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## The Effect of Delayed Enrollment, Regional Wealth, and First-Generation Status on Community College Student Success

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**THE EFFECT OF DELAYED ENROLLMENT, REGIONAL WEALTH, AND  
FIRST-GENERATION STATUS ON COMMUNITY COLLEGE STUDENT SUCCESS**

**by**

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Old Dominion University in Partial Fulfillment of the  
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**Dennis Gregory (Co-Director)**

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## ABSTRACT

### THE EFFECT OF DELAYED ENROLLMENT, REGIONAL WEALTH, AND FIRST-GENERATION STATUS ON COMMUNITY COLLEGE STUDENT SUCCESS

Sunita Etwaroo Hines  
Old Dominion University, 2014  
Co-Director: Dennis Gregory  
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For many students, the path to earning a postsecondary educational degree is often met with personal and social obstacles, but first-generation students are less likely to even enroll in postsecondary education and they have a higher probability for attrition when compared to their counterparts. The purpose of this study was to examine the relationship between delayed enrollment, regional wealth, and first-generation status on community college student success. This study analyzed differences in student success for students who enrolled at the community college immediately after high school graduation, for those who delayed enrollment up to two years, or delayed enrollment more than two years. This study further explored whether regional wealth had a significant relationship with the rate of delayed enrollment among first-generation and non-first-generation students. In particular, the study examined whether there was a non-causal relationship between enrollment status (immediate enrollment, short-term delay, long-term delay), regional wealth (as measured by the composite index in five service regions), and first-generation status (first-generation or not). The findings from this study revealed that students who immediately enrolled had higher student success ratios when

compared to students who delayed enrollment up to two years. In addition, students who graduated from high school in the most wealthy region had the highest student success ratio when compared to students who graduated from high school in the least wealthy region. Additional tests revealed if a student graduated from high school in the least wealthy region, the probability of delaying enrollment more than two years was approximately three times more likely than for students who graduated from high school in the most wealthy region. There was a significant interaction between enrollment status and regional wealth with student success whereas the students who immediately enrolled had significantly higher student success ratios when compared to students who delayed enrollment up to two years for both the least wealthy region and the most wealthy region. There has recently been an increase in the number of empirical studies examining the pre-college characteristics that affect the academic success of first-generation community college students. The results of previous studies combined with the current study could have important implications for administrators who develop interventions or provide the resources to help first-generation students over-come many of the challenges they face. These studies can support community college leaders in their efforts to increase student academic achievement and graduation rates. More specifically, it would be advantageous for leaders to fully understand the different educational impacts on students who immediately enroll or delay enrollment at two-year institutions.

This dissertation is dedicated to my Lord and Savior Jesus Christ, my family, and first-generation students. To my husband and best friend, Dr. Glenn Derrick Hines, we have learned some of life's greatest lessons together. Thank you for your stability, dedication, forgiveness, and love. I will always love and adore you. To my beautiful and blessed children: Jordan Milan Hines, Jada Nalini Hines, and Jamison Glenn Hines, thank you for the joys I have experienced watching you grow strong and prosperous. I will always love you and know that you always have a place in our family's home. Remember to keep God first, let him fight your battles, and know that you can achieve any goal that your heart desires. To my supportive and prayerful parents, my dad Neville Narwani Etwaroo and my mom Dorothy Irene Rose Bernadette Mayo Etwaroo, thank you for teaching me the power of prayer, grace, and humble beginnings. To my extended family, my mom Helen Pearl Hines and my dad David Earl Hines: thank you for welcoming me into your family. This dissertation is also dedicated to first-generation students: may you find your voice and unending support and may the Lord bless you, keep you, and give you peace.

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## CHAPTER I: INTRODUCTION

The path to earning a postsecondary degree is often met with personal and social obstacles for students, but first-generation students are less likely to even enroll in postsecondary education and they have a higher probability for attrition when compared to their counterparts whose parents attended college (Gibson & Slate, 2010). The increasing diversity of the undergraduate population has resulted from a significant amount of first-generation students who are served primarily at community colleges rather than traditional baccalaureate institutions (Gibson & Slate, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004).

Francis and Miller (2008) affirmed that first-generation students are at-risk for poor achievement in education. Gamoran (2001) predicted the achievement gaps would endure in full force throughout the 21<sup>st</sup> century, despite the strategies that were implemented to reduce the disparities in academic outcomes when factoring in socioeconomic backgrounds. Therefore, Bainbridge and Lasley (2002) advised that educators must focus on the social environmental characteristics when they are attempting to narrow the disparities that exist in America's classrooms.

Chen (2005) affirmed that first-generation students comprised the 22% of students who enrolled in higher education during the period of 1992 and 2000 (Chen, 2005). In addition, first-generation students were more likely to enroll at a two year institution with a part-time status and were less likely than their peers to attend college within eight years after high school (Chen, 2005). Bainbridge and Lasley (2002) commented that K-12 schools with 25% of students living in poverty would underperform when compared to students from schools in affluent communities, regardless of the socioeconomic status of

the students throughout the school (Bainbridge & Lasley, 2002). Also, Wells (2008) supported previous claims that social and cultural capital had a positive impact on student retention rates in higher education.

### **Background of the Problem**

The literature comprises many articles and books that examine the influence of demographic characteristics, delayed enrollment, regional wealth, interventions, socioeconomic attributes, social and cultural capital, and achievement barriers that influence first-generation community college student success. Several research studies described first-generation students who lacked college information and financial support and the combined bearing on student engagement, aspiration, and motivation (Adelman, 1999; Bui, 2002; Chen, 2005; Fallon, 1997; Forbus, Newbold, & Mehta, 2011; Francis & Miller, 2008; Gibson & Slate, 2010; Inman & Mayes, 1999; Jesnek, 2012; Nunez and Carroll, 1998). In addition, other studies compared first-generation students with their peers and reported the differences in demographic characteristics (Bui, 2002; Chen, 2005; Inman & Mayes, 1999; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Subsequently, the perception of identify and factors that induced mental development during the college years for first-generation students was identified (Orbe, 2004; Pascarella et al., 2004).

Likewise, several researchers focused on providing best practices to address at-risk students and more specifically, first-generation students (Banks, 1993; Banks, Cookson, Gay, Hawley, Irvine, Nieto, Schofield, & Stephan, 2001; Forbus, Newbold, & Mehta, 2011; Francis & Miller, 2008; Jehangir, Williams, & Pete, 2011; Jesnek, 2012; Valentine, Hirschy, Bremer, Novillo, Castellano, & Banister, 2011). The interventions that were reviewed focused on supporting the success of first-generation students in the

broad areas of understanding diverse cultures, utilizing technology, and improving communication skills. Based on the findings of the meta-analysis which reported on 19 studies, the interventions were vastly different yet they had a common purpose of retaining at-risk students in higher education and it was recommended for practitioners to evaluate the process of the intervention (Valentine et al., 2011).

Various socioeconomic factors that influenced student achievement, specifically as it pertained to acquiring the academic credentials necessary to sustain college enrollment were examined (Cabrera & La Nasa, 2001; Farley, 2002; Francis & Miller, 2008; Gibson & Slate, 2010). Several other researchers clarified how the various operational definitions of social class influenced the associations formed with student identity (Aries & Seider, 2007; Ostrove & Cole, 2003). In addition, various researchers explored the influence of social systems on student success (Farley, 2002; Gamoran, 2001) and additional research revealed the impact of socioeconomic status on enrollment in higher education and successful student outcomes (Cabrera & La Nasa, 2001; Lara-Cinisomo, Pebley, Vaiana, Maggio, Berends, & Lucas, 2004).

Furthermore, several researchers examined the influence of social class on educational achievement, the college choice process, and creating social capital networks (Colclough & Sitaraman, 2005; Martinez, 2012; Wells, 2008). In addition, several researchers argued that the effect of parental financial resources on their children's educational achievements was smaller than the effects of parental cultural resources (Bourdieu, 1973; De Graaf, De Graaf, & Kraaykamp, 2000). Other studies determined whether investment in cultural and educational resources were compatibly rewarded or provided an advantage at school (Roscigno & Ainsworth-Darnell, 1999; Sullivan, 2001).

Several researchers examined the achievement barriers that exist with standardized test performance (Croizet & Claire, 1998; McKay, Doverspike, Bowen-Hilton, & McKay, 2003). The literature also revealed contrasting theories on how social context and group identity formed to facilitate academic achievement while personality variables could also be a determining factor in student outcomes as it related to stereotypes and racial socialization (Brown & Tylka, 2011; Smith & Hopkins, 2004). In addition, other studies investigated the impact of self-assessment and self-esteem on educational outcomes (Morgan & Mehta, 2004).

Subsequently, Ogbu examined the economic mistreatment that occurred for Blacks (Ogbu & Simons, 1998; Ogbu, 2004). Other studies revealed how neighborhood isolation and poverty negatively influenced educational achievement (Bainbridge & Lasley, 2002; Charles, Dinwiddie, & Massey, 2004; Massey & Gross, 1991). In addition, Becker and Luthar (2002) described the impact of school resource allocations and the social emotional aspects that either threatened or provided opportunities for the disadvantaged students.

There has been a lack of empirical study on the relationship between delayed enrollment and community college student success, particularly with regard to regional wealth. Much of the literature has limited applicability to community college settings with diverse student groups and increasing populations of first-generation students (Wells, 2008). More specifically, the mission of community colleges is to have open access and equity privileges for all students (Vaughan, 2006) and this contrasts with the selective nature of four-year institutions, thus limiting the applicability of research conducted at four year institutions to the community college setting.



According to Cabrera and La Nasa (2001), 71% of the lowest socioeconomic status individuals were not successful with acquiring the academic credentials that were required to sustain college enrollment. Likewise, Chen (2005) affirmed that when first-generation students were compared with their peers whose parents earned a bachelor's degree or higher, they earned fewer college credits, enrolled in fewer academic courses, accumulated lower GPAs, required more remedial coursework, and were more probable to withdraw or repeat coursework.

The various perspectives contained within the literature indicated a need for a study that further explored the impact of parental educational levels, regional wealth, and delayed enrollment on community college student success. Several findings revealed that parental educational levels were significant predictors of children's successful outcomes (De Graaf, De Graaf & Kraaykamp, 2000; Lara-Cinisomo et al., 2004). Other authors revealed how socioeconomic status was directly connected to academic achievement through minority status and the school location (Ogbu & Simons, 1998; Sirin, 2005). Several studies conveyed how first-generation students were less likely than other student groups to attend postsecondary education within eight years after high school, were less likely to enroll in postsecondary enrollment, and were confronted with geographical restrictions based on their requirements to stay at home and enroll in night courses (Chen, 2005; Gibson & Slate, 2010; Inman & Mayes, 1999).

### **Purpose Statement**

The purpose of this study was to examine the relationship between delayed enrollment, regional wealth, and first-generation status on community college student success. This study analyzed differences in student success for students who enrolled at

the community college immediately after high school graduation, for those who delayed enrollment up to two years, or delayed enrollment more than two years. This study further explored whether regional wealth had a significant relationship with the rate of delayed enrollment among first-generation and non-first-generation students. In particular, the study examined whether there was a non-causal relationship between enrollment status (immediate enrollment, short-term delay, long-term delay), regional wealth (as measured by the composite index in five service regions), and first-generation status (first-generation or not).

### **Research Questions**

This study was guided by the following research questions:

1. To what extent is there a statistically significant mean difference in student success (as measured by the ratio of credits passed to credits attempted) between students who enroll at the community college immediately after high school graduation, delay enrollment up to two years, or delay enrollment more than two years?
2. To what extent do regional wealth and the rate of delayed enrollment for first-generation students compared to non-first-generation community college students differ?
3. Is there a non-causal relationship between regional wealth (as measured by the composite index in five service regions), enrollment status (immediate enrollment, short-term delay, long-term delay), first-generation status (first-generation or not), and student success (as measured by the ratio of credits passed to credits attempted)?

**Professional Significance**

Many authors acknowledged the significance of socioeconomic forces that mitigate educational attainment (Cabrera & La Nasa, 2001; Farley, 2002; Francis & Miller, 2008; Gibson & Slate, 2010; Pascarella et al., 2004; Sirin, 2005). Farley (2002) conveyed that the racial and social class educational achievement disparity originated from students not even completing college when compared to those who enrolled. Cabrera and La Nasa (2001) contended that 71% of the lowest socioeconomic status individuals were unsuccessful with acquiring the academic credentials that were required to sustain college enrollment. Francis and Miller (2008) affirmed that first-generation students were at-risk for poor achievement in education and further advised that learning community programs should also incorporate communication apprehension curriculum and training (Francis & Miller, 2008).

Farley (2002) reported the majority of factors that impacted attrition and non-graduation rates were associated with society as a whole, not the student individually. Gibson and Slate (2010) declared first-generation students were served primarily at community colleges rather than traditional baccalaureate institutions. Also, first generation students were less likely to enroll in postsecondary education and had a higher probability for attrition when compared to their counterparts (Gibson & Slate, 2010).

In addition, Pascarella et al. (2004) concluded the significance of examining demographic and precollege characteristics, institutional characteristics, college academic experiences, and college non-academic experiences to understand educational outcomes. In addition, Sirin (2005) reported that the family's socioeconomic status was significant and had an impact on student's academic performance by directly offering resources at

home and indirectly offering the social resources required to be successful in the school (Sirin, 2005).

There has recently been an increase in the number of empirical studies examining the pre-college characteristics that affect the academic success of first-generation community college students. The results of these studies could have important implications for administrators who develop interventions or provide the resources to help first-generation students over-come many of the challenges they face. These studies can help community college leaders to increase student academic achievement and graduation rates. For example, Wells (2008) revealed that low capital students who began at community colleges were more successful in persistence when compared to their low capital peers beginning at four-year institutions.

An empirical study examining the relationship between delayed enrollment, regional wealth, and student success of first generation students would be beneficial to community college leaders because the findings could boost funding for community colleges which serve higher numbers of disadvantaged students than four year institutions (Wells, 2008). Researching these pre-college demographic characteristics could add substantive information to the already existing research on first-generation student outcomes. In addition, administrators could utilize the findings and continue to work on retaining first-generation students by understanding the different educational impacts on students who immediately enroll or delay enrollment at two-year institutions.

### **Overview of the Methodology**

The researcher utilized a quantitative, ex post facto research methodology, which specifically entailed reviewing conditions that already occurred and collecting data to

examine a possible relationship between these conditions (Leedy & Ormrod, 2005). The researcher also examined data collected over a four-year period from Jordason Community College, a large-enrollment public institution located in the Southeastern United States. Jordason Community College has multiple campuses and serves a very diverse student population in distinct urban, suburban, and rural areas, as presented in Table 1.

Table 1

*Quick Facts of the Five Service Regions Jordason Community College Serves*

Composite Index of Local Ability-to-Pay 2008-2010	Population Estimate 2011	High School Graduate or Higher for Age 25 and over 2007-2011	Bachelor's Degree or Higher for Age 25 and over 2007-2011	Median Household Income 2007-2011
.2112	95,684	82.6%	19.1%	\$46,340
.2588	242,628	84.8%	24.7%	\$43,914
.2983	84,930	85.6%	25.3%	\$65,351
.3025	225,050	89.5%	28.1%	\$70,115
.3704	442,707	92.9%	32.3%	\$65,910

*Note.* Data were derived from the U.S. Census Bureau website, Retrieved from <http://quickfacts.census.gov/qfd/states/51000.html>. Data were derived from the Virginia Department of Education Website, Retrieved from [http://www.doe.virginia.gov/school\\_finance/budget/compositeindex\\_local\\_abilitypay/](http://www.doe.virginia.gov/school_finance/budget/compositeindex_local_abilitypay/)

Inferential tests and non-parametric tests were conducted to answer the research questions. For the first research question, the analysis of covariance was utilized to determine whether there was a statistically significant mean difference in student success (as measured by the ratio of credits passed to credits attempted) between students who enrolled at the community college immediately after high school graduation, delayed enrollment up to two years, or delayed enrollment more than two years. For the second

research question, the chi-square test was utilized to determine if there was a significant difference between regional wealth and the rate of delayed enrollment for first-generation students and non-first-generation community college students. For the third research question, analysis of covariance was utilized to determine whether there was a non-causal relationship between regional wealth (as measured by the composite index in five service regions), enrollment status (immediate enrollment, short-term delay, or long-term delay), first-generation status (first-generation or not), and student success (as measured by the ratio of credits passed to credits attempted).

### **Delimitations of the Study**

The study was based on a conceptual framework that represents several interrelated ideas detailing the influence of demographic characteristics, delayed enrollment, regional wealth, interventions, socioeconomic attributes, social and cultural capital, and achievement barriers that influenced first-generation community college student success (Banks et al., 2001; Chen, 2005; Colclough & Sitaraman, 2005; Forbus et al., 2011; Gibson & Slate, 2010; Lara-Cinisomo et al., 2004; Martinez, 2012; Pascarella et al., 2004; Sirin, 2005; Valentine et al., 2011; Wells, 2008).

The study examined data that were collected over four years, from Fall 2008 through Spring 2012. In addition, the study assumed that differences in precollege characteristics had a direct impact on student success. This assumption was based on a growing body of research that focused directly on demographic characteristics with significant evidence that first-generation community college students have substantial barriers to overcome due to a lack of information regarding higher education, a lack of income and support from family, limited educational degree expectations and plans, and

deficiencies in curriculum preparation during the high school years (Pascarella et al., 2004). The researcher also assumed that all first-generation students had major barriers to overcome despite other societal influences that might have proved otherwise, and the educational degree expectations and plans were not considered for additional analysis and will be explained further in chapter two.

The researcher also assumed that regional wealth was a major indicator of the resources available towards postsecondary school preparation. The researcher utilized a quantitative, ex post facto research methodology and included only those students who obtained a high school diploma or GED from a public high school in the five primary service regions which include rural, suburban, and urban areas. The researcher assumed that the students attending a public high school and living within the five service regions at the time of high school graduation or GED obtainment had similar community influences and educational support systems.

### **Definition of Key Terms**

The definition of terms utilized in the study is as follows:

*Composite index of local ability to pay.* The Virginia Department of Education calculates the composite index with the true value of real property, adjusted gross income, and taxable retail sales to designate a school division's ability to pay education costs (Virginia Department of Education, 2010).

*Credits attempted.* The credits attempted refers to any units the students has taken for a GPA grade and has received a grade, whether it is a passing grade or not.

*Credits passed.* The credits passed refers to any units the student has taken for a grade and has received a passing grade.

*Cultural capital.* The cultural capital refers to the culture-based influences and gauges of symbolic wealth that aid in defining a person's class and is inherited from one's family (Wells, 2008).

*High school graduation year.* The high school graduation year refers to the year reported for the high school diploma or GED.

*First-generation.* First-generation refers to as neither parent having completed more than a high-school education (Pascarella et al., 2004).

*Non first-generation.* Non first-generation refers to one or more parents completed at least some college or more (Pascarella et al., 2004). Various articles also refer to non-first-generation students as continuing education students and second generation students.

*Regional wealth.* Regional wealth refers to the composite index of local ability to pay for Jordason Community College's primary service regions. The study sample will consist of students from those regions who obtained a high school diploma or GED from a public high school and will exclude students who attended private schools or were homeschooled.

*Social capital.* Social capital refers to the social connections that people utilized for personal assistance and gain (Wells, 2008).

*Student success.* Student success refers to the ratio of credits passed to credits attempted.

## **Summary**

The conceptual framework of the research was built around the growing body of research which focused on first-generation students. Administrators could utilize the



findings and continue to work on retaining first-generation students by understanding the different educational impacts on students who immediately enroll or delay enrollment at two-year institutions. The literature review in chapter two was based on an examination of demographic characteristics, delayed enrollment, regional wealth, interventions, socioeconomic attributes, social and cultural capital, and achievement barriers that influence first-generation community college student success.

## **CHAPTER II: LITERATURE REVIEW**

The purpose of this study was to examine the relationship between delayed enrollment, regional wealth, and first-generation status on community college student success. This study analyzed differences in student success for students who enrolled at the community college immediately after high school graduation, for those who delayed enrollment up to two years, or delayed enrollment more than two years. This study further explored whether regional wealth had a significant relationship with the rate of delayed enrollment among first-generation and non-first-generation students. In particular, the study examined whether there was a non-causal relationship between enrollment status (immediate enrollment, short-term delay, long-term delay), regional wealth (as measured by the composite index in five service regions), and first-generation status (first-generation or not).

### **Conceptual Framework**

The conceptual framework for this study was based around the growing body of research which focused on first-generation students. More specifically, the seven concept areas that influence first-generation community college student success include the following topics: demographic characteristics, delayed enrollment, regional wealth, interventions, socioeconomic attributes, social and cultural capital, and achievement barriers. The conceptual framework was also based upon the work of Pascarella, Pierson, Wolniak, and Terenzini (2004). They examined first-generation students in a variety of ways. Pascarella, Pierson, Wolniak, and Terenzini (2004) reported that an increasing amount of research revealed comparisons about first-generation college students as related to their peers.

Chen (2005) affirmed that first-generation students were disproportionately likely to be Black or Hispanic, to come from low-income families, and to be less prepared academically. Bui (2002) revealed that first-generation students were also more likely to converse in a native language other than English at home and to have lower scores on the SAT, when compared to their peers.

In addition, there were various socioeconomic factors that influenced student achievement. Cabrera and La Nasa (2001) contended that 71% of the lowest socioeconomic status individuals were unsuccessful with acquiring the academic credentials that were required to sustain college enrollment. Francis and Miller (2008) affirmed that first-generation students were at-risk for poor achievement in education. Farley (2002) reported the majority of factors that impacted attrition and non-graduation rates were associated with society as a whole, not the student individually. Gibson and Slate (2010) declared first-generation students were served primarily at community colleges rather than traditional baccalaureate institutions. Also, first-generation students were less likely to enroll in postsecondary education and had a higher probability for attrition when compared to their counterparts (Gibson & Slate, 2010).

On average, schools that provided services to larger volumes of disadvantaged youth received inadequate funding resources and ineffective staff and those schools had less promise with instructional and developmentally responsive teaching techniques (Becker & Luthar, 2002). Similarly, Charles et al. (2004) examined the effects of African American housing segregation occurrences that had ongoing academic effects and suggested that African American college students were unequally connected to people living in neighborhoods that had intense levels of poverty and violence. These African

American students at all levels of socioeconomic status were connected to families and networks that had higher probabilities of being disturbed by gangs or drugs. This dilemma impacted African American students by diverting their attention from their studies (Charles et al., 2004).

Croizet and Claire (1998) revealed achievement barriers that negatively impacted the academic performance of low socioeconomic students in that they scored lower, completed a lower number of items, and were less precise on the items they did finish. When low socioeconomic status students were informed their test was not a gauge of their intellectual aptitude, they had favorable outcomes when compared to high socioeconomic status students. Wells (2008) reported that four year colleges were found to be more disadvantageous to retention rates when compared to community colleges students with lower levels of social and cultural capital. For example, low capital students who began at community colleges were more successful in persistence when compared to their low capital peers beginning at four year institutions (Wells, 2008).

### **Method of the Literature Review**

The articles and books were located from the Old Dominion University electronic library. The search engines that were utilized included WorldCat advanced search, subject guides for Education, Counseling, and Human Movement Sciences through Educational Foundations and Leadership, ERIC, Education Full Text, Education Research Complete, Education: A SAGE Full-Text Collection, Academic Search Complete, PsycINFO, LexisNexis Academic, Web of Knowledge, and ProQuest Dissertations and Theses Database. Interlibrary loan requests were made for those articles and books that were unavailable from the Old Dominion University. In addition,

sources were identified from the bibliographies of journal articles, books, and dissertations. Various combinations of the following key terms were used in the search engines: community college, first-generation, stereotype, socioeconomic, interventions, programs, social capital, and cultural capital. Only peer reviewed journal articles were utilized. In addition, the universal resource locator of articles that were listed in published articles, books, or dissertations were utilized to locate articles via the internet. Articles were drawn from the current date while articles as far back as 1973 were utilized. The articles were then analyzed by topic and subtopic. Within each topic, landmark studies were distinguished as well as the evolution of the topic. Gaps within the literature and areas requiring more research were identified and summarized.

The literature review examined the demographic characteristics of first-generation students and the relationship of delayed enrollment and regional wealth. Information pertaining to the consequences of achievement barriers and the constructs of social systems were examined to ascertain their influence on student success. A compilation of the influence of social capital and cultural capital on educational outcomes revealed the various impacts on students within various socioeconomic and community groups. In addition, intervention strategies addressed the implications for first-generation students.

### **First-Generation Students**

There were several research studies that reported on the influences of first-generation students including demographic characteristics, educational achievement, expectations on student success, and contrasting theories (Adelman, 1999; Bui, 2002; Chen, 2005; De Graaf et al., 2000; Fallon, 1997; Francis & Miller, 2008; Forbus et al.,

2011; Gibson & Slate, 2010; Inman & Mayes, 1999; Jesnek, 2012; Lara-Cinisomo, 2004; Nunez and Carroll, 1998; Orbe, 2004; Pascarella et al., 2004).

**Demographic characteristics.**

Gibson and Slate (2010) declared that first-generation students were served primarily at community colleges rather than traditional baccalaureate institutions. They were also more probable to be older and married, and also have lower earnings and dependents. These characteristics were in stark contrast to their non-first-generation peers (Gibson & Slate, 2010). In addition, first-generation students were more probable to originate from an ethnically minority status and have a lower socioeconomic background (Bui, 2002). These students were also more likely to converse in a native language other than English at home, and to have lower scores on the SAT, when compared to their peers (Bui, 2002).

Chen (2005) affirmed as in earlier studies, that first generation students were more likely to be Black or Hispanic, to come from low-income families, and to be less prepared academically. In addition, they were also more probable to delay enrollment in a higher educational institution and were more likely to enroll at a two year institution with a part-time status (Chen, 2005). First-generation students were found to be underprepared psychologically, economically, and academically for the challenges of college when compared to their peers whose parents attended college (Inman & Mayes, 1999). More specifically, twice as many first-generation students, when compared to non-first-generation students, were more probable to have two or more people economically supported by them. Furthermore, in contrast to their peers, first-generation students had less family income support. Moreover, since first-generation students'

parents had not experienced college, they were unable to provide helpful advice about course selections. As a result, first-generation students were inadequately prepared for the rigorous coursework (Inman & Mayes, 1999).

There were social and personal costs that confronted first-generation students as they sought higher education opportunities without the support and knowledge from their families to attend postsecondary education (Fallon, 1997). For instance, family support was one of the main distinctions between first and second generation students. As an example, many parents were apprehensive their child may not return to their neighborhood and may lose sight of their culture and begin to take on the values of the majority European American middle class. In addition, many families were anxious about the wages their child would lose as a result of enrolling in college. In turn, these families also became apprehensive about the additional burden of paying excessive college costs. These concerns were mainly derived from low income families who were in need of financial aid information and had no experiences in higher education. These families were unable to serve as a mentor to their child, in that they held stereotypical beliefs about the principle of college and the academic rigors associated with college, and they may have wanted to save their children from the aspect of failing (Fallon, 1997).

First- generation college students also had different college experiences than their peers. For instance, first generation students reported feeling less prepared and felt they had to study more than their peers (Bui, 2002). Similarly, Orbe (2004) reported on first generation students over a two-year period asserted that the status of being a first-generation student functioned as a prominent feature of identity, especially for those students who attended selective universities. For instance, students reported privileges

that were acquired of students whose parents attended college. Privileged students were afforded the opportunity to take ACT review courses, own personal computers, and obtain the used or cheaper books ahead of schedule. Furthermore, first-generation students felt they were always trying to catch up with the courses and they also reported feeling out of place. In contrast, some students did not view their first-generation status as the focus of their personal frames of identity. For those first generation students who felt their status was less noticeable, they were attending less respected campuses for instance, two-year business colleges (Orbe, 2004).

Francis and Miller (2008) acknowledged there was a gap in the research literature surrounding the communication apprehension levels of first-generation students and also reported that first-generation students were anxious with oral communication. Francis and Miller (2008) developed a detailed communication apprehension outline for first-generation students at two year institutions which contained the strategies that students utilized for lowering communication apprehension levels. Students used various communication strategies to manage communication apprehension including preparation, skills training, modified physical response, visualization techniques, humor, and assertiveness. In addition, first-generation college students reported their capability of dealing with communication apprehension within varying contexts. There were also various students who were uncertain about their individualized strategy to lower their communication apprehension levels (Francis & Miller, 2008).

Jesnek (2012) asserted that many first-generation students, who are 25 years and older, are often unskilled and unsuccessful with utilizing technology. As a whole, the digital divide emerges most significantly on community college campuses. Many of the



students who returned to the classroom, from being displaced workers, do not own personal computers, do not have internet access and have not been trained in the functions of Microsoft Office. These tasks have been considered confusing and frustrating for the first-generation students that did not have close contact with the computer and internet during their high school years (Jesnek, 2012).

**Educational achievement.**

Forbus et al. 2011 enhanced previous research by demonstrating the benefits the university gained by distinguishing the institutions students were previously enrolled upon entering the university. In addition, the influence of the established relationship between a four-year university and regional community colleges was explored. Lower grade point averages at the university were not reported for first-generation students when compared to continuing-generation students since special alliances were formed to promote a smooth transition into the university culture (Forbus et al., 2011).

Nunez and Carroll (1998) compared first-generation and non-first-generation students at public four-year and two-year institutions and discovered remedial coursework enrollment patterns did not vary significantly. In contrast, the historical trends demonstrated that first generation students persevered and earned credentials at significantly lower rates when compared to their non-first-generation peers (Nunez & Carroll, 1998). In comparison, Adelman (1999) concluded that academic resources, which comprised the composite of high school curriculum, test scores, and class rank, were more strongly associated with completing a bachelor's degree when compared to socioeconomic status.

Inman and Mayes (1999) reported that first-generation students enrolled in fewer credit hours in their first semester and had lower retention rates when compared to non-first generation students. After the first year of college, there were no significant differences when comparing first-generation students to non-first generation students for credits earned and the grade point average (Inman & Mayes, 1999).

Similarly, first-generation students earned fewer college credits, enrolled in fewer academic courses, accumulated lower GPAs, required more remedial coursework, and were more probable to withdraw or repeat coursework (Chen, 2005). An illustration of this occurred in the first year of college when first generation students completed an average of 18 credits while their peers completed an average of 25 credits. Fifty-five percent of first-generation students enrolled in remedial coursework as compared to 27% of their peers. Thirty-three percent of first-generation students did not declare a major as compared to 13% of their peers (Chen, 2005).

Pascarella et al. (2004) confirmed previous research findings and reported that during the second and third years of postsecondary education, first-generation students earned substantially fewer credit hours and worked significantly more hours per week when compared to students whose parents had higher levels of postsecondary education. Also, first-generation students had lower grades in the third year of college than their colleagues whose parents had both graduated from college. The main continuous negative impact of first-generation students occurred in the second and third year of college where the declaration of degree plans were significantly lower as compared to students whose parents were both college graduates.

**Expectations of student success.**

Student expectations in relation to their socioeconomic status and academic profile were compared (Adelman, 1999). For example, students who started out in two-year institutions expecting to earn a bachelor's degree were compared with students who started out in four year institutions. The students who started out in two year institutions had the same expectations yet they had a lower socioeconomic status and academic profile. Previous findings were confirmed in that first-generation students take a more serious approach to their college education and are more probable to take pride in the institution they select when compared to continuing-generation students (Forbus et al., 2011). Further, Adelman (1999) acknowledged that family income did not play a role in the different attendance patterns of these students. In addition, first-generation students had plans to persist until they achieved their goals, with twice as many reporting the ultimate goal of achieving a two-year degree (Inman & Mayes, 1999).

**Contrasting theories.**

There were cited differences in whether the highest level of parental education should be utilized in studies. Several findings revealed that parental educational levels were significant predictors of children's successful outcomes (Adelman, 1999; De Graaf et al., 2000; Lara-Cinisomo et al., 2004)

Adelman (1999) conducted a national study and tracked students from the period of 1980 through 1993 including postsecondary enrollment at a four-year college until the completion of the bachelor's degree. The rationale of the study was to understand the factors that mostly influenced completion of a bachelor's degree for students at four-year colleges. Adelman (1999) discovered the high school curriculum was associated with a

larger number of bachelor degree attainment versus test scores or the grade point average. Based on this finding, Adelman (1999) posited that course taking patterns in advanced placement courses were significantly related to bachelor's degree attainment when compared to college access. Sixteen percent of the students that participated in the national longitudinal study would not even volunteer an educated guess of their parents' education. Thus, Adelman (1999) recommended for researchers to discard the highest level of parents' education because the data were imbalanced and inconsistent.

In contrast, De Graaf et al. (2000) utilized illustrative data from the Netherlands in 1992 and confirmed that parental educational levels were a substantial predictor of children's successful educational outcomes when compared to their father's occupational level. Furthermore, parental participation in reading activities, when compared to cultured activities, was the factor that contributed mostly to their children's educational success. In support of these claims, Lara-Cinisomo et al. (2004) conducted a study in over 3,000 households within 65 Los Angeles communities and assessed the reading skills of both the child and mother. Lara-Cinisomo et al. (2004) discovered that the mother's highest educational level and community poverty were the two factors that were strongly correlated with school readiness.

In addition, Lara-Cinisomo et al. (2004) acknowledged that school readiness also included equipping children with the social, mental, and physical capabilities prior to school. The findings also revealed that reading test scores significantly correlated with school readiness, parenting conduct, and the literacy atmosphere at home. Most of the children in poorer communities, where the mothers had not completed high school, did not center regular activities on reading. In contrast, children who were read to on a daily

basis and regularly visited the library had substantially higher reading and math achievement scores. Consequently, the test scores of the children increased as their mother's experience in college increased (Lara-Cinisomo, 2004).

### **Delayed Enrollment**

Several studies examined how first-generation students delay enrollment and other contributing factors of college attrition (Bui, 2002; Chen, 2005; Fallon, 1997; Gibson & Slate, 2010; Inman & Mayes, 1999).

Approximately 28% of the NELS 1992 12<sup>th</sup> grade student population was comprised of first-generation students (Chen, 2005). During the next eight year tracking period, only 22% of all students who entered college were first-generation. This finding indicates that first-generation students were less likely than other student groups to attend postsecondary education within eight years after high school. During this same time period, approximately 43% of first-generation students left college without a degree by 2000 (Chen, 2005).

Gibson and Slate (2010) declared first-generation students were served primarily at community colleges rather than traditional baccalaureate institutions. Also, first-generation students were less likely to enroll in postsecondary education and had a higher probability for attrition when compared to their counterparts (Gibson & Slate, 2010).

Similarly, Inman and Mayes (1999) contended that first-generation students confronted more geographical and financial restrictions based on their requirements to stay at home and enroll in night courses. First-generation students reported that they would be less probable to attend a state university if the community college was not available. This revealed that first-generation students viewed community colleges as

their major choice of postsecondary education and this could be due to geographical constraints and needing to take night courses (Inman & Mayes, 1999).

Fallon (1997) conducted research on first-generation students and found that first-generation students were more focused on their careers being able to provide income to pay back loans and support their families. Similarly, Bui (2002) asserted first-generation students' motivation for attending college was to provide financially for their families. In addition, they also had concerns regarding financial aid, failing in their classes, and knowing less about their social environment (Bui, 2002).

#### **Factors contributing to college attrition.**

First-generation students lacked participation in college organizations due in part to economic reasons that were at odds with college life (Fallon, 1997). These reasons included having child care and household responsibilities. When students often balanced home, work, and school, it often resulted in the first generation student not persisting in college (Fallon, 1997). In contrast, second generation students went to college for individual and learning development (Fallon, 1997).

Gibson and Slate (2010) examined the degree of student engagement amongst first-year students at community colleges in Texas and discovered correlations between the degree of student engagement and first-generation status. More specifically, first-year college students from a multitude of populations and backgrounds were at a higher risk of dropping out due to their lack of engagement at their institutions (Gibson & Slate, 2010).

Non-first-generation first-year students were found to have substantively larger levels of engagement in educationally purposeful activities when compared to first-

generation first-year students at the one year time frame. First-year first-generation students' level of student engagement was correlated to their relationships with faculty, administrators, and other students (Gibson & Slate, 2010). Similarly, Pascarella et al. (2004) reported that first-generation students also obtained greater educational benefits from being occupied with academic or classroom activities.

There were several research studies that reported on the influences of first-generation student characteristics, family and financial support, and their impact on delayed enrollment, levels of engagement, aspiration, and motivation as it pertained to educational achievement. In summary, the literature also revealed the social and personal costs that confronted first-generation students as they sought higher education opportunities without the support and knowledge from their families to attend postsecondary education. Several studies revealed how first-generation students perceived their identity and the factors that induced mental development during the college years.

A great extent of investigation surrounding first generation students has substantiated the notion that parental educational levels were significant predictors in determining successful educational outcomes (De Graaf et al., 2000; Lara-Cinisomo et al., 2004). In addition, first-generation students were affirmed in the continued obstacles they faced during their transition to higher education. Moreover, the studies reported the impediments stemmed from the family's lack of financial knowledge as it pertained to higher education opportunities and costs. Subsequently, first-generation students also continued to face personal and social costs as they attempted to move into middle-class positions.

The literature that has been reviewed thus far has concentrated on the barriers that students faced as it related to family support and lack thereof. The review will begin to focus on the environmental factors that play a role in student outcomes. In addition, the research will shed light on regional wealth and how school funding and community poverty at the K-12 school level expand into achievement barriers in higher education. Thus, in consideration of Pascarella et al.'s (2004) recommendations, further research is needed to extend existing research that pertains to first-generation students as it relates to student success.

### **Regional Wealth**

The literature review shed light on how school funding and community poverty at the K-12 school level expanded into achievement barriers in higher education. In addition, an examination of the literature revealed how regional wealth, low economic returns, school funding, economic mistreatment, and community poverty and isolation negatively impacted school achievement (Bainbridge & Lasley, 2002; Becker & Luthar, 2002; Charles, Dinwiddie, & Massey, 2004; Massey & Gross, 1991; Ogbu, 2004; Ogbu & Simons, 1998).

### **Implications of community poverty.**

Various reports revealed how neighborhood isolation and poverty negatively influenced educational achievement (Bainbridge & Lasley, 2002; Charles, Dinwiddie, & Massey, 2004; Massey & Gross, 1991). Bainbridge and Lasley (2002) revealed that environmental features were significant enough that students from high socioeconomic backgrounds had more promise in academic performance. In addition, the determining factor of a child's achievement in school was the educational level of the parents,



specifically the mother's and the family's socioeconomic status. More specifically, K-12 schools with 25% of students living in poverty would underperform when compared to students from schools in affluent communities, regardless of the socioeconomic status of the students throughout the school (Bainbridge & Lasley, 2002).

Subsequently, Sirin (2005) acknowledged how school and neighborhood socioeconomic status differed in their evaluation since those were more contextual in nature. For instance, socioeconomic status was also directly linked to academic achievement through various networks including grade level, minority status, and school/neighborhood location, not just academic accomplishment. Several student demographic characteristics influenced the relationship between socioeconomic status and academic accomplishment. The results revealed a medium level of correlation between socioeconomic status and academic accomplishment at the student level with a larger degree of correlation at the school level. The parent's location in the socioeconomic structure was also very substantial in that the family's socioeconomic status had an impact on student's academic performance by directly offering resources at home and indirectly offering the social resources required to be successful in the school (Sirin, 2005).

Similarly, Massey and Gross (1991) acknowledged that high amounts of isolation and black poverty worked together to construct a high intensity of poverty in Black neighborhoods and in effect produced a high likelihood of male joblessness. They hypothetically exposed how personal actions are connected to structural circumstances that are outside an individual influence. The levels of residential isolation and poverty worked together to establish the concentration of poverty that neighborhood members

experienced. As poverty increased in a racially isolated atmosphere, Blacks were subjected to significantly higher levels of neighborhood poverty and lack of income. This was aside from their individual social and economic qualities. These findings revealed structural measures that caused neighborhood circumstances and established neighborhood behaviors, yet the model could not impute causality (Massey & Gross, 1991).

Additionally, lengthy residence in a poor neighborhood increased the probability of male joblessness, teenage child bearing, and female head of households, even when taking other factors like personal, family and neighborhood situations into account. Therefore, Massey and Gross (1991) revealed that focused black poverty experienced by blacks could be tracked to larger fundamental powers that fostered poverty at the group level within U.S. metropolitan areas. Subsequently, the effects were first felt from the metropolitan conditions to the neighborhood configuration then to individual results and became more distinct with the statistical models that were developed. As the level of segregation and poverty both increased within a neighborhood, the degree of poverty intensity increased substantially. For instance, poverty levels increased steadily with groups in public housing. As a group's isolation and poverty rate escalated, the poverty intensity still increased severely (Massey & Gross, 1991).

Subsequently, Becker and Luthar (2002) reported on the impact of school resource allocations and the social emotional aspects that either threatened or provided opportunities for disadvantaged students. Existing research was utilized to record the social-emotional aspects that weakened academic achievement. Multiple viewpoints were combined across disciplines to advise policy makers and school administrators

regarding the social emotional aspects that served as threats or learning opportunities for disadvantaged students. On average, schools that provided services to larger volumes of disadvantaged youth received inadequate funding resources and ineffective staff and those schools had less promise with instructional and developmentally responsive teaching techniques (Becker & Luthar, 2002).

Becker and Luthar (2002) maintained that several challenges persisted in the areas of disadvantaged students. First, disadvantaged students remained further behind than their comparative groups in both reading and math achievement levels. Second, a noticeable amount of Title I schools, especially the ones with a significant amount of high-poverty children, continued to engage staff members with insufficient teacher preparations (Becker & Luthar, 2002).

Similarly, Charles et al. (2004) examined the effects of African American housing segregation occurrences that had ongoing academic effects and revealed that African American college students were unequally connected to people living in neighborhoods that had intense levels of poverty and violence. These African American students at all levels of socioeconomic status were connected to families and networks that had higher probabilities of being disturbed by gangs or drugs. This dilemma impacted African American students by diverting their attention from their studies. Subsequently, the findings revealed that these connections also destabilized students' physical and emotional levels of wellness and contested with their time, money and energy as they became involved in their family and network issues (Charles et al., 2004).

**Community forces.**

Ogbu and Simons (1998) theorized that examining community forces would clarify why immigrant minorities historically have performed well in school and nonimmigrants have not performed as well. As an example, voluntary minorities willingly moved to the United States in the dream of a better future and didn't perceive their residency as forced upon them by the U.S. government. Involuntary minorities were forced to become a part of the United States and they perceived their residency in the U.S. as forced. The classification of voluntary and involuntary minority status within the research was not based on race, it was a general structure that clarified the values and behaviors of various minority groups, while voluntary and involuntary minorities with varying situations had differing frames of reference and they varied in their attitudes and behaviors (Ogbu & Simons, 1998).

In addition, Ogbu and Simons (1998) asserted that minorities have been mistreated based on educational policies and low economic returns. More specifically, minority school implications were reflected by the treatment in society and that same treatment was replicated in the educational environment. The maltreatment in the educational environment comprised of unequal school funding, treatments within the school and cafeteria, and the lack of teacher rewards for credentials. Similarly, Ogbu (2004) reported that Black Americans still confronted problems after emancipation due to economic mistreatment. For instance, employers used a job ceiling to decline access to employment and income corresponding to their educational credentials. Black students faced the burden of acting White in the same manner that Black Americans faced throughout history. They developed coping methods to counter the social sanctions or

peer pressures they encountered. Also, Black students experienced peer pressure not only for behaving and talking White but from other community forces that discouraged academic commitment (Ogbu, 2004).

Many theories surrounding the impact of regional wealth on educational outcomes were inherent in the collective identity and cultural frames of reference that continuously influenced student behaviors. These community forces impacted the attitudes that students used to respond in their educational environments. Also, the method in which many people developed their social capital networks was another factor that influenced how beliefs and values about schooling were formed. Thus, understanding the environmental influences on performance levels was paramount to recognizing the remaining disparity in educational outcomes for various regional wealth levels. Further research is needed to understand the socio-emotional aspects as it pertains to regional wealth that weakens academic achievement outcomes.

### **Interventions for First-Generation Students**

Several research studies were conducted that focused on supporting practitioners and administrators in understanding the importance of providing a multicultural environment within the school community while also providing curriculum and intervention services to address at-risk students and more specifically, first-generation students (Banks, 1993; Banks, Cookson, Gay, Hawley, Irvine, Nieto, Schofield, & Stephan, 2001; Forbus, Newbold, & Mehta, 2011; Francis & Miller, 2008; Jehangir, Williams, & Pete, 2011; Jesnek, 2012; Valentine, Hirschy, Bremer, Novillo, Castellano, & Banister, 2011).

**Multicultural curriculum.**

Banks (1993) debated that information centered on ethnic diversity should be taught in schools and universities. In addition, Banks (1993) asserted the implication of deficient multicultural curriculum was that many adolescents had rare chances to learn directly about the cultures of people from various different racial, ethnic, cultural, religious, and social-class groups. Subsequently, the practice of teaching students about school knowledge varied across racial lines. For instance, white students found school to be a more relaxed place than low income and students of color (Banks, 1993). Similarly, Multicultural Education Consensus Panel (MECP) emphasized that intergroup relations should be created so that members of groups identify within and between groups to improve intergroup relations. In addition, the MECP advised the curriculum should guide students as they understand that knowledge is socially created while students should also learn about stereotyping, biases, and values shared by all cultural groups (Banks et al., 2001).

**Programming.**

Francis and Miller (2008) recommended for two-year institutions to develop a public-speaking program to support first-generation students who possessed public speaking apprehension. In addition, two year colleges were advised to implement an introductory communication course to facilitate awareness training. All faculty members were advised to become skilled in understanding the communicative skills of first-generation college students and to incorporate communication apprehension curriculum and training in the Learning community programs (Francis & Miller, 2008).

**Academic integration.**

Forbus et al. (2011) conducted research and revealed the early identification of distinguishing the institutions in which first-generation students were previously enrolled upon entering the university should enable university administrators and staff to understand the needs of these students and provide them with distinct attention to meet their needs. In these cases, lower grade point averages at the university were not reported for first-generation students when compared to continuing-generation students since special alliances were formed to promote a smooth transition into the university culture (Forbus et al., 2011).

Similarly, Jehangir et al. (2011) investigated the effect of a Multicultural Learning Community (MLC) that was present to support the social and academic integration of first-generation college students who enrolled at majority White research institutions during their first-year of college. Many students expressed they found safety in finding their path with other students who came from places they were from (Jehangir et al., 2011). Yet, students realized that learning multiple perspectives from others supported them in moving towards becoming an author of their own life. Students began to reflect on the value of connecting with diverse peers and reflected on their own identity and shared how the MLC encouraged them to participate in Study Abroad and internship opportunities. In the cognitive development phase of the MLC, instructors focused on involving students in personal reflection, critical pedagogy and a multicultural curriculum by building knowledge on students' own lived experiences (Jehangir et al., 2011).

**Resource utilization and implementation.**

Valentine et al. (2011) conducted a meta-analysis of retention programs designed to keep at-risk college students enrolled and to better understand and tackle the barriers related to students transitioning from secondary to postsecondary education. Positive outcomes were discovered for programs that were designed to benefit at-risk college students to support continuous enrollment, especially in the short term. Yet, Valentine et al. 2011 reported the design of the programs were weak and could not be used as a basis for sound public policy. Valentine et al. (2011) discovered evidence in stronger studies and found the broad interventions impacted short-term grades and persistence. In contrast, there were gaps in the data which showed there was not enough information to distinguish the elements within the programs that were more effective. Valentine et al. (2011) recommended that programs should have information related to resource utilization and implementation process. For instance, programs should collect information such as the training of service providers and the amount of time students participated in the programs (Valentine et al., 2011).

Comparably, Jesnek (2012) examined the digital divide found in first-generation students in higher educational institutions. In addition, all incoming students were recommended to have opportunities to enroll in basic computer skills courses. It was also recommended as a necessity to require an introductory computer skills course as a pre-requisite to general studies courses based on the results of the computer competency placement exam that was taken before enrollment. Thus, Jesnek (2012) recommended for universities to publish and disseminate computer competency guidelines for all



computer placement tests and provide services in the form of learning centers or student services for those students who were taking introductory computer courses.

The interventions were focused on supporting the success of first-generation students in the broad areas of understanding diverse cultures, utilizing technology, and improving communication skills. Based on the findings of the meta-analysis which reported on 19 studies, the interventions were very different yet they had a common purpose of retaining at-risk students in higher education. While there was a focus on improving interventions, Valentine et al. (2011) recommended for practitioners to evaluate the process of the intervention, such as the time the students spend in the intervention and resource utilization.

### **Socioeconomic Status**

Various researchers explored the construct of social systems to examine their influence on student success (Farley, 2002; Gamoran, 2001). Gamoran (2001) affirmed the root causes of socioeconomic disparity in education included economic, cultural, and social variations which served to protect privilege across generations. More specifically, with access to higher education, cost was a primary concern for the type of institution one chose, not whether one attended higher education. Families who had higher earning potentials selected neighborhoods and communities based on the quality of the schools. In addition, the most significant resources and greatest impact on academic outcomes originated from the family level, when controlling for resources, as compared to attempting to justify the allocation of funds for education through school districts. Additionally, studies had not revealed the educational programs which benefitted the lower socioeconomic groups (Gamoran, 2001).

Farley (2002) performed a literature review on the obstacles that minority students faced while attending majority white campuses. A substantive component of the disparity found between racial and social class educational achievements originated from students not completing college as compared to those who enrolled. In addition, there were four main reasons that influenced the attrition and non-graduation rates for minority and working students. These factors included the lack of encouragement and seclusion on white campuses, the burden of paying for higher education, work and family commitments, and unproductive study habits. In addition, minority and working students frequently encountered college campuses as unfriendly and intolerant. Thus, African American students remained concerned about their jobs and financial obstacles. Farley (2002) found the majority of factors that impacted attrition and non-graduation rates were associated with society as a whole, not the student individually.

### **Identity formation.**

Various operational definitions of social class and the influence of social class on student identity were clarified in the literature (Aries & Seider, 2007; Ostrove & Cole, 2003). Aries and Seider (2007) conducted a study which focused on interviewing a total of 45 students from an elite private college and a state college to understand the influence of social class on identity formation. Social class played a crucial role as a predictor variable in shaping identity formation and exploring the identity domain. Overall, the students ranked occupational goals first and social class second in the significance of identity formation. In addition, affluent students recognized the importance of social class in relation to their identity while lower income students were found in direct contrast. In short, Aries and Seider (2007) shed light on the role that social class played

in higher education. These findings could serve to motivate more research regarding the relationship between social class and identity.

Ostrove and Cole (2003) addressed all stages of education from data that were collected inside and outside of the United States while also inspecting viewpoints of individuals from a variety of social class groups. Their findings suggested that social class played a prominent role in schools and educational institutions where individuals developed, maintained, and challenged those psychological meanings. In addition, the discussion of social class and the implications of class at both the individual and group levels highlighted the ways in which class must be comprehended in association with other social identities such as gender and race (Ostrove & Cole, 2003).

Ostrove and Cole (2003) contended it was imperative to study class and examine the psychology of social class in the education environment. Further, they contended that a critical psychology of social class was needed. As an example, a psychology of social class must understand how the study participants define social class. Furthermore, it should proceed farther than mere categorization and seek to examine the magnitude of identification and the methods in which individuals view themselves in association to members of other social class groups. Ostrove and Cole also reasoned that social class differed from race and gender on the basis of the definition and measurement. More specifically, while race and gender are self-reported, social class may be assessed by subjective or objective measures. In short, class is often processed as socioeconomic status, while both are not theoretically identical (Ostrove & Cole, 2003).

**Social class categorization.**

An examination of the various socioeconomic status definitions over time revealed how socioeconomic status was directly connected to academic achievement through minority status and the school location (Ogbu & Simons, 1998; Sirin, 2005). Ogbu and Simons (1998) revealed that minority school implications are reflected by the treatment in society and that same treatment is replicated in the educational environment. For instance, the maltreatment in the educational environment comprised of unequal school funding, treatments within the school and cafeteria, and the lack of rewards for credentials (Ogbu & Simons, 1998).

Sirin (2005) wrote a meta-analytical review that revealed there was an operational change that occurred in regard to researchers' definition of socioeconomic status. Current research was more probable to utilize a variety of socioeconomic status indicators comprised of family income, the mother's education, and a measure of family structure as compared to previous studies that concentrated on the father's education and/or occupation. The change in the operational definition of socioeconomic status was also due in part to the parental education levels and the change in the family structure. In addition, there was an increased focus on race/ethnicity, neighborhood characteristics, and the students' grade level as well as the social, economic and methodological changes that occurred (Sirin, 2005).

The literature contained various definitions of socioeconomic status. The findings have been disaggregated by two educational levels, K-12 and the undergraduate college level. The various definitions of socioeconomic status, broken out by educational level, are presented in Table 2 and Table 3.

Table 2

*Definitions of Socioeconomic Status by K-12 Level*

	Definitions of SES	Authors and Date	Year of Student
(1)	Family income, parental level of education, and parental occupation	Adelman, C. (1999).	8 <sup>th</sup> Grade
(2)	Parental education, parental occupation, items in the home (i.e. dishwasher, books, etc.), and family income.	Cabrera, A. F., & La Nasa, S. M. (2001)	8 <sup>th</sup> Grade
(3)	Parental education, occupation, and family income	Carpenter, D. M., Ramirez, A., Severn, L. (2006).	12 <sup>th</sup> grade
(4)	A measure based on parental occupation	Dreeben, R., & Gamoran, A. (1986)	First grade
(5)	Students eligible for the national school lunch program	Farkas, G., Lleras, C., & Maczuga, S. (2002).	Fourth grade
(6)	Parent's occupational level and parent's highest educational attainment.	Kim, H., Rendon, L., & Valadez, J. (1998).	10 <sup>th</sup> grade
(7)	Parent's educational attainment, occupational status, and income.	Lara-Cinisomo, S., Pebley, A. R., Vaiana, M. E., Maggio, E., Berends, M., & Lucas, S. R. (2004).	Early Childhood and high school
(8)	Mother's education, father's education, mother's occupational prestige, father's occupational prestige, and family income	Morgan, S. L., & Mehta, J. D. (2004).	8 <sup>th</sup> grade

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(9)	Education, occupation, and income	Ogbu, J. U. (1994).	K-12 and undergraduate
(10)	Family income, parental level of education, and parental occupation	Osborne, J.W. (1995).	8 <sup>th</sup> & 10 <sup>th</sup> grade
(11)	Parental income and educational level	Osborne, J. W. (1997).	8 <sup>th</sup> , 10 <sup>th</sup> and 12 <sup>th</sup> .
(12)	Index comprised of equally weighted: father's occupational status, father's education, mother's education, possessions in the home, number of books in the home, and number of rooms per persons in the home.	Portes, A., & Wilson, K. L. (1976).	10 <sup>th</sup> grade
(13)	Family income, parental education, and parental occupation.	Roscigno, V. J., & Ainsworth- Darnell, J. W. (1999).	8 <sup>th</sup> & 10 <sup>th</sup> grade
(14)	Current research used the family income, the mother's education, and a measure of family structure as compared to previous studies that concentrated on the father's education and/or occupation.	Sirin, S. R. (2005).	K-12

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Table 3

*Definitions of Socioeconomic Status by Undergraduate Level*

Definitions of SES		Authors and Date	Year of Student
(1)	Percent of college paid by family	Charles, C. Z., Dinwiddie, G., Massey, D. S.	Freshmen and sophomore in college
(2)	Main provider of the family's occupation (father or mother)	Croizet, J. C., & Claire, T. (1998).	Undergraduates
(3)	Parental income, parental education and occupation, grandparents' education, and self-perceived social class.	Aires, E., & Seider, M. (2007).	1 <sup>st</sup> and 2 <sup>nd</sup> year students at a state liberal arts college and private liberal arts college.
(4)	Annual family income, highest level of educational attainment by mother and father.	McKay, P. F., Doverspike, D., Bowen-Hilton, D., & McKay, Q. D. (2003).	Undergraduate students at a majority White university and a HBCU.
(5)	Education, occupation, and income	Ogbu, J. U. (1994).	Policy evaluation and literature review of K-12 and undergraduate levels

**Disparities in postsecondary enrollment and achievement.**

Additional research revealed the impact of socioeconomic status on enrollment and successful student outcomes in higher education (Cabrera & La Nasa, 2001; Lara-

Cinisomo et al., 2004). Cabrera and La Nasa (2001) examined how low economically and sociologically individuals prepared themselves for gaining college qualifications, graduating from high school, and applying for admissions to a four-year university. Parents' knowledge of college provided assistance to their children and furthered their success in becoming equipped for college. They reviewed the records of parents with some experience with college and found only 23% of the lowest socioeconomic parents were able to provide direction and that was founded on actual college exposure. Conversely, 99.3% of the highest socioeconomic status students were raised in families that were experienced with higher education. Individuals who acquired college qualifications during high school had a greater possibility of enrolling in college than those who did not. Cabrera and La Nasa (2001) contended that seventy-one percent of the lowest socioeconomic status individuals were not successful with acquiring the academic credentials that were required to sustain college enrollment.

In addition, Lara-Cinisomo et al. (2004) revealed how differences in socioeconomic status accounted for the disparities in the scores that normally were associated with ethnicity or immigrant status. These findings revealed that school-readiness programs should concentrate their efforts on the children of poorly educated mothers as compared to specific ethnic or immigrant groups. For instance, children from poor neighborhoods often expressed anxious and aggressive conduct despite their parents conduct. More current policy proposals of some states and school districts were promising in providing steady school funding across all schools as well as maintaining the racial and ethnic diversity in schools. Therefore, it was imperative to combine



educational policies with socioeconomic policies to attain the goal in lessening the disparity in achievement outcomes (Lara-Cinisomo et al., 2004).

The literature review revealed that the disparity in educational achievement when comparing social classes is steadily continuous. In addition, operational definitions played a major role in the research revelations and the implications of policy that were associated with social variations. Thus, while there have been changes in the operational definition of socioeconomic status, researchers must proceed with caution when interpreting the implications of interventions aimed at specific socioeconomic groups.

### **Cultural Capital and Social Capital**

#### **Social and community capital.**

Various researchers examined the relationship between community and social capital and the influence of social class on educational achievement, the college choice process and creating social capital networks (Colclough & Sitaraman, 2005; Martinez, 2012; Wells, 2008). Colclough and Sitaraman (2005) attempted to explain the relationships that existed between community and social capital including the ways they were related and distinctive. In reviewing the previous research, they acknowledged that both terms had been used interchangeably. The ongoing debate existed within understanding whether developing community prompted social capital or whether social capital guided the strengthening of community. Also, previous literature provided the notion that community was a source for social capital and social capital was required to nurture economic and cultural growth which could then be accomplished through associations. Social capital networks did not routinely emerge from community or organizational memberships or even with connections amongst family and friends. In

short, social capital networks were not only rooted in communities, they were rooted in other structures such as familiar occurrences or ethnicity, occupation, and social rank which supported a foundation for developing social capital networks (Colclough & Sitaraman, 2005).

Wells (2008) utilized data from the National Educational Longitudinal Study from 1988 to 1994 to examine the impact of social and cultural capital on student persistence with a total sample size of 1,726 students from two and four-year institutions. Wells (2008) confirmed previous claims that social and cultural capital had a positive impact on student retention rates in higher education. Students who started at community colleges did not have lower retention rates when compared to students at four-year institutions. In addition, for students with lower levels of social and cultural capital, four-year colleges were found to be more disadvantageous to retention rates when compared to community colleges. For example, low capital students who began at community colleges were more successful in persistence when compared to their low capital peers beginning at four-year institutions (Wells, 2008).

Martinez (2012) confirmed how social capital comprised the social links that were utilized to gain assistance mostly within schools and the community. Martinez (2012) built a frame of reference for community cultural wealth that was in direct contrast to Bourdieu. Bourdieu (1977) maintained that cultural capital was inherited from the family and was comprised of culture-based characteristics and gauges of representative wealth. The idea of community cultural wealth was applied to concentrate on the multiple types of social capital that were used to navigate the college choice process. In addition, the influence that community individuals had on the college choice process of 20 Mexican

American high school seniors from South Texas was examined. Interviews were conducted with Mexican American students who were seniors and had goals to attend college after graduating from high school. Students identified members in the community that provided knowledge and support towards their college process which included members of their congregations, neighbors, and in one instance a physician (Martinez, 2012).

#### **Non-dominant barriers and culture.**

The literature examined how the promotion of self-authorship, parents' efforts of socialization in cultural activities with their children, disparity of the street and mainstream culture deterred or strengthened the ways that experiences, cultural capital, and identity could enhance learning postsecondary education (Jehangir et al., 2011). Jehangir et al. (2011) argued how promoting self-authorship in the first-year of college could strengthen the ways that experiences, cultural capital, and identity connected and enlightened learning and knowing in postsecondary education. Self-authorship could also deepen the understanding of instructors regarding the self-perceptions of students and could influence the learning process for all involved (Jehangir et al., 2011).

#### **Contrasting theories on parental cultural resources.**

Bourdieu (1973) and De Graaf, De Graaf, and Kraaykamp (2000) both argued the effects of parental financial resources on their children's educational achievements was smaller than the effects of parental cultural resources. In addition several studies determined whether investment in cultural and educational resources were compatibly rewarded or provided an advantage at school (Sullivan, 2001; Roscigno & Ainsworth-Darnell, 1999). Bourdieu (1973) examined the academic market and reported that it

tends to imitate and endorse the distribution of cultural capital by proportioning academic success to the amount of cultural capital handed down by the family. Moreover, Bourdieu (1973) acknowledged the most advantaged sections of the dominant classes, from the perspective of economic capital and power, were not automatically the most well off in regards to cultural capital. Bourdieu (1973) declared the various instructional actions along with school practices carried out by families within multiple social classes worked together to pass on a cultural heritage which was considered the undivided property of society as a whole.

Bourdieu (1973) endorsed the composition of the distribution of economic capital was balanced and opposite when compared to the composition of the distribution of cultural capital. Further, the mobility of people between social classes was dependent upon the possession of economic capital and was closely associated to the possession of power. Those class sections richest in cultural capital were more predisposed to invest in their children's education as well as in cultural practices likely to sustain and increase their specific scarcity. Consequently, Bourdieu (1973) reported those class sections richest in economic capital set aside cultural and educational spending to the advantage of economic investments.

Similarly, De Graaf et al. (2000) addressed the importance of parents' educational background and cultural capital on academic outcomes. Previous theories explained how social and cultural exclusion occurred, based on high ranking cultural gestures and styles, and this level of ranking varied in countries and was dependent upon the curriculum standards in higher education. De Graaf et al. (2000) highlighted two categories of parental cultural capital including active involvement in beaux arts and reading behavior.

Previous researchers made the notion that parental participation in academic cultural activities and their experience with beaux arts improved their child's fluency in specific cultural outlooks and tastes. De Graaf et al. (2000) utilized data from the Netherlands Family Survey of 1992-1993 with over 1,500 participants. Parental educational levels were a substantial predictor of children's successful outcomes in their educational pursuits when compared to their father's occupational level. Also, parental cultural climate had a larger effect on student outcomes than parental financial resources. For instance, when parents read at home, the home then bears resemblance to the school environment and students are not shocked with the reading culture at school. Subsequently, parents' reading activities also had a larger effect than parents' involvement in intellectual art activities and maintained that overall, reading behaviors of parents contributed more readily to children's achievements when compared to achieving cultural fluency. Therefore, the disparities in parental cultural capital, in regards to reading practices, were more imperative for children from lower and middle socioeconomic families than children from the higher socioeconomic backgrounds (De Graaf et al., 2000).

Also, Sullivan (2001) utilized data from eleventh grade questionnaires at four K-12 schools with two of the schools being co-educational and two being single sex. Parents' cultural capital was the most significant factor in relation to the variation in pupils' cultural activities. Social class, educational credentials, and school attended were not significant when parental cultural capital was added to gauge the variation in students' cultural activities. In addition, participation in formalized or societal culture did not nurture the intellectual resources that may have provided an advantage at school.

Subsequently, reading and watching refined television did nurture these intellectual resources. Sullivan (2001) confirmed Bourdieu's theory that cultural capital was transferred from parents to their children. This theory was significantly reinforced when students' cultural activities were examined. Similarly, the results in support of Bourdieu's theory revealed the possession of cultural capital did have a significant impact on earning educational achievements (Sullivan, 2001).

In contrast, Roscigno and Ainsworth-Darnell (1999) utilized data from the National Education Longitudinal Study during the first wave in 1988 and the second wave in 1990. The degree to which racial disparities in cultural capital and household educational resources served as a utility in family socioeconomic status and structure was examined. Further, the achievement results were examined by adding family socioeconomic status and household cultural educational resources. Blacks were disadvantaged with education due in part to having less of family cultural and educational resources when compared to their white peers. As an example, Black students were less probable to go on cultural trips and join in extracurricular cultural classes. In addition, they also possessed significantly lower levels of household educational resources when compared to their white counterparts (Roscigno & Ainsworth-Darnell, 1999).

Subsequently, Roscigno and Ainsworth-Darnell (1999) reported a concerned issue that involved whether investment in cultural and educational resources was compatibly rewarded. Cultural trips and classes impacted grades in comparable manners for Black and White students. When the study controlled for race, high socioeconomic status students obtained greater achievement rates for grade point averages and standardized tests with cultural trips than did low socioeconomic status students. High educational

resources positively impacted high socioeconomic status students but only for standardized achievement. In addition, Blacks experienced lower returns to standardized achievement for their investment in cultural trips and ascertained this return could be a function of assessment at the classroom and school levels. Further, the debate that family background and cultural methods were significant for earlier mental development, tracking, and assessment was challenged. Cultural capital and educational resources only moderately clarified racial and social-class disparities in achievement. Black students incurred less returns for cultural trips and educational resources than their white and higher socioeconomic status counterparts (Roscigno & Ainsworth-Darnell, 1999).

#### **Extending Bourdieu's theory.**

Several researchers explained how youths form their identity and human behavior is aligned within the context of the environment (Bennett & Savage, 2004; Clay, 2003; Nora, 2004). Clay (2003) expanded Bourdieu's theory and explored how Black youth identity was shaped and reassigned in daily interactions through hip-hop culture with other Black youth. Also, the research broadened Bourdieu's theory by offering ethnographic explanations of how Black youth developed and preserved boundaries around racial identity. The research further explained how Black youth utilized hip-hop culture as cultural capital to develop these boundaries. For instance, members of groups created boundaries to determine who was counted in or left out. Thus, when groups determined the legitimacy of group members grounded on features other than skin color, racial groups would normally create other ranking indicators to signify boundaries and then build the community around the group. Youth's performances of hip-hop at the teen center was observed, in addition to their overall demeanor and dress which represented

the cultural capital required to be seen as authentic amongst their Black peers. Therefore, the struggle with forming one's Black identity was focused on one being able to perform hip-hop, create relationships with staff and other youth to increase the cultural capital required for popularity and involvement with hip-hop culture (Clay, 2003).

Bennett and Savage (2004) utilized previous research to ascertain the gap that existed in bearing the substantive nature of cultural capital based on cultural citizenship and policy. An extension of inclusive cultural citizenship could go beyond the normal participation of cultural activities that include going to art galleries or reading literature novels. These activities have been classified as high culture and have been socially exclusive (Bennett & Savage, 2004).

Bennett and Savage (2004) further summarized arguments surrounding how cultural abilities, defined as cultural capital, are needed for appreciating and attending highly graded cultural activities within conventional classifications of the arts and culture. An illustration of this viewpoint provided examples of distributing cultural aptitudes through extending schooling, cultural training, and interfacing schooling with family and home (Bennett & Savage, 2004).

Nora (2004) surveyed first-year students at three southwestern universities to measure the primary dimensions of the psychosocial concepts of habitus and cultural capital including student attitudes and behaviors involved in their college choice. Theoretical constructs were researched which clarified the psychosocial dimension of the college choice process including cultural capital. Previously these constructs had not been fully empirically verified. The cultural capital variables included academic self-esteem, leadership experiences, extra-familial encouragement, and institutional support.



The analysis revealed that students were more likely to reenroll if they felt accepted at the institution, were supported by their families, and their academic interests matched academic offerings. Therefore, previously established college choice factors were not as substantive predictors in making a reenrollment decision as were the psychosocial factors. Psychosocial factors that were revealed to persuade subsequent commitment to an institution included satisfaction with academic experiences, environmental factors, and unexpected college expenses. The campus visit and viewpoints of a personal and social fit were factors in committing to an institution. The study revealed that psychosocial factors were substantially influential in forecasting students' purposes for reenrollment and students who felt they were personally received were more likely to persist at their institution as well (Nora, 2004).

Several theories of cultural capital, community capital and social capital have been examined since the introduction of Bourdieu's cultural capital theory in relation to educational outcomes. The social capital and cultural capital were important constructs that could be used in quantitative research to disaggregate social class. In addition, the higher education systems should continue to work on retaining first-generation students and understand how retention rates are affected by social and cultural capital in different ways for students who begin at four and two-year institutions. Also, implications for community college administrators and faculty involve pursuing opportunities of retaining developmental students by inspecting current institutional practices that do not adversely impact students achieving their academic inspirations. Bennett and Savage (2004) specified the difficulties in current translations regarding the notion of cultural capital and also conveyed the limitations of information that were implied regarding individual's

artistic tastes, the choices of their cultural involvement, and their familiarity with cultural activities.

Various researchers provided examples of distributing cultural aptitudes through extending schooling, cultural training, and interfacing schooling with family and home. The research has not extended past understanding the driving motivation for participation in cultural activities as it correlates to one's preferences and cultural knowledge, which are direct determinants of one's engagement in cultural activities. Much of the research has explored the economic, cultural, and parental educational resources as it applies to the educational value in the academic arena. Thus, while the researched theories sought to provide explanations of cultural capital concepts, there was a lack in the reinforcement of the overall theory of cultural reproduction.

### **Achievement Barriers**

#### **Social context and socioeconomic background.**

Several researchers investigated stereotype threat and conducted studies in undergraduate institutions to ascertain whether socioeconomic status had a significant influence on academic achievement (Croizet & Claire, 1998; McKay, Doverspike, Bowen-Hilton, & McKay 2003). Croizet and Claire (1998) examined the stereotype threat and tested undergraduate students who came from low and high socioeconomic backgrounds on complex questions derived from the Graduate Record Examination. The test was presented as diagnostic and non-diagnostic in nature and since the socioeconomic status was not prominent, researchers attempted to investigate whether students underperformed only in cases when their socioeconomic status was made noticeable to them (Croizet & Claire, 1998).

Croizet & Claire (1998) revealed that stereotype threat had a negative impact on the academic performance of low socioeconomic students in that they scored lower, completed a lower number of items, and were less precise on the items they did finish. When low socioeconomic status students were informed their test was not a gauge of their intellectual aptitude, they had favorable outcomes when compared to high socioeconomic status students. Croizet and Claire (1998) extended the generalizability of previous research by extending the premise of stereotype threat to economic groups, not only racial and gender groups. Their research revealed the stereotype threat would impact students in any cultural situation where lower achievement rates of low socioeconomic status students were related to popular beliefs of students having academic limitations (Croizet & Claire, 1998).

McKay et al. (2003) examined socioeconomic disadvantages and adverse stereotypes to clarify racial disparities in intelligence test scores at a large, majority White mid-western University with White participants and a small southeastern historically Black University with African American students. McKay et al. (2003) calculated African American posttest attitude survey results which indicated that African Americans experienced a higher level of stereotype threat during their testing experience for the diagnostic testing session than the non-diagnostic testing session. Their results validated previous research findings. For instance, the level of the father's education and stereotype threat were more strongly related to the test scores than race. These findings emphasized the function of environmental influences on reasoning ability test scores (McKay et al., 2003).

The literature review revealed contrasting theories on how social context and group identity formed to facilitate academic achievement while personality variables were also a determining factor in student outcomes as it related to achievement barriers (Brown & Tylka, 2011; Smith & Hopkins, 2004). Smith and Hopkins (2004) conducted research and revealed that stereotype threat did not guide the academic achievement of African Americans who possessed a strong sense of persistence and pride. In addition, these students might have been aware of the stereotype yet they did not allow it to have a negative impact on their performance and achieved better on skillsets that required higher level cognitive skills like math as compared to rote memorization like spelling (Smith & Hopkins, 2004).

Similarly, Brown and Tylka (2011) revealed those participants who received a higher amount of racial socialization messages from their caregivers, in combination with higher levels of racial discrimination had substantively higher resilience scores when compared to those who received lower amounts of racial socialization messages. In addition, specific racial socialization messages that contained an understanding and appreciation of the history of African Americans proved to be more valuable in counteracting racial discrimination when compared to messages that simply instructed children to be proud without offering a historical foundation. The implications revealed that African American parents need to be able to prepare children without encouraging feelings of helplessness. Racial socialization facilitated resilience and also supported assertive coping mechanisms which all supported the development of resilience (Brown & Tylka, 2011).

The research revealed that when students are exposed to a cultural stereotype, in order for it to affect them, they have to personally care about the domain (Aronson, Lustina, Good, Keough, Steele, & Brown, (1999). Pinel, Warner, and Chua (2005) revealed that students responded to the cultural stereotype by psychologically disengaging while Martinez (2012) reported that students focused on the negative stereotype and continuously persisted to enroll in higher education.

### **Disengaging and cultural stereotypes.**

While many of the stereotype categories had already been defined, Aronson et al. (1999) carried the research a step further by demonstrating that self-protective measures could be extended from minority status and identity, although it did not depend upon them. Subsequently, students had to personally care about the domain in order for it to affect them. Furthermore, Aronson et al. (1999) defined stereotype threat as a reaction that occurred from low or demeaning expectations that presented themselves to an individual in the form of cultural stereotypes.

Pinel et al. (2005) revealed that self-esteem combined with GPA and disengagement functioned as a self-protective layer. The increased stigma consciousness levels of academically stigmatized minority students occurred when they arrived on campus and it played a primary role in the negative effects of academic stigmatization. Stigmatized males who faced increased levels of race-based stigma consciousness normally achieved poorly and disengaged psychologically while females who had low increases in stigma consciousness disengaged (Pinel et al., 2005).

Martinez (2012) examined the influence of community members on the college choice process of 20 Mexican American high school seniors from South Texas. In high

numbers, students revealed that their major reason for aspiring to attend postsecondary institutions was to contest the negative stereotypes about Latinos or Mexican Americans. These aspirations were present despite the fact that many students faced financial obstacles and had limited knowledge due to being the first in their family to attend college. Students channeled the negative stereotype of Latinos and Mexican Americans in their region not wanting to pursue higher education and instead they furthered their goals to enroll in college despite the stereotype (Martinez, 2012).

### **Disidentification theory.**

Morgan and Mehta (2004) investigated the impact of self-assessment and self-esteem on educational outcomes. The researchers examined the disidentification explanation by analyzing National Education Longitudinal Study data from 1998 to 1994. The findings established that Black students' self-assessments of their academic ability were weakly related to their academic achievement. Further, these variances were found to have originated from stereotype threat or confidence that the assessments were racially subjective. In addition, stereotypes did not depress the enthusiasm of test takers, yet they triggered anxiety and then as Blacks adapted it resulted in disidentification. Blacks began to disidentify with educational accomplishments to maintain their positive self-image. Further, stereotype threat did not lower motivation, while in contrast disidentification lowered motivations and dedication for continuous educational accomplishments (Morgan & Mehta, 2004).

Steele and Aronson (1995) performed groundbreaking research at Stanford University to understand how students performed when they perceived their ability was being measured. While several new theories emerged and in also confirmed Steele's

theory, other theorists extended the Steele's theory even further to shed additional light on how stereotype threat played out with socioeconomic status and the disidentification theory. Much of the research was conducted in four-year, controlled higher educational settings with participants being informed that the tests were either diagnostic or non-diagnostic. These controlled settings revealed the true extent of the stereotype impact on educational outcomes. Practitioners would need to proceed with caution in generalizing the findings to the community college, but would need to be aware that students can disidentify with intellectual capability, especially if intellectual capability is a domain that is significant to them.

### **Summary**

There has been a lack of empirical study on the relationship between delayed enrollment and first-generation community college student success, particularly with regard to regional wealth. An empirical study of these factors could be beneficial to community college leaders because the findings could boost funding for community colleges which serve higher numbers of disadvantaged students than four year institutions (Wells, 2008). Researching these precollege demographic characteristics could yield substantive information to the already existing research on first-generation student outcomes. In addition, administrators could utilize the findings and continue to work on retaining first-generation students by understanding the different educational impacts on students who immediately enroll or delay enrollment at two-year institutions.

### **CHAPTER III: METHODS**

This chapter summarized the purpose of the study, the research questions, and the hypotheses that guided the research study. In addition, the chapter provided a summary of the overall research design, including the non-parametric and inferential statistical techniques that were utilized to examine the influence of pre-college demographic characteristics on first-generation community college students. The sampling methods and data analysis techniques were summarized within the context of the study. Also, a summary of the limitations were addressed with additional supporting information on the internal and external threats to validity.

The purpose of this study was to examine the relationship between delayed enrollment, regional wealth, and first-generation status on community college student success. This study analyzed differences in student success for students who enrolled at the community college immediately after high school graduation, for those who delayed enrollment up to two years, or delayed enrollment more than two years. This study further explored whether regional wealth had a significant relationship with the rate of delayed enrollment among first-generation and non-first-generation students. In particular, the study examined whether there was a non-causal relationship between enrollment status (immediate enrollment, short-term delay, long-term delay), regional wealth (as measured by the composite index in five service regions), and first-generation status (first-generation or not).



**Research Questions and Hypotheses**

This study was guided by the following research questions:

1. To what extent is there a statistically significant mean difference in student success (as measured by the ratio of credits passed to credits attempted) between students who enroll at the community college immediately after high school graduation, delay enrollment up to two years, or delay enrollment more than two years?
2. To what extent do regional wealth and the rate of delayed enrollment for first-generation students compared to non-first-generation community college students differ?
3. Is there a non-causal relationship between regional wealth (as measured by the composite index in five service regions), enrollment status (immediate enrollment, short-term delay, long-term delay), first-generation status (first-generation or not), and student success (as measured by the ratio of credits passed to credits attempted)?

The study tested the following hypotheses:

- H1 Non-first-generation students who enroll immediately after high school have higher success than first-generation students who delay enrollment up to two years or more than two years.
- H2 Non-first-generation students who reside in the least wealthy regions have a greater rate of delayed enrollment than non-first-generation students who reside in the most wealthy regions.

- H3 First-generation community college students who reside in the least wealthy regions have a greater rate of delayed enrollment than first-generation community college students who reside in the most wealthy regions.
- H4 Community college students from a lower wealth region, delayed enrollment, and first-generation status have lower success than students who do not have these characteristics.

### **Research Design**

The researcher utilized an ex post facto design and examined data collected over a four-year period from a college with the pseudonym Jordason Community College, a large-enrollment public institution located in the Southeastern United States. Jordason Community College has multiple campuses and serves a very diverse student population in distinct urban, suburban, and rural areas. The institution was selected based on the vastly distinct service regions which have varying levels of median incomes, bachelor degrees and high school graduation rates, population estimates, and composite indices.

The independent variables that were tested include enrollment status (immediate enrollment, short-term delay, and long-term delay), regional wealth (as measured by the composite index of the five primary regions), and first-generation status (first-generation or non-first-generation). First-generation status was defined as both parents with no more than a high-school education (Forbus, Newbold, & Mehta, 2011; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Non first-generation status was defined as one or more parents who completed at least some college or more (Pascarella et al., 2004).

The dependent variable was student success, as measured by the ratio of credits passed to credits attempted over two continuous Fall and Spring semesters of one year.

Based on the existing literature which focused on pre-college characteristics for first-generation students, credits earned were acceptable measures of student success (Chen, 2005; Gibson & Slate, 2010; Inman & Mayes, 1999; Pascarella et al., 2004). Two semesters were used since many of the students who enroll in certificate programs can complete the entire program within two semesters.

### **Covariates**

The covariates that were used in this study are race and gender. According to existing research, race and gender have individual influence on educational outcomes (Aries & Seider, 2007; Bui, 2002; Farley, 2002; Smith & Hopkins, 2004). The covariates were utilized to explain some of the unexplained variance, by reducing the error variance (Field, 2009; Green & Salkind, 2008). After performing ANCOVA, with race and gender defined as the covariates, the researcher was able to accurately assess the effect of the independent variables on the dependent variables and the researcher was able to partial out the effect of the covariates (Zinbarg et al., 2010). A detailed listing of the research questions, variables, covariates, and research design method are listed in Table 4.

Table 4

*Overall Research Design*

Research Question	Independent Variables and Covariates	Dependent Variable	Method of Analysis
To what extent is there a statistically significant mean difference in student success (as measured by the ratio of credits passed to credits attempted) between students who enroll at the community college immediately after high school graduation, delay enrollment up to two years, or delay enrollment more than two years?	Enrollment status Gender Race	Student Success	ANCOVA
To what extent do regional wealth and the rate of delayed enrollment for first-generation students compared to non-first-generation community college students differ?	Regional Wealth Enrollment status		CHI-SQUARE
Is there a non-causal relationship between regional wealth (as measured by the composite index in five service regions), enrollment status (immediate enrollment, short-term delay, long-term delay), first-generation status (first-generation or not), and student success (as measured by the ratio of credits passed to credits attempted)?	Regional wealth Enrollment status First generation status Gender Race	Student Success	ANCOVA

**Setting and Context**

Jordason Community College is a large-enrollment public institution located in the Southeastern United States. Jordason Community College has multiple campuses and serves a very diverse student population in distinct urban, suburban, and rural areas, as presented in Table 1. In 2012, Jordason Community College reported an annual

enrollment of 47,757 students (Institutional Research Office, 2013). Forty percent of those students enrolled on a full-time basis, which means they enrolled in at least 12 credit hours while 60% were enrolled on a part-time basis. Forty-five percent of the students declared college transfer programs of study while 45% declared occupational/technical programs. The average age of the student body was reported at 27.9 years while 50% of the students ranged from 18 to 24 years of age. Fifty-three percent of the student population is Caucasian, 34% is African American, and the remaining 13% of the student body population comes from American Indian, Asian, Hispanic, or other races (Institutional Research Office, 2013).

### **Subjects and Sampling Method**

Students were selected from the Fall 2008, Fall 2009, Fall 2010, and Fall 2011 student records. The criterion sampling method was utilized to sample first-generation students and non-first-generation students who obtained a high school diploma or GED from a public high school in the five primary service regions with a first-time in college status, who had never registered for courses at the college (Leedy & Ormrod, 2005). The study excluded new students who registered the summer before Fall 2008, Fall 2009, Fall 2010 and Fall 2011 and new students who were previously categorized as dual enrolled students. The study also excluded students who graduated from private high schools or were homeschooled.

The dependent variable was student success as measured by the ratio of credits passed to credits attempted over two continuous Fall and Spring semesters of one academic year. Developmental courses, English as a Second Language courses, and courses excluded from the GPA were not included in the final compilation of the ratio of

credits passed to credits attempted. The credits attempted refers to any units the students had taken for a GPA grade and received a grade, whether it was a passing grade or not. The credits passed refers to any units the student had taken for a grade and received a passing grade.

Students who were categorized with immediate enrollment or delayed enrollment had self-reported a specified high school graduation year or General Education Diploma (GED) year, which designated the last time they were enrolled in high school or the year in which they received their GED. The study excluded students that did not report a high school graduation year or GED year. In addition, first-generation status was defined as both parents with no more than a high-school education (Forbus, Newbold, & Mehta, 2011; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Non first-generation status was defined as one or more parents who completed at least some college or more (Pascarella et al., 2004). Students' gender and race were self-reported. Participants who reported being Caucasian, African American, American Indian, Asian, or Hispanic were chosen for these analyses.

The Virginia Department of Education (2010) calculated the composite index which determined a school division's ability to pay education costs. This calculation is essential to Virginia's Standards of Quality. The composite index was calculated by utilizing the following three locality indicators: the true value of real property (weighted 50%), adjusted gross income (weighted 40%), and taxable retail sales (weighted 10%) (Virginia Department of Education, 2010). Regional wealth refers to the composite index of local ability to pay for Jordason Community College's primary service regions. The study sample consisted of students from those primary service regions who obtained a

high school diploma or GED from a public high school and excluded students who graduated from private schools or were homeschooled. The 2008-2010 composite indexes will be used in these analyses.

The population of this study was comprised of 9,615 first-time in college students who obtained a high school diploma or GED from a public high school in the five primary service regions in the fall semesters of 2008, 2009, 2010, and 2011. A large majority of the students in the college were Caucasian and represented more than half of the student population, as presented in Table 5. In addition, African American students represented one-third of the student population.

Table 5

*Study Sample Race Compared to Student Sample Race*

Race	Study Sample	Study Sample	2008 Student Sample	2009 Student Sample	2010 Student Sample	2011 Student Sample
	<i>n</i>	%	%	%	%	%
Caucasian	4,935	51.3%	55.0%	53.2%	53.0%	51.6%
African American	3,679	38.3%	31.3%	33.3%	33.8%	36.4%
American Indian	69	0.7%	0.6%	0.7%	0.7%	0.7%
Asian	535	5.6%	5.8%	5.5%	5.5%	5.4%
Hispanic	397	4.1%	4.4%	4.6%	4.4%	4.1%
Other	0	0.0%	2.9%	2.7%	2.5%	1.8%
Total	9,615	100.0%	100.0%	100.0%	100.0%	100.0%
<i>n</i>	9,615	9,615	26,898	30,447	31,308	32,101

The majority of students in the study and overall college population were females. While females accounted for roughly 53% of the study sample, males accounted for 47%. Table 6 represented the gender breakout of the student body for each of the four fall terms as well as the study sample. Overall, the gender of the study sample was similar in proportion to the overall student body.

Table 6

*Study Sample Gender Compared to Student Sample Gender*

Gender	Study Sample	Study Sample	2008 Student Sample	2009 Student Sample	2010 Student Sample	2011 Student Sample
	<i>n</i>	%	%	%	%	%
Male	4,439	46.9%	38.1%	39.1%	39.7%	39.8%
Female	5,176	53.1%	61.9%	60.9%	60.3%	60.2%
Total	9,615	100.0%	100.0%	100.0%	100.0%	100.0%
<i>n</i>	9,615	9,615	26,898	30,447	31,308	32,101

The sample of students that were eligible to be included in this study was classified as first-time in college students who never registered for courses at the college. The sample excluded new students who registered the summer before Fall 2008, Fall 2009, Fall 2010 and Fall 2011 and new students who were previously categorized as dual enrolled students. The proportion of students who were classified as first-time in college represented approximately one-sixth of the population, as presented in Table 7.



Table 7

*Admit Status by Fall Enrollment*

Admit Status	Study Sample	Study Sample	2008 Student Sample	2009 Student Sample	2010 Student Sample	2011 Student Sample
	<i>n</i>	%	%	%	%	%
First-time in college	9,615	100%	17.70%	18.00%	15.30%	16.20%
Previous register	0	0%	2.70%	2.60%	2.80%	2.90%
Return/Transfer	0	0%	79.60%	79.40%	81.90%	80.80%
Total	9,615	100%	100.00%	100.00%	100.00%	100.00%
<i>n</i>	9,615	9,615	26,898	30,447	31,308	32,101

Only students who obtained a high school diploma or GED from a public high school in the five primary service regions were included in this study. The regional wealth value was represented by the previously calculated composite index from the Virginia Department of Education for years 2008-2010. The proportion of the first-time in college student body who obtained a high school diploma or GED from a public high school in the five primary service regions was similar to students who obtained a high school diploma or GED from a public high school in the five primary service regions, as presented in Table 8. The largest proportion of the study sample resided in the region with the highest composite index at 46.5%, while the region with the lowest composite index had a study sample of 7.0%, as presented in Table 8.

Table 8

*Regional Wealth by Fall Enrollment*

Composite Index in each primary service region	Study Sample	Study Sample	2008 Student Sample	2009 Student Sample	2010 Student Sample	2011 Student Sample
	<i>n</i>	%	%	%	%	%
.2112 (least wealthy)	669	7.0%	3.6%	4.1%	4.8%	10.6%
.2588	1,267	13.2%	7.5%	7.5%	7.3%	15.6%
.2983	563	5.9%	2.2%	2.3%	2.7%	5.6%
.3025	2,644	27.5%	14.0%	14.0%	14.1%	27.3%
.3704 (most wealthy)	4,472	46.5%	24.2%	22.6%	22.1%	43.9%
Non-service region	0	0.0%	48.5%	49.5%	49.0%	102.9%
Total	9,615	100.0%	100.0%	100.0%	100.0%	205.9%
<i>n</i>	9,615	9,615	26,898	30,447	31,308	32,101

This study was designed to examine only those students who reported a high school or GED completion year so that the length of time it took to enroll at the college could be captured. The study only utilized first-time in college students which allowed for all students to have the same starting and ending period where they earned credits to determine student success. The study sample had a higher proportion of immediately enrolled students at 77.4% when compared to the student body at approximately 11%, as presented in Table 9. The higher proportion of immediately enrolled students within the study sample was largely based on the study sample only containing first-time in college students.

Table 9

*Delayed Enrollment Status by Fall Enrollment*

Enrollment Status	Study Sample	Study Sample	2008 Student Sample	2009 Student Sample	2010 Student Sample	2011 Student Sample
	<i>n</i>	%	%	%	%	%
Immediate	7,443	77.4%	12.0%	11.4%	10.7%	10.9%
Delay up to two years	1,055	11.0%	20.3%	20.1%	20.4%	19.7%
Delay more than two years	1,117	11.6%	66.1%	67.0%	67.9%	68.6%
No High School or GED	0	0.0%	1.6%	1.6%	1.0%	0.9%
Total	9,615	100%	100.0%	100.0%	100.0%	100.0%
<i>n</i>	9,615	9,615	26,898	30,447	31,308	32,101

The study only included students who were classified as first-generation students and non-first-generation students. The Admissions Office began requesting for students to provide their parent's educational status on the college application in 2008. As presented in Table 10, the study sample was comprised mostly of non-first-generation students at 76% and first-generation students at 24%, as presented in Table 10. The study did not include students who were unaware of their parent's education status. The study sample of first-generation students was in proportion to non-first-generation students as it related to comparing the study sample to the student sample. More specifically, one-third of the total students who reported their parents' educational status were first-generation for both the study sample and the student sample.

Table 10

*First-Generation and Non-First-Generation Students by Fall Enrollment*

First-Generation Status	Study Sample	Study Sample	2008 Student Sample	2009 Student Sample	2010 Student Sample	2011 Student Sample
	<i>n</i>	%	%	%	%	%
First-Generation	2,309	24.0%	3.5%	12.7%	17.5%	20.4%
Non-first-generation	7,306	76.0%	10.3%	35.2%	47.4%	55.5%
Not reported	0	0.0%	86.1%	52.0%	35.1%	24.1%
Total	9,615	100.0%	100.0%	100.0%	100.0%	100.0%
<i>n</i>	9,615	9,615	26,898	30,447	31,308	32,101

**Data Collection**

A file was obtained from the Institutional Research Department from Jordason Community College. The file contained the following data elements: race, jurisdiction, gender, high school graduation year, highest level of mother's education, highest level of father's education, ceeb code revealing whether a GED or high school diploma was obtained), high school (external organization id), high school name, high school state, first-time in college (FTIC), term, full-time/part-time status, age, academic plan, program level, and total credits (attempted credits and passed credits). The variables were coded for analysis as presented in Table 3. Since the data were generated from previous years and did not contain identifying information, the study did not present any potential harm to participants. The spreadsheet was password protected and no other parties had access to these data. A description of the variables and proposed coding was presented in Table 11.

Table 11

*Description of Variables*

Variable Type	Description	Coding Value
Independent Variables	Enrollment Status	1 = Immediate Enrollment
		2 = Delayed Enrolment up to two years
		3 = Delayed Enrollment more than 2 years
	First Generation Status	1 = First Generation
		0 = Non-First-Generation
	Regional wealth	.2112 (least wealthy)
		.2588
		.2983
		.3025
		.3704 (most wealthy)
Covariates	Race	1 = Caucasian
		2 = African American
		3 = American Indian
		4 = Asian
		5 = Hispanic
	Gender	1 = Male
		0 = Female

*Note.* The regional wealth value will be represented by the previously calculated composite index of local ability to pay from the Virginia Department of Education.

**Limitations**

In utilizing first-generation and non-first-generation status for students within the population of this study, the researcher assumed that students accurately supplied the highest level of parental education on the college application. In addition, the researcher also assumed that the ratio of credits passed to credits attempted were consistent measures of student success despite other competing factors across the various courses, professors, and students throughout the college. Developmental courses, English as a Second Language courses, and courses excluded from the GPA were not included in the final compilation of the ratio of credits passed to credits attempted.

The study only utilized first-time in college students which allowed for all students to have the same starting and ending period where they earned credits to determine student success. The study sample had a higher proportion of immediately enrolled students at 77.4% when compared to the student body at approximately 11. The higher proportion of immediately enrolled students within the study sample was largely based on the study sample only containing first-time in college students.

**Internal Validity – Minimizing Bias**

The researcher utilized the ANCOVA procedure and defined race and gender as the covariate measures. ANCOVA was ideally suited to remove the bias of these confounding variables and allow for a more accurate assessment of the effect of the independent variable (Field, 2009). Also, in order to ensure the ANCOVA results were not misleading, the researcher closely examined the group means and standard deviations on the covariates and dependent variables to further minimize any biases (Zinbarg et al., 2010). In addition, the criterion method was utilized to select the comparative groups

from the same time period which reduced the potential historical threat to validity (White & Hallett, 2005).

### **External Validity**

The researcher examined historical data that occurred in real-life circumstances and produced results with limited applicability to other real-world environments (Leedy & Ormrod, 2005). The study has limited applicability because the setting occurred in a specific context and the research was also restricted to students with a particular set of characteristics (Leedy & Ormrod, 2005).

### **Summary**

This chapter has outlined the research design and methodology of this ex post facto study. The criterion sampling method was utilized to sample first-generation students and non-first-generation students and the descriptive statistics of the study sample were provided. Providing an empirical study on first-generation students, as related to regional wealth and delayed enrollment, could add to the growing body of literature on first-generation students. It could also enable administrators to utilize the findings and continue to work on building student success for first-generation students by understanding the different educational impacts on students who immediately enroll or delay enrollment at two-year institutions. Chapter Four will contain the assumptions of the statistical tests and an analysis of the findings.

## CHAPTER IV: RESULTS

The purpose of this study was to examine the relationship between delayed enrollment, regional wealth, and first-generation status on community college student success. First, the ratio of student success (credits passed to credits attempted) was used to examine the relationship between students who enrolled at the community college immediately after high school graduation, delayed enrollment up to two years, or delayed enrollment more than two years. Second, the study further investigated whether regional wealth had a significant relationship with the rate of delayed enrollment among first-generation and non-first-generation students.

### Research Question 1

**To what extent is there a statistically significant mean difference in student success (as measured by the ratio of credits passed to credits attempted) between students who enroll at the community college immediately after high school graduation, delay enrollment up to two years, or delay enrollment more than two years, controlling for race and gender?**

#### **Testing for normal distribution.**

The student success ratio was converted to z-scores and there were no outliers greater than the 3.29 threshold. The Kolmogorov-Smirnov test was conducted to ascertain whether student success, the ratio of credits passed to credits attempted, was normally distributed across each enrollment group. The Kolmogorov-Smirnov test has limitations with respect to larger sample sizes because it is easier to get significant results from small deviations from normality and the determination of whether the deviation is enough to bias any statistical tests is questionable (Field, 2009). The ratio of student



success was significantly non-normal for students who immediately enrolled,  $D(7443) = .353, p < .001$ , delayed enrolled students (up to two years),  $D(1055) = .320, p < .001$ , and delayed enrolled students (more than two years),  $D(1117) = .388, p < .001$ . A second measure of normality was conducted where the values of skewness and kurtosis were examined to determine their proximity to zero. Skewness and kurtosis values should be zero in a normal distribution (Field, 2009). The values of skewness and kurtosis were -1.090 and -.465, respectively. The dependent variable was not normally distributed, as is the case with count data (Osborne, 2013). This study was conducted with a large sample and based on the central limit theorem, when a sample is greater than 30, the sampling distribution is normal (Field, 2009). In addition, the ANCOVA test that was conducted is classified as a robust test and is still accurate even when its assumptions are broken (Field, 2009).

#### **Testing for homogeneity of variance with Levene's test.**

Levene's test for the full factorial model with two covariates was significant,  $F(2,9612) = 74.648, p < .001$ . However, an additional test was conducted to determine the significance of the assumption. The standard deviation values that were used to calculate the variance ratio are presented in Table 14. The variance ratio was calculated with the largest variance divided by the smallest variance for the ratio of student success across enrollment status,  $.159/.116 = 1.37$ . The variance ratio was less than two which means the assumption of homogeneity of variance has been met.

#### **Testing the independence of the independent variable and covariates.**

The test of independence was conducted to ascertain whether the covariates race and gender were approximately equal across all levels of the independent variable,

enrollment status, as presented in Table 12. The main effect of enrollment status and gender was significant,  $F(2,9612) = 7.544, p < .001$ , which shows that gender was not equal across the three groups of enrollment status. Since the study does not include an experimental manipulation, the independent variables were utilized as categorical predictor variables, and the ANCOVA statistical model is robust, the results of the study can be interpreted as an ex post facto study (Field, 2009; Keppel, 2004). The researcher also checked to determine whether the covariate, race was approximately equal across all levels of the independent variable, enrollment status. The main effect of enrollment status and race was not significant,  $F(2,9612) = 2.682, p = .068$ , which shows that race was approximately equal across the three groups of enrollment status.

Table 12

*Testing the Independence of the Independent Variable and Covariates*

Variables	Type III Sum of Squares	df	Mean Square	F	P	Partial Eta Squared
Enrollment Status, Gender	3.745	2	1.872	7.544	.001	.002
Enrollment Status, Race	5.583	2	2.792	2.682	.068	.001

**Testing the homogeneity of regression slopes.**

The interaction between enrollment status and the covariates gender and race is presented in Table 13. The interaction between enrollment status and gender is significant  $F(2,9606) = 6.413, p < .001$ . In addition, the interaction between enrollment status and race is significant  $F(2,9606) = 11.246, p < .001$ . Since the independent variables were utilized as categorical predictor variables, lacking experimental

manipulation, and the ANCOVA statistical model is robust, the results of the study can be interpreted as such (Field, 2009).

Table 13

*Test Homogeneity of Regression Slopes Assumption*

Variables	Type III Sum of Squares	df	Mean Square	F	P
Enrollment status * gender	1.812	2	.906	6.413	.002
Enrollment status * race	3.177	2	1.589	11.246	.000

**ANCOVA results.**

A one-way analysis of covariance (ANCOVA) was conducted. The independent variable was grouped by students who enrolled at the community college immediately after high school graduation, delayed enrollment up to two years, or delayed enrollment more than two years. The dependent variable, student success (as measured by the ratio of credits passed to credits attempted) was utilized over two continuous fall and spring semesters. An ANCOVA was used for the analysis because it was ideally suited to remove the bias of the covariates and allow for a more accurate assessment of the effect of the independent variable. The covariates in this analysis were race and gender.

**Mean student success ratio.**

Table 14 represents the mean student success ratio of all study participants based on their enrollment status. The students who immediately enrolled had the highest mean student success ratio ( $M = .751$ ) as compared to students who delayed up to two years ( $M = .668$ ). Students who delayed enrollment more than two years had a mean student success ratio of .736.

Table 14

*Mean Student Success Ratio of Students by Enrollment Status*

Enrollment Status	<i>M</i>	<i>SD</i>	<i>n</i>
Immediate	.7513	.36773	7443
Delay up to two years	.6682	.41467	1055
Delay more than two years	.7358	.40081	1117

**Tests of between-subjects effects for full-factorial model.**

As presented in Table 15, the ANCOVA revealed a significant relationship between enrollment status and student success after controlling for race and gender,  $F(2,9610) = 22.482$ ,  $p < .001$ , and the partial  $\eta^2 = .005$ , which is a small effect. There was also a significant relationship between gender and student success,  $F(1,9610) = 30.000$ ,  $p < .001$ , and the partial  $\eta^2 = .003$ , which is a small effect. In addition, there was a significant relationship between race and student success,  $F(1,9610) = 3.923$ ,  $p = .048$ , and the partial  $\eta^2 = .000$ , which is a small effect.

Table 15

*Tests of Between-Subjects Effects Based on the Dependent Variable Student Success*

Variables	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>	Partial Eta Squared
Gender	4.252	1	4.252	30.000	.000	.003
Race	.556	1	.556	3.923	.048	.000
Enrollment Status	6.373	2	3.187	22.482	.000	.005

**Marginal means analysis.**

The analysis of marginal means was utilized to determine the variance between the student success ratio for students who immediately enrolled, delayed enrollment up to two years, or delayed enrollment more than two years, as presented in Table 16. The Bonferroni adjustment was utilized to calculate the estimated marginal means to control the familywise error by correcting the level of significance (Field, 2009). The results revealed a 95% confidence level that the adjusted mean occurred in the interval of the population mean. The students who immediately enrolled had a higher student success ratio (.751) as compared to those who delayed enrollment up to two years (.669). Students who delayed enrollment more than two years had a .734 student success ratio. Although, the outcome of enrollment and student success was significant and provides further clarification of the variation within the dependent variable, the strength of the relationship was not strong. Perfect success of the ratio would equal 1 and this would only occur if a student passed all of the attempted credits. The difference in the ratio of student success between the three enrollment groups is very small.

Table 16

*Marginal Means Student Success of Participants by Enrollment Status*

Enrollment Status	n	Mean Student Success Ratio	Standard Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Immediate Enrollment	7443	.751	.004	.743	.760
Delay up to two years	1055	.669	.012	.646	.692
Delay more than two years	1117	.734	.011	.712	.756

**Contrast analysis.**

A contrast analysis was conducted and the results have verified significant group differences. Students who immediately enrolled had significantly different student success when compared to students who delayed enrollment up to two years ( $p = .000$ ). Additional contrasts confirmed that students who delayed enrollment more than two years did not significantly differ when compared to students who immediately enrolled ( $p = .140$ ).

**Research Question 2**

**To what extent do regional wealth and the rate of delayed enrollment for first-generation students compared to non-first-generation community college students differ?**

**Assumptions and test design.**

The assumptions of the chi-square test are that each student can only contribute to one cell of the contingency table and the expected frequencies should be greater than five. The assumptions were not violated. For this study, each student was defined with the status of either being a first-generation or non-first-generation student. In addition, each student was defined with the status of immediate enrollment, delayed enrollment up to two years, or delayed enrollment more than two years. There were no expected frequencies for enrollment status or first-generation status below five. Separate chi-square tests were performed for first-generation and non-first-generation students on the regional wealth and enrollment status variables.

Table 17

*Percentage of Enrollment by Regional Wealth*

Composite Index	Immediate Enrollment		Delayed Enrollment Up to Two Years		Delayed Enrollment More than Two Years	
	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>
<b>First-Generation</b>						
.2112 (least wealthy)	7.83	126	8.36	25	15.96	64
.2588	13.24	213	19.73	59	22.69	91
.2983	5.66	91	5.69	17	4.99	20
.3025	29.52	475	26.09	78	26.93	108
.3704 (most wealthy)	43.75	704	40.13	120	29.43	118
Total %	100%	1609	100%	299	100%	401
<b>Non-First-Generation</b>						
.2112 (least wealthy)	5.64	329	4.89	37	12.29	88
.2588	10.51	613	18.78	142	20.81	149
.2983	5.81	339	6.75	51	6.28	45
.3025	27.19	1586	26.98	204	26.96	193
.3704 (most wealthy)	50.86	2967	42.59	322	33.66	241
Total %	100%	5834	100%	756	100%	716

*Note.* The regional wealth value is represented by the previously calculated composite index from the Virginia Department of Education.

**First-generation students.**

For first-generation students, there was a significant association between regional wealth and time of enrollment  $\chi^2 (8) = 62.8696, p < .0001$ . As revealed in Table 17, first-generation students who graduated from high school in the most wealthy region were more likely to immediately enroll at 43.75% when compared to first-generation students who graduated from high school in the least wealthy region at 7.83%, as presented in Table 17. First-generation students who graduated from high school in the most wealthy

region were more likely to delay enrollment up to two years at 40.13% when compared to first-generation students who graduated from high school in the least wealthy region at 8.36%. First-generation students who graduated from high school in the most wealthy region were more likely to delay enrollment more than two years at 29.43% when compared to first-generation students who graduated from high school in the least wealthy region at 15.96%.

First-generation students who graduated from high school in the least wealthy region were more likely to delay enrollment at 15.96% than to immediately enroll at 7.83%. Similarly, non-first-generation students who graduated from high school in the least wealthy region were also more likely to delay enrollment at 12.29% than to immediately enroll at 5.64%.

#### **Non-first-generation students.**

For non-first-generation students, there was a significant association between regional wealth and enrollment  $\chi^2 (8) = 176.3767, p < .0001$ . Table 17 reveals the following patterns. Non-first-generation students who graduated from high school in the most wealthy region were more likely to immediately enroll at 50.86% when compared to non-first-generation students who graduated from high school in the least wealthy region at 5.64%, as presented in Table 17. Non-first-generation students who graduated from high school in the most wealthy region were more likely to delay enrollment up to two years at 42.59% when compared to non-first-generation students who graduated from high school in the least wealthy region at 4.89%. Non-first-generation students who graduated from high school in the most wealthy region were more likely to delay



enrollment more than two years at 33.66% when compared to non-first-generation students who graduated from high school in the least wealthy region at 12.29%.

**First-Generation status and additional significant relationships.**

A chi-square test was conducted to determine whether there was a significant difference between first-generation and non-first generation students with respect to time of enrollment. The chi-square test revealed there was a significant association between first-generation status and time of enrollment,  $\chi^2 (2) = 120.7264, p < .0001$ . The largest representation of enrollment time was immediate enrollment for both first-generation and non-first-generation students when compared to delayed enrollment.

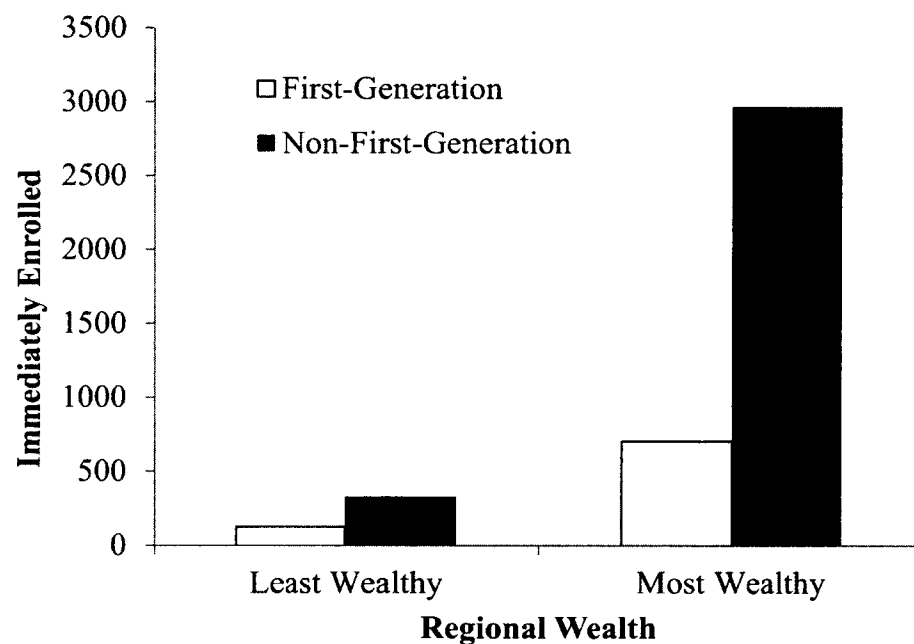
In addition, a chi-square test was utilized to determine whether there was a significant association between first-generation status and enrollment of students who graduated from high school in various wealth regions. There was a significant relationship between first-generation status and students who enrolled at the college upon graduating from high school in various wealth regions,  $\chi^2 (4) = 62.3543, p < .0001$ . Students who graduated from the most wealthy region represented the largest enrollment figures when compared to all regions.

**Overall effect size.**

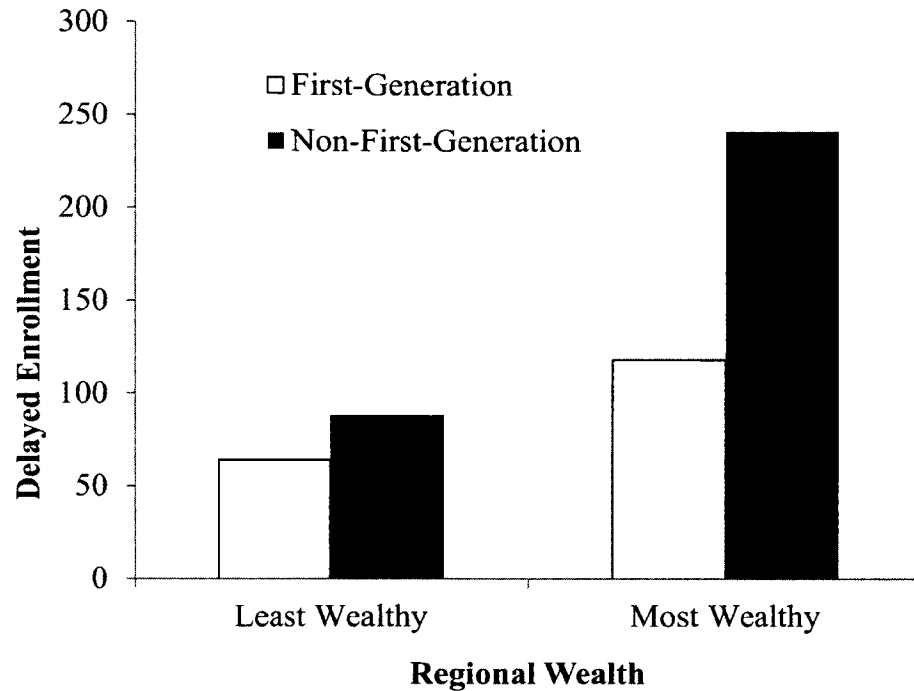
The overall effect size revealed similarities between first-generation students and non-first-generation students as it related to enrollment patterns and regional wealth. The following findings were summarized according to the odds ratio results for first-generation and non-first-generation students by comparing immediate enrollment and delayed enrollment more than two years. The probability of non-first-generation students who graduated from high school in the least wealthy region and delayed enrollment more

than two years was 3.29 times more likely than for non-first-generation students who graduated from high school in the most wealthy region. The probability of first-generation students who graduated from high school in the least wealthy region and delayed enrollment more than two years was 3.03 times more likely than for first-generation students who graduated from high school in the most wealthy region.

Similarly, the probability of first-generation students who graduated from high school in the most wealthy region and immediately enrolled was 3.03 times more likely than for first-generation students who graduated from high school in the least wealthy region. The probability of non-first-generation students who graduated from high school in the most wealthy region and immediately enrolled was 3.29 times more likely than for non-first-generation students who graduated from high school in the least wealthy region.



*Figure 1.* First-generation and non-first-generation students who immediately enrolled.



*Figure 2.* First-generation and non-first-generation students who delayed enrollment more than two years.

### Research Question 3

**Is there a non-causal relationship between regional wealth (as measured by the composite index in five service regions), enrollment status (immediate enrollment, short-term delay, long-term delay), first-generation status (first-generation or not), and student success (as measured by the ratio of credits passed to credits attempted), controlling for race and gender?**

#### **Testing for normal distribution.**

The test for normal distribution of student success, the ratio of credits passed to credits attempted, was conducted using the Kolmogorov-Smirnov test and the values of skewness and kurtosis were examined as well. This study was conducted with a large sample and based on the central limit theorem, when a sample is greater than 30, the

sampling distribution is normal (Field, 2009). In addition, the ANCOVA test that was conducted is classified as a robust test and is still accurate even when its assumptions are broken (Field, 2009).

**Testing for homogeneity of variance with Levene's test.**

The Levene's test for the full factorial model with the first-generation and regional wealth is significant which means the assumption of homogeneity of variance has not been met,  $F(29,9585) = 10.807, p < .001$ . In addition, the Levene's test was conducted to test whether there were any significant differences between group variances. The results of Levene's test for first-generation status was significant,  $F(1,9613) = 40.118, p < .01$ . In addition, the results were significant for enrollment status,  $F(2,9612) = 59.776, p < .01$ , and regional wealth was significant as well,  $F(4,9610) = 13.230, p < .01$ .

An additional test was conducted to determine the significance of the assumption. The standard deviation values that were used to calculate the variance ratio are presented in Table 20. The variance ratio was calculated on the largest variance divided by the smallest variance for the ratio of student success across enrollment status,  $.159/.116 = 1.37$  and the assumption of homogeneity of variance has been met. The variance ratio was calculated for the ratio of student success across first-generation status,  $.141/.120 = 1.18$  and the assumption of homogeneity of variance has been met. The variance ratio was calculated for the ratio of student success across regional wealth,  $.145/.122 = 1.19$  and the assumption of homogeneity of variance has been met.

**Testing the independence of the independent variable and covariates.**

The researcher checked whether the covariates race and gender were approximately equal across all levels of the independent variable, enrollment status, first-generation status, and regional wealth, as presented in Table 18. The main effect of enrollment status and gender was significant,  $F(2,9612) = 7.544, p < .001$ , which shows that gender was not equal across the three groups of enrollment status. The main effect of enrollment status and race was not significant,  $F(2,9612) = 2.682, p = .068$ , which shows that race was approximately equal across the three groups of enrollment status. The main effect of regional wealth and gender was significant,  $F(4,9610) = 13.439, p < .001$ , which shows that gender was not equal across the regional wealth groups. The main effect of regional wealth and race was significant,  $F(4,9610) = 31.037, p < .001$ , which shows that race was not equal across the regional wealth groups. The main effect of first-generation status and gender was significant,  $F(1,9613) = 31.493, p < .001$ , which shows that gender was not equal across first-generation status. The main effect of first-generation status and race was not significant,  $F(1,9613) = 1.129, p = .288$ , which shows that race was approximately equal across first-generation status.

Table 18

*Testing the Independence of the Independent Variable and Covariate*

Variables	Type III Sum of Squares	df	Mean Square	F	P	Partial Eta Squared
Enrollment Status, Gender	3.745	2	1.872	7.544	.001	.002
Enrollment Status, Race	5.583	2	2.792	2.682	.068	.001
Regional Wealth, Gender	13.293	4	3.323	13.439	.000	.006
Regional Wealth, Race	127.683	4	31.921	31.037	.000	.013
First-Generation, Gender	7.803	1	7.803	31.493	.000	.003
First-Generation, Race	1.176	1	1.176	1.129	.288	.000

**Testing for the homogeneity of regression slopes.**

The interaction between enrollment status and the covariates gender and race is presented in Table 19. The interaction between enrollment status and gender was significant  $F(2,9598) = 5.931, p < .001$ ; the assumption is not tenable. However, this is a robust ANCOVA test and the independent variable was not manipulated. In addition, the interaction between enrollment status and race was significant  $F(2,9598) = 10.433, p < .001$ ; the assumption is not tenable. To reiterate, this is an ex post facto study utilizing a robust ANCOVA test and the independent variables were not manipulated. The interaction between first-generation status and gender was non-significant  $F(1,9598) = .242, p = .623$ ; the assumption is tenable. The interaction between first-generation status and race was non-significant  $F(1,9598) = .006, p = .937$ ; the assumption is tenable. The interaction between regional wealth and gender was non-significant  $F(4,9598) = 1.894$ ,

$p=.109$ ; the assumption is tenable. The interaction between regional wealth and race was non-significant  $F(4,9598) = 1.922$ ,  $p=.104$ ; the assumption is tenable.

Table 19

*Test Homogeneity of Regression Slopes Assumption*

Variables	Type III Sum of Squares	df	Mean Square	F	P
Enrollment status * gender	1.668	2	.834	5.931	.003
Enrollment status * race	2.934	2	1.467	10.433	.000
First-generation status * gender	.034	1	.034	.242	.623
First-generation status * race	.001	1	.001	.006	.937
Regional Wealth * gender	1.065	4	.266	1.894	.109
Regional Wealth * race	1.081	4	.270	1.922	.104

**ANCOVA results.**

A one-way analysis of covariance (ANCOVA) was conducted. The independent variable was grouped by students who enrolled at the community college immediately after high school graduation, delayed enrollment up to two years, or delayed enrollment more than two years. The second independent variable was grouped by first-generation status or non-first-generation status. The third independent variable was based on the regional wealth regional wealth where the students graduated. The dependent variable, student success (as measured by the ratio of credits passed to credits attempted) was utilized over two continuous fall and spring semesters. An ANCOVA was used for the analysis because it was ideally suited to remove the bias of the covariates and allow for a more accurate assessment of the effect of the independent variable. The covariates in this analysis were race and gender.

**Mean student success ratio.**

Table 16 represents the mean student success ratio of all study participants based on their enrollment status, first-generation status, and regional wealth. The students who immediately enrolled had the highest mean student success ratio ( $M=.7967$ ) as compared to students who delayed enrollment up to two years ( $M=.7137$ ). Students who delayed enrollment more than two years had a mean student success ratio of .7662. Non-first-generation students had a higher mean student success ratio ( $M=.7921$ ) as compared to first-generation students ( $M=.7586$ ). Students who graduated from a high school in the most wealthy region ( $M= .7909$ ) had higher student success ratios when compared to students who graduated from a high school in the least wealthy region ( $M=.7327$ ), as represented in Table 20.

Table 20

*Mean Student Success Ratio of Students*

Variables	<i>M</i>	<i>SD</i>	<i>n</i>
Immediate	.7513	.36773	7443
Delay up to two years	.6682	.41467	1055
Delay more than two years	.7358	.40081	1117
First-Generation	.7164	.39517	2309
Non-First-Generation	.7479	.37204	7306
.2112 (least wealthy)	.6815	.40374	669
.2588	.7053	.39021	1267
.2983	.7560	.38175	563
.3025	.7572	.36990	2644
.3704 (most wealthy)	.7472	.37332	4472



**Tests of between-subjects effects for full-factorial model.**

As presented in Table 21, the ANCOVA revealed a significant relationship between enrollment status and student success,  $F(2,9583) = 7.099, p < .05$ , and the partial  $\eta^2 = .001$  which is a small effect. There was also a significant relationship between regional wealth and student success,  $F(4,9583) = 3.897, p < .05$ , and the partial  $\eta^2 = .002$  which is a small effect. In addition, there was also a significant relationship between gender and student success,  $F(1,9583) = 36.777, p < .001$ , and the partial  $\eta^2 = .004$  which is a small effect. There was a non-significant relationship between race and student success,  $F(1,9583) = 2.013, p = .156$ , and the partial  $\eta^2 = .000$  which is a small effect. There was a non-significant relationship between first-generation status and student success,  $F(1,9583) = 2.541, p = .111$ , and the partial  $\eta^2 = .000$  which is a small effect.

Table 21

*Tests of Between-Subjects Effects Based on the Dependent Variable Student Success*

Variables	Type III Sum of Squares	df	Mean Square	F	P	Partial Eta Squared
Race	.284	1	.284	2.013	.156	.000
Gender	5.186	1	5.186	36.777	.000	.004
Enrollment Status	2.002	2	1.001	7.099	.001	.001
First-Generation Status	.358	1	.358	2.541	.111	.000
Regional Wealth	2.198	4	.549	3.897	.004	.002
Enrollment Status * Regional Wealth	3.461	8	.433	3.069	.002	.003

**Interaction of regional wealth and enrollment status.**

The ANCOVA revealed a significant relationship between enrollment status and student success,  $F(2,9583) = 7.099, p < .05$ , and the partial  $\eta^2 = .001$  which is a small effect. There was also a significant relationship between regional wealth and student success,  $F(4,9583) = 3.897, p < .05$ , and the partial  $\eta^2 = .002$  which is a small effect. In addition, there was a significant interaction between enrollment status and regional wealth with student success,  $F(8,9583) = 3.069, p < .05$ , and the partial  $\eta^2 = .003$  which is a small effect. Figure 3 displays the interaction between enrollment status (immediate and delayed enrollment up to two years) and regional wealth (least wealthy and most wealthy) in regards to student success. There was a significant interaction between enrollment status and regional wealth with student success whereas the students who immediately enrolled had significantly higher student success ratios when compared to students who delayed enrollment up to two years for both the least wealthy region and the most wealthy region, as presented in Figure 3.

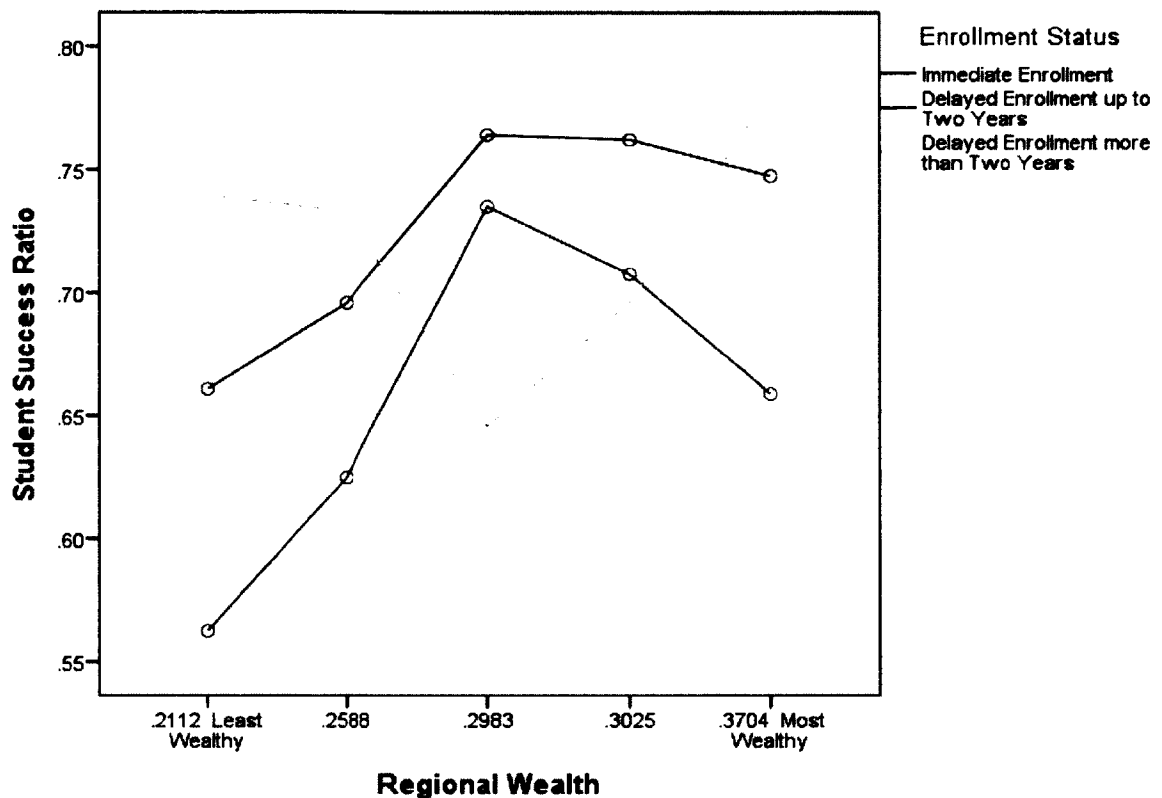


Figure 3. Interaction between enrollment status and regional wealth.

#### Marginal means analysis.

The analysis of marginal means was used to determine the variance between the student success ratio for students by gender, enrollment status, first-generation status, and regional wealth. The results revealed a 95% confidence level that the adjusted mean occurred in the interval of the population mean, as presented in Table 22. Males had a lower student success ratio (.694) as compared to females (.710). The students who immediately enrolled had a higher student success ratio (.726) as compared to those who delayed enrollment up to two years (.658) or delayed enrollment more than two years (.719). Non-first-generation students had a higher student success ratio (.713) as

compared to first-generation students (.689). Students who graduated from a high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from a high school in the least wealthy region (.654). Although, the outcome of enrollment and regional wealth were significant in their relationship to student success, the strength of the relationship was not strong. Perfect success of the ratio would equal 1 and this would only occur if a student passed all of the attempted credits.

Table 22

*Marginal Means Student Success of Participants by Enrollment Status*

Variables	<i>n</i>	Mean Student Success Ratio	Standard Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Male	4439	.694	.012	.671	.718
Female	5176	.710	.010	.690	.730
Immediate Enrollment	7443	.726	.007	.712	.740
Delay up to two years	1055	.658	.017	.625	.691
Delay more than two years	1117	.719	.014	.691	.747
First-generation	2309	.689	.013	.664	.714
Non-first-generation	7306	.713	.009	.696	.730
.2112 (least wealthy)	669	.654	.020	.615	.694
.2588	1267	.685	.014	.658	.712
.2983	563	.715	.025	.665	.765
.3025	2644	.722	.012	.699	.745
.3704 (most wealthy)	4472	.729	.010	.709	.749

**Contrast Analysis**

A contrast analysis was conducted and the results have verified significant group differences. Students who immediately enrolled had significantly different student success when compared to students who delayed enrollment up to two years ( $p = .000$ ). Students who graduated from high school in the most wealthy region had significantly different student success when compared to students who graduated from high school in the least wealthy region ( $p = .001$ ).

Students who immediately enrolled did not significantly differ with student success when compared to students who delayed enrollment more than two years ( $p = .665$ ). First-generation students did not significantly differ with student success when compared to non-first-generation students ( $p = .111$ ). In addition, female students did not significantly differ with student success when compared to male students ( $p = .322$ ).

**Summary**

The increasing diversity of the undergraduate population has resulted from a significant amount of first-generation students who are served primarily at community colleges rather than traditional baccalaureate institutions (Gibson & Slate, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004). This empirical study examined the relationship between delayed enrollment, regional wealth, and student success as it related to the community college population and first-generation students. The findings presented in this chapter revealed that enrollment status and regional wealth had significant relationships with student success. Chapter Five will provide a summary of these results, implications of the findings, and recommendations for practice and future research.

## CHAPTER V: RECOMMENDATIONS AND CONCLUSIONS

There has been a lack of empirical study on the relationship between delayed enrollment and community college student success, particularly with regard to regional wealth. Much of the literature has limited applicability to community college settings with diverse student groups and increasing populations of first-generation students (Wells, 2008). More specifically, the mission of community colleges is to have open access and equity for all students (Vaughan, 2006) and that mission differs according to the selective nature of four-year institutions, thus limiting the applicability of research conducted at four year institutions to the community college setting.

The various perspectives contained within the literature indicated a need for a study that further explored the impact of parental educational levels, regional wealth, and delayed enrollment on community college student success. Several findings revealed that parental education levels were significant predictors of children's successful outcomes (De Graaf, De Graaf & Kraaykamp, 2000; Lara-Cinisomo et al., 2004). Other authors revealed how socioeconomic status was directly connected to academic achievement rewards (Ogbu & Simons, 1998; Sirin, 2005). Several studies conveyed how first-generation students were less likely than other student groups to attend postsecondary education within eight years after high school and were confronted with geographical restrictions based on their requirements to stay at home and enroll in night courses (Chen, 2005; Gibson & Slate, 2010; Inman & Mayes, 1999).

This chapter summarizes the purpose of the study, the research questions, methodology of the study, major findings and their relationship to previous studies,

unanticipated findings, contributions to the literature, implications, recommendations for practice, recommendations for future research, and concluding remarks.

### **Purpose Statement and Research Questions**

The purpose of this study was to examine the relationship between delayed enrollment, regional wealth, and first-generation status on community college student success. This study analyzed differences in student success for students who enrolled at the community college immediately after high school graduation, for those who delayed enrollment up to two years, or delayed enrollment more than two years. This study further explored whether regional wealth had a significant relationship with the rate of delayed enrollment among first-generation and non-first-generation students. In particular, the study examined whether there was a non-causal relationship between enrollment status (immediate enrollment, short-term delay, long-term delay), regional wealth (as measured by the composite index in five service regions), and first-generation status (first-generation or not).

This study was guided by the following research questions:

1. To what extent is there a statistically significant mean difference in student success (as measured by the ratio of credits passed to credits attempted) between students who enroll at the community college immediately after high school graduation, delay enrollment up to two years, or delay enrollment more than two years?
2. To what extent do regional wealth and the rate of delayed enrollment for first-generation students compared to non-first-generation community college students differ?

3. Is there a non-causal relationship between regional wealth (as measured by the composite index in five service regions), enrollment status (immediate enrollment, short-term delay, long-term delay), first-generation status (first-generation or not), and student success (as measured by the ratio of credits passed to credits attempted)?

### **Review of the Methodology**

The researcher utilized a quantitative, ex post facto research methodology, which specifically entailed reviewing conditions that already occurred and collecting data to examine a possible relationship between these conditions (Leedy & Ormrod, 2005). Data collected over a four-year period were examined from Jordason Community College, a large-enrollment public institution located in the Southeastern United States. Jordason Community College has multiple campuses and serves a very diverse student population in distinct urban, suburban, and rural areas.

Inferential and non-parametric tests were conducted to answer the research questions. For the first research question, the analysis of covariance was utilized to determine whether there was a statistically significant mean difference in student success (as measured by the ratio of credits passed to credits attempted) between students who enrolled at the community college immediately after high school graduation, delayed enrollment up to two years, or delayed enrollment more than two years. For the second research question, the chi-square test was utilized to determine if there was a significant difference between regional wealth and the rate of delayed enrollment for first-generation students and non-first-generation community college students. For the third research question, analysis of covariance was utilized to determine whether there was a non-causal



relationship between regional wealth (as measured by the composite index in five service regions), enrollment status (immediate enrollment, short-term delay, or long-term delay), first-generation status (first-generation or not), and student success (as measured by the ratio of credits passed to credits attempted).

The independent variables were the enrollment status, first-generation status, and regional wealth. Enrollment status was grouped by students who enrolled at the community college immediately after high school graduation, delayed enrollment up to two years, or delayed enrollment more than two years. The second independent variable, first-generation status, was grouped according to first-generation status or non-first-generation status. The third independent variable, regional wealth, was based on the composite index assigned to the locality where the student graduated. Regional wealth refers to the composite index, 2008-2010, of the locality's ability to pay educational costs. The dependent variable was student success (as measured by the ratio of credits passed to credits attempted) over two continuous fall and spring semesters. The covariates in this analysis were race and gender.

The study only utilized first-time in college students which allowed for all students to have the same starting and ending period where they earned credits to determine student success. The study sample consisted of students who obtained a high school diploma or GED from a public high school from those primary service regions and excluded students who graduated from private schools or were homeschooled. In addition, this study was designed to examine only those students who reported a high school or GED completion year so that the length of time it took to enroll at the college could be captured.

The total number of study participants was 9,615. The higher proportion of immediately enrolled students within the study sample was largely based on the study sample only containing first-time in college students. One-third of the total students who reported their parents' educational status were first-generation for both the study sample and the student sample. The largest proportion of the study sample resided in the most wealthy region at 46.5%, while the least wealthy region had a study sample of 7.0%.

### **Summary of the Major Findings**

The first research question determined whether there was a significant difference in the mean student success ratio between students who enrolled at the community college immediately after high school graduation, delayed enrollment up to two years, or delayed enrollment more than two years. There was a significant relationship between enrollment status and student success. More specifically, there was a significant difference in student success for students who immediately enrolled when compared to students who delayed enrollment up to two years. The students who immediately enrolled had a higher student success ratio (.751) as compared to those who delayed enrollment up to two years (.669).

The second research question addressed the difference in regional wealth and the rate of delayed enrollment for first-generation students and non-first-generation students. There was a significant relationship between regional wealth and enrollment for both first-generation and non-first-generation students. The overall effect size revealed similarities between first-generation students and non-first-generation students as it related to enrollment patterns and regional wealth. The following findings were summarized according to the odds ratio results for first-generation and non-first-

generation students by comparing immediate enrollment and delayed enrollment more than two years. In addition, if a student graduated from high school in the least wealthy region, the probability of delaying enrollment more than two years was approximately three times more likely than for students who graduated from high school in the most wealthy region. There was also a significant association between first-generation status and time of enrollment with immediate enrollment representing the largest share of enrollment time for both first-generation and non-first-generation students when compared to delayed enrollment. There was also a significant relationship between first-generation status and students who enrolled at the college upon graduating from high school in various wealth regions with the largest representation of enrollment figures occurring for students who graduated from the most wealthy region when compared to all regions.

The third research question examined the relationship between regional wealth, enrollment status, first-generation status, and student success. Regional wealth and enrollment status had a significant impact on student success. More specifically there was a significant difference in student success for students who immediately enrolled when compared to students who delayed enrollment up to two years. The students who immediately enrolled had a higher student success ratio (.726) when compared to those who delayed enrollment up to two years (.658). In addition, there was a significant difference in student success for students who graduated from high school in the least wealthy region when compared to students who graduated from high school in the most wealthy region. Students who graduated from a high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from

a high school in the least wealthy region (.654). First-generation status did not have a statistically significant association with student success after controlling for race and gender.

### **Findings Related to the Literature – Relationship to Previous Studies**

#### **First-generation status and student success.**

There were several previous studies that reported on first-generation status and student success. Adelman's (1999) study built a narrative of student completion rates from the time students were in tenth grade in 1980 until approximately age 30 in 1993. Adelman's (1999) study tracked students over a decade and analyzed data from the National Center for Education Statistics high school and beyond sophomore cohort restricted file. The cohort of students started in a two-year institution with the expectation to earn a bachelor's degree. Adelman utilized the quintile of performance and logistic regression to compare completion rates by socioeconomic status and academic resources. Adelman (1999) reported that academic resources which consisted of a combination of high school curriculum, test scores, and class rank, were strongly associated with bachelor degree completion when compared to socioeconomic status. In addition, Adelman (1999) recommended for researchers to discard the highest level of parents' education because the data were imbalanced and inconsistent.

The current study analyzed data from a four-year time frame in five regions of one community college and utilized ANCOVA to compare the analysis of marginal means to determine the variance between the ratio of student success for regional wealth, enrollment status, and first-generation status. Regional wealth and enrollment status had a significant impact on student success. More specifically there was a significant

difference in student success for students who immediately enrolled when compared to students who delayed enrollment up to two years. The students who immediately enrolled had a higher student success ratio (.726) when compared to those who delayed enrollment up to two years (.658). In addition, there was a significant difference in student success for students who graduated from high school in the least wealthy region when compared to students who graduated from high school in the most wealthy region. Students who graduated from a high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from a high school in the least wealthy region (.654).

First-generation status did not have a significant impact on student success. These findings were similar to Adelman's finding in that parental educational levels were not significant predictors of student success. However, the findings from the current study were in contrast to several studies that revealed parental educational levels were significant predictors of children's successful outcomes (De Graaf, De Graaf & Kraaykamp, 2000; Lara-Cinisomo et al., 2004). De Graaf et al. (2000) utilized data from the Netherlands Family Survey of 1992-1993 with an overall response rate of 43% including respondents only from the ages of 25 and older, providing a data set of 1,653 participants. The level of educational attainment was calculated with the average educational years and the highest level enrolled and completed. De Graaf et al. (2000) reported by correlational scores that parental educational levels were a substantial predictor of children's successful educational outcomes when compared to their father's occupational level.

Lara-Cinisomo et al. (2004) conducted a questionnaire study with a random sample of over 3,000 households within 65 Los Angeles communities. The study was centered on two populations of students that consisted of a local, early childhood population and a national high school sample of students. The study reported that parental highest educational levels, community poverty, parental occupational status, and family income levels are most closely associated with students' academic success.

**Regional wealth and student success.**

The current study was similar to Lara-Cinisomo et al.'s (2004) study in that both studies reported community poverty was significantly associated with academic outcomes. The current study reported that students who graduated from a high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from a high school in the least wealthy region (.654).

Sirin (2005) conducted a meta-analytic review of studies published between 1990 and 2000 that focused on socioeconomic status and academic accomplishment. The sample comprised 101,157 students, 6,871 schools, and 128 school districts collected from 74 independent samples. The results revealed there was a significant correlation between socioeconomic status and academic accomplishment. Sirin (2005) compiled the findings and reported that socioeconomic status was also directly linked to academic achievement through various networks including grade level, minority status, and the school and neighborhood location. The current study supports Sirin's (2005) claims in that regional wealth was reported with a significant impact on student success. Students who graduated from the most wealthy region had higher student success ratios when compared to students who graduated from the least wealthy regions.

Bainbridge and Lasley (2002) reviewed national and state data for students at various points in their academic years: pre-K, kindergarten through first grade, and age 17, by analyzing reading progress scores disaggregated by the mother's education status and ethnicity. Bainbridge and Lasley (2002) concluded that environmental features were significant enough that students from high socioeconomic backgrounds had more promise in academic performance.

The current study supports those findings in that students who graduated from a high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from a high school in the least wealthy region (.654). In addition, the Chi-Square analysis resulted in a significant association for first-generation students and non-first-generation students between regional wealth and enrollment. More specifically when comparing the findings between immediate enrollment and delayed enrollment more than two years, the findings revealed similar patterns of enrollment based on regional wealth. Of the first-generation students who graduated from high school in the least wealthy region, the largest percent of those students delayed enrollment more than two years at 15.96% when compared to immediate enrollment at 7.83%. In contrast, of the first-generation students who graduated from high school in the most wealthy region, the largest percent of those students immediately enrolled at 43.75% when compared to delayed enrollment more than two years at 29.43%. Of the non-first-generation students who graduated from high school in the least wealthy region, the largest percent of those students delayed enrollment more than two years at 12.29% when compared to immediate enrollment at 5.64%. Of the non-first-generation students who graduated from high school in the most

wealthy region, the largest percent of those students immediately enrolled at 50.86% when compared to delayed enrollment more than two years at 33.66%.

**Delayed enrollment and student success.**

Gibson and Slate (2010) examined the degree of student engagement amongst first-year students at community colleges in Texas over a three-year timeframe. They utilized data from the Community College Survey of Student Engagement for community colleges located in Texas, more specifically 32 institutions from 2004, 20 institutions from 2005, and 32 from 2006. Only first year students who achieved 29 credit hours or less were included in the sample. Gibson and Slate (2010) compiled the findings and reported that first-generation students were served primarily at community colleges rather than traditional baccalaureate institutions, were less likely to enroll in postsecondary education, and had a higher probability for attrition when compared to their counterparts (Gibson & Slate, 2010).

The current study was similar in utilizing data from first-time in college, first-year students at the community college level. In addition, the findings were similar in that first-generation students who graduated from high school in the least wealthy region were more likely to delay enrollment at 15.96% than to immediately enroll at 7.83%. In addition, the probability of a student who graduated from high school in the least wealthy region and delayed enrollment more than two years was 3.03 times more likely than for first-generation students who graduated from high school in the most wealthy region.

Chen (2005) utilized data from the Postsecondary Education Transcript Study (PETS) of the National Education Longitudinal Study of 1988. Chen's (2005) study investigated first generation students' programs of study, patterns of course enrollment,



and compared their higher educational achievement with students whose parents went to college. The final sample included 7,400 students comprised of twelfth graders who were enrolled in a higher educational institution between 1992 and 2000. Chen (2005) reported first-generation students were less probable than their peers to attend college within eight years after high school (Chen, 2005).

The current study was similar to Chen's (2005) study in comparing first-generation students with non-first-generation students. In addition, the current study supported Chen's findings that first-generation students were more likely to delay enrollment. More specifically, the probability of a first-generation student who graduated from high school in the least wealthy region and delayed enrollment more than two years was 3.03 times more likely than for first-generation students who graduated from high school in the most wealthy region. In addition, of the first-generation students who graduated from high school in the least wealthy region, the largest percent of those students delayed enrollment more than two years at 15.96% when compared to immediate enrollment at 7.83%.

#### **Contributions to the literature.**

The current study analyzed data from one community college over a four-year period to determine whether there was a significant association with enrollment status, first-generation status, and regional wealth for student success. ANCOVA was utilized to examine the relationship between student success and enrollment status, while controlling for gender and race. There was a significant association with enrollment status and student success. More specifically, there was a significant difference in the mean student success ratio for students who enrolled at the community college immediately after high

school graduation when compared to students who delayed enrollment up to two years. The students who immediately enrolled had a higher student success ratio (.751) as compared to those who delayed enrollment up to two years (.669).

In addition, the current study utilized the Chi-Square analysis to determine whether there was a significant difference in regional wealth and the rate of delayed enrollment for first-generation students when compared to non-first-generation students. There was a significant relationship between regional wealth and enrollment for both first-generation and non-first-generation students. More specifically, the findings were similar for both first-generation and non-first-generation students as it related to the relationship between enrollment and regional wealth. If a student, regardless of their first-generation status, graduated from high school in the least wealthy region, the probability of delaying enrollment more than two years was approximately three times more likely than for students who graduated from high school in the most wealthy region.

There was also a significant association between first-generation status and time of enrollment with immediate enrollment representing the largest share of enrollment for both first-generation and non-first-generation students when compared to delayed enrollment. There was also a significant relationship between first-generation status and students who enrolled at the college upon graduating from high school in various wealth regions with the largest representation of enrollment figures occurring for students who graduated from the most wealthy region when compared to all regions.

More specifically when comparing the findings between immediate enrollment and delayed enrollment more than two years, the findings revealed similar patterns of enrollment based on regional wealth. Of the first-generation students who graduated

from high school in the least wealthy region, the largest percent of those students delayed enrollment more than two years at 15.96% when compared to immediate enrollment at 7.83%. In contrast, of the first-generation students who graduated from high school in the most wealthy region, the largest percent of those students immediately enrolled at 43.75% when compared to delayed enrollment more than two years at 29.43%. Of the non-first-generation students who graduated from high school in the least wealthy region, the largest percent of those students delayed enrollment more than two years at 12.29% when compared to immediate enrollment at 5.64%. Of the non-first-generation students who graduated from high school in the most wealthy region, the largest percent of those students immediately enrolled at 50.86% when compared to delayed enrollment more than two years at 33.66%.

Moreover, the current study examined the relationship between regional wealth, enrollment status, first-generation status, and student success, while utilizing ANCOVA and controlling for gender and race. The findings revealed regional wealth and enrollment status had a significant impact on student success. More specifically, there was a significant difference in student success for students who immediately enrolled when compared to students who delayed enrollment up to two years. The students who immediately enrolled had a higher student success ratio (.726) when compared to those who delayed enrollment up to two years (.658). In addition, there was a significant difference in student success for students who graduated from high school in the least wealthy region when compared to students who graduated from high school in the most wealthy region. Students who graduated from high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from

high school in the least wealthy region (.654). There was also a significant interaction between enrollment status and regional wealth with student success whereas the students who immediately enrolled had significantly higher student success ratios when compared to students who delayed enrollment up to two years for both the least wealthy region and the most wealthy region.

#### **Unanticipated findings.**

An unexpected finding of this study was that a significant relationship did not exist between first-generation status, race, and student success. Much of the literature suggested first-generation students were more likely to be minority and were at-risk for poor achievement. The findings from this study suggested the delay in enrollment was a more plausible explanation of low student success, especially in cases where students who graduated from the least wealthy region had limited educational resources before they enrolled in postsecondary education.

#### **Conclusions**

##### **Implications for community college leaders.**

In support of the second and third hypothesis, it appears that enrollment status and regional wealth have a significant relationship. The probability of non-first-generation students who graduated from high school in the least wealthy region and delayed enrollment more than two years was 3.29 times more likely than for non-first-generation students who graduated from high school in the most wealthy region. The probability of first-generation students who graduated from high school in the least wealthy region and delayed enrollment more than two years was 3.03 times more likely than for first-generation students who graduated from high school in the most wealthy region.

In support of the fourth hypothesis, there was a significant association between enrollment status and regional wealth on student success. The students who immediately enrolled had a higher student success ratio (.726) when compared to those who delayed enrollment up to two years (.658). In addition, there was a significant difference in student success for students who graduated from high school in the least wealthy region when compared to students who graduated from high school in the most wealthy region. Students who graduated from a high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from a high school in the least wealthy region (.654).

Results for first-generation status are less clear. First-generation status was not significantly associated with student success based on the ANCOVA analysis. Yet, when the Chi-Square analysis was run separately for first-generation and non-first-generation students, there was a significant association between enrollment status and regional wealth. In addition, the ANCOVA analysis revealed that both enrollment status and regional wealth had significant associations with student success.

Results for the first hypothesis are less clear. While first-generation status was not significantly associated with student success, enrollment status was found to be significantly associated with student success. Overall, the students who immediately enrolled had a higher student success ratio (.726) when compared to those who delayed enrollment up to two years (.658).

There has recently been an increase in the number of empirical studies examining the pre-college characteristics that affect the academic success of first-generation community college students. The results of previous studies combined with the current

study could have important implications for administrators who develop interventions or provide the resources to help first-generation students over-come many of the challenges they face. These studies can support community college leaders in their efforts to increase student academic achievement and graduation rates. More specifically, it would be advantageous for leaders to fully understand the different educational impacts on students who immediately enroll or delay enrollment at two-year institutions.

Community colleges serve higher numbers of disadvantaged students than four year institutions (Wells, 2008). More specifically, low capital students who began at community colleges were more successful in persistence when compared to their low capital peers beginning at four-year institutions (Wells, 2008).

Both first-generation and non-first-generation students who graduated from high school in the region lacking a campus site displayed the lowest enrollment rates when compared with all regions in this study. These findings support the premise that several groups of students could benefit from college readiness programs such as the dual enrollment program. Various studies have cited the importance of policies containing dual enrollment as a college readiness strategy (Hughes, Rodriguez, Edwards, & Belfield, 2012; Rodriguez, Hughes, & Belfield, 2012). Dual enrollment delivers college experiences for high school students which can serve to increase their academic and nonacademic skills, support them to understand what is expected in college, and boost future college enrollment by demonstrating to students that they are capable of performing college level work (Hughes, Rodriguez, Edwards, & Belfield, 2012).

Administrators could utilize the findings and continue to work on retaining students who

graduate from the least wealthy regions by understanding the different educational impacts on students who immediately enroll or delay enrollment at two-year institutions.

**Implications for community college faculty and staff.**

It would be advantageous for college faculty and staff to fully understand the impact of regional wealth on delayed enrollment at two-year institutions. Faculty and staff could utilize the findings and continue to support the retention of students by understanding the impact of delayed enrollment on student success.

The findings also revealed if a student, regardless of first-generation status, graduated from high school in the least wealthy region, the probability of delaying enrollment more than two years were approximately three times more likely than for students who graduated from high school in the most wealthy region. More specifically, the students who immediately enrolled had a higher student success ratio (.726) when compared to those who delayed enrollment up to two years (.658).

It would be useful for students and other constituents to understand the impact of delayed enrollment. In addition, it would be of interest for students and constituents to further recognize the implications of student success as it relates to regional wealth. Further, students who graduated from a high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from a high school in the least wealthy region (.654).

Of the first-generation students who graduated from high school in the least wealthy region, the largest percent of those students delayed enrollment more than two years at 15.96% when compared to immediate enrollment at 7.83%. In contrast, of the first-generation students who graduated from high school in the most wealthy region, the

largest percent of those students immediately enrolled at 43.75% when compared to delayed enrollment more than two years at 29.43%.

### **Recommendations for Practice**

The literature related to this topic and the data acquired from this study suggest the following recommendations for practice.

#### **Recommendation for practice 1.**

Provide partnerships and expertise in curriculum planning and financial aid procedures to parents of eighth graders. Cabrera and La Nasa (2001) compared low socio-economic individuals with high socioeconomic individuals and revealed there were significant disparities between both groups in being equipped with minimal college credentials, graduating from high school, and submitting applications to higher education institutions. They further reported that implementing partnerships which are comprised of family, school, and colleges are more crucial than a family's socioeconomic status in relation to earning college credentials, graduating from high school, and submitting applications to higher education institutions (Cabrera & La Nasa, 2001).

Community colleges are in a unique position to develop partnerships and expertise to parents of eighth graders by explaining the importance of curriculum planning and further providing information to the lowest socioeconomic families in qualifying for need-based financial aid programs. This study supports the need for college partnerships with the lowest socioeconomic families because students who graduated from high school in the least wealthy region were more likely to delay enrollment and are not as successful in their academic pursuits when compared to students who graduated from high school in the most wealthy region. Students who



graduated from high school in the most wealthy region had a higher student success ratio (.729) when compared to students who graduated from high school in the least wealthy region (.654).

**Recommendation for practice 2.**

Forge partnerships to facilitate the development of grant-funded college access programs with colleges, schools, and communities. In 1999, the U.S. Department of Education introduced a new initiative within their college access programs to increase educational opportunities for low-income and minority students (Ward, Strambler, & Linke, 2013). Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) was designed to support students with the college readiness skills where entire cohorts of students are earmarked for enrollment. GEAR UP also requires partnerships between the college, school, and community that collectively work towards the same goals of increasing access and equity for low-income and minority students into higher educational institutions (Ward et al., 2013).

Seven years grants are awarded to college, school, and community partnerships to provide support services to high poverty school districts across the country. There are instances where grants are managed by a state university with student programming coordinated through the state's community colleges. This study supports the conclusion from the literature in that students who delay enrollment are in need of college access and equity programs. Students who immediately enrolled had a higher student success ratio (.726) when compared to those who delayed enrollment up to two years (.658). In addition, students who graduated from high school in the most wealthy region had a

higher student success ratio (.729) when compared to students who graduated from high school in the least wealthy region (.654).

### **Recommendations for Further Research**

This study provided one perspective for examining the effect of enrollment status, first-generation status, and regional wealth on student success. Replication of the study could enhance and strengthen the findings.

#### **Recommendation for further research 1.**

The current study focused on student success as it related to the ratio of credits passed to credits attempted over two academic semesters. This study should be replicated with student success over a longer time period by examining the association between student success and delayed enrollment.

#### **Recommendation for further research 2.**

This study should be replicated at other community colleges to check for consistency among the findings and to determine if factors vary in their association with student success, based on the differences in the community college settings.

#### **Recommendation for further research 3.**

The findings also suggested that students who delayed enrollment past two years have higher success than those who delay up to two years. This study should be replicated with a qualitative component where interviews are conducted with students to understand the implications of students who delay enrollment past two years when compared to those who delay up to two years.

**Concluding Remarks**

This study provided a rigorous insight on the impact of delayed enrollment and regional wealth with regard to community college student success for first-time in college students. It is essential that all stakeholders in the enrollment and recruitment management process including community college leaders, faculty, staff, students, and constituencies understand the implications of this study. The findings from this study revealed that students who immediately enrolled had higher student success ratios when compared to students who delayed enrollment up to two years. Students who graduated from high school in the most wealthy region had the highest student success ratio when compared to students who graduated from high school in the least wealthy region. There was also a significant interaction between enrollment status and regional wealth with student success whereas the students who immediately enrolled had significantly higher student success ratios when compared to students who delayed enrollment up to two years for both the least wealthy region and the most wealthy region. In addition, if a student graduated from high school in the least wealthy region, the probability of delaying enrollment more than two years was approximately three times more likely than for students who graduated from high school in the most wealthy region.

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