along with completion or graduation is tied to state-appropriated funding.

Studies of retention primarily focused on overall factors of student successes and graduation rates (Murtaugh et al., 1999; Wild & Ebbers, 2002). More current research is focusing on the three areas of retention—institutional factors, student attributes, and financial considerations (Millea et al., 2018)—as they relate to student success. Their research is quite

interesting because it looked at student support services offered by institutions, both financially and as an important factor in student success and institution effectiveness. Lastly, it looked at student attributes (regarding behavior and engagement) as a way to model successes in and outside of the classroom, paying particular attention to the quality of classroom experiences as a key factor in student engagement (Millea et al., 2018, p. 310). With respect to the classroom experiences, institutions that invested in tenure-track faculty tended to impact graduation rates positively (Ehrenberg & Zhang, 2005). Critical factors around retention that influenced graduation were high GPAs, smaller class sizes, and most importantly, financial aid—not only for Hispanic males but for all students. Specifically, merit based scholarships increased graduation by 18.4% and grant-based aid increased graduation by 9%, while student loans decreased graduation by 19% (Millea et al., 2018).

College Majors

The literature indicated we have not made significant progress with regard to gender desegregation among college majors, either nationally or worldwide (Hendley & Charles, 2015). When looking at race, economics and parental influence still played a major role in the direction students take when choosing a major (Workman, 2015). Regardless of the motivations and social implications associated with choosing a major, studies have shown that students (both males and females) who change majors more often (within the first two years) have a higher chance of graduating (Foraker, 2012; Micceri, 2001).

Data from the U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Studies (NELS) 1988-1994 and from the Public Use Micro (PUMS) 1990 were cross-referenced by gender, race, and nativity (Ma, 2011) to compare and display patterns of segregation in college majors and occupational fields. The direction of this

study posited understanding demographic compositions and how they related to societal occupations. “This (patterns of segregation) indicates that demographic similarities (between men and women as influential forces in career and occupational decisions) is an underlying force in influencing educational and occupational decisions” (Ma, 2011, p. 125). Favorable role-modeling career influences did not occur in the business and humanities fields. However, favorable effects occurred mostly, and had positive results, in technical and life/health science fields, which may be attributed to policy focused on attracting underrepresented groups, for example, women to the areas of science and engineering (Ma, 2011).

Ma’s (2011) research brought understanding to the demographic composition within occupations by implying that choosing a college major is influenced at a societal level. “...College major choice has been centered on individual characteristics such as precollege influences and micro-level departmental contexts such as family, school, and peer influences” (Ma, 2011, p. 124). Ma’s research did not look at the social context, but rather at a distant portrait of career choice and studies of choosing a major that were often neglected and difficult to witness, given the proximal, micro-level factors students face. Ma (2011) linked group occupational structure with students’ choice of major by involving choice to demographic groups, gender, and nativity and power of stereotypical groups that concentrate on specific majors or fields. Equally important is Perez and McDonough’s (2008) work, which addressed two critical areas in the decision-making for Hispanics students: (1) college choice is important, and (2) there is a college choice decision-making process specific to Hispanic students that merits further investigation. For first generation college students, this is a process in which “...parents, siblings, peers, and high school contacts, serve as important agents...” (p. 261). Regarding retention, not all demographic groups or concentrations among represented groups

have similar retention success (Ma, 2011). There may be infighting between parents and students that occurs at the micro level that influences a student's decision and/or completion (p. 115). These decisions are usually tied to acculturation and similarities among different groups.

Choosing a Major

In the book, *Blink: The Power of Thinking without Thinking*, Gladwell (2007) analyzed split-second decision making. He delved into why some people are good at making decisions and others are not, and how some people capitalize on quick, accurate, and effective decision making with minimal subject knowledge. Gladwell also notes decision making or choices pertaining to higher education may have similar characteristics (2007). One of the difficult components of the collegiate decision-making processes is choosing a major, yet for most students this part of the academic process is often overlooked and/or not well thought out (Pascarella & Terenzini, 2005). According to student choice construct, when students make choices around education, the focus lies primarily on their interactions with the academic environment and employment (Paulsen & St. John, 2002).

Many Hispanic students in particular deviate from the sequence of student choice construct when choosing a college and/or major and when faced with the decision to change their major. For instance, there are two important factors for Hispanic students choosing to attend college that are strong predictors of college/education persistence: (1) acculturation and (2) gender (Perna, 2000; Sciarra & Whitson, 2007). According to Berry's (2003) definition, acculturation is adopting a host culture (as one associated with an academic institution) while maintaining one's heritage culture, which is particularly important for male and female Hispanics (Cavazos-Rehg & DeLucia-Waack, 2009; Cervantes & Cordova, 2011; Fiebig, Braid, Ross, Tom, & Prinzo, 2010; Ojeda et al., 2012; Rivera, Blumberg, Chen, Ponterotto, & Flores,

2007; Schwartz, Zamboanga, & Jarvis, 2007; Valentine, 2001). More important than acculturation for Hispanic males are the concepts of academic conscientiousness and ethnic identity (Ojeda et al., 2012), which both dictate and permit college selection and the focus on a major and graduation. According to Ojeda et al., (2012) the term(s) academic conscientiousness was defined as the “persistence, responsibility, and a need for achievement” (p. 212) and ethnic identity is an overall identity that identifies with each person’s self-concept and social groups (p. 212).

Self-efficacy

Gushue’s (2006) article, “The Relationship of Ethnic Identity, Career Decision-making Self-efficacy and Outcome Expectations among Latino/a High School Students,” explored the determinants of career interests among ninth graders as they related to ethnic identity. Gushue (2006) found that Social-Cognitive Career Theory (SCCT) identified two determinants of self-efficacy and outcome expectations. Per “the SCCT model, culture and race affect career development at a number of different points” (Gushue, 2006, p. 87). There were two expectations, the first being that the stronger a person’s ethnic identity, the higher the level of career-making self-efficacy decisions and outcome expectations (Gushue, 2006). The second, Career Decision-Making Self-Efficacy Scale Short Form (CDMSES-SF) (Betz, Klein, & Taylor, 1996), used short form scales to measure student self-efficacy expectations in relation to career decision-making tasks—outcome expectations relate positively to career decision making and self-efficacy (Gushue, 2006). Phinney’s (1992) Multi-group Ethnic Identity Measure (MEIM), a multistep questionnaire that addresses ethnic identity across a variety of groups, measured students’ feelings of pride and belonging. To analyze the data, a multivariate analysis of variance (MANOVA) explored group differences on selected variables. Students who were

aware of their ethnic identity may have a greater chance of making improved career decisions in the future (Bauman et al., 2019; Gushue, 2006). In addition, emphasis was placed on the importance of including race and acculturation under the umbrella of ethnic identity. The study shared insights on how ethnic identity influences self-efficacy, but was limited by sample size and other variables such as racism, social economic status, and employment. Career decision-making self-advocacy as it related to high school students was important in establishing a comfort level when students explored careers; students who were more confident in the ability to make career decisions were more likely to have clear goals for the future (Gushue, Clarke, Pantzer, & Scanlan, 2006). Ethnic identity should be considered an important social factor in the career development of Latinos/as' toward graduation preparation (Gushue et al., 2006).

Equally as important is the research of Bauman et al. (2019), which explored the successes of minority students in addressing the social-psychological dimensions of self-efficacy of students, including cultural and environmental dimensions. College transitions were very stressful for minority students because they need to lean on the guidance, emotional support, and academic support of others to deal with the uncertainties of prejudice and discriminatory experiences. The regularity with which Hispanic male students experienced this necessitates their finding mentors to validate academic success (Bauman et al., 2019; Ponjuan, Palomín, & Hernández, 2018).

Family and College Barriers

Person and Rosenbaum's (2006) study, which focused on Latinos' (males and females) choices in both two-year colleges and subsequent college experiences, utilized mixed methods to paint a holistic picture. Under the chain enrollment model, kinship, friendship, and client ties were examined by looking at students who had close friends in attendance (Person &

Rosenbaum, 2006). Ethnic contacts were key for students in the collegiate environment; otherwise, they risked isolation and greater difficulties in adjusting.

Person and Rosenbaum's (2006) findings (both qualitative and quantitative) addressed key theoretical concepts regarding migration. The qualitative data identified two distinct patterns: Chain Migration and College Enclaves of Latino students. The first pattern, Chain Enrollment, was used by Latino students in selecting their college. For this section, none of the students surveyed had parents who attended college; one student's parents had not completed high school. The second pattern is College Enclaves pertained to isolation. Findings described low levels of social interaction among students who had strong contacts with other students during the decision-making process. The quantitative portion pointed to Latino students' access to information (dependent variable) by using a multivariate analysis (independent variables: age, high school grades, parental income, and enrollment in an occupational college) and demonstrated that Latinos had less information than students of other races. A second evaluation, which used regression analysis, explored the influence of staff, teachers, and other students (Person & Rosenbaum, 2006) as sources of information. Hispanic students tended to have less information than white students did at smaller colleges. Colleges with more students provided more networking opportunities and more information about college requirements (Person & Rosenbaum, 2006).

Familismo, connoting a strong attachment to immediate and extended family, plays an enormous role in Hispanic students' decision-making around their education. Latino males' main responsibility is to provide financial and emotional support for their families. Due to this cultural perception of masculinity, Latino males have difficulty asking for help and are expected to seek success on their own (Peña & Rhoads, 2018). Sáenz and Ponjuán (2011) created a

blueprint that included the intricacies of their research of Hispanic males. This blueprint included three main stages geared to inform programs of Familismo, Machismo, and other cultural attributes. The stages include: (1) Planning and Development; (2) Resource Development and Sustainability; and (3) Outreach and Communication for Latino males. Sáenz and Ponjuán (2012) concluded by outlining an ambiguous crisis among the educational progress of Hispanic males with real consequences now beginning to influence the economic status of Hispanic males, as well as their higher education funding and social perceptions.

The four identified critical findings to the success of First Year Experience (FYE) of Latino/Hispanic males were (1) help-seeking behaviors, (2) the long journey to transfer, (3) students' work burden and financial constraints, and (4) approachable and culturally responsive practices (Peña & Rhoads, 2018). First, with regard to Hispanic male students seeking help, college administrators and academics instructors need to be able to identify when Hispanic males need support and aid them in understanding it is not a sign of weakness to ask for help (p. 193). Second, they need to address the developmental education element of student placement to aid in the length of time it takes to complete programs (p. 194). Third, Latino students tend to work more hours than other students do, and male Hispanics often carry the burden of being their family's sole provider (p. 196). Finally, administrators and faculty alike need to have understanding of how to incorporate approachable and culturally responsive practices. For example, the appearance and functionality (i.e., flags, colors, posters, languages) of offices and departments that help students have an impact on student behaviors (p. 197).

Academic Experiences

Sáenz and Ponjuán's (2011) article regarding the academic success of Latino males in higher education (in two- and four-year institutions) placed emphasis on numerical data to point

out realities of their experiences. The agenda was led by four areas of emphasis: family and community engagement; college and career-ready curricula; linked academic and social supports; and economics (i.e., affordability, transparency, and financial literacy). These four areas were translated as variables with one exception: family and community engagement. The importance of family and community engagement was emphasized by the suggested and critical component of developing supporting programs to support Hispanic males' transitions among workforce, family, and education. The article provided a review of census data, along with educational attainment data for early childhood, secondary, and postsecondary education for Latinas/os as a blueprint to show Latino males' success and implications for stakeholders and legislators. The conclusions/findings depicted a clear, disturbing, and increasing gender gap between Hispanic males and females, with Hispanic females earning 62.5% of all Hispanic degrees in 2009 (Sáenz & Ponjuán, 2011).

The educational research by Sáenz and Ponjuán (2011) identified the lack of data on Latino males and labeled it problematic. The aggregated data from the National Center for Educational Statistics (NCES) annual *Digest of Educational Statistics* were described as having inconsistencies and not identifying part-time, re-entry, or community college transfers. However, the data showed significant obstacles hindering persistence and undermining the transition points for Latino males (Sáenz & Ponjuán, 2011). According to the Pew Hispanic Center fact sheet (2003), workforce participation data collected from the U.S. Armed Forces showed that Hispanics (both males and females) represented 12% of active duty members and 9.5% of enlistees were Hispanic males. Incarceration was also a factor, with Latino males ages 18-29 making up 20% of the national prison population (West, Sabol, & Greenman, 2010).

Students' Outcomes

Taggart and Crisp's (2011) study centered on the discriminatory experiences of Hispanic college students (both males and females) and how their experiences impacted their educational decisions, including whether to attend a two-year or four-year institution. Their theoretical framework to identify variables was based on College Choice Theory and research on Hispanic students' access and academic success. College Choice Theory (Hossler & Stage, 1992) was based on a three-stage model—predisposition, search, and choice—each of which takes place during students' transition phase into college. The study of 2,210 participants from the Education Longitudinal Study (2005) recognized similar variables such as GPAs, high school assessments, parental education, language backgrounds, and academic experiences associated with student decision-making as predictors. The five variables groups, as defined by Crisp and Nora (2010) and illustrated in Figure 1, are an excellent starting point to inform data collection on Hispanic community college students intending to transfer.

Academic preparation yielded the most positive returns among Hispanic students. "...48% of Hispanic students who attend a four-year institution had enrolled in one or more advanced placement courses compared to 9% of the students who attended community college" (Taggart & Crisp, 2011, p. 28). Overall, these findings were significant for four of the five variables—grades, financial aid received, number of times financial aid was received, and graduation—favoring the outcomes of Hispanics attending four-year institutions. A descriptive comparison between four-year and two-year students revealed that four-year students were better prepared in all areas (Socio, Demographic, Environmental, Academic, and Pre-College).

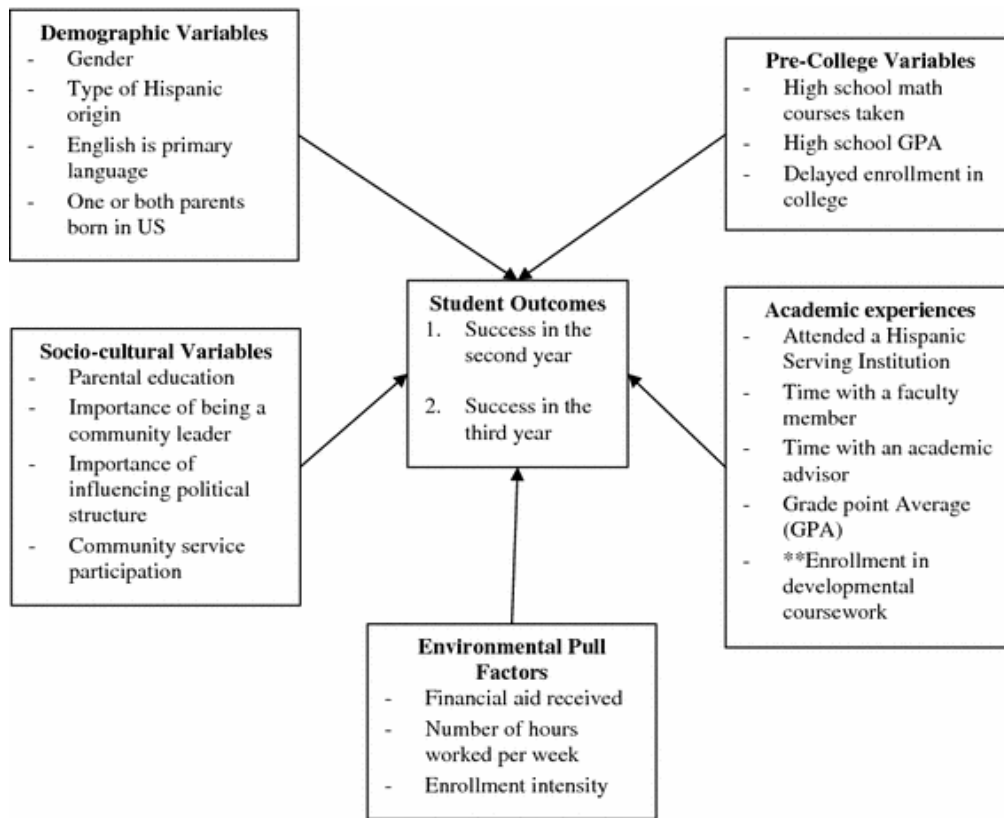


Figure 1. *Crisp and Nora's (2010) theoretical framework of Hispanic student outcomes (see Appendix A)*

In addition, “Of the 60% of high school students in our study who enrolled in a 2-year college reported having initial aspirations to enroll in a 4-year college, 29% actually did so” and students with discriminatory experiences in high schools had considerably lower odds in attending four-year colleges (Taggart & Crisp, 2011, p. 33).

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Similar to Crisp and Nora’s (2010) work is that of Núñez (2014) who introduced explanations of a research paradigm pertaining to two- and four-year institutions, and suggested the importance of intersecting of both quantitative and qualitative (mixed method) variables. Intersecting data sets were particularly important when studying Hispanic males, because they combined the concepts of domain and power as they enhance or constrain student success. This theoretical framework was identical to Crisp and Nora’s (2010), which hypothesized decision-making characteristics of Hispanic students. They hypothesized the persistence and transfer decisions of Hispanic students who attended community college and why each variable (demographic, pre-college, academic experiences, environmental pull factors, and socio-cultural) was important to student success.

Lastly, colleges that placed emphasis on improving their efforts toward the successful outcomes of Hispanic males will likely have improved outcomes. A good example and suggestions of best practices was the inclusion of cultural competency skills by embedding them in developmental education courses. The addition of professional development workshops in these courses helped build solid student and faculty relationships; thus, allowing Hispanic males to have a planned acculturation process at the institutions (Doran & Medina, 2018; Ponjuan et al., 2018).

CHAPTER 3: METHODOLOGY

The purpose of this retrospective study was to identify patterns (see Figure 2) within the data that would lead toward an understanding of Hispanic male graduation outcomes within the analysis of each variable (Morgan, Leech, Gloeckner, & Barrett, 2012). The variables examined were Major Changes, Grades, Number of Credits, Financial Aid, and Graduation Outcome. Though literature on Hispanic males changing majors is limited, the studies pointed out Hispanic male are highly influenced by acculturation, which is a strong predictor of college/educational persistence (Cervantes & Cordova, 2011; Fiebig et al., 2010; Perez & McDonough, 2008; Schwartz et al., 2007; Sciarra & Whitson, 2007).

For purposes of this research, patterns were identified through the analysis of variables (see Figure 3) of persistence that signify phases of retention as students continue toward graduation. Predictor variables and the outcome variable (GO), as represented in Figure 2 and in Table 4, lay out the operation of each predictor variable (number of changes, age, grades, number of credits, financial aid, time, and censoring). The graduation time, or outcome, is directly related to the time frame from the first semester until each student graduates or finishes the program.

The research design in this quantitative study (see Table 3) combined the elements of the three theories: Chain Migration (MacDonald & MacDonald, 1964; Person & Rosenbaum, 2006), Transitional Theory (Schlossberg, 2005), and Transformational Theory (Mezirow, 1997; 2000) as phases to a linear timeline (see Figure 3). These identified the three student Major Change (MC1, MC2, & MC3) groups (see Table 5) and how they (N = 706) progressed toward graduation.

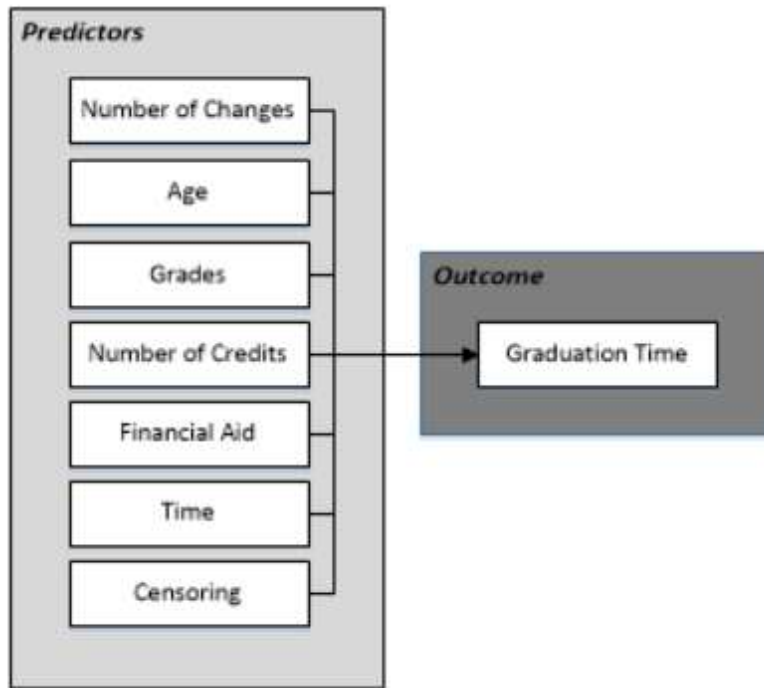


Figure 2. Design Diagram of Predictor Variables

The source of the data was SPC's (St. Petersburg College) archival data for Hispanic male students. The study examined the number of times Hispanic males changed majors within a 3.5 year period. Three and one-half years were chosen because this is the time frame in which community college students are expected to complete an associate's degree (Hoachlander, Sikora, Horn, & Carroll, 2003).

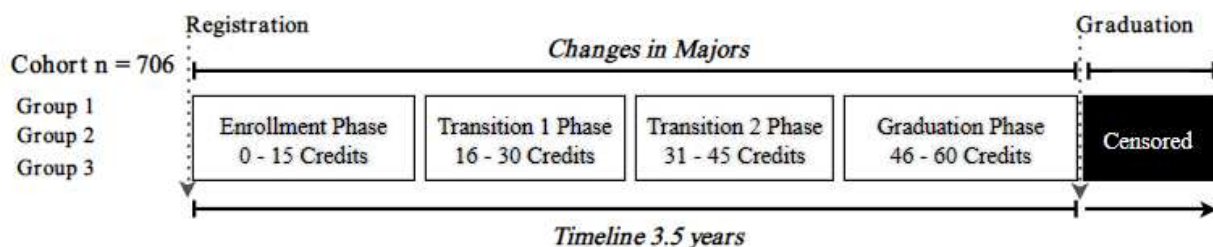


Figure 3. Research Design Timeline

The retrospective analysis design looks at the correlations among predictor variables and the outcome variable—graduation of Hispanic male students—and how each relate to the research questions. Specifically, this research expanded on the following questions: which of the predictor variables (Number of Major Changes, Grades, Total Number of Credits at graduation, Financial Aid, Time, and censoring) relate to graduation (Graduation Outcome), and are there differences between those who graduate and those who do not?

Research Questions

The research questions and variables established the direction of the models to analyze (Clark, Bradburn, Love, & Altman, 2003; Harrell, 2013; Morita, Lee, & Mowday, 1993; Muche, 2001; Willett & Singer, 1993). Equally as important was the process of choosing the variables for conducting t-tests (for graduates and non-graduates), effect sizes, survival, and logistic regression analysis as they aligned with the design and purpose. In addition, the variables used were selected based on the literature review, particularly Crisp and Nora's (2010) theoretical framework of persistence and transfer success among Hispanic students.

The questions created to address directional hypotheses and outcomes to lead this study and gain understanding of Hispanic males at SPC are as follows:

Q1: Does the number of times Hispanic males change majors influence graduation outcomes?

H1: There is no difference in the number of major changes for Hispanic males who graduate and those who do not.

Q2: Does GPA influence graduation for Hispanic males?

H2: There is no difference in the final GPA for Hispanic males who graduate and those who do not.

Q3: Does the number of total credits influence graduation for Hispanic males?

H3: There is no difference in the number of credits taken by Hispanic males who graduate and those who do not.

Q4: Does financial aid acceptance influence the graduation for Hispanic male students?

H4: There is no difference between financial aid accepted by Hispanic males who graduate and those who do not.

Q5: Does the number of times financial aid is received influence graduation for Hispanic males?

H5: There is no difference in the number of times financial aid is received for Hispanic males who graduate and those who do not.

Variable Definitions

Table 4 includes the variable names, descriptions, types, and levels of measurement included in the analysis. The variables were pulled from SPC's PeopleSoft database and used as retrospective data sets.

Major Changes (MC) is an independent variable, measured on both ordinal and categorical bases, as the number 1 for one change of major, 2 for two changes, and 3 for three or more changes of majors. For clarification, students who chose a major and never requested a major change were categorized as having one change.

Grades (G) is a ratio independent variable, number ranging from a cumulative 4.00 (highest) to a 0.00 (lowest) GPA. The study used this variable as students' GPA at the end of 3.5 years or the last term of enrollment in research question #2.

Age (A) was collected as an independent variable at the beginning of the study for each Hispanic male student, age is a continuous variable that ranges from 1 to 100+. This variable was not used in the analysis (see Appendix B).

Number of Credits (NC) is an independent variable that is both a ratio and continuous number ranging from 0 to 120+. The number of credits is an important variable conducive in attempting to answer research question #3.

Financial Aid accepted (FA) is an independent variable and dichotomous—this variable was collected as a Yes (1) / No (0) for each semester (10 terms) within the 3.5 years. Financial Aid Received (FAC) represents the number of terms (0 to 10) enrolled students received aid. The FA (Yes/No) and FAC (number of terms received) are used in the analysis for research question #4 and for question #5.

Time (T) is the number of terms enrolled. This variable is an independent variable ratio and discrete, ranging from zero to 10 terms.

Censoring (C) is a variable represented as a Yes (1) No (0) used to censor participants who did not graduate or withdrew (not to return) during the 3.5 years.

Finally, the Graduation/Outcome (GO) is the dichotomous dependent variable represented as Yes (1) / No (0). This variable was used in each of the five research questions and in the final analysis.

Table 4
Variable Definitions

Variables	Description	Variable Type and Level of Measurement	Type
Major Changes (<i>MC</i>)	Independent	Ordinal/Categorical	1 change, 2 changes, 3 or more changes to identify groups
Grades (<i>G</i>)	Independent	Ratio	0.00 to 4.00 GPA, Cumulative (at graduation or exit)
Number of credits (<i>NC</i>)	Independent/total	Ratio/Continuous	0-120+, total
Financial Aid Accepted (<i>FA</i>)	Independent	Dichotomous	Yes (1) / No (0)
Financial Aid Received (<i>FAC</i>)	Independent/num ber of terms received aid	Ratio/Continuous	1-10 terms
Time (<i>T</i>)	Independent	Ratio/Discrete	0-10 terms enrolled (3.5 years)
Censoring (<i>C</i>)	Independent	Dichotomous	Yes (1) / No (0)
Graduation/Outcome (<i>GO</i>)	Dependent	Dichotomous	Yes (1) / No (0)

Sampling

The cohort of Hispanic males (706) was categorized into three groups based on the number of times they changed majors from admission to graduation or dropping out. Data from SPC's PeopleSoft system displays the number of times each student changed majors. Table 5 shows the three groups and their distribution. Group 1 consisted of students who changed majors once, students who did not change majors were also categorized in Group 1 because the initial choice established during the registration process; Group 2 consisted of students who changed

majors twice; and Group 3 consisted of students who changed majors three or more times. As Gordon (1995) stated in *The Undecided College Student*, the decision to split the cohort in groups of 1, 2, and 3+ was made because students tend to change majors at least once before graduating, which left the question of what happens when students change majors two or three or more times.

Table 5

SPC Hispanic Males (N = 706) Changing Majors Group

Group/Number of changes	N	%
Group 1 (1 change)	547	78
Group 2 (2 changes)	130	18
Group 3 (3+ changes)	29	4
Total	706	100

Archival Data Collection

The SPC data came from its internal student data collection system, PeopleSoft. The College created a data collection and analysis system that pulls data from the PeopleSoft database into what is called Business Intelligence (BI) or Pulse (SPC's main data collection/analysis hub). The BI (Pulse) hub is what employees use to have information and to analyze data from PeopleSoft. BI is the only data collection process in the State of Florida that allows every employee handling student data to have access to demographic information such as grades, withdrawals, financial aid, enrollment information, and so forth. If one uses Zhao and Luan's (2006) definition of data mining as a means of using data to make decisions, then it follows that the College became a data mining institution once PeopleSoft was instituted. Utilizing data mining can help identify students' behaviors and predictive outcomes (Zhao & Luan, 2006). The College has made significant strides in this regard by allowing employees to

pull data at any interval during the work schedule. The data were put through a rigorous verification system established by SPC's Institutional Effectiveness and Academic Services department. In addition, employees are empowered with this tool to use student data.

Archival quantitative data were chosen and used to identify and measure each of the variables among the cohort of Hispanic males (N = 706). The goal of collecting historical data was to identify and analyze students' progress from initiating a major change. "...the problem calls for (a) the identification of factors that influence an outcome, (b) the utility of an intervention, or (c) understanding the best predictors of outcomes; then a quantitative approach is best" (Creswell, 2011, p. 38). The criteria suggested by Creswell (2011) created a clear mechanism for efficiency when measuring students' success along a timeline, from the point when they identify their major and made a change until they graduate or dropout.

The variables were selected for their relevance and importance when addressing the retention of Hispanic male students as examined in the literature review (Crisp & Nora, 2010; Murtaugh et al., 1999; Taggart & Crisp, 2011). Table 6 displays a small section of the dataset with the variables. The variables chosen were utilized in Chapters 3 and 4 by conducting descriptive analysis, t-tests, and survival analysis consistent with Crisp and Nora's (2010) theoretical framework (see Figure 1).

Table 6

Student and Variable Data Set

Uniq . ID	Term FTIC	Home Cam- pus	Age	Total Cred- its	Last GPA	Degree Changes	Grad	# of Sem. Att.	FA Acc.	Total # of Terms Ac- cepted FA
Data ID	TF	HC	A	NC	G	MC	GO	T	FA	FAC
1	400	SPG	48	3	2.00	1	0	2	1	2
2	400	TS	18	65	3.08	1	0	10	0	0
3	400	CL	19	54	2.98	1	0	8	1	3
4	400	SE	21	11	1.87	1	1	4	1	3
5	400	SPG	24	9	1.14	1	0	4	1	2
6	400	SE	18	71	3.14	2	1	6	1	5
7	400	SE	19	67	3.77	1	1	6	1	3
8	400	SE	18	8	2.88	1	0	2	1	1

Retrospective data included variables among groups of Hispanic males at SPC over 3.5 years. When benchmarking two-year college performance of graduation rates, community colleges use a three-year benchmark or 150% of expected time to graduate (Bailey et al., 2006). According to the National Center for Higher Education Management Systems–Information Center for Higher Education Policymaking and Analysis (2009), three of 10 community college students who start as full-time students will graduate with an associate’s degree in three years or more (Chen, 2018).

Lastly, the National Center for Education Statistic reports that 31% of students at SPC graduate within 150% of normal time, or three years (National Center for Education Statistics, 2015). Therefore, it was appropriate to extend the time to graduation from three years to 3.5 years, to have data showing those who graduated beyond three years in terms 9 and 10. The event (or outcome) is graduation. Time was measured as number of terms students were enrolled and included the first time in college Hispanic students who started in these terms.

- Fall 2008 – Summer 2009 (*SPC terms 400, 405, 410*);
- Fall 2009 – Summer 2010 (*SPC terms 415, 420, 425*);
- Fall 2010 – Summer 2011(*SPC terms 430, 435, 440*);
- Fall 2011 – Summer 2012 (*SPC terms 445*).

The number of terms ranged from one to 10 and encompassed 3.5 years for Fall enrollees.

Although students entered in different years, in analysis, each year had different event start times.

T-test Analysis

For each research question, t-test analyses compared graduates and non-graduates using the variables (MC, G, NC, FA, and FAC). To gain understanding of the findings when the two groups differed, effect sizes were reported. The effect size benchmarks for Cohen's *d* were small .20, medium .50, large .80, and very large 1.3 (Sullivan, 2012). If effect size coefficients were <.20 they were considered small, around .50 were considered medium, and >.80 were considered large.

Survival Analysis Method of Inquiry

Survival analysis and logistical regression analyzed the data of Hispanic male students at SPC over a 3.5 year period from first enrollment. To interpret the findings, Statistical Package for the Social Sciences version 22 (SPSS) was used for Life Tables, Kaplan-Meier, and Cox Regression (Lee & Wang, 2003).

Survival analysis was used in the research model because of the effectiveness in measuring time to an event (Clark et al., 2003; Harrell, 2013, 2015) of Hispanic males graduating. Survival analysis is mainly used in medical/biomedical research with an endpoint or death (Harrell, 2015). Here it was useful in measuring retention or time to graduate (an endpoint)

or censored (Harrell, 2015). The models include students who graduated, withdrew, or persisted, but had not graduated within 3.5 years of entry. Those who graduated after 3.5 years or had 10 terms were not included or censored.

Lastly, in survival analysis, censoring—or censored observation—is defined as an observation “...whose value is incomplete due to a random factor for each subject,” (Muche, 2001, p. 18). Figure 4 graphs each student registration by semesters/term (time), it is important to note they begin (first term) at a defined time $t = 0$ and may end before the outcome is observed or possibly end after the outcome (graduation) occurred. Censoring identified non-graduated students who exceeded the amount of time (3.5 years) to graduate and those who failed to graduate. Exceeding the time frame is an example of right censoring observations (Lee & Wang, 2003). Figure 4 displays an example of specific student censoring scenarios for graduated and non-graduated students. Here we can see how the data were interpreted. It outlines the concept of how survival analysis and right censoring identify each student and the likelihood that he reached graduation at the endpoint (3.5 years):

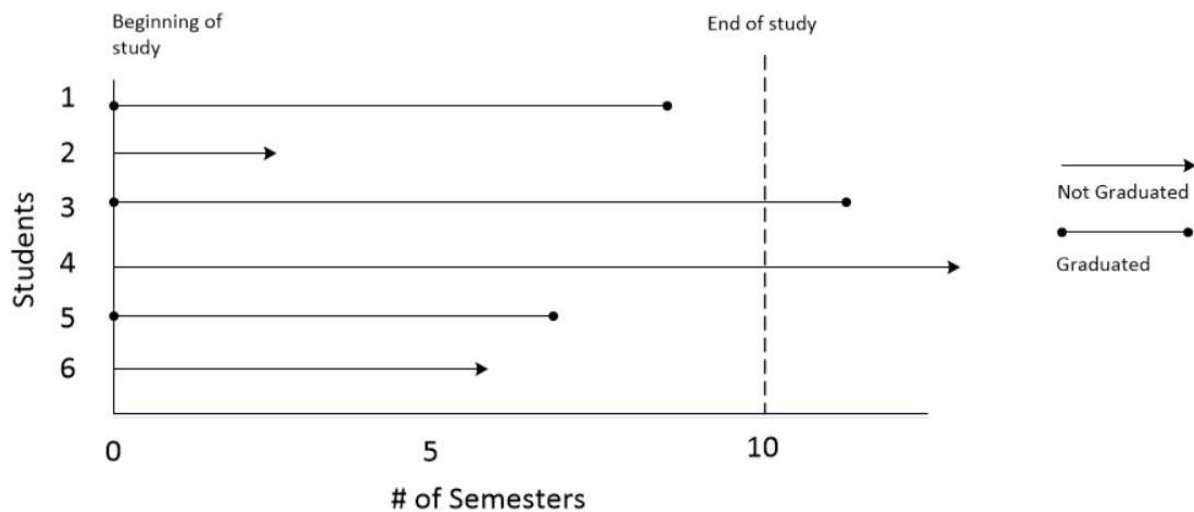


Figure 4. Example: Right Censoring Utilized

- *Student 1* - graduated (1) / not censored (0)
- *Student 2* - not graduated (0) / not censored (0)
- *Student 3* - graduated (1) / censored (1)
- *Student 4* - not graduated (0) / censored (1)
- *Student 5* - graduated (1) / not censored (0)
- *Student 6* - not graduated (0) / censored (0)

Logistic Regression Analysis

Logistic regression explored the relationships of the independent variables to major change groups and to the graduation/non-graduation of Hispanic male students at SPC (see Figure 5). A categorical variable was established for the number of times a student changed majors: students who changed majors one time (Group 1); students who changed majors two times (Group 2); and students who changed majors three or more times (Group 3). Few students changed their majors more than three times (see Figure 5). The three groups were analyzed in terms of four independent variables to determine the likelihood of graduation (see Table 5). These variables consisted of grades (G), Financial Aid Accepted (FA), Financial Aid Received (FAC), and the total number of credits earned (NC). Lastly, dichotomous variables graduation (G) and financial aid accepted (FA) were created to analyze the graduation outcome (GO) in which the probability of success *may* depend on the number of major changes for each student.

The outcome variable is graduation (1) or its inverse—not graduating (0), thus, creating the logistic regression function that expands to accommodate additional predictors. The probability predictor function for graduation is $P(GO) = 1$. Below is the

logit function evolution of probability with variables ($X_1, X_2 \dots etc.$ and the binary response variable GO):

$$P(GO) = \frac{1}{1 + e^{-(A + \beta_1(MC) + \beta_2(G) + \beta_3(NC) + \beta_4(FA) + \beta_6(FAC) + \beta_n XE_i)}}$$

Probability comparisons can be made against each category (MC = Major Changes):

MC(1) students who changed majors one time; MC(2) students who changed majors two times; and MC(3) students who changed majors three or more times. The MC was substituted for each one of the reference groups, and then compared to the dummy variables, as illustrated in Figure 5.

Log Rank Test

Log Rank testing compared graduation times for the three sub-groups of Hispanic male students (MC(1); MC(2); and MC(3)). Log Rank measured the distribution of the graduation times among these groups, mainly because of its appropriateness when interpreting right-skewed and censoring survival analysis data (Clark et al., 2003; Lee & Wang, 2003). Appropriateness is considered when the data are related to the likelihood of developing events of interest. Each event was applicable mostly to the time (T) variable, as it determines whether the student's data were censored or not, including all 706 students in each of the analyses.

The method calculates at each event time, for each group, the number of events one would expect since the previous event if there were no difference between the groups. These values are then summed over all event times to give the total expected number of events in each group. (Clark et al., 2003, para. 22)

To conduct an effective study, each group should have a good sample size, or at least 30 subjects (Sayles & Soulakova, 2007). To show an example of how Log Rank testing was used in this

research study, a fabricated data set of 30 students (below) illustrated: (1) overall comparisons, (2) survival functions, and (3) case processing summary among three groups of students.

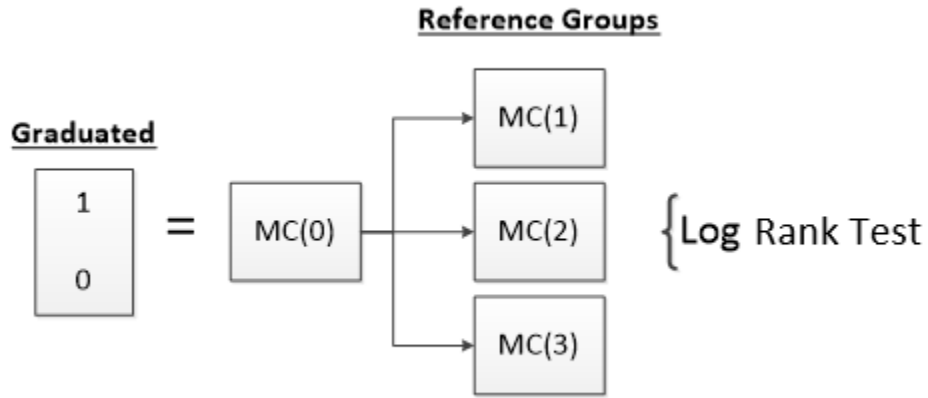


Figure 5. Log Rank analysis of change reference groups and graduation

By running the overall comparison of the Log Rank results, X^2 (Chi-Squared) tested the equality of survival distributions for all levels of changes. As seen in the example analysis Table 7, a Log Rank test is insufficient without the Kaplan-Meier for all the groups to demonstrate the variances among curves (see Figure 6). Table 7 and Figure 6, respectively, indicate significance and a visual of variance among the major changes, while Table 7 indicates a weighted difference between the numbers of observed events. Although the three Log Rank tests (Mantel-Cox, Generalized Wilcox, Tarone Ware) are weighted differently, each provides a similar conclusion with subtle differences in the patterns of curves when displayed in graph form (Sayles & Soulakouva, 2007). For this study, the Mantel-Cox (Log Rank) was used as the preferred method because the proportional hazard is true, meaning students could graduate at the end of any of the 10 terms.

Table 7

Overall Log Rank Comparisons Results

	Chi-Squared	df	Sig.
Log Rank (Mantel-Cox)	4.093	4	.325
Breslow (Generalized Wilcoxon)	4.970	4	.290
Tarone-Ware	4.679	4	.322

Test of equality of survival distributions for the different levels of changes.

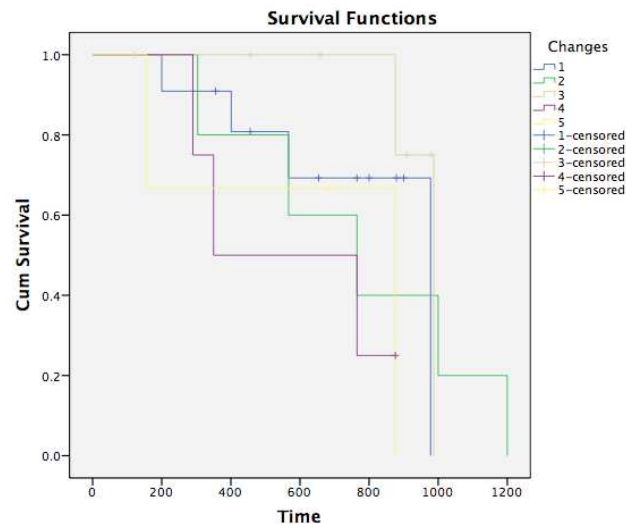


Figure 6. Example: Survival Analysis Graph

In SPSS, when running survival analysis example, a case processing summary displays the number of changes (see Table 8). In this example, changes indicate number of major changes. Total N refers to the number of participants who experienced the major changes. The number of events among the participants (graduates) and censored indicates the number of participants (non-graduates) with 0 events included due to not meeting the minimal parameters indicated with the changes of events.

Table 8

Example: Number of Censored Changes among Groups

Changes	Total n	n of Events	Censored	
			n	Percent
1	11	4	7	63.6
2	5	5	0	0.0
3	7	2	5	71.4
4	4	3	1	25.0
5	3	2	1	33.3
Overall	30	16	14	46.7

Trustworthiness

The establishment of trustworthiness depends upon clear explanations of validity, generalizability, and reliability. In reviewing the historical patterns of Hispanic students changing majors, the transformative design provided the best perspective to understand this study with a framework that can identify the patterns of graduation and/or success outcomes. Specific to this study are the research questions, which included variables that pertained to Hispanic patterns and outcomes, in particular graduation, based on Crisp and Nora's (2010) theoretical framework.

Validity

The process was designed to establish trustworthiness from the initial collection of data to the generation of research findings. The data collection process was provided by SPC's enrollment services and the data set requested was based on the parameters of the research (see Appendix B), thus ensuring the process was valid. According to the research methodology, identification of variables that pertained to Hispanic males

changing majors and the relationship that changing majors had on graduation were important. The data set included the variables requested, which did not need to be manipulated by the researcher. Research validity was assured by choosing variables (e.g., variables such as GPA, Credits, Financial Aid) that showed strength in predicting graduation outcomes (Crisp & Nora, 2010).

Reliability

In addition, data sets were prescreened and checked by enrollment management to ensure the data were free from subjectivity and these were triangulated with the internal PeopleSoft system for accuracy. The college's Enrollment Management and Information Systems (AIS) supplied a compiled data set for 3.5 years directly from the database, thus validating the process and accuracy of the data provided.

Generalizability

The nature of this research, namely, using retrospective data from Hispanic male students at SPC, limits generalizability. It allowed the study to draw conclusions based on a sample of the student population, the context of which is familiar to the researcher. In other words, because the research focused on Hispanic males changing majors at one institution, the findings may be suggestive of outcomes for Hispanic males in similar institutions throughout the state or nation.

CHAPTER 4: RESULTS

The purpose of this study was to collect, examine, and analyze retrospective data from graduation outcomes of Hispanic male students at St. Petersburg College (SPC). In this chapter, the analysis presents descriptive statistics, logistic regression, t-tests, and survival analysis/Log Rank test for the purpose of examining and evaluating the outcomes for each of the research questions and hypotheses.

In Chapter 3, Figures 4 and 5 illustrated how the variables would be interpreted with one major change variable (MC). In addition, three distinct models were explored with the original MC variable to represent the number of changes (see Figure 5) for regression analysis. The three major change (MC) variables were created to address grouped major changes, MC1, MC2, and MC3 (see Figure 5), to quantify the variables utilizing Log Rank analysis, answer research question #1 (Q1), and to present the odds ratio for predictability. Odds ratios for predictability are used when two variables are compared in a 2 x 3 model (Morgan et al., 2012). For this research, the 2 x 3 was utilized for the outcome variable—graduation outcome (GO) to the three major change (MC) variables (1 to 2, 2 to 3, and 1 to 3).

Last, with regard to the research questions and the hypotheses, each of the five independent variables (MC, G, NC, FA, & FAC) were compared to the binary dependent variable (GO) using t-tests and effect size analysis as appropriate.

Descriptive Statistics

To understand why relatively few Hispanic male students graduated in 3.5 years, the study included a descriptive analysis for each research question and its respective variables. These analysis explored the relationship attributed to the independent variables and make predictions regarding student success. Per Taggart and Crisp's (2011) model, each of the

questions' independent variables (i.e., graduation/major changes, grades/major changes, credits/major changes, financial aid received/major changes, and financial aid acquired/major changes) were examined by using descriptive statistics in Table 9.

Of a cohort of 706 students, 101 (14.3%) students graduated and 605 (85.6%) students did not complete a program (i.e., AA, AS, or Certificate) within 3.5 years. Table 9 displays the descriptive statistics for the variables to address the research questions selected.

Table 9

Descriptive Statistics of all Variables (N = 706)

Variables	Category	Min.	Max.	Mean	Std. Deviation	Variance
Graduation Outcome (GO)	0/1	0	1	.14	.35	.12
Major Changes (MC)	Number	1	3	1.27	.54	.28
Grades (G)	GPA	.00	4	2.07	1.12	1.26
Number of Credits (NC)	Number	0	203	29.95	27.63	763.28
Financial Aid Accepted (FA)	0/1	0	1	.77	.42	.18
Financial Aid Received (FAC)	0-10	0	10	2.77	2.53	6.41

Graduation

The graduation numbers and percentages were analyzed for each of the three student groups within 3.5 years (Bailey et al., 2006; National Center for Education Statistics, 2015). Of the 547 students who changed majors once, 62 (11%) graduated with a degree (AA, AS, or certificate). Of the 102 students who changed majors twice, 28 students (21%) graduated. Finally, of the 29 Hispanic male students who changed majors three or more times, 11 students (38%) graduated, as shown in Table 10.

The first research question focused on the numbers and percentages of Hispanic male students at SPC who changed majors one, two, or three or more time.

Q1: Does the number of times Hispanic males change majors influence graduation outcomes?

H1: There is no difference in the number of major changes for Hispanic males who graduate and those who do not.

An independent t-test was conducted to compare the Graduation Outcome (GO) variable for Hispanic male students (N = 706) graduates and non-graduates. The t-test yielded significant differences in the number of major changes for Hispanic male students who graduated ($M = 1.50$, $SD = .687$) and those who did not ($M = 1.23$, $SD = .486$); $t(117) = 3.75$, $p < .000$. The effect size of the Cohen's analysis test, $d = .45$, was medium. This means the difference among the means was not trivial and statistically significant (Greenland et al., 2016). Therefore, the null hypothesis was rejected and the alternate hypothesis was accepted, the Hispanic male students who graduated changed majors more times than those who did not graduate as in Table 10.

Table 10

Number of Changes in Major and Graduation (N = 706)

Major Changes	Graduated	% of group total	Not-graduated	% of group total	Group totals
Group 1 (1 change)	62	11	485	89	547
Group 2 (2 changes)	28	21	102	78	130
Group 3 (3+ changes)	11	38	18	62	29
Total	101		605		706
Mean number of changes	1.50		1.23		

As in Table 10, Group 1 (n = 547) had both the largest number of non-graduates (485), and the largest number of graduates (62). Groups 1 and 2 included 587 students (97%) who did

not graduate, all of whom changed majors one or two times. In groups 1 (62) and 2 (28), 90 students accounted for 89% of those who graduated. The smallest group, Group 3, had 29 students, each of whom had changed their majors three or more times. Of these, 11 graduated, the highest percentage (38%) for the three groups. This could be an indicator that Hispanic students who change majors three times have a higher chance of graduating from SPC within 3.5 years than those with fewer changes of majors.

When comparing the three major change groups via an odds ratio, the results were all more than 1, meaning that the interpretation of the data addressed the likelihood of graduation for each major change group. A comparison of all three major change groups was conducted to compare group 3 to 1, 2 to 3, and 1 to 2 and Hispanic males at SPC who changed majors:

- Three times had a 4.78 chance of graduating more than those who changed majors one time.
- Two times have a 2.23 chance of graduating than those who change majors three times.
- Once have a 2.15 chance of graduating than those who change majors two times (see Table 19).

When interpreting odds ratio for MC (1, 2, & 3) and GO variables, the further the odds ratio from 1, the stronger the association of likelihood (Morgan et al., 2012). Last, Table 11 displays the number of censored changes among events for both graduates and non-graduates. Students who graduated did so during terms six, seven, eight, and nine, and most students who did not graduate tended to disenroll in terms two and three.

Table 11

Number of Censored Events among Cohort (N = 706)

Term/Time	Total n	n of Events (Grad)	Censored	
			n (Non-grad)	Percent
1	68		68	100.0
2	126	1	125	99.2
3	93	2	91	97.8
4	82	5	77	93.9
5	61	10	51	83.6
6	69	19	50	72.5
7	82	21	61	74.4
8	50	16	34	68.0
9	50	19	31	62.0
10	25	8	17	68.0
Overall	706	101	605	85.7

Grades

Of the 547 students who had changed their major once, 255 (47%) had cumulative GPAs of 2.00 or higher. In Group 2, 77 (59%) of the 130 students who had changed majors twice had GPAs of 2.00 or higher. Of the students who changed majors three or more times (Group 3), 20 of them (68%) had GPAs of 2.00 or higher (see Table 12). This analysis tells us that over half of the students in all three groups achieved GPAs sufficient for graduation. Second, a more intricate analysis was conducted to find the cumulative GPA distribution among Hispanic students who graduated and those who did not graduate to answer the research questions and hypotheses:

Q2: Does GPA influence graduation for Hispanic males?

H2: There is no difference in the final GPA for Hispanic males who graduate and those who do not.

An independent t-test compared the independent variable, grades (G), of Hispanic male student graduates and non-graduates. There was a significant difference in the grades (G) and the graduation outcome (GO) for graduates ($M = 3.10$, $SD = .511$) and non-graduates ($M = 1.89$, $SD = 1.10$); $t(286) = 17.8$, $p < .000$. The effect size was $d = 1.42$ and large. This means that the difference among the means was not trivial and therefore statistically significant. The null hypothesis was rejected and the alternate hypothesis was accepted, indicating there was a difference of students' GPAs between those who graduated and those who did not graduate.

Table 12

GPA of Each Major Change Group (N = 706)

Major Changes	n	2.00+	%	GPA Mean
Group 1 (1 change)	547	255	46.6	1.95
Group 2 (2 changes)	130	77	59.2	2.54
Group 3 (3+ changes)	29	20	68.9	2.68
Total	706	352		2.07

Group 1 indicates either one major change or the student's initial major of choice (0 or 1 change), Group 2 was only 2 major changes, and Group 3 was 3 major changes or higher. Group 1 had the largest number of students ($n = 547$), however, in combining Groups 2 and 3 it became evident that students who changed majors more often had higher GPAs and a higher chance of graduating. Additionally, when comparing the overall percentage of students in Group 1 to the combined percentage of students in Groups 2 and 3, 97 students (61%) earned a cumulative GPA

of 2.00 or higher versus students in Group 1 (46.6%). With 29 students, Group 3 was both the smallest group and the highest percentage (68.9%) of students with GPAs of 2.00 or higher. The mean GPA for all students ($N = 706$) was 2.07; however, Group 3 had the highest mean GPA (2.68) and when combined, Groups 2 and 3 had a GPA mean of 2.61. It is important to note that Group 1 had the highest number of students with insufficient graduation GPAs (less than 2.00), 255 (46.6%) of 547. Lastly, after conducting an odds ratio on research question #2. Hispanic males at SPC who changed majors 3 or more times had a 1.27 times greater chance of having a 2.00 or higher GPA than Hispanic males who changed majors twice (.47 less likely) and those who changed majors once (.79 less likely).

Number of Credits

The study also included an analysis of total credits accumulated and their relationship to the number of major changes.

Q3: Does the number of total credits influence graduation for Hispanic males?

H3: There is no difference in the number of credits taken by Hispanic males who graduate and those who do not.

An independent t-test was conducted to compare the number of total credits taken (NC) by graduates ($H3$) and non-graduates ($H3$). There was a significant difference in the number of credits (NC) of graduates ($M = 69.2$, $SD = 21.6$) and non-graduates ($M = 23.4$, $SD = 22.6$); $t(139) = 19.5$, $p < .000$. The effect size was $d = 2.07$, which was large. The test did reject the null hypothesis, and the alternate hypothesis was accepted, meaning that the number of credits students took did influence graduation. Lastly, Hispanic males at SPC who took more credits and changed majors three or more times have a 2.44 times greater chance of graduating. Students who change majors two times had a 1.85, and those who changed majors one time had a

1.32 higher chance of graduating (see Table 19), indicating that students who explore other possibilities and complete credits increase their chances of graduation. The credits taken were interpreted in two different ways: (1) to identify the number of credits students took and how many students graduated, and (2) to identify the Theoretical Grounding Phase categories. As stated in Chapter 1 and illustrated in Table 13, there are four Theoretical Grounding Phases: Enrollment, Transition 1, Transition 2, and Graduation. Depending on the total number of credits accumulated, each student was categorized into one of the four phases, as steps to completion (graduation). The phase categorization was helpful in determining which group of major changes accumulated the most credits, with or without graduating.

Table 13

Theoretical Phases of Each Major Change Group (N = 706)

Group	Number of credits (NC)								Grad Totals n
	Phase 1 0-15 Credits n	Grad n	Phase 2 16-30 Credits n	Grad n	Phase 3 31-45 Credits n	Grad n	Phase 4 46-60+ Credits n	Grad n	
Group 1 (1 change)	272	3	88	0	44	1	143	58	62
Group 2 (2 changes)	30	0	22	0	21	1	57	27	28
Group 3 (3+ changes)	6	0	3	0	4	1	16	10	11
Total	308	3	113	0	69	3	216	95	101

In Table 13, the navigation of students toward Phase 4 is strong in each groups, with the highest number of graduates (58) from Group 1 reaching Phase 4. In Phase 1, we see three students graduated with a certificate and 15 credits. However, less than half of the 216 students in Phase 4 who accumulated 46-60+ credits graduated (95 students) (i.e., B.A., A.S., or A.A). Phase 1 had a large number of students who took less than 15 credits and did not graduate; nor

did they complete the enrollment or acculturation theoretical phase. This is indicative of students who did not progress. In addition, the students who graduated with 30 or less credits were enrolled in certificate programs. Of the students in Group 1 with 46+ credits, 85 did not graduate; this is suggestive of students who had less than 2.00 GPAs. However, the GPAs ranged from 4.00 to 1.50 for students who did not graduate. Of the 64 students in Group 1 who had a GPA of 0.00, the majority had less than 15 credits.

Dual Enrollment

Twenty-eight students who exceeded the number of credits (80+), were in SPC's high school and college articulation programs. Programs such as Early College, Dual Enrollment, and Early Admission allow students to earn college credits while in high school; however, they are not considered regular SPC students and do not have specific majors. Students in these programs work toward their high school diplomas and AA concurrently. The data showed these students as dual enrolled and once they graduated from high school were switched to first time college students. This is the main reason 28 students earned more than 80+ total credits as they may have accumulated anywhere from 10 to 80+ credits over the 60 credit AA requirement. Upon further analysis of the students who were in programs such as dual enrollment, early college, or collegiate high school, it was noted that they had a favorable graduation rate of 67% ($n = 19$), a cumulative GPA of 3.22, and reached Phase 4.

The program does allow students to earn Fs, but this is rare, given the selective student acceptance process (of a 3.00 GPA to get into the dual enrollment program). Earning a grade of F may not be limited to Dual Enrolled students and may have some impact on the number of credits over 60. SPC has a grade forgiveness program that does not calculate D and F grades in the GPA if the course is repeated with a C or better; however, the credits count as an attempt of

the course. The attempts are counted for tuition purposes as the state of Florida will not pay for fourth attempts. Students in this program need to maintain a GPA of 2.00 or higher.

Financial aid – Accepted

The financial aid accepted (FA) variable was examined students who accepted aid at SPC during the 3.5 years. The data identified 542 students who accepted aid; of these, 86 graduated and 456 did not graduate (see Table 14).

Table 14

Financial Aid Received of Each Major Change Group (N = 706)

Group	Did not Accept FA	Accepted FA	%	Graduated	%	Not Graduated	%
Group 1 (1 change)	129	418	77.1	54	62.8	364	79.8
Group 2 (2 changes)	26	104	19.2	24	27.9	80	17.5
Group 3 (3+ changes)	9	20	3.7	8	9.3	12	2.6
Total	164	542	100	86	100	456	100

Q4: Does financial aid acceptance influence the graduation for Hispanic male students?

H4: There is no difference between financial aid accepted by Hispanic males who graduate and those who do not.

An independent t-test was conducted to determine if there was significant difference in the receipt of Financial Aid Accepted (FA) and the graduation outcomes (GO) of graduated and non-graduated. There was a statistically significant difference for the graduates ($M = .85$, $SD = .357$) and non-graduates ($M = .75$, $SD = .431$); $t(153) = 2.47$, $p < .000$. The effect size was, $d = .24$, was small. The test did reject the null hypothesis ($H4$) and the alternate hypothesis ($H4$) was accepted. Financial aid accepted (Yes/No) did have an influence in the graduation of Hispanic

male students. From the odds ratio, Hispanic males at SPC who accepted financial aid have a 1.8 times greater chance of not graduating.

Research question five was analyzed by creating a variable called Financial Aid Received (FAC), which was the number of terms students received financial aid throughout the 3.5 years. Table 14 illustrates the differences between the patterns of each group of major changes, and Table 15 shows that each group of students acquired financial aid in unique patterns. It also displays the number of times students received financial aid cross-referenced with data from each of the major change group. And finally, question #5:

Q5: Does the number of times financial aid is received influence graduation outcome for Hispanic males?

H5: There is no difference in the number of times financial aid is received for Hispanic males who graduate and those who do not.

An independent t-test was conducted of the financial aid received (FAC) variable to determine if a difference existed between the dependent graduation outcome (GO) variable for the Hispanic male graduates and non-graduates. There was not a significant difference for the times financial aid was received (FAC) of graduates ($M = 4.50$, $SD = 2.61$) and non-graduates ($M = 2.49$, $SD = 2.40$); $t(704) = -7.72$, $p = .255$. The research accepted the null hypothesis and rejected the alternate hypothesis, meaning that number of terms financial aid was received did not influence students' graduation. Lastly, after conducting an odds ratio on the number of terms financial aid was received by Hispanic males at SPC, the odds ratio was 2.79 times greater chance of Hispanic males not graduating than those who graduated and received financial aid.

Table 15 displays each major change group and financial aid received by number of terms and percentages, thus indicating that students acquiring financial aid did so in different

patterns. Groups 1 and 3 had highest number of major changes during terms one through four and received most financial aid in the beginning terms. Group 2 had second highest number of major changes in the beginning and most received financial aid during the middle terms of five through seven. Lastly, Group 3 had the greatest number of major changes and acquired the most financial aid during terms one through five.

Table 15

Number of Terms Financial Aid Received of Each Major Change Group (N = 706)

# Terms Financial Aid was Received (FAC)	Group 1 (1 Change) n	%	Group 2 (2 Changes) n	%	Group 3 (3 Changes n)	%	Totals n
0	129	23.58	26	20.00	9	31.03	164
1	85	15.54	15	11.54	4	13.79	104
2	118	21.57	12	9.23	1	3.45	131
3	54	9.87	17	13.08	3	10.34	74
4	46	8.41	8	6.15	3	10.34	57
5	39	7.13	11	8.46	5	17.24	55
6	22	4.02	14	10.77	1	3.45	37
7	31	5.67	16	12.31	2	6.90	49
8	11	2.01	5	3.85	1	3.45	17
9	9	1.65	4	3.08	0	0.00	13
10	3	0.55	2	1.54	0	0.00	5
Total	547	100	130	100	29	100	706

In summary, the research questions were analyzed using descriptive statistics, t-tests, and odds ratios. The t-tests for each research question are reported (see Table 16) and for questions one through four, the null hypothesis was rejected, and for the fifth the alternate hypothesis was accepted as $p = .255$.

Table 16

Graduates and Non-Graduates Research Questions T-test Summary

Research Question/Variable	n	Mean	SD	T	p
Q1 - Major Changes					
Graduated	101	1.50	.69	3.75	<.001
Non-Graduate	605	1.23	.49		
Q2 - GPA					
Graduated	101	3.10	.51	17.8	<.001
Non-Graduate	605	1.89	1.10		
Q3 - Credits					
Graduated	101	69.2	21.6	19.5	<.001
Non-Graduate	605	23.4	22.6		
Q4 - Financial Aid					
Graduated	101	.85	.38	2.16	<.001
Non-Graduate	605	.75	.43		
Q5 - Terms of FA					
Graduated	101	4.50	2.61	7.72	.255
Non-Graduate	605	2.49	2.40		

Logistic Regression Analysis

Per purpose of this study and to gain a better understanding of independent variables studied, logistic regression was used to assist in the interpretation and assessment of the findings. Given the two logistic regression analysis (see Figure 5) of the three change(s) groups (MC1, MC2, & MC3) and the dichotomous outcome variable of students who graduated/not graduated

(GO), logistic regression was viewed as the best option “...for predicting a single dependent/outcome variable from several independent variables” (Morgan et al., 2012, p. 97). Regression analysis highlights predictor variables as they relate to the outcome or likelihood of success (Harmon, Morgan, & Gliner, 2000; Harrell, 2015; Tabachnick & Fidell, 2013). Table 17 analyzed the classification data and the model determined that 95.9% of Hispanic male students who attended SPC from Fall of 2008 through Fall 2011 and were projected not to graduate and did not graduate. On the other hand, 49.5% of those who were anticipated to graduate did graduate. For the variables studied, not graduating may be more accurately predicted than graduating.

Table 17

Observed Predictive Graduation Outcome

		Predictive Graduation Outcome		Percent Correct
		No	Yes	
		n	n	
Graduation Outcome	No	580	25	95.90
	Yes	51	50	49.50

Table 18 shows each of the variables in the equation and the variations indicating individual predictors that assisted in the classification accuracy for the analysis model. The data showed which variables are the most influential (see Figure 7) in the graduation outcomes for Hispanic male students at SPC, by examining the findings using box plots.

When variables were compared against the outcome variable, the findings using logistic regression indicated correlations that aligned with the findings results for each research question. Figure 7 displays a representation for each of the research questions and variables in boxplot format. The most definitive findings using logistic regression indicated the variables Number of Credits (NC) and Grades (G) were most influential, because of the reality that students with higher GPAs and higher number of credits meet requirements to graduate. The regression

analysis supported this by illustrating that changes to independent variables (NC and G) have on the outcome (GO) variable (see Figure 7, top and middle right; middle left).

When looking at the Graduation Outcome (GO), the majority of students in this study dropped out within their first year, through terms two and six, with a median term of three (Figure 7, middle left). Of the students who graduated, the majority graduated between terms six and nine, with a median term of six (Figure 7, middle left). In addition, the highest number of students changed majors once and had the highest non-graduation rate. However, when looking at the Major Changes (MC) variable, students with three or more major changes have the highest variations between terms four to eight, suggesting the chances of graduation are higher for students who changed majors three or more times (see Figure 7, top left). In Figure 7, the Grades (G) (top right) and Graduation Outcome (GO) (middle left) variables for graduation had the highest concentration of students who graduated with GPAs between 4.00 and 2.00. However, the majority of students' GPAs ranged from 3.50 to 2.80, with a median of 3.20, an unusually high GPA for Hispanic males who graduated at SPC.

Table 18

Summary of Regression Analysis Predicting 1 Graduation Outcome (3 Major Changes Groups)

	B	S.E.	Wald	df	Sig.	r ²
Major Changes (MC)	.163	.240	.547	2	.761	.031
Major Changes (MC2)	-.440	.614	.550	1	.474	
Major Changes (MC3)	-.344	.649	.510	1	.596	
Grades	.776	.291	.280	1	.008	.142
Number of Credits	.076	.009	64.1	1	.000	.338
Financial Aid Accepted	.787	.546	2.08	1	.149	.007
Financial Aid Received	-.150	.076	3.88	1	.049	.078
Constant	-7.22	1.071	45.5	1	.000	

It is essential to have a benchmark for comparison, and high school GPA is often a predictor for college success and graduation; in general, students who have higher GPAs in high school are better prepared and tend to earn higher GPAs in college (Seidman, 2019). When GPAs were compared, the national average for Hispanic male high school students' was 2.84 (National Center for Education Statistics, 2015), and at SPC the GPA of all graduates was 3.10 (see Figure 7, top right) for Hispanic males. This comparison indicates the GPAs for SPC Hispanic male students who graduate are higher than the national average of incoming high school Hispanic students. Moreover, students who graduated earned the highest Number of Credits (NC), between 60 and 77 credits (see Figure 7, middle right). Comparing the high school GPA to the college GPA is important because the majority of Hispanic male students in college are not graduating (Fry, 2002); this could be a reliable indicator Hispanic male students are not prepared for college (Fry, 2002; 2004; Sáenz & Ponjuán 2009). Lastly, both graduates and non-graduates accepted Financial Aid (FA) similarly each term (see Figure 7, bottom left); graduates had more terms of Financial Aid Received (FAC) than non-graduating students (see Figure 7, bottom right).

In Table 18, the major change variable (MC) was analyzed as a standalone variable and as three separate variables (MC, MC2, & MC3), along with the other independent variables (G, NC, FA, & FAC). Binary logistic regression (in Table 18) was used to analyze all five variables (Number of Major Changes, Number of Credits, Grades, Financial Aid Accepted, Financial Aid Received) against the outcome variable (GO). When the Major Change (MC) was analyzed as a standalone (MC) variable, it yielded a non-significant result of $p = .761$. The results of the Major Change variables MC2 was $p = .474$ and MC3 was $p = .596$ these results were not significant, meaning that when compared to graduation outcome variable the results exceeded the desired

significance value of $p < .05$. In addition to the Major Change (MC) analysis, each of the four remaining variables (G, NC, FA, & FAC) in Table 18 were compared against the odds ratio in Table 19.

Table 18 show the odds ratio table for each variables and major changes (MC1, MC2, & MC3). The Grades (G) variable was a significant ($p = .008$) factor of prediction; when compared by the odds ratio, students with three major changes had the highest odds ratio of 1.27 when compared to two and one major change. The Number of Credits (NC) variable also had a significant ($p \leq .000$) regression value and a 2.44 odds ratio result for students graduating with three major changes or more. Followed by similar odds ratio results for the Financial Aid Accepted (FA) 1.46 and Financial Aid Received (FAC) 2.79.

What is essential in Table 18 are the values for two of the independent variables (G and NC), which show a significant graduation likelihood within the odds ratios (G3 and NC3) and on Table 19. Table 19 displays the odds ratio results based on the five research questions and the 2 x 3 model of calculating the odds ratio for each (one, two and three) categorical major changes (Morgan et al., 2012; Newcombe, 2006). There were higher odds ratios for Major Change (MC3), Grades (G3), and Number of Credits (NC3) favoring students who change majors three or more times. However, based on the questions and t-test analyzed earlier in Chapter 4, graduation outcomes related to the financial aid variables (FA and FAC) were inconsistent, thus showing a pattern of many students taking more on more financial and not graduating.

This analysis below helps to explain and support the key findings within the 3.5-year timespan. Bullet one (for Research Question #1) is in ratio format, because it dealt with the three major changes and is displayed in a ratio form for Hispanic male students at SPC. The other bullets were analyzed with a percentage of change in relation to students who graduate:

- Who change majors three or more times have a 4.78 times greater chance of graduating than students who change majors two times (2.23) or one time (2.15)
- Who earn a GPA > 2.07 have a 39% greater chance of graduating than those who fail to obtain the minimum GPA of 2.0.
- Who change majors three or more times and take more credits have a 73% greater chance of graduating than students with fewer credits.
- Who change majors once and accept financial aid have a 2% greater chance of graduating than students who do not accept financial aid.
- Who receive financial aid are 10% greater chance to graduate than students who do not receive financial aid.

Table 19

Variables in the Equation with Odds Ratio

		Odds Ratio	95% C.I. EXP(B)	
Variables			Lower	Upper
Major Changes	(MC1)	2.15	1.31	3.53
	(MC2)	2.23	.94	5.26
	(MC3)	4.78	2.16	10.59
Grades	(G1)	.79	.44	1.43
	(G2)	.47	.24	.92
	(G3)	1.27	.70	2.30
Number of Credits	(NC1)	1.32	.71	2.45
	(NC2)	1.85	.59	5.77
	(NC3)	2.44	.84	7.08
Financial Aid Accepted	(FA1)	1.23	.77	1.97
	(FA2)	.56	.23	1.37
	(FA3)	1.46	.65	3.29
Financial Aid Received	(FAC1)	1.87	1.11	3.14
	(FAC2)	.53	.32	.89
	(FAC3)	2.79	1.22	6.41

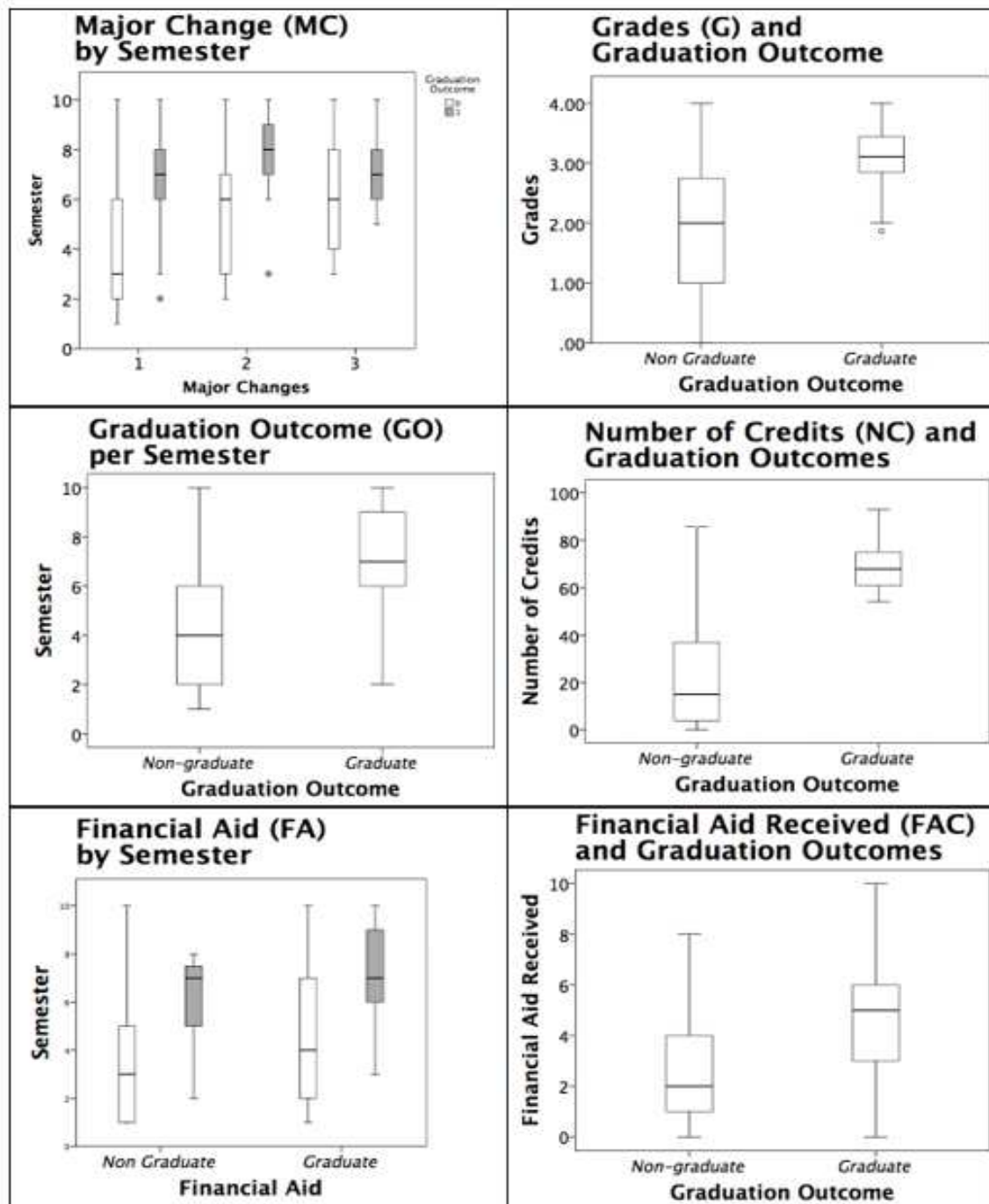


Figure 7. Intercorrelations of Graduation Outcome and Predictor Variables

Lastly, it is important to note that Newcombe (2006) explained the “Condorcet Paradox,” this concept relates to a single variable being compared to three groups (2 x 3). “The odds ratio

paradox relates to three chained proportions compared between the same two groups, and involves the magnitude, but not the direction of the effect” (p. 4239), therefore the need to show the odds ratio and CIs for greater understanding.

Survival Analysis

Survival analysis was a metric for time (retention), due to its ability to measure time to event and event to discrete occurrences (Clark et al., 2003; Harrell, 2013; Lee & Wang, 2003; Morita et al., 1993; Muche, 2001; Willett & Singer, 1993). The study measured the number of total terms students attended courses uninterrupted or staggered during the 3.5 year period and how the independent variables related to graduation outcome.

Kaplan-Meier Estimator

The Kaplan-Meier estimator is a survival analysis function used to study the estimation of lifetime data. Researchers use estimators visually and numerically to plot data in horizontal declining steps to show the probability of survival longevity (Clark et al., 2003; Harrell, 2013; Muche, 2001; Willett & Singer, 1993). Although frequently and successfully used in economic, medical and educational studies, the Kaplan-Meier estimator does have its limitations, one being that it only adjusts to survival covariates (Harrell, 2013). Because this study did not extend past 3.5 years and the majority of students did not graduate, the Kaplan-Meier estimator was sufficient to use as a non-parametric test in conjunction with the Log Rank test. The analysis allowed the data to be estimated over the 3.5 years and to observe the probability of success as student graduation outcomes.

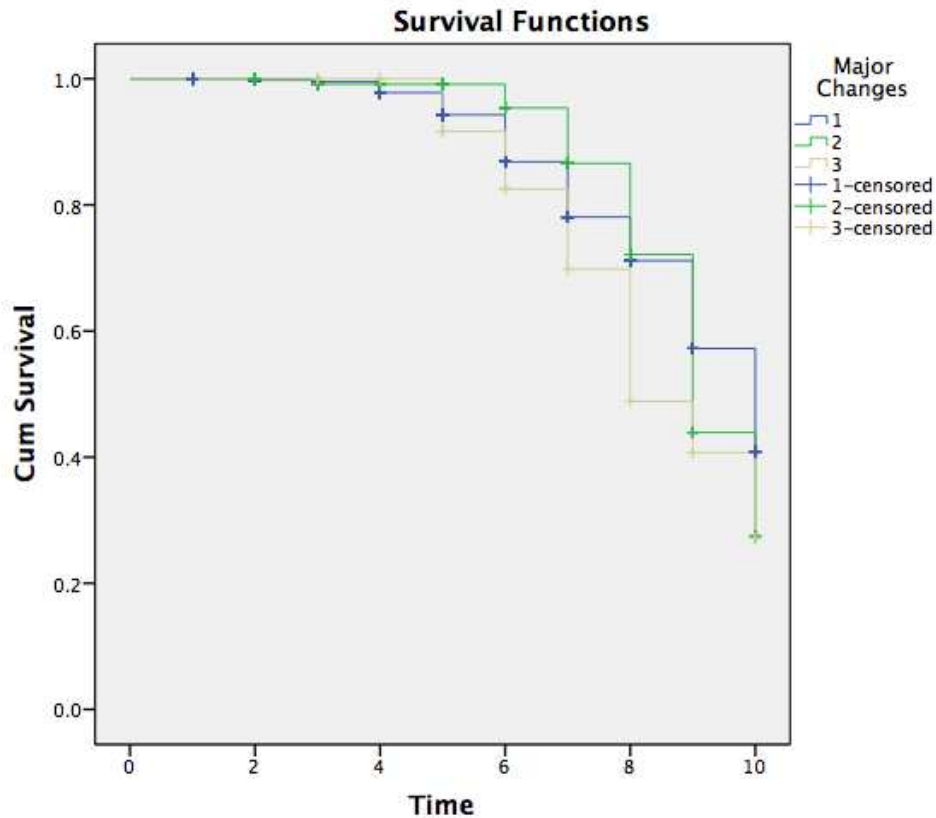


Figure 8. Survival Analysis of Major Change Groups

Survival Analysis Results

Figure 8 suggests that of the three groups, the probability of surviving or, in this case, graduating, starts high at 1.0 or P (Graduation Outcome, (GO)). As time (measured in number of terms) progresses, the probability of graduation for students in each of the three groups begins to increase as students either graduate or do not (censored); in every term there were students from each group who met the graduation criteria built on the number of credits (NC) and GPA (G). The downward curve(s) on the survival analysis for all three major changes is statistically significant, because it represents students experiencing the effects of graduating or not. The possibility of not graduating is more apparent among the students who accumulate fewer credits and/or start with low GPAs. The survival curves in Figure 8 are convex, suggesting that students

have a strong start to their college careers but begin to drop out after four terms. Each of the three groups (MC1, MC2, & MC3) have subtle differences in their survival curve patterns. Namely, students who change majors one (MC1) or two (MC2) times within terms one through eight appear to be taking longer to experience graduation; this is indicative of the longer curve. Second, students who have changed majors three (MC3) times during terms four through eight appeared to have a slight edge, with regard to graduation within the 3.5 years, over those who changed their major one or two times. It is important to note that all groups experience censoring or dropping off/out during every term. In addition, all three groups had students who were taking courses throughout the 3.5 years (10 terms) of the study. However, based on the censored (+) points at each descending intersections in Figure 8, only had 3 groups. MC2 and MC3 we see the steepest and earliest drop-offs, which is indicative of student graduation among the group.

Log Rank Testing

Log Rank testing showed comparisons of survival distributions between Hispanic male students at SPC who graduated and those who did not. These groups' variables were studied for how many times students changed their majors (NC): one, two, or three or more times. As stated above, the cohort contained 706 students, of whom 101 graduated (1) and 605 did not (0). A time variable (T) indicated the number of terms each Hispanic male student attended SPC.

Log Rank Comparisons

In Figure 8, the survival lines indicated the number of times students in each group (MC1, MC2, MC3) changed majors within 3.5 years and whether the students graduated. Based on each survival line, the separation between lines and the crossing of lines indicate a possible inability to detect differences. Therefore, the comparison of survival distributions of each group

is important and the reason why Log Rank was used to compare data for a time/term to event/graduation (Bland & Altman, 2004). In the beginning, each line moves in harmony, indicating that the probability of survival or graduation is high (100% or 1.0), but as the line progresses to the right the probability of survival (graduation) becomes lower and lower until each student within the cohort has had the event occur and the probability of graduation is zero. However, in this case, we see a sharp drop in specific terms and not all lines reach zero. This indicates not all students in that group had the event (graduation) occur and are still in school based on the definition of this study's censoring as displayed in Figure 4.

The tail end of the curve is important because the three lines of the survival analysis graph share some common characteristics in the beginning and the middle but tend to slope downward toward the end. A subsequent overall Log Rank comparison test (Martel-Cox), run to observe the tail end of the three lines separately, confirmed the significant Log Rank levels of the three curves as $p = .39$ (Chi-squared = .75, $df = 1$), greater than the p value of .05. It confirms this tail end drop is important because 605 of the 706 students did not graduate within 3.5 years (Bland & Altman, 2004).

Means and Medians for Survival Times

As indicated in the calculation of the means and medians (see Table 20), the survival function (or graduation) for each of the three major change groups (MC1, MC1 and MC3) is less than or equal to 0.05 CI levels. This indicates that all three major changes move along a similar pattern (see Figure 8). This pattern of starts high on the upper left side and ends on the opposite bottom right side of the chart, but all three groups differ in the progression. The three MC groups fit the 95% CI that is less than or equal to what all three groups had students with 8+ terms of survival time to graduation. The 95% confidence interval that the most number of

students who graduated in each of the three groups of the Hispanic male students occurred within the interval of $8.63 < \mu < 9.02$ for the mean number of terms and $9.35 < \mu < 10.65$ for the median. When comparing the mean and median survival times for each of the three major changes (MC1, MC2, & MC3), students who changed majors three times (MC3) graduated in eight terms, while students who changed majors two times (MC2) finished in nine terms and students who changed majors one time (MC1) took 10 terms to graduate. Table 20 focuses on the means and medians within the number of terms for each of the major change groups. When interpreting the CI median, we find that in the 95% CI the lower bound and the upper bound cross (results are within each Major Change groups). These figures show that there is statistical significance among these three survival curves in relation to each other as they align closely within the 95% CI results (see Table 20) and are visually aligned in Figure 8. Therefore, graduating (or not graduating) based on the number of majors changes may not be very different among each group based on the number of terms or survival time. As is evident in Table 20, the mean differences of graduates is that students who changed majors three or more times finish in slightly fewer (8.34) terms than students who change majors once (8.85 terms).

Table 20

Means and Medians for Survival Time

Major Change Mean 95% Confidence Interval					Major Change Median 95% Confidence Interval			
Major Changes	Mean Term	Std. Error	Lower Bound	Upper Bound	Median Term	Std. Error	Lower Bound	Upper Bound
1			8.60	9.10			9.06	10.94
2	8.95	.16	8.63	9.28	9.00	.29	8.42	9.58
3	8.34	.41	7.54	9.13	8.00	.86	6.31	9.70
Overall	8.83	.10	8.63	9.02	10.00	.33	9.35	10.65

Summary and Conclusions

This chapter addressed five questions and related hypotheses pertaining to 706 Hispanic male SPC students who changed majors one, two, or three or more times within a 3.5-year period.

In the descriptive analysis, the groups were compared to each variable of interest, first as one group then as three separate groups. The data collected yielded results that mirror other studies explored in the literature review. For instance, Sáenz and Ponjuán's 2009 study points out Hispanic students who enroll in college may be unprepared, while others discuss the adjustment/adaption of Hispanic males as it relates to acculturation to the institution (Cavazos-Rehg & DeLucia-Waack, 2009).

Of the 706 Hispanic students, 101 students graduated. Each of the variables (Graduation, Grades, Number of Credits, Financial Aid, Financial Aid Received) was incorporated into a research question. Students who changed majors three or more times graduated within 3.5 years while the majority of students who changed majors once did not graduate within this time. Students with one or two major changes had less favorable results with regard to graduation than those who changed their majors three or more times; in other words, those who changed majors three or more times graduated at a higher rate. In addition, the majority of students in each group who did not graduate received financial aid; this could be an indicator financial aid may be playing a role in why students are choosing to go to college.

Finally, survival analysis was utilized to understand how Hispanic male students at SPC progressed as they navigate the higher learning system and ultimately graduate. Although there were differences within the three groups, those who changed their major once or twice appeared

to not have an edge regarding graduation outcomes and grades successes over students who had changed major three or more times.

CHAPTER 5: DISCUSSION

The importance of studying the graduation successes among Hispanic males cannot be overstated, not only for institutions, but for policymakers and researchers whose work focuses on Hispanic students nationwide. The dramatic increase in the Hispanic population in the United States (Brown, 2014; Fry & Lopez, 2012) has made it a powerful demographic and has shined a spotlight on the shortcomings in our educational system. Over the past several decades, the numbers of Hispanic males enrolling in and completing college have declined relative to Hispanic females (Fry, 2011; Fry & Lopez, 2012; Ponjuan et al., 2018). Data from many colleges and community colleges show that Hispanic males are facing numerous setbacks. Unless this problem is identified and addressed, enrollments (see Table 1) will continue to increase and retention figures for Hispanic males will continue to decrease (Fry, 2011; Fry & Lopez, 2012; Hollmann et al., 1999; Knapp et al., 2012; Lopez & Cohn, 2011; Ponjuan et al., 2018; Suro & Passel, 2003). Recognizing factors that influences graduation among Hispanic males may help understand how and why getting a degree correlates to the overall successes of Hispanic males (Garcia, 2013; Suro & Passel, 2003).

General Findings

The initial question was based on the idea that there are specific variables that may influence the graduation outcome (GO) of Hispanic males. In the literature review, several key areas emerged as important: college majors, choosing a major (decision), self-efficacy, family and college barriers, academic experiences, and students' outcomes, all of which stem from the theoretical framework by Crisp and Nora (2010) and Taggart and Crisp (2011). These articles hypothesized decision-making characteristics of Hispanic students (see Figure 1) and presented a framework leading to the definition of variables and the direction of the methodology. Crisp and

Nora's (2010) diagram was particularly efficient with regard to the main variable—graduation outcome (GO). It helped the researcher identify other variables that influenced GO and facilitated a thorough examination of these variables, both separately and as compared to each other. Descriptive, logistic regression and survival analysis were critical in gaining further understanding of how and why this research may help improve the educational outcomes for Hispanic males.

In addition to these questions, the study relied on the grounding of three theoretical paradigms: migration, transition and transformation, all of which informed its design (see Table 3). This design allowed for a visual perspective examining the timeline as Hispanic male students navigated an institution of community college, specifically around the number of major changes and the influence on graduation. Lastly, having a theoretical grounding element allowed for holistic understanding and clarity of each component, variables, and outcomes to aid in exploring areas that may need to be further examined because of this study.

Limitations of Study

The study's main limitation concerned the number of available variables collected in the archived database (see Table 4). For example, the BI hub did not offer variables related to students changing majors (see Table 6); therefore, the major change (MC) variable was created to fill this void. Subsequently, this new student majors section in BI was added as a request for this research. The variables within the BI system were chosen as the closest match to Crisp and Nora's (2010) theoretical framework. Since the start of this research, the SPC has updated the number of available variables. If the study was extended to a longer time frame (i.e., four, eight, or even 10 years) and included more variables, graduation outcomes may have increased. Because of limiting variable availability in the study, interpreting the findings may be restricted

when looking at the holistic picture and end results. To compare a plethora of variables significant towards graduation may paint a broader picture as opposed to relying on a smaller set of significant variables.

The second limitation is SPC has nine campuses with a total of 46,706 students in 2017-18; each campus is unique and has a different culture that may have limitations to this study. For example, the student population of the Health Education Campus are extremely different from the Tarpon Springs campus; the students are older and most are in a career already, as opposed to younger students at Tarpon Springs who have part/full-time jobs. In addition, more than 50% of students at SPC chose to take courses on multiple campuses. This made it difficult to explore campus culture or differences among each campus. The data from all campuses gave a relatively moderate sample size collectively as a college and not per campus. Although the above is important, the outcomes from all campuses with different programs have created additional questions that would have influenced Hispanic student outcomes. By further analyzing the variables of campus, programs and course offerings, the study may have been able to address the acculturation change element's influence on graduation in a reasonable amount of time. In addition, by analyzing components in the system such as course configurations may indicate change(s) that could assure more graduates in a reasonable period of time. Addressing the above limitations is particularly important because it helps inform future questions such as, are there other variables that may influence outcomes? And are there campuses' specific programs, courses, and offering times (i.e., health or law enforcement programs) that create cultures of success for Hispanic male students?

Research Questions Analysis

Major Change and Graduation – Question 1 Analysis

Students who change majors more often have a higher likelihood of graduating (Micceri, 2001). The data on the cohort ($N = 706$), as interpreted, indicated a significant findings between the number of times Hispanic males changed majors and graduation (see Table 10), an independent t-test of graduates ($n = 101$) and non-graduates ($n = 605$) did show a significance level of $p < .000$ (see Table 16).

In addition to the quantitative data for question 1, the literature review yielded additional information supporting the theory that students who change majors more often double their chances of graduation (Micceri, 2001). That said students who acculturate within their institution had a greater likelihood of graduation. A part of acculturation is finding mentors in faculty, staff, and peers (Clark et al., 2013; Ojeda et al., 2012). Students who are actively seeking information from social groups and from academic programs choose to engage in the culture of the institution and therefore may find a way to navigate toward best decisions and a successful outcome (Bauman et al., 2019; Clark et al., 2013; Harrell & Forney, 2003; Millea et al., 2018; Ponjuan et al., 2018; Sáenz & Ponjuán, 2009).

The difference between the current literature and the results of this study is that students who change majors more times had higher graduation successes. It should be noted, however, those who had fewer major changes made those changes during the first few terms and, as first-year college students face the most rigorous assignments in the curriculum. This may suggest that the difficulty and volume of the work could be a contributing factor as to why they did not graduate. (Gonzalez & Meling, 2018). Although the data indicate that the more times students change majors the greater the likelihood of graduation (see Table 10), the literature shows how

important it is to retain first- year Hispanic male students (Sáenz & Ponjuán, 2012). To foster decision-making, these students should be encouraged and have varied opportunities to gather information about majors. This is evident when discussing students who choose a major once throughout their entire college career and may not have the opportunity, access to information, or knowledge of any other majors offered. Further explorations of acculturation will allow opportunities to assimilate and therefore may have a positive impact on the rate of Hispanic male graduations.

Grades and Graduation – Question 2 Analysis

The variable grade (G) is of crucial importance for students to graduate. When researching student outcomes, grades are typically a key variable because they consistently demonstrate results (Crisp & Nora, 2010; Nora & Crisp, 2009; Person & Rosembaum, 2006; Taggart & Crisp, 2011; Zhao & Luan, 2006). In Person and Rosenbaum's (2006) mixed methods study regarding Latino student choices and migration, grades were one variable used to discover whether Latinos received more or less information in college in both multivariate and regression analyses. For example, grades were analyzed and compared against variables of parent education and income to see differences in information students received. They found positive associations that the successes among Hispanic male students as a group are dependent on family (parent income) and friends within their network at an institution—the more information received from their network the higher their grades (Seidman, 2019). This is particularly important for an institution like SPC that has structured Associates in Science programs (i.e., Law Enforcement, Nursing, & Respiratory Care), which provide students with consistent information. This structure is important as it relates to acculturation, because the more structure students receive the more information

they have, the fewer mistakes they make, the better their chances for program completion (Person & Rosenbaum, 2006).

In this study, grades were one of the variables used as a predictor of graduation as students changed majors and transitioned. As discussed earlier, the analysis of the data indicated Hispanic males who change majors more often have a higher GPA upon graduation (see Table 12). Specifically, students who changed majors three or more times had a higher GPA than those who changed majors one or two times. An independent t-test of graduates ($n = 101$) and non-graduates ($n = 605$) was run regarding the research question showing a $p < .000$. The effect size was large $d = 1.42$. Because the p value was $< .000$, further examination of the effect size was conducted to validate students who have higher GPAs have a tendency to change majors more times and a larger portion graduated. However, if we look at this from the opposite of lower grades or unsuccessful students, this result is consistent with the findings explored in Chapter 2 for each of the subsections (*Retention, College Majors, Choosing a Major, Self-efficacy, Family and College Barriers, Academic Experiences, and Student Outcomes*). The main reason is students who earned lower grades and did not graduate were the largest group ($n = 605$). These students may have been unsuccessful in finding ways to navigate the collegiate system. In the mix of students, community colleges tend to target a large majority of first generation, low-income students (Peña & Rhoads, 2018). SPC does have a mixture of multigenerational students with the majority on financial aid, which is indicative of low income. The difference between the literature and data are that although many Hispanic students have barriers to overcome, a large number of students ($n = 255$) had a 2.00 or higher GPA, which, if maintained, is enough to graduate (see Table 12). From an acculturation standpoint, SPC Hispanic male students that had a 2.00 GPA were not retained. A number of factors/barriers pointed out in the literature review

may indicate that these students, regardless of grades, may not have had the nurturing environment to graduate and therefore dropped out.

Total Credits and Graduation – Question 3 Analysis

Question 3 focused on the number of credits (NC) and how this variable influenced graduation. Like the grade (G) variable, the number of credits is a clear benchmark: nearly every program requires students to have a certain number of credits to graduate. The number of credits required for associate in science and numerous certificates varies by program and college (Board of Trustees of St. Petersburg College, 2012). According to the SPC Board of Trustees, there is a minimum of 60 credits to earn an associate's degree. The number of credits taken by each major change group does influence the graduation of Hispanic male students at SPC; graduates took more credits.

Number of credits also correlates to retention and/or persistence (Bauman et al., 2019; Millea, Wills, Elder, & Molina, 2018) as typically the more credits, the longer students attended the institution. SPC has a long history of creating support programs for women (in general); however, the same cannot be said for Hispanic males, who face similar but unique challenges. As Millea et al. (2018) stated the three areas of retention—institutional factors, student attributes, and financial considerations—could pose added challenges for Hispanic males at SPC. According to the literature, Hispanic males have more obstacles to overcome and may not have the resources to overcome them (Fry, 2002; Sáenz & Ponjuan, 2009). However, in the data analysis very few students graduated in phases 1 and 2 (one to 30 credits), which indicates that Hispanic male students were not enrolling in certificate programs with fewer completion credits. This leads us to believe that Hispanic male students are attempting to enroll but dropping within the

first 30 credits, which may be a strong indicator of not receiving enough support or critical information to navigate the institution successfully.

Lastly, the importance of addressing issues of support and information regarding Hispanic males should immensely improve the educational experiences and outcomes for this group. These are the experiences many Hispanic male students seek in institutions, and these experiences will inform and educate them on the front end to have successes on the backend (graduation).

Financial Aid and Graduation – Question 4 Analysis

Financial constraints are often seen as a barrier of entry among low income Hispanic students in the United States (Fry, 2002; Sáenz & Ponjuan, 2009), especially for Hispanic males (Sáenz & Ponjuan, 2009). Researchers have long recognized that financial aid accepted (FA) is an important factor with regard to Hispanic students' graduation rates (Taggard & Crisp, 2011). They found without the financial resources from, for example, a job and/or family, Hispanic students were at a disadvantage.

In this study, financial aid accepted (FA) was analyzed as an independent variable (Yes/No) to determine differences in graduation. Table 14, which focuses on students who accepted financial aid ($n = 542$), shows that, at SPC, 77% of Hispanic male students who changed majors one time accepted financial aid, 19% of students who changed majors two times, and 4% of students who changed three or more times accepted financial aid. An independent t-test of graduates ($n = 101$) and non-graduates ($n = 605$) on the financial aid accepted (FA) variable showed significance ($p < .000$) and the effect size was small (.08). It is important to note that Hispanic male students who graduate acquire financial aid (see Table 14) similar to the

portion of student financial aid acquired by Hispanic male students who do not graduate from SPC.

Research question 4 shows both students who successfully graduate ($n = 101$) and those who do not graduate are equally accepting financial aid. It is important to note based on SPC's data, the majority of Hispanic students attending are considered low income, although low income is not the only criterion that determines receipt of financial aid. In addition, it is important to note that most research on challenges and/or barriers faced by Hispanic males overwhelmingly show financial and economic challenges as a major struggle (Crisp & Nora, 2010; Fry, 2002; Millea et al., 2018; Peña & Rhoads, 2018; Sáenz & Ponjuan, 2009, 2011; Taggart & Crisp, 2011). The difference between the research literature and outcome data show that students may focus on the financial aid and not the economic impact of the program/major of choice.

Financial Aid Received and Graduation – Question 5 Analysis

The financial aid received (FAC) variable was the total number of terms (disbursements) students received monies for tuition and other expenses. Table 15 shows the number of times financial aid disbursements students received, by each major change group, to show patterns among the times of disbursements. Students tend to receive financial aid consistently per term during the first three terms or phase 1 (30 credits) within the first year.

An independent t-test of the number of terms financial aid received (FAC) did not differ between those who graduated (4.50) and those who did not (2.49). This is further indication that the majority of Hispanic male students at SPC have low incomes and are dependent on financial aid as a means of support for retention/persistence. The difference between literature and data are that Hispanic males may similarly receive financial aid in the beginning (first year), but they

become less dependent on the financial aid in later terms as they progressed academically. This could be an indication of acculturation (expanding their networking opportunities with other students) and finding additional sources of funding as they navigate each term.

Findings

Males in general are experiencing more life obstacles such as suicides, incarceration, labor force disengagement, divorce, and a lack of participation in civic life (Mortenson, 2003). According to the literature review, females have been outperforming males in every racial/ethnic group in attainment of bachelor's degrees (Figlio, Karbownik, Roth, & Wasserman, 2019; Jones, 2013; Mortenson, 2003). Moreover, academic challenges experienced by men are profound within the Hispanic population.

Clearly, variables influencing college graduation rates, including the factors that hinder Hispanic males persisting through the rigors of the college curriculum and ultimately graduating, need consideration (Garcia, 2013). In addition, exploring other variables tied to acculturation, economics, patterns, and behavior (Millea et al., 2018) will provide a holistic picture regarding Hispanic male students who change majors.

This study shed some light on the SPC students who are not graduating and has revealed areas of concerns that may inform and direct educators toward successful interventions. Moreover, this research has brought forth one important area of student success when addressing Hispanic males in higher education: acculturation. The data showed that Hispanic male students at SPC dropout every term, more tend to drop during their first four semesters than in later semesters, which may suggest that family, economic, and financial acculturation may have a significant impact on Hispanic male graduation outcomes (Garcia, 2013; Millea et al., 2018; Taylor et al., 2009).

Sáenz and Ponjuan (2009) outlined the stigmatization of Hispanic students and the increased challenges they experience. As stated by Clark et al. (2013), for Hispanic males to thrive there must be an encouraging environment that allows for the inclusion of family and community, mentoring, role modeling, and support programs. Researchers should examine how Hispanic male students acculturate with the current diverse educational climate (Harrell & Forney, 2003; Millea et al., 2018; Sáenz & Ponjuán, 2009).

College Experience

To understand the contextual framework of this dissertation and recommend future research, there are several key elements from SPC's College Experience initiatives to explain. President William Law instituted these initiatives in May 2012. Under his vision and leadership, SPC embarked on a rigorous plan to enhance students' success. Initially called the 5 x 180 Plan (launched five initiatives in 180 days) and now referred to as the College Experience, the president's plan outlined five components: (1) Individualized Learning Plans, (2) Enhanced New Student Orientation, (3) Expanded Career Advising, (4) An Early Alert System, and (5) Learning Support Centers/outside of the classroom support (Coraggio & Gardner, 2013; Law, 2012). At the time of this writing, all components of the College Experience were implemented at SPC.

The timing of both the change in leadership and implementation of the College Experience is noteworthy as it coincides with the three-and-a-half-year period of this study and therefore may have influenced students. That said, while every student in the sample may have encountered some components of the College Experience, though their experiences were not uniform. Therefore, it was difficult consider influences of this initiative on graduation outcomes for this sample of Hispanic males.

Future Research

Chapter 2 points out research regarding successes of Hispanic males as it relates to gender, race and changing majors. Currently, there is a dearth of such research, particularly around Hispanic males and changing majors; therefore, a deeper focus on majors as it relates to graduation and employment is needed (Malgwi et al., 2005; Montmarquette et al., 2002). When analyzing the process and consequences of changing majors, it is important to examine the sequence of the *student choice construct*. The student choice model assumed collegiate decisions structured around unique pathways encompassing individuals' situations, diversity, economic circumstances, and geography (Paulsen & St. John, 2002). With regard to Hispanic males changing their major, the literature focuses on two important factors, acculturation and gender, as strong predictors of college/educational persistence (Perna, 2000; Sciarra & Whitson, 2007). These factors are particularly important when examined through the lens of Berry's (2003) definition of acculturation. He states that is, adopting a host culture while maintaining a heritage culture (Hispanic students can often be heterogeneous and multigenerational within a host culture) as they are being introduced to navigating and ultimately graduating from U.S. institutions (Cavazos-Rehg & DeLucia-Waack, 2009; Cervantes & Cordova, 2011; Fiebig et al., 2010; Ojeda et al., 2012; Rivera et al., 2007; Schwartz et al., 2007; Valentine, 2001).

At SPC, the president's initiatives did not address acculturation as an area of focus, which may have had negative implications. When seeking ways to support Hispanic students, educators need to adopt the concept of acculturation (Ojeda et al., 2012), as this may be a factor in likely selecting a college of choice and/or how they focus on major changes and graduation at any institution. Studying acculturation may involve variables such as language, values, attitudes, and behaviors to address the questions of why Hispanic males have low graduation success in

higher education. Further, in the study of acculturation *not* changing majors may need to be addressed as a possible barrier to completion.

Lastly, research with a broader sample could be conducted at SPC or in other Florida colleges to strengthen the findings and to clarify unanswered questions. The possibility of national research could be explored with other variables to understand how and why Hispanic males are not graduating and why those who change majors three or more times seem to be more likely to graduate than those who change fewer times. In addition, because there are many Hispanic students within the community college system, the contrast between universities and community colleges may yield rich data regarding Hispanic male students that can have an impact on intervention and graduation as it relates to theory, practice, and policy.

Theory

Hispanic males are categorized as groups of Latinos or Hispanics by geographical areas of origin; for example, Puerto Rico, Mexico, or Latin America. We see this type of categories regarding Hispanics often when referring to government agencies (and for the purpose of this research). According to the U.S. Census website (last revised on Jan. 18, 2018):

Hispanic origin can be viewed as the heritage, nationality, lineage, or country of birth of the person or the person's parents or ancestors before arriving in the United States. People who identify as Hispanic, Latino, or Spanish may be any race. (Humes, Jones, & Ramirez, 2011)

Although the area of origin is important, there are also two significant subgroups, which could be categorized as (1) multiple generations who are United States-born, or (2) first-generation Hispanic males (Doran & Medina, 2018) from various countries. Each subgroup poses different challenges for student services/intervention programs (Ballysingh et al., 2017). For instance, multigenerational Hispanic males may struggle less with the English language if at all, while first-generation Hispanic students may have considerable struggles and require English as a

Second Language (Cervantes & Cordova, 2011; Doran & Medina, 2018; Morales & Hanson, 2005).

Environment influences personal choices for Hispanics (Padilla, 1994) and choices can be influenced by migration (Person & Rosenbaum, 2006). By looking to theory and research to create successful programs, administrators can address the challenges that Hispanic males face and influence them in a positive direction (Clark et al., 2013; Sáenz & Ponjuan, 2009, 2011). It is through theory and interventions that college leaders can gain substantial leverage in aligning programs with funding to influence the retention and graduation of Hispanic males (Garcia, 2013; Peña & Rhoads, 2018).

Practice

Institutions look toward successful practices and interventions that produce results. A good example is the research of Garcia (2013) regarding *Institutional Selectivity*, where she researched the practice of selecting incoming freshman students with higher SAT scores. Institutional selectivity did impact graduation rates for whites and students of color alike (Garcia, 2013); it also influenced funding structures directly for colleges like SPC, as well as the access of students and/or specific student groups like Hispanic males. Institutional Selectivity worked in opposition to the process of acculturation of students. However, this practice can be enhanced by suggesting, implementing, and assessing student services that impact retention, graduation rates and, ultimately, the funding structures from colleges and universities. Further, aligning research with academic budgets and funding structures may result in colleges and students benefitting from enhanced intervention and collaborative best practice.

Based on research of Millea et al. (2018), the critical factors surrounding retention that impact graduation for all students—high GPAs, smaller class sizes, and financial aid. Research

and best practices should center on merit based scholarships, which can increase graduation (by 18.4%) and grant-based (by 9%). Also noted, is the adverse influences of financial aid in the form of student loans, which decreased graduation by 19% (Millea et al., 2018).

Policy

Hispanic Serving Institutions (HSIs) contain a wealth of invaluable knowledge due to the high student enrollment. "...[T]here are over 370 HSIs, and they enroll more than half of all Latin(os/as) students (identified by culture and language) enrolled in higher education; approximately one-half of HSIs (48%) are community colleges (178), and 4 percent (15) are private not-for-profit two-year institutions" (Santiago, Calderon Galdeano, & Taylor, 2015, p. 12). For instance, the lack of financial aid knowledge and understanding among Hispanic males is a challenge that is difficult to interpret when analyzing data. Many Hispanic male students who attend HSIs have similar challenges to Hispanic students attending other institutions, including low income, language barriers, and financial insecurities (Ballysingh et al., 2017). Further, in the state of Florida, Hispanics may not have a loud enough voice in the political and academic processes; this, due to a myriad of reasons such as lack of political clout, legislation changes, language barriers, community collaboration, and a cohesive cultural identity. As mentioned earlier, a lack of information is a problem for many Hispanic males and efficiently targeting messages to these students may increase their likelihood of success. For example, sports venues, radio, and restaurants that communicate directly to this population may be effective channels of communicating information and move away from a one-size-fits-all messaging that may not work with the Hispanic male population. The importance of financial aid to student success is a critical link in the intervention process and should not be ignored for Hispanic males and students of color. Because many states (including Florida) have increasing

numbers of Hispanic students and may therefore qualify to become HSIs, policy should follow suit regarding research and funding so that graduation is a more inclusive, collaborative, and equitable process for Hispanic males (Ponjuan et al., 2018).

Recommendations

For Hispanic males, cultural differences may impede educational success, defined in this study as graduation. The data suggest that Hispanic male students who enter SPC and make more changes of majors appear to have better chances of graduating. And the majority of Hispanic males who did not graduate changed majors the fewest times (see Table 10), which could be a strong indicator of academic acculturation, financial impact on their family, and/or the actual length of time students attended SPC. The findings of this study indicate that more is needed around students who graduated ($n = 101$) and students who did not graduate ($n = 605$). Research on individual students, for example, would be a valuable contribution to the information collected regarding Hispanic male students in colleges. Another important issue when considering research is whether higher education institutions are asking the right questions to understand and address the challenges Hispanic male students are facing. Such questions would include, what is the impact this group has on the community, the institution, and the student body? What is the impact of greater understanding on Hispanic males' ability to navigating the college process? Moreover, research on financial aid or financial/economic challenges as it pertains to Hispanic males would be beneficial to colleges. Financial aid research could have a large impact on understanding Hispanic male student success on the county, state, and national levels, especially since the majority of these students are relying on aid (Crisp & Nora, 2010; Fry, 2002; Millea et al., 2018; Sáenz & Ponjuan, 2009, 2011; Peña & Rhoads, 2018; Taggart & Crisp, 2011).

As mentioned earlier, the national Hispanic population increased from 2000-2012, as did the enrollment of Hispanic students (18- to 24-year-olds) in colleges (Fry & Lopez, 2012). However, Hispanic males are still facing challenges within the educational system (Hollmann et al., 1999; Passel et al., 2011; Peña & Rhoads, 2018), necessitating research on acculturation, academic consciousness, and ethnic identity of Hispanic males. A comprehensive understanding of how Hispanic male students navigate higher education may provide explanations for the low rate of graduation. Academic institutions often categorize students according to their ethnic identity, and they experience student diversity from the population growth (Benitez & DeAro, 2004; Ojeda et al., 2012). Educators and college leaders must take into consideration Person and Rosenbaum's (2006) definition of chain migration, or the desire for students to belong to one group or subgroups, particularly Hispanic students, who face many challenges when it comes to identifying themselves as belonging to one cohesive group. On the other hand, belonging to one group may have negative implications, further limiting student opportunities when choosing institutions, changing majors, or graduating. For instance, the military demands "one size fits all" conformity, which is not the best option for all service members. As Mezirow (1997) stated, negative experiences may limit decision-making, which can potentially limit Hispanic male students from reaching their full potential. Indeed, there are intricacies that stem from the integration of cultural, family, and systematic differences (Bauman et al., 2019; Berry, 2003; Lopez et al., 2018; Ponjuan et al., 2018) and these intricacies must be addressed and understood if this population is to thrive within our educational system.

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Appendix A: Permissions

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Date: July 8, 2019 at 12:46:38 PM EDT
To: "rdavis259@verizon.net" <rdavis259@verizon.net>, "amaury.nora@utsa.edu" <amaury.nora@utsa.edu>
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Rodrigo,

Thank you for your kind words. I'm glad that our work has been helpful to you. From our perspective, you are welcome to use the figure. However, you may also need permission from the publisher. If you haven't already, I'd suggest that you ask your advisor who needs to approve use of the figure.

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Subject: Permission Request for Use of Diagram in Dissertation

Dr. Crisp & Dr. Nora -
I hope this email finds you well. I am a graduate student at Colorado State University finishing up my dissertation. I have cited your "Theoretical Model of Persistence among Hispanic Community College Student" diagram from your research work (*below*):

Crisp, G., & Nora, A. (2010). Hispanic student success: Factors influencing the persistence and transfer decisions of Latino community college students enrolled in developmental education. *Research in Higher Education*, 51(2), 175-194.

Your work on this topic has been both extremely helpful and inspirational. I was seeking your approval in writing to cite your work as a figure in my dissertation.

Please let me know if you need any more information regarding my request.

Sincerely,
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SPRINGER NATURE

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Appendix B: Data Set Variables not used in the Analysis

Variables Not Used in the Analysis

Variables	Description	Variable Type and Level of Measurement	Type
Age (<i>A</i>)	Independent/at start of FTIC	Ratio/Continuous	Actual years (1-100+)
Campus (<i>HC</i>)	Independent	Categorical	All 9 SPC Sites: AL–Allstate Campus CL–Clearwater Campus DT/MT–Downtown/Midtown Campus HEC–Health Education Campus SE–Seminole Campus SPG–St. Pete Gibbs Campus TS–Tarpon Springs Campus

Appendix C: IRB Approval Letter SPC



18 September 2017
(Renewal)

Dear Mr. Davis,

The St. Petersburg College Research Review Committee reviewed your request for renewal of the study entitled:
"Hispanic Male's Students changing major and predictors toward graduation at St. Petersburg College – A retrospective study".

We are pleased to inform you that your renewal request was approved. Please note that approval constitutes human subjects review by this committee only and in no way indicates St. Petersburg College's willingness to support this study which is a separate administrative decision at the Department level. Subject to Departmental authorization, this approval will allow you to conduct research at St. Petersburg College provided such research conforms to College policy and the methodology defined in your research proposal/SPC research application.

The committee requests that St. Petersburg College not be named specifically in any of the study documents except as an author affiliation.

This research authorization covers a one-year period beginning November 6, 2017. The time frame should be adequate to satisfy your research needs based upon your application. If the research extends beyond this time frame, you will be required to submit a *Study Update* to the Research Review Committee requesting an extension of the authorization period.

When the study is completed you are required to submit a *Study Update* form to close the study formally. In addition, you must provide the SPC Research Review Committee with a copy of your completed study findings and all publications and presentations resulting from it for archiving in the SPC records.

Thank you for your interest in conducting research at St. Petersburg College.

Best wishes to you.

Sincerely,

Dorraine Watts, PhD, RN
Faculty Chair, Research Review Committee
St. Petersburg College

Appendix D: IRB Approval Letter CSU

NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: September 27, 2017
TO: Makela, Carole
Lucas, Kathy, Kuk, Linda, Davis, Rodrigo
FROM: Swiss, Evelyn, CSU IRB 2
PROTOCOL TITLE: HISPANIC MALE STUDENTS: CHANGING MAJORS AND PREDICTORS OF GRADUATION AT ST. PETERSBURG COLLEGE
FUNDING SOURCE: NONE
PROTOCOL NUMBER: 12-3202H
APPROVAL PERIOD: Approval Date: October 23, 2017 Expiration Date: October 22, 2018

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: HISPANIC MALE STUDENTS: CHANGING MAJORS AND PREDICTORS OF GRADUATION AT ST. PETERSBURG COLLEGE. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

Important Reminder: If you will consent your participants with a signed consent document, it is your responsibility to use the consent form that has been finalized and uploaded into the consent section of eProtocol by the IRB coordinators. Failure to use the finalized consent form available to you in eProtocol is a reportable protocol violation.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.


This approval is issued under Colorado State University's Federal Wide Assurance 00000547 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

IRB Office - (970) 491-1553; RICRO_IRB@mail.colostate.edu

Evelyn Swiss, Senior IRB Coordinator - (970) 491-1381; Evelyn.Swiss@colostate.edu

Tammy Felton-Noyle, IRB Biomedical Coordinator - (970) 491-1655; Tammy.Felton-Noyle@colostate.edu



Swiss, Evelyn

Continuing renewal has been granted under expedited category 8C to continue to analyze data collected per approved protocol. Review was completed on September 27, 2017. Approval period is: October 23, 2017 to October 22, 2018.



Research Integrity & Compliance Review Office
Office of the Vice President for Research
321 General Services Building - Campus Delivery 2011 eprotocol
TEL: (970) 491-1553
FAX: (970) 491-2293

Approval Period:	October 23, 2017 through October 22, 2018
Review Type:	EXPEDITED
IRB Number:	00000202